# INTERNAL SUPPLY CHAIN INTEGRATION IN OMNICHANNEL RETAILERS: A DYNAMIC CAPABILITIES PERSPECTIVE

by

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# DECLARATION

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**INTERNAL SUPPLY CHAIN INTEGRATION IN OMNICHANNEL RETAILERS: A DYNAMIC CAPABILITIES PERSPECTIVE**

I declare that the above thesis is my own work and that all the sources I have used or quoted have been indicated and acknowledged by means of complete references.

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SIGNATURE DATE

(Ms Alicia Neva Weber)

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*"Being a doctoral student is akin to being a novice mountain climber who decides to summit Mt Everest on their first climb. From the base of the mountain, she cannot see the peak, but her experienced friends assure her that if she persists, it will be worth it. She expects a long, slow and sometimes painful journey – and that is exactly what she gets."*

– The Doctoral Support Team –

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# ABSTRACT

The proliferation of digital devices and services has fundamentally changed customers' shopping behaviour and has occasioned a new type of retailing called omnichannel retailing. Omnichannel retailing requires retailers to completely transform, moving away from managing processes in silos towards offering fully integrated and seamless shopping experiences across all the retailers' physical and digital channels and touchpoints. The imperative to create seamless shopping experiences has rippled through every part of the retail supply chain. Accordingly, internal supply chain integration (SCI) has become central to a retailer's ability to integrate the vast network of channels and functions that need to collaborate to create an omnichannel shopping experience. However, retailers highlight numerous difficulties when transforming their supply chains from previous types of multichannel retailing to omnichannel retailing.

By applying the strategic management theory of the dynamic capabilities view (DCV) this study explores the question of which dynamic capabilities facilitate the internal SCI of omnichannel retailers. To answer this question, the study employed a multimethod qualitative methodology. First, an in-depth literature review was conducted to identify dynamic capabilities within the scope of this study. Based on this process, a coding frame was developed. The coding frame was used to conduct a content analysis of 40 South African omnichannel retailers' integrated annual reports (IARs). Second, 17 semi-structured interviews were conducted with top managers employed at South African omnichannel retailers. The interview data were transcribed and then analysed employing reflexive thematic analysis. Following the analysis of these two datasets, the findings were triangulated and a conceptual framework of dynamic capabilities that facilitate the internal SCI of omnichannel retailers was developed. The conceptual framework identified 14 dynamic capabilities that facilitate internal SCI, and elaborated on how each capability promotes internal SCI. These findings make a unique contribution as managers can use the list of dynamic capabilities to appraise their internal competencies to identify and prioritise the development of capabilities that facilitate competitiveness and adaptability in an ever-changing omnichannel environment. Furthermore, these findings make a unique contribution by being among the first to take an end-to-end approach to the investigation of omnichannel supply chain integration.

**KEYWORDS**

Supply chain, supply chain integration, omnichannel retailing, retail supply chains, dynamic capabilities view, dynamic capabilities, integration, digital transformation, qualitative, South Africa

# AFRIKAANS

## INTERNE AANBODKETTINGINTEGRASIE IN ALLEKANAALKLEINHANDEL: ‘N DINAMIESE VERMOËNS PERSPEKTIEF

Die toename in digitale toestelle en dienste het die koopgedrag van kliënte grondig verander en tot ’n nuwe wyse van kleinhandel aanleiding gegee. Dit heet allekanaalkleinhandel. Vanweë allekanaalkleinhandel kan kleinhandelaars nie voortgaan om prosesse apart van mekaar te bestuur nie. Kleinhandelaars moet gevolglik in al hulle fisiese en digitale kanale en raakpunte ’n geïntegreerde, soomlose inkopiebelewenis kan bied. Soomlose inkopiebelewenisse het dus in elke faset van die kleinhandelsaanbodketting noodsaaklik geword. Gevolglik staan interne aanbodkettingintegrasie (AKI) in die kern van ’n kleinhandelaar se vermoë om sy ontsaglike netwerk van kanale en funksies te integreer om ’n allekanaalinkopiebelewenis te bied. Kleinhandelaars wys egter op verskillende probleme wat met die transformasie van hulle aanbodkettings van meerkanaalkleinhandel na allekanaalkleinhandel gepaard gaan.

Hierdie studie vra dus op grond van die strategiese bestuursteorie uit die oogpunt van dinamiese vermoëns (ODV) welke dinamiese vermoëns interne AKI van allekanaalkleinhandelaars verg. Om hierdie vraag te beantwoord, is ’n kwalitatiewe metodologie van meerdere metodes toegepas. Ten eerste is die literatuur grondig ondersoek om die dinamiese vermoëns vir hierdie studie aan te toon. ’n Koderingsraamwerk is vervolgens op grond hiervan ontwikkel om die inhoud van die geïntegreerde jaarverslae (GJV’s) van 40 Suid-Afrikaanse allekanaalkleinhandelaars te ontleed. Ten tweede is 17 halfgestruktureerde onderhoude met die topbestuurders van Suid-Afrikaanse allekanaalkleinhandelaars gevoer. Die data van die onderhoude is getranskribeer en daarna met nadenke tematies ontleed. Ná die ontleding van die twee stelle data is die bevindings getrianguleer. ’n Konseptuele raamwerk van die dinamiese vermoëns wat die interne AKI van allekanaalkleinhandelaars moontlik maak, is opgestel. Die konseptuele raamwerk toon 14 dinamiese vermoëns aan wat interne AKI bevorder en beskryf ook hoe elke vermoë interne AKI moontlik maak. Hierdie bevindings lewer ’n wesenlike bydrae aangesien bestuurders volgens die lys van dinamiese vermoëns hulle eie interne vermoëns kan beoordeel om die ontwikkeling daarvan te prioritiseer met die oog op mededingendheid en aanpasbaarheid in ’n immerveranderende allekanaalomgewing. Hierdie bevindings lewer ’n unieke bydrae aangesien dit die heel eerste keer is dat ’n ent-tot-entbenadering in ’n ondersoek na allekanaalaanbodkettingintegrasie gevolg is.

## SLEUTELBEGRIPPE

Aanbodketting, aanbodkettingintegrasie, allekanaalkleinhandel, kleinhandelaanbodkettings, oogpunt van dinamiese vermoëns, dinamiese vermoëns, integrasie, digitale transformasie, kwalitatiewe, Suid-Afrika

# ISIZULU

## UKUHLANGANISWA KOCHUNGECHUNGE LOKUHLINZEKA UHLOBO LOKUDAYISA OLUHLANGANISA IZINDLELA EZAHLUKENE ZOKUTHENGA EZITHOLAKALA KUBATHENGI: UMBONO ONAMADLA WAMAKHONO

Ukwanda kwamadivayisi edijithali namasevisi kuye kwashintsha ngokuyisisekelo ukuziphatha kokuthenga kwamakhasimende futhi kuye kwabangela uhlobo olusha lokuthengisa olubizwa ngokuthi uhlobo lokudayisa oluhlanganisa izindlela ezahlukene zokuthenga ezitholakala kubathengi. Ukuthengiswa kohlobo lokudayisa oluhlanganisa izindlela ezahlukene zokuthenga ezitholakala kubathengi kudinga abathengisi ukuthi baguqule ngokuphelele, basuke ezinqubweni zokuphatha ezinqolobaneni baye ekunikezeni ulwazi lokuthenga oludidiyelwe ngokuphelele futhi olungenazihibe kuwo wonke amashaneli angokoqobo nawedijithali kanye nezindawo zokuthinta zabathengisi. Isidingo sokudala isipiliyoni sokuthenga senzeke kuzo zonke izingxenye zochungechunge lokuthengwa kwempahla. Ngokufanelekile, ukuhlanganiswa kochungechunge lokuhlinzeka (UKL) sekuyinto engqala yekhono lomthengisi lokuhlanganisa inethiwekhi enkulu yamashaneli nemisebenzi edinga ukubambisana ukuze kudalwe okuhlangenwe nakho kokuthenga kohlobo lokudayisa oluhlanganisa izindlela ezahlukene zokuthenga ezitholakala kubathengi. Kodwa-ke, abathengisi bagqamisa ubunzima obuningi lapho beguqula uchungechunge lokuhlinzeka okunikezwayo kusuka ezinhlotsheni zangaphambilini zokuthengisa kabusha kweziteshi eziningi kuya ekuthengisweni kohlobo lokudayisa oluhlanganisa izindlela ezahlukene zokuthenga ezitholakala kubathengi.

Ngokusebenzisa ithiyori yokuphatha yesu lokubuka kwamakhono anamandla (LKA) lolu cwaningo luhlola umbuzo wokuthi yimaphi amandla aguqukayo asiza UKL yangaphakathi yabathengisi beziteshi zonke. Ukuze kuphendulwe lo mbuzo, ucwaningo lusebenzise izindlela eziningi eziyindlela yekhwalithi. Okokuqala, ukubuyekezwa kwemibhalo okujulile kwenziwa ukuze kutholakale amakhono ashukumisayo ngaphakathi kwendawo yalolu cwaningo. Ngokusekelwe kule nqubo, uhlaka lwekhodi lwenziwe. Uhlaka lwekhodi lusetshenziswe ukuhlaziya okuqukethwe kwemibiko edidiyelwe yaminyaka yonke (IYE) yabathengisi bohlobo lokudayisa oluhlanganisa izindlela ezahlukene zokuthenga ezitholakala kubathengi ezingama-40 baseNingizimu Afrika. Okwesibili, izinhlolokhono eziyi-17 ezihlelwe kancane zenziwa nabaphathi abaphezulu abaqashwe ezitolo ezidayisa uhlobo lokudayisa oluhlanganisa izindlela ezahlukene zokuthenga ezitholakala kubathengi zaseNingizimu Afrika. Idatha yenhlolokhono yabhalwa yabe isihlaziywa kusetshenziswa ukuhlaziya

kwengqikithi ezenzakalelayo. Ngemuva kokuhlaziywa kwalawa madathasethi amabili, okutholakele kwaphindwa kathathu futhi kwasungulwa uhlaka lomqondo lwamakhono ashukumisayo asiza UKL yangaphakathi yohlobo lokudayisa oluhlanganisa izindlela ezahlukene zokuthenga ezitholakala kubathengi. Uhlaka lomqondo luhlonze amakhono ayi-14 anamandla asiza UKL yangaphakathi, futhi lwachaza kabanzi ngokuthi ikhono ngalinye liyithuthukisa kanjani UKL yangaphakathi. Lokhu okutholakele kube nomthelela oyingqayizivele njengoba abaphathi bengasebenzisa uhlu lwamakhono aguqukayo ukuze bahlaziye amakhono abo angaphakathi ukuze bahlonze futhi babeke phambili ukuthuthukiswa kwamakhono asiza ukuncintisana nokuzivumelanisa nezimo endaweni ehlala ishintsha uhlobo lokudayisa oluhlanganisa izindlela ezahlukene zokuthenga ezitholakala kubathengi. Ngaphezu kwalokho, lokhu okutholakele kube nomthelela oyingqayizivele ngokuba phakathi kwabokuqala ukuthatha indlela yokuphela kophenyo lokuhlanganiswa kochungechunge lokuhlinzekwa uhlobo lokudayisa oluhlanganisa izindlela ezahlukene zokuthenga ezitholakala kubathengi oluhlanganisa uchungechunge lokuhlinzeka.

## AMAGAMA ABALULEKILE

Uchungechunge lokuhlinzeka, ukuhlanganiswa kochungechubge lokuhlinzeka, ukuthengiswa kohlobo lokudayisa oluhlanganisa izindlela ezahlukene zokuthenga ezitholakala kubathengi, ukudayisa kochungechunge lokuhlinzeka, ukubukwa kwamakhono anamandla, amakhono anamandla, ukuhlanganiswa, ukuguqulwa kwedijithali, ikhwalithi, iNingizimu Afrika

# REFLEXIVITY/POSITIONALITY STATEMENT

An essential practice to improve the integrity of the qualitative research process is reflexivity. Reflexivity relates to the researcher's ability to self-consciously articulate their generative role in producing knowledge during the research process (Braun & Clarke, 2022:17). Therefore, in a reflexivity statement, a researcher acknowledges how their identity in society influences their worldview by outlining the manner in which prior experiences, assumptions, and beliefs influenced the research process (Gary & Holmes, 2020:1). Accordingly, in the spirit of self-reflexivity, the following section will outline my role in constructing meaning in terms of the current topic.

**Introduction: The researcher**

I am a 33-year-old female. I have a multidisciplinary educational background, having studied marketing management in my undergraduate and honours degrees while completing my master's degree within the field of supply chain management. The integration of these two disciplines piqued my interest in online retail supply chains, which I have studied for more than ten years.

My research paradigm is pragmatism as I have always strived to design research studies with the highest probability of answering the research question. Within the pragmatist paradigm, I believe research questions should be constantly renegotiated, debated, and interpreted from new perspectives to gain a holistic understanding of the issue under investigation. I also believe that the best way to understand an issue is to use multiple methods to investigate a topic.

**My history and personal interaction with this topic**

I believe my historical and personal interaction with this topic to be threefold. First, I acknowledge that I have prior experience as a researcher in this topic. I initially became acquainted with the topic of online retailing as part of my honours degree. Subsequently, my master's degree focused on the barriers and motivators of online grocery supply chains from a South African perspective (Snyman, 2014). Upon conclusion of my master's degree, it was found that the most significant barrier to online retailing from a retailer's perspective is their struggle to design suitable online retailing fulfilment models. As such, I wanted to investigate the supply chain capabilities retailers should have to be able to offer online retailing experiences comparable to those offered in developed countries.

Second, as a millennial I have always been interested in new technologies and have been an avid online shopper for many years. Therefore, within my role as a South African consumer, I have prior experience relating to online shopping, which I brought to this research.

Third, since the start of my career, I have been an academic; therefore, I acknowledge that I lack the practical experience of managing omnichannel supply chains. Accordingly, I wanted to investigate how managers of omnichannel retailers perceived their SCI efforts and the capabilities they would highlight as essential to omnichannel SCI.

**The evolving self**

According to Lacy (2017), positionality is not fixed or static and continual reflexivity is required to ensure that the researcher remains cognisant of the evolving self and the evolving topic. First, I would like to comment on my evolutionary journey as a researcher throughout this study. While I approached this topic with some preconceived notions (as outlined above), my deep immersion in the literature and engagement with the participants throughout this study have evolved my understanding of the issues concerned with omnichannel retailing. I now realise the issues identified as part of my master's degree were focused on narrower supply chain design challenges, while this study illuminated broader capability development challenges within the omnichannel supply chain. I have come to realise that multidisciplinary capabilities have become exceedingly important in modern supply chains. While I can only make recommendations on the development and implementation of multidisciplinary capabilities to retailers through the findings of this study, I can, in my role as an academic, influence the integration of multidisciplinary capabilities into the curricula in which I am involved.

Second, I would like to comment on the blind spots I have concerning the online retailing opportunities in rural communities in South Africa. While literature and media may strongly evince the impracticality of offering such a service in rural communities, through my engagement with participants I have come to recognise that these communities are often under-serviced, despite constituting a large part of the South African consumer base. Although there are countless and clear obstacles to offering online retailing in rural communities (for example, a lack of spending power, a lack of specified delivery addresses, and a lack of knowledge on the use of online shopping), participants

commented that they were exploring options to expand online shopping to rural communities but were finding it challenging. I have, therefore, suggested in Chapter 9 that further research should be conducted on the feasibility of online retailing in rural communities in South Africa.

While the above sections outlined the reflexive self, I also need to reflect on the evolution of this topic that was brought about by this study, in particular the impact of the pandemic on my worldview. While I set out to research a relatively underutilised service (omnichannel shopping) in the South African context, the outbreak of the novel coronavirus pandemic (COVID-19) highlighted the critical role that online retailing would play in mediating customers' growing health concerns amid the pandemic. COVID-19 relinquished any previously held assumptions about online retailing as a 'luxury' or simply being 'convenient' and established the service as an essential service to meet the instantaneous change in customers' shopping habits.

At the start of this study (pre-pandemic), I saw many opportunities that future omnichannel supply chains would hold for South African customers. However, the pandemic changed this view. I no longer consider omnichannel retailing to be a future opportunity for South African retailers but rather a strategic imperative that retailers need to develop to be competitive in the current retailing climate. This sentiment was shared by participants of this study, as one of the participants explained: "*COVID has pushed us about three to five years ahead of the planned trajectory… I think that's taught us a major lesson; I don't think we could have planned it. It's about how we reacted to it.*" (Participant 5, Head of Transport and Engineering Logistics, 24 years of experience).

Although these factors have contributed to my worldview, I have remained cognisant of them and have continually reflected on them to mitigate any potential prejudices that may affect my subjectivity.

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# GLOSSARY AND ACRONYMS

| CONCEPT | DEFINITION |
|---|---|
| **Adaptability** | The ability of a retailer to exploit existing or new opportunities in response to changing environments or changes in the market, such as advances in technology or changing customer needs. |
| **Back-end integration** | The integration of the back-end processes of a retailer which facilitate the picking and packing of orders before final delivery to the customer. Back-end fulfilment includes picking location (in store, separate fulfilment centres, or central warehouses), picking automation (manual, semi-automated, or fully automated) and picking integration (separated, integrated, or capacity-optimised and -integrated). |
| **Channels** | Any channel used by the customer to purchase a product from an omnichannel retailer. |
| Physical channels | Any channel where the customer has physical contact with a retailer while purchasing a product. A physical channel includes the retailer's brick-and-mortar store. |
| Digital channels | Any channel where the customer does not have physical contact with a retailer when purchasing a product. Digital channels are enabled and facilitated by various digital technologies. Digital channels include the retailer's website and mobile application. |
| Distribution channels | Any distribution channel used by the retailer to deliver products to the final customer. Distribution channels include home delivery, customer collection (in store or from a dedicated warehouse), smart lockers, and crowdshipping. |
| **Dynamic capabilities view (DCV)** | This theoretical framework, as an extension of the resource-based view (RBV), states that, for organisations to achieve a competitive advantage in rapidly changing business environments, the possession of valuable, heterogeneous resources is simply not sufficient. The dynamic capabilities view therefore builds upon the RBV by focusing on organisational transformation in reaction to environmental change, through alterations in the resource base of the organisation, with the purpose of achieving a competitive advantage. Organisational transformation is achieved through organisational processes that use resources to integrate, coordinate, reconfigure, gain, modify, and release an organisation's valuable, rare, and irreplaceable internal and external resources to match and even create industry change in turbulent business environments. |
| **Dynamic capabilities** | Dynamic capabilities are the antecedent organisational and strategic routines (or processes) by which managers alter the resource base by acquiring and shedding resources or integrating and recombining resources to generate new value-creating strategies. As such, dynamic capabilities are the drivers behind the creation, evolution, and recombination of other resources into new sources of competitive advantage. Dynamic capabilities are geared towards effecting and driving organisational change and are essentially strategic in nature. |
| Lower-order dynamic capabilities (LODCs) | These are organisational processes or routines, such as forming external partnerships with a supplier or developing new products. |

| CONCEPT | DEFINITION |
|---|---|
| Higher-order dynamic capabilities (HODCs) | The proficiency of an organisation to sense and seize opportunities in the organisation's competitive external environment (opportunity discovery) by rapidly reconfiguring and coordinating (transforming) the organisation's capabilities and resources. |
| **Front-end integration** | The integration of a retailer's physical and digital channels and touchpoints to provide customers with a seamless and consistent shopping experience across the retailer's channel mix. |
| **Information integration** | The integration of quality, multidirectional supply chain information through cloud-based information technology (IT) systems to facilitate decision-making by linking higher-level strategic planning with lower-level transactional systems in the organisation. Through organisational knowledge management, shared meanings and interpretations of the information are developed to guide organisational decision-makers. |
| **Integrated annual report (IAR)** | An integrated annual report provides a comprehensive narrative of an organisation by putting the performance, business model, and strategy in the context of the organisation's financial, social, and environmental factors. |
| **Last-mile distribution** | The integration of the final leg of the omnichannel supply chain in which order delivery takes place. Last-mile distribution includes strategic considerations in terms of various delivery modes (home delivery and click-and-collect), delivery times (delivery velocity and time slot planning), delivery area (local, regional, and national), and, finally, returns (no returns but money-back, check and return at reception, returns by courier, express and parcel (CEP) returns, and accept and refund in retail outlets). |
| **Market-based view (MBV)** | The market-based view asserts that competitive advantage is obtained when an organisation has a stronger market position than its competitors (a competitive advantage is obtained *external* to the organisation). |
| **Omnichannel retailing** | A direct to consumer (D2C) business model where all channels ranging from online, mobile, telephonic, mail order, self-service, and physical retail establishments are aligned in terms of service delivery. Order fulfilment processes are integrated to provide customers with a seamless shopping experience in accordance with the organisation's brand proposition. |
| **Ordinary capabilities** | The processes that deploy people, facilities, and equipment (existing resource base) to carry out the day-to-day operations of the organisation. |
| **Process integration** | This refers to a holistic approach to SCI, which emphasises the joint management of supply chain processes across functional units. Process integration is achieved through organisational governance in terms of leadership support, the cross-functional team approach, as well as the alignment of supply chain goals with organisational objectives and process-oriented performance measures. Process integration requires organisational change and personnel support. |
| **Resource-based view (RBV)** | A theoretical framework for understanding how a competitive advantage is achieved by focusing on the internal organisation. According to this view, competitive advantage derives from valuable, heterogeneous organisational resources. Resources are defined as specific physical, human, and organisational (tangible and intangible) assets that can be used to implement value-creating strategies. |

| CONCEPT | DEFINITION |
|---|---|
| **Social capital integration** | This refers to a set of social resources embedded in the boundary-spanning relationships of an internal supply chain, including not only relationships but also a cooperative organisational culture which is characterised by trust and mutuality and which serves as the relational glue for process and information integration. |
| **Supply chain integration (SCI)**<br><br>Internal supply chain integration (Internal SCI) | Supply chain integration relates to the scope and strength of linkages of supply chain processes across organisations. These linkages are facilitated by information, operational, and relational integration. SCI can be an effective behavioural response to uncertainty by facilitating lateral relations that aid collaborating, coordinating, and controlling materials and information between members of a supply chain to develop the capability to respond to rapidly changing conditions.<br><br>The internal supply chain refers to the way in which an organisation structures its organisational practices, procedures, and behaviours into collaborative, synchronised, and manageable processes which mainly involves the integration of data, information systems, and relations. Such processes provide the infrastructure and guidelines for cross-functional information processing and joint decision-making. As a result of internal integration, collaboration occurs between functional areas within the organisation, thereby leading to goal alignment and improved organisational performance. |
| **Supply chain management (SCM)** | Supply chain management is a management philosophy aimed at proactively integrating and coordinating a network (or web) of upstream linkages (sources of supply), internal linkages (inside the organisation, according to the value chain approach), and downstream linkages (distribution and ultimate customers) in performing specific key business processes and activities. These processes and activities will ultimately create and optimise value for the customer in the form of products and services specifically aimed at satisfying customer demands and expectations. |
| **Supply chain strategies (SCSes)** | Supply chain strategies integrate all the activities within organisations, such as procurement, operations, and logistics management as well as considerations from customers and suppliers through supply chain relationships. |
| **Thematic analysis (TA)** | Thematic Analysis is a qualitative data-analysis method for identifying, analysing, and interpreting patterns of meaning (themes) within qualitative data. |
| **Touchpoint** | This refers to episodes of direct and/or indirect engagement between the customer and the retailer which do not explicitly result in a purchase. Touchpoints stimulate a continuous shopping journey, allowing customers the opportunity to interact with the retailers more frequently in the omnichannel process. Touchpoints include (but are not limited to): social media platforms, showrooms/pop-up shops, customer review websites, blogs, live chats (virtual assistants), and product review sites (external to or on the retailer's website). |

# ACRONYMS

The following acronyms are used throughout the study:

| | |
|---|---|
| **3PLs** | Third-party logistics provider |
| **AI** | Artificial Intelligence |
| **AR** | Augmented Reality |
| **BORIS** | Buy online return in store |
| **DCV** | Dynamic capabilities view |
| **ERP systems** | Enterprise Resource Planning systems |
| **LODCs** | Lower-order dynamic capabilities |
| **HODCs** | Higher-order dynamic capabilities |
| **IARs** | Integrated annual reports |
| **IT** | Information technology |
| **IoT** | Internet of Things |
| **MBV** | Market-based view |
| **ML** | Machine learning |
| **PSM** | Purchasing and Supply Management |
| **RBV** | Resource-based view |
| **RFID** | Radio frequency identification |
| **SCI** | Supply chain integration |
| **SCM** | Supply chain management |
| **SCSes** | Supply chain strategies |
| **TA** | Thematic Analysis |
| **VR** | Virtual Reality |
| **VRIN Resources** | Valuable (V), rare (R), inimitable (I), and non-substitutable (N) resources |
| **VUCA environments** | Volatile (V), uncertain (U), complex (C), and ambiguous (A) |

# CHAPTER 1
# BACKGROUND TO THE STUDY

## 1.1 CHAPTER INTRODUCTION

The proliferation of digital devices and services has fundamentally changed customer behaviour and needs and, consequently, the way in which customers engage with retailers (Mirsch, Lehrer & Jung, 2016:2). In response to the changes in customer behaviour, retailers are revisiting and changing the services offered to customers (Wang e*t al.,* 2022:196). Today, most customers use several digital channels (such as websites or mobile applications) and physical channels (such as brick-and-mortar stores) before, during, and after making a purchase (Verhoef, 2021:610). This channel-switching behaviour has occasioned a new type of retailing called omnichannel retailing (Chopra, 2016; Ishfaq *et al.,* 2016). The purpose of omnichannel retailing differs significantly from previous types of multichannel retailing in that, with omnichannel retailing, retailers use substantial amounts of data across all commerce channels (both digital and physical) to offer customers a seamless shopping experience (Gao & Huang, 2021:1), regardless of the commerce channel[1] (hereafter referred to as channel) that customers use.

Literature on omnichannel retailing shows that the nature of omnichannel retailing makes the constant shifting of performance goalposts inevitable (Ross, Ressia & Sander, 2017:113; Saghiri *et al.,* 2017:58). New technologies are frequently emerging, which means retailers might gain capabilities in one area of omnichannel retailing but be lagging in other areas (Goga & Paelo, 2018:7). Technological advances in the retail

[1] It is important to define the term 'commerce channel'. In omnichannel literature, no universally accepted term can be identified to refer to the different channels (both physical and digital) which form part of omnichannel retailing. Since omnichannel retailing often encompasses not only the distribution channels through which products reach customers but also the marketing communication channels through which marketers interact with customers, using either the term distribution channel or marketing communication channel implies that certain channels within omnichannel retailing is excluded from the study (Ailawadi & Farris, 2017). A detailed discussion on terminology clarification can be found in Section 1.4.3.

industry are affecting every part of the omnichannel supply chain. For example, smart-home devices such as Amazon.com's Alexa and Google Home not only influence customers' purchasing decisions but, through the application of artificial intelligence (AI), can place orders on behalf of customers (Grewal, Roggeveen & Nordfält, 2017:5; Kaplan & Haenlein, 2019:23). Payment options are also impacted, with omnichannel retailers reporting a demand from customers for payment options via a range of different (and modern) payment technologies such as e-wallets and cryptocurrencies (Oka *et al.,* 2017:5; Goga & Paelo, 2018:7). Rapid technological changes also influence last-mile delivery, with retailers such as Amazon.com testing the use of unmanned delivery vehicles, such as drones (Amazon PrimeAir) and delivery robots (Amazon Scout), as part of the last-mile transportation fleet (Simmie, 2020). Consequently, omnichannel retailing requires more complex organisational structures and processes to keep up with the ever-evolving retail landscape (Saghiri *et al.,* 2018:362).

The synergistic advantage of an omnichannel supply chain lies in allowing the retailer to exploit the complementary strengths of offering both physical and digital channels to customers (Hübner, Wollenburg & Holzapfel, 2016:256). Research has, however, shown that omnichannel retailers still structure supply chains based on one dominant channel, either physical or digital (Ishfaq *et al*., 2016; Kim & Chun, 2018; Von Briel, 2018). Mirsch (2019:14) reported how, in most cases, these channels are only partially integrated and explained that the absence of integration is caused by a lack of certain capabilities necessary for omnichannel supply chain integration. Mirsch (2019:14) further argued that in light of the dynamic retail environment driven by technological advancements and changing consumer behaviour, retailers cannot simply rely on already established channel resources (such as legacy IT systems) to remain competitive. Therefore, retailers need to continuously acquire or develop a new set of resources and capabilities to keep up with these dramatic changes (Leu & Masri, 2021:407). In particular, retailers need to integrate, build, and reconfigure internal and external resources and capabilities. Seamless shopping experiences for customers are facilitated through these fully integrated supply chains (Gregory *et al.,* 2015; The Consumer Goods Forum, 2015; Hoogveld & Koster, 2016; Witcher & Silverman, 2016; Saghiri *et al.,* 2017).

Supply chain integration (SCI) is viewed as *"the alignment, linkage and coordination of people, processes, information, knowledge, and strategies across the supply chain between all points of contact and influence to facilitate the efficient and effective flows of material, money, information, and knowledge in response to customer needs"* (Stevens & Johnson, 2016:22). These linkages are facilitated by information, operational and relational integration. Supply chain integration (SCI) can facilitate lateral relations that aid collaborating, coordinating, and controlling materials and information between supply chain members to develop the capability to respond to rapidly changing conditions (Flynn, Koufteros & Lu, 2016:10). Turkulainen *et al.* (2017:290) argued that, despite the importance of internal SCI, the concept remains poorly understood and research on internal SCI is considered 'incomplete'. Therefore, Espino-Rodríguez and Taha (2022:11) called for research on techniques and technologies to aid internal departments to be better equipped for internal integration initiatives.

According to Chicksand *et al.* (2012:456), management theories are essential to interpret the complex environment in which organisations operate. Therefore, the topic of this study is investigated from a strategic management perspective: the dynamic capabilities view (DCV). The DCV is a theoretical framework developed by Teece, Pisano and Shuen (1997) for understanding an organisation's behavioural orientation towards the continuous integration, reconfiguration, renewal, recreation, and upgrading of resources and capabilities (dynamic capabilities) in response to the changing environment (Garrido *et al.,* 2020:47).

To provide context to the research, this chapter (Chapter 1) starts with a presentation of the problem statement, followed by a brief review of the main topics covered in this study. The research design, methodology, sampling, and data-collection methods are then outlined, after which there is a discussion of the unique research contribution. The chapter concludes with a chapter-by-chapter outline of this study.

## 1.2 PROBLEM STATEMENT

Both academics (Wong, Lai & Cheng, 2011; Herhausen *et al.,* 2015; Bernon, Cullen & Gorst, 2016) and practitioners (Ternstrand *et al.,* 2015; Deloitte, 2020a) indicated

that the integration of physical and digital channels is a key challenge for retailers who aim to become omnichannel retailers. Brunner and Rudolph (2015:14) argued that, although academic authors had conducted an abundance of research on the phenomenon of omnichannel retailing, hardly any of these authors addressed the managerial challenges retailers face when striving for the integration of their physical and digital channels. Song and Song (2021:4) added that where such studies were conducted, they often only resulted in propositions based on exploratory research.

The Consumer Goods Forum (2015:8), a global leader in knowledge exchange surrounding best practices for the consumer goods value chain, surveyed 42 senior supply chain executives from the largest consumer goods and retail organisations in the world to investigate the impact of omnichannel retailing on the supply chain. The study found five key barriers which prevented retailers from optimising the benefits of an omnichannel supply chain:

- Organisations lack dedicated resources and capabilities devoted to omnichannel advancements.
- A high level of capital investment is required to succeed in the omnichannel environment.
- Omnichannel supply chains are more complex than other types of retail (e.g., pure or multichannel).
- Traditional 'siloed' organisational structures create barriers to becoming fully integrated omnichannel retailers.
- Top management do not fully back the omnichannel concept and merely see this concept as 'something to do'.

In a study done by Srinivasan and Swink (2015:823) where 445 global organisations' SCI practices were investigated, the researchers found that organisations who install integration processes not only meet performance goals but tend to outperform others operationally in areas of customer satisfaction, product and market diversification, and supply chain agility. Furthermore, Williams *et al.* (2013:551) and Shukor *et al.* (2021:1725) found that internal SCI is a "*crucial building block for complete SCI*

*leading to superior firm performance*". Therefore, the importance of SCI cannot be ignored. Gregory *et al.* (2015:2) maintained that the key to operational transformation is a well-oiled supply chain enabled by new inventory fulfilment methods and digital interaction capabilities. However, these authors stated that only a few retailers are able to complete this journey, and ultimately, those who can differentiate between quicksand and a solid path are able to drive growth and profitability via the supply chain.

Various research studies on multichannel management investigated the changes in customer behaviour by scrutinising channel choice decisions (Ishfaq *et al.,* 2016), which include customer satisfaction, loyalty, and channel migration (Park & Kim, 2022), marketing decisions across channels (Öztürk & Okumuş, 2018; Hossain *et al.,* 2020), and the effect of cannibalisation on channels (Kollmann, Kuckertz & Kayser, 2012; Kim & Chun, 2018). However, several authors (GT Nexus, 2012; Beck & Rygl, 2015; Houston, 2015; Mirsch *et al.,* 2016) argued that there is a gap in literature outlining **the capabilities necessary for retailers to successfully transform from previous types of retailing (such as multichannel retailing) to an omnichannel model**.

Matarazzo *et al.* (2021:654) debated that studies investigating organisations' digital transformation journeys tend to take a narrow approach to omnichannel retailing, focusing on singular factors such as human resource management. However, these authors maintained that the number of investigated variables should be expanded to include other factors of digital transformation, particularly those relevant to the Fourth Industrial Revolution such as supply chain and logistics management. Song and Song (2021:3) added that researchers believe that a successful transition from single- or multichannel to omnichannel retailing depends on the integration of supply chain systems between channels. Verhoef (2021:611) argued that integration in omnichannel retailing is a strategic issue, as organisations typically organise themselves around channels where a manager is responsible only for a single channel and for optimising the performance of that particular channel. However, successful omnichannel retailing requires changes to some well-established structures and processes of the organisation. Therefore, a gap in literature exists outlining **ways in which a retailer's supply chain should be integrated to transition to omnichannel**

**retailing and to respond to the dynamic omnichannel environment** (Brunner & Rudolph, 2015; Picot-Coupey, Huré & Piveteau, 2016; Song & Song, 2021).

Kotzab, Bäumler and Gerken (2021:9) found, in their biometric analysis of 1 700 peer-reviewed journal articles published within the domain of SCI, there was considerably more research published on external SCI than on internal SCI. Similarly, Shukor *et al.* (2021:1741) found that internal SCI is a vital to an organisation's ability to respond to changes in its external environment. Since internal SCI should first be achieved before expanding integration efforts externally, several authors (Yuen *et al.,* 2019:663; Liao, Hu & Chen, 2021:2) concluded that retailers need to first focus on internal SCI efforts as part of the digital transformation journey. Therefore, **more research on internal SCI is needed** to substantiate the already established body of knowledge on external SCI.

It is widely accepted that omnichannel retailing is synonymous with rapid change (Alexander & Cano, 2020; Leu & Masri, 2021), which often overwhelms and confuses retailers in terms of the most lucrative expansion opportunities (Von Briel, 2018:218). Sorkun *et al.* (2020:631) stated that omnichannel management requires retailers to possess several capabilities to navigate these complexities successfully. The development and deployment of dynamic capabilities are offered as fundamental to keep up with rapid change and to foster the organisational transformation required in dynamic environments (Bojesson & Fundin, 2021; De Aro & Perez, 2021; Foerstl *et al.,* 2021). Hüseyinoğlu, Sorkun and Börühan (2018:1214) posited that, within the omnichannel environment, the rapid advancement of technology will inevitably generate new channels over time; therefore, **dynamic capabilities are required to adapt to the ever-changing omnichannel environment**. Based on this discussion, the primary research question was developed as:

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| **PRQ:** | What dynamic capabilities would facilitate the internal supply chain integration of omnichannel retailers? |

From the primary research question (PRQ), the primary research objective (PRO) and secondary research objectives (SROs) were drawn. These are outlined and discussed in more detail below.

## 1.3 RESEARCH OBJECTIVES

The research question provided the foundation for the proposed study. To ensure that the aim of the study was reached, research objectives, aligned with the research question, needed to be set. These objectives were subdivided into primary and secondary objectives, which are listed below.

### 1.3.1 Primary research objective (PRO)

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| **PRO:** | To develop a conceptual framework of dynamic capabilities that facilitates the internal supply chain integration (SCI) of omnichannel retailers. |

### 1.3.2 Secondary research objectives (SRO)

The section below indicates the three secondary research objectives (SRO1-3) that were set to answer the primary research question (PRQ) and to achieve the primary research objective (PRO). These SROs were investigated through a review of available literature on the topic as well as through an empirical investigation.

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| **SRO1:** | To explore the dynamic capabilities view from an internal omnichannel supply chain perspective. |
| **SRO2:** | To determine what constitutes internal supply chain integration within omnichannel retailers. |
| **SRO2a:** | To define dynamic capabilities that facilitate internal supply chain integration. |
| **SRO2b:** | To define dynamic capabilities that facilitate omnichannel integration. |
| **SRO3:** | To investigate how dynamic capabilities can facilitate the internal supply chain integration of omnichannel retailers. |

After defining the gap in knowledge and setting the primary research objective and its subobjectives, the researcher conducted a literature search for studies closely related to the topic, to ensure that the identified gaps in knowledge had not been addressed by recent studies. The researcher identified six studies that warranted brief consideration (Table 1.1). These studies were scrutinised to ensure that there was no overlap between the identified studies and this study.

**Table 1.1: Previous research closely related to this study**

| TITLE AND AUTHOR | BRIEF RESEARCH CONTEXT | METHODOLOGY | MAIN FINDINGS | DIFFERENCE BETWEEN PREVIOUS STUDY AND PRESENT STUDY |
|---|---|---|---|---|
| **Title of the PhD thesis:** Enhancing the omnichannel experience through channel integration and digital nudging **Author:** Mirsch (2019)[2] | The study aimed to explore how organisations can establish omnichannel management to enhance the omnichannel experience of customers. | The study was conducted in Switzerland using a multimethod approach consisting of: ▪ literature reviews, ▪ case-studies, ▪ document analyses, and ▪ interviews[3] | The study found that organisational and technological dynamic capabilities enable successful channel integration so that organisations can transition to omnichannel retailing. | Mirsch (2019) considered channel integration primarily from a digital nudging perspective (designing omnichannel operation to guide customers' digital choices). The study of Mirsch (2019) did not consider SCI but only focused on omnichannel integration. |
| **Article title:** Supply chain integration in omni-channel retailing: a logistics perspective **Authors:** Song, Song and Sun (2019) | The study applied the resource-based theory to identify the relationships between logistics integration capability, supply chain integration (SCI), and performance in the context of omnichannel retailing. | The study followed a mixed methodology: 243 respondents from e-commerce retailers in China completed a quantitative survey, and a focus group was conducted among eight expert participants. | The study revealed that information and organisational integration significantly affects logistics integration. Additionally, it was found that the influence of SCI on financial performance is more significant than on operational performance in omnichannel retailers. | The theoretical lens of the study by Song *et.al.* (2019) and the present study differs, i.e. resource-based view versus dynamic capabilities view. Also, Song *et al.* (2019) considered the topic only from a logistics perspective while the present study took an end-to-end (internal) supply chain view. |

[2] The cited research is a PhD thesis consisting of six research papers (unpublished). The details listed in Table 1.1 refer to the summarised findings of the complete thesis in general.
[3] Since this study was conducted over the course of six research papers, these methods were not employed together.

| TITLE AND AUTHOR | BRIEF RESEARCH CONTEXT | METHODOLOGY | MAIN FINDINGS | DIFFERENCE BETWEEN PREVIOUS STUDY AND PRESENT STUDY |
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| **Article title:**<br>The omnichannel retailing capabilities wheel: Findings of the literature<br>**Authors:**<br>Mrutzek, Kotzab and Galipoglu (2020) | The authors developed a conceptual model based on literature to identify ordinary and dynamic capabilities that differentiate sustainable and successful omnichannel retailers from less successful omnichannel retailers. | The conceptual study was based on the analysis of 153 published journal articles. | The study identified six dynamic capabilities for omnichannel retailing:<br>▪ Customer and market understanding<br>▪ Integration and coordination<br>▪ Customer interaction<br>▪ Omnichannel environment<br>▪ Innovativeness<br>▪ Supply chain management | Mrutzek *et al.*'s (2020) study was based only on conceptual (literature) findings, no empirical data were collected whereas the present study collected empirical data. Although one of the identified dynamic capabilities was supply chain management, the authors did not investigate dynamic capabilities that facilitate internal SCI whereas the present study did. |
| **Article title:**<br>Fostering supply chain integration in omnichannel retailing through human resource factors: empirical study in China's market<br>**Authors:**<br>Song and Song (2021) | The study aimed to identify critical dynamic capabilities that promote supply chain integration in omnichannel retailers from a human resources perspective. | The study followed a quantitative methodology:<br>230 respondents from e-commerce retailers in China completed a survey questionnaire. | The study revealed that human resource management is positively related to human capital and that human capital positively impacts SCI in the context of omnichannel retailing. | The study only considered omnichannel SCI from a human resources perspective. The present study took a broader approach to consider all dynamic capabilities that facilitate the internal SCI of omnichannel retailers. |

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|---|---|---|---|---|
| **Article title:**<br>Digital transformation and customer value creation in Made in Italy SMEs: A dynamic capabilities perspective<br>**Authors:**<br>Matarazzo *et al.* (2021) | The study examined the impact of digital transformation on the customer's value creation in the context of small and medium-sized enterprises (SMEs). The purpose of the study was to understand dynamic capabilities as enabling mechanisms to foster digital transformation in omnichannel retailers. | A qualitative multiple case study approach was employed to collect data among six SME retailers in Italy. | The results of the study showed that digital instruments (websites, social media, chatbots) contribute to SMEs' innovation, creating new distribution channels and new ways to create and deliver value to customers. | The study of Matarazzo *et al.* (2021) investigated omnichannel integration but did not consider digital transformation and integration from a supply chain perspective as in the present study. Additionally, the study was based on SMEs, while the present study was conducted among large multinational retailers. |
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| **Article title:**<br>Linking digitalisation and human capital to shape supply chain integration in omni-channel retailing<br>**Authors:**<br>Song *et al.* (2021) | The study explored the role of digitalisation as a driver of supply chain integration (SCI) as well the role of human capital (HC) in digitalisation. This study was conducted through the knowledge management theory. | The study followed a quantitative methodology:<br>188 respondents from e-commerce retailers in China completed the survey questionnaire. | The results of the study revealed that human capital positively relates to the level of digitalisation of omnichannel retailers and that digitalisation is positively related to the retailer's SCI. | The study explicitly explored the role of human capital in digitalisation and SCI through the theoretical lens of knowledge management theory. While the study was conducted within the scope of SCI in omnichannel retailing, it did not aim to identify any dynamic capabilities that could facilitate SCI and therefore differs from the present study. |

**Source: Researcher's own compilation**

Based on Table 1.1, it can be concluded that this study indeed identified an existing gap in knowledge.

The next section addresses some of the most pertinent factors within the scope of this study and provides a holistic overview of the factors discussed throughout this study.

## 1.4 THE RESEARCH CONTEXT

Ongoing digitalisation has radically transformed the field of retailing (Rai *et al.,* 2019:267). Only a few years ago, there was a dedicated focus on brick-and-mortar stores. However, retailers now have to engage both physical (offline) and digital (online) channels to attract and retain customers (Wang, Wang & Liu, 2016:635). Taylor *et al.* (2019:880) reported that, while sales for digital channels continue to proliferate, foot traffic has become stagnant or is declining among many brick-and-mortar stores. Therefore, successful omnichannel retailers are those who can provide customers with a seamless shopping experience across channels, enabled by a fully integrated supply chain (Pereira & Frazzon, 2021:1).

### 1.4.1 Supply chain integration (SCI)

The term ‘integration’ originated from Latin and means ‘restoring of a whole’ (Kotzab *et al*., 2021). Within the field of supply chain management, SCI can be interpreted as an organisation’s ability to bring together disparate organisational functions to work as a cohesive unit towards creating the most value within their operations. Although the concept of SCI is easily grasped (Autry & Moon, 2016:201), the implementation is quite challenging since lower-level decision-makers are frequently left to ‘go through the motions’ of integrating supply chains without the appropriate mindset, knowledge, skills, motivation, incentives, or structure to execute such integration (Lintukangas, Peltola & Virolainen, 2009; Zhang, Gunasekaran & Wang, 2015; Autry & Moon, 2016; Tsanos & Zografos, 2016; Turkulainen & Swink, 2017).

Despite the importance of SCI, literature provides limited commonly-accepted subdimensions of SCI, and the relationships necessary between different internal

organisational functions are inconsistently described in previous studies on SCI (Huo, 2012:596). Turkulainen *et al.* (2017:290) argued that, to advance a deeper understanding of SCI, research needs to move beyond merely investigating the relationship between SCI and organisational performance, as conducted by Flynn, Huo and Zhao (2010). Flynn *et al.* (2016), Pasanen (2015), Samaranayake and Laosirihongthong (2016), Ataseven and Nair (2017), and Rockson, Annan and Muntaka (2017) to also examined the 'context' in which SCI occurs because such a focus builds greater insight into supply chain designs and processes that enable effective and accurate processing of information.

Supply chain integration (SCI) is often subdivided into internal (intra-organisational, which is between organisational functions) and external (inter-organisational, which is between customers and suppliers) integration (Perdana, Ciptono & Setiawan, 2019:186; Liu, Liu & Gu, 2021:61). Several authors agreed that organisations should first become proficient in their internal integration capabilities before attempting to integrate externally (Van Weele, 2018; Wisner, Tan & Leong, 2019; Ambe *et al.,* 2022). Williams *et al.* (2013:545) described internal SCI as the way in which an organisation structures its practices, procedures, and behaviours into collaborative, synchronised, and manageable processes, mainly involving the integration of data and information systems. Such processes provide the infrastructure and guidelines for cross-functional information processing and joint decision-making, allowing the organisation to work as a single function (Ambe *et al.,* 2022:71). In conclusion, internal SCI can be achieved by removing functional barriers and encouraging cooperation between the internal organisational functions (such as marketing, purchasing, and operations). Organisations establish internal SCI by re-engineering traditional organisational structures (internal functions) and integrated data systems (Pagell, 2004; Basnet, 2013; Chopra & Meindl, 2016; Picot-Coupey *et al.*, 2016; Badenhorst-Weiss *et al.*, 2017).

Houston (2015) reported that SCI plays a vital role in the retail industry since the industry has been heavily affected by customers' acceptance of the internet and advancements in technology. The accelerated acceptance of technology has exceeded, by far, what analysts had predicted years ago and has significantly affected

retail supply chains (Sorescu *et al.,* 2011; Lobaugh, Simpson & Ohri, 2014, Hagel *et al.,* 2015; Prinsloo, 2015; Ternstrand *et al.,* 2015; Chopra, 2016).

This argument carried even more weight when considering the impact of the novel coronavirus (COVID-19) pandemic on the retail industry. During the lockdown periods, retailers saw the drastic migration of customers to digital channels as a safer shopping alternative than traditional brick-and-mortar shopping (Leu & Masri, 2021:403; Thilmany *et al.*, 2021:91; Weber, 2021:9). However, even as lockdowns started to lift, the early reliance on digital shopping expanded into a fundamental dependence on still-evolving omnichannel shopping experiences, placing immense pressure on retailers' supply chains (Nielsen, 2020).

For the current investigation of SCI, the researcher relied on the categorisation of three SCI barriers presented by Autry and Moon (2016:302–308): *information barriers, process barriers,* and *relational barriers*[4]. The authors' justification for such categorisations was based on their research findings that these three categories were present in most definitions of SCI. Further investigation into commonly accepted foundational elements of SCI showed that most factors deemed as critical to SCI by other authors could be classified under one of the categories highlighted by Autry and Moon (2016).

For the purposes of this study, the categorisation of Autry and Moon (2016) was adapted to refrain from referring to these categories as *barriers* but rather as SCI *pillars*, which should form the basic architecture for any organisation's SCI efforts. The study, therefore, considered how the three pillars of SCI (*information integration, process integration,* and *social capital integration*) should be employed to integrate the internal omnichannel supply chain.

[4] 'Relational barriers' was renamed to 'social capital integration' in this study. Chapter 4, Section 4.3, presents a detailed discussion on the rationale for such renaming.

### 1.4.2 Omnichannel retailing

Omnichannel retailing is a direct-to-consumer (D2C) business model where all sales channels (online, mobile, telephonic, mail order, self-service, and physical retail establishments) are aligned in terms of service delivery. The concept entails order fulfilment processes to be integrated to provide customers with a seamless shopping experience in accordance with the organisation's brand proposition (Coyle *et al.,* 2017). As such, omnichannel retailing allows customers the option of moving seamlessly between fully integrated front-end operations (physical and digital channels) and back-end operations (order fulfilment and last-mile delivery options) (Weber & Badenhorst-Weiss, 2018a:6).

From an internal supply chain perspective, omnichannel SCI is concerned with integrating three domains: *front-end* (consumer-facing) *operations, back-end fulfilment*, and *last-mile distribution.* Integrated *front-end operations* allow customers to seamlessly move between the different channels offered by a retailer (Weber, 2021:6). Huré, Picot-Coupey and Ackermann (2017:321) stated that customers equate 'seamlessness' to the ability to use channels interchangeably and those customers expect both content (information) and process consistency across all channels.

In terms of *integrated back-end fulfilment,* Lim and Srai (2018b:309) debated that traditional retail structures are insufficient in offering the back-end operational process necessary for omnichannel retailing. Therefore, Hübner, Kuhn and Wollenburg (2016) developed a comprehensive strategic planning framework, outlining the characteristics and design parameters for back-end operations and last-mile distribution in omnichannel retailing. This framework has since been cited and employed by many authors researching the field of back-end operations in omnichannel retailing, such as Lim and Srai (2018b), Marchet *et al.* (2018), Melacini *et al.* (2018), and Rai *et al.* (2019a). In Chapters 5 and 6, this study used the characteristics and design parameters for back-end operations, as first introduced by Hübner *et al.* (2016), as a catalyst for determining how back-end fulfilment should be integrated for omnichannel retailing.

*Last-mile distribution* also comprises many design parameters such as delivery mode (home delivery or instore collection), delivery velocity (same-day, next-day, more than two days), delivery time (specific delivery time slot or undefined delivery time), delivery area (local to international), and returns (Hübner *et al*., 2016: 234; Marchet *et al.*, 2018:450). In addition to these parameters, retailers also need to determine if the transportation function of last-mile delivery (particularly for online orders) is performed in-house or outsourced to third-party logistics providers (3PLs). Consequently, the complexity of the omnichannel supply chain comes to the fore since retailers need to consider integrating both front-end and back-end operations, which adds a 'layer of complexity' to omnichannel SCI (Murfield *et al.,* 2017*;* Saghiri *et al.*, 2017; Song, Song & Sun, 2019).

### 1.4.3 Terminology clarification

Omnichannel literature lacks a universal taxonomy of the different physical and digital channels and/or touchpoints that form part of omnichannel retailing. The main reason for the ambiguity in literature is the interconnectedness of physical and digital channels and touchpoints, which complicates individual classifications. Dennis *et al.* (2016:1064) outlined three typical channels for customers when making purchases, one physical channel (brick-and-mortar) and two digital channels (website and mobile application).

Some authors acknowledged touchpoints such as social media sites in the omnichannel process as a channel (Piotrowicz & Cuthbertson, 2014:6; Mosquera *et al.,* 2018:69). However, this study followed the protocols of Baxendale, Macdonald and Wilson (2015), Verhoef, Kannan and Inman (2015), Jocevski *et al.* (2018), Alexander (2020), Mrutzek *et al.* (2020), and Hajdas, Radomska and Silva (2022) who differentiated between channels (which directly facilitate the purchase process) and touchpoints (which stimulate engagement between the retailer and the customer). These authors delimited the discussion to three main channels (brick-and-mortar, website, and mobile application) and considered the integration of various physical and digital touchpoints as a way for the retailer to elevate the customer's omnichannel journey. The following definitions of these terms guided this research:

- **Channels** refer to any channels used by a customer *to purchase a product* from an omnichannel retailer. Channels can be either physical or digital:
  - **Physical channels** refer to any channels where the customer has physical contact with a retailer while purchasing a product. A physical channel includes the retailer's brick-and-mortar store.
  - **Digital channels** refer to any channels where a customer does not have physical contact with a retailer when purchasing a product. Digital channels are enabled and facilitated by various digital technologies. Digital channels include the retailer's website and mobile application.

- **Touchpoints** refer to episodes of direct and/or indirect engagement between a customer and a retailer which *do not explicitly result in a purchase*. Touchpoints stimulate a continuous shopping journey, allowing customers the opportunity to interact with a retailer more frequently in the omnichannel process. Touchpoints include (but are not limited to):
  - social media platforms
  - showrooms/pop-up shops
  - customer review websites
  - blogs
  - live chats (virtual assistants)
  - product review platforms (third-party sites or on the retailer's website).

- **Distribution channels** refer to any distribution channels used by the retailer to deliver products to the final customer. Distribution channels include:
  - home delivery
  - customer collection (in store or from a dedicated warehouse)
  - smart lockers
  - crowdshipping

From the above definitions, it is clear that one channel (e.g., a retailer's brick-and-mortar store) can serve as a channel, or a touchpoint, or a distribution channel, or all three, thereby confirming the interconnectedness of the terminology. For instance, when a customer visits a retailer's brick-and-mortar store to purchase a product, the term 'channel' is applicable. If a customer visits a brick-and-mortar store to physically

view a product but does not purchase the product, the term ‘touchpoint’ applies. When a customer decides to purchase a product on a retailer’s website and chooses to have the product delivered to the nearest brick-and-mortar store for collection, this is considered a ‘distribution channel’. The above scenarios illustrate how a single customer can use various channels and touchpoints when moving through the omnichannel process.

As stated above, the primary objective of this study was to develop a conceptual framework of dynamic capabilities which facilitate the internal supply chain integration of omnichannel retailers. Therefore, this study applied the theoretical lens of the DCV to address the identified gap in the literature. This is discussed in the next section.

## 1.5 THEORETICAL LENS OF THE STUDY

Several prominent researchers within the field of purchasing and supply chain management (PSCM) attempted to cordon off the so-called ‘grand theories’ within the field of PSCM. This is evident by the series of journal articles published by Harland *et al.* (2006), Carter and Ellram (2003), Halldórsson & Stefánsson (2007), Wynstra (2010), Rozemeijer (2012), and Chicksand *et al.* (2012), reviewed and revised by Van Weele and Van Raaij (2014) and built upon by Spina *et al.* (2016). In their respective articles, the authors debated the relevance of ‘grand theories’ and attempted to validate or reject the management, economic, and social theories used by researchers in the field of PSCM to establish their applicability. Combined, these authors summarised and presented several grand theories relevant to PSCM. This demarcation of theories addressed Van Weele and Van Raaij’s (2014:68) plea that *“future [PSCM] research should be better embedded and grounded in management, economic, and social theories. We would rather see future research embedded in less, but more prominent, dominant, and relevant theories than to continue with the current PSCM research landscape”.* The authors went on to argue that grounding future PSCM research in a limited number of established theories will contribute to higher visibility and recognition of PSCM research, both academically and in the practitioner field. Additionally, the application of such theories signals contemporary and strategic thinking in a research study.

This study was conducted through the theoretical lens of the *dynamic capabilities view* (DCV). The DCV is an influential theoretical framework in strategic management literature for understanding how organisations generate and sustain a competitive advantage in anticipation of, and in response to, environmental change in rapidly changing market environments. The DCV is an extension of the resource-based view (RBV) (Teece *et al.*, 1997; Eisenhardt and Martin (2000). El Baz and Ruel (2021) described the RBV as a theoretical approach that emerged as a response to turbulence in the business environment resulting from globalisation, technological innovations, and economic crises. According to this view, a competitive advantage is derived from valuable, heterogeneous organisational resources (Abu-Rumman *et al.,* 2021:4). Resources are defined as specific organisational, financial, technological, physical, human, and reputational (tangible and intangible) assets that can be used to implement value-creating strategies (Barney, 1991:101).

The RBV has been criticised as conceptually vague and redundant with limited focus on the processes by which resources contribute to a competitive advantage (El Gizawi, 2014:2). As a result, three broad areas of criticism against the RBV were developed in the literature (Eisenhardt & Martin, 2000; Wang & Ahmed, 2007; Pavlou & Sawy, 2011; Wójcik, 2015). First, the RBV lacks focus on resource development[5]. Second, the RBV does not describe how organisational resources should be reconfigured[6] to respond to rapidly changing environments or industries. Third, the RBV does not consider how the redeveloped or reconfigured resources should be utilised within organisational processes to create a competitive advantage.

In an attempt to address the critiques of the RBV, Teece *et al.* (1997) introduced the DCV. The DCV is universally accepted by academics (Wójcik, 2015; Ju, Park & Kim, 2016; Albort-Morant *et al.* 2017; Laaksonen & Peltoniemi, 2018; Robertson, Caruana

[5] In terms of this study, an example of resource development is the development of the demand forecasting capabilities of an omnichannel retailer. By combining the demand forecasting capabilities of purchasing with the information processing capabilities of IT, improved demand forecasting capabilities can be developed within the omnichannel retailer.

[6] In terms of this study, an example of resource reconfiguring is when an omnichannel retailer moves away from demand forecasting based on historical data to forecasting demand based on real-time data by using software applications.

& Ferreira, 2021) as an evolutionary extension of the RBV to address fundamental factors that were not deliberated on in the RBV (El Gizawi *et al.,* 2014:3).

### 1.5.1 The dynamic capabilities view (DCV)

Teece (2018a:363) stated that the DCV was created to help organise and prioritise the endless stream of competing and conflicting information that cascades toward managers attempting to build a competitive advantage. In his original paper, Teece *et al.* (1997) recognised that, to build a competitive advantage, organisations must create the ability to respond rapidly and effectively to opportunities and threats in the market environment. In the most recent work of Teece (2018a), the author aimed to consolidate the broad application of the DCV and the many interrelated mechanisms of the theory to outline the foundations of the DCV. Three foundational components of the DCV were presented by Teece (2018a): *strategy, resources,* and *capabilities*. Capabilities lie at the 'heart' of the DCV while strategy and resources serve as 'major influences'. In this study, the researcher followed the most recent classification of the DCV as presented by Teece (2018a): predominately emphasising and investigating *capabilities* while remaining cognisant of the influence of strategy and resources on the development and deployment of dynamic capabilities. These three factors are only considered briefly below as they are covered extensively in Chapter 2.

Within the context of the DCV, *strategy* relates to a set of dynamic choices made by management concerning how the organisation intends to engage and compete within its environment. *Resources* enable organisations to differentiate themselves from competitors. Resources are not only physical objects (e.g. equipment) but also humans with various skills (e.g. employees) (Gellweiler, 2018:8). *Capabilities* imply an action, which means that an organisation 'performs' capabilities (Wójcik, 2015:88). Teece (2018a) outlined two types of capabilities (*ordinary* and *dynamic capabilities*) which the author termed the 'capability hierarchy'.

### 1.5.2 The capability hierarchy: Ordinary and dynamic capabilities

Ordinary and dynamic capabilities differ in purposes and intended outcomes. *Ordinary capabilities* refer to the organisation's operational function, or standard operating procedures/best practices. *Dynamic capabilities* are the organisational and strategic routines (or processes) by which managers alter the resource base: acquire and shed resources, integrate them together, and recombine them to generate new value-creating strategies. As such, dynamic capabilities are the drivers behind the creation, evolution, and recombination of other resources into new sources of competitive advantages (Teece *et al.,* 1997). Dynamic capabilities are further subdivided into two 'micro-foundations', or the nested capability hierarchy: *lower-* and *higher-level dynamic capabilities*. Higher-level dynamic capabilities constitute three clusters of dynamic capabilities: *sensing, seizing,* and *transforming*. These clusters of activities take place concurrently as the organisation adapts to its changing environment. It should be emphasised here that, although the researcher acknowledged the additional classifications of the DCV, it fell beyond the scope of this study to classify the identified dynamic capabilities within these domains.

## 1.6 RESEARCH DESIGN

The term 'research design' refers to the types of inquiry within qualitative, quantitative, and mixed-method approaches (Creswell & Creswell, 2017:12). This study employed a *qualitative research design*. Primary data (interviews) and secondary data (documents) were analysed. The subsections below discuss the main research design adopted for this study.

### 1.6.1 Research approach and paradigm

Creswell and Creswell (2017:5) argued that, although philosophical ideas remain largely hidden in research, the importance of identifying a researcher's philosophical stance should not be underestimated as it may influence the ultimate interpretation of the study's results. Paradigms, also known as philosophical assumptions, refer to the nature of reality and are crucial in understanding the overall perspective from which a

research study is designed and carried out (Lapan, Quartaroli & Riemer, 2012:76). Research paradigms are defined as the "*basic belief system or worldview that guides the investigation*" (Guba & Lincoln, 1994:105).

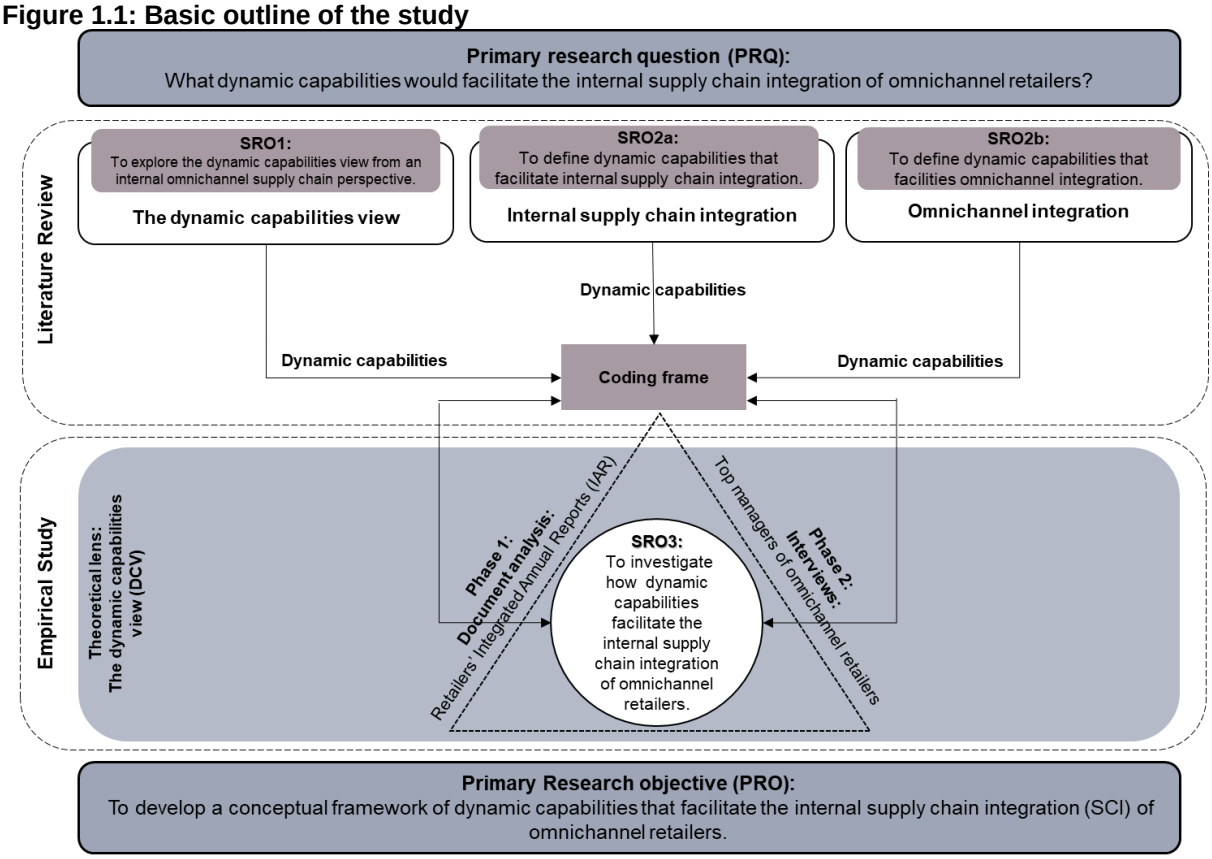
Despite having several paradigms within the field of social sciences, the research paradigm for this study was *pragmatism*. Pragmatism is related to "…*the doctrine that an idea can be understood in terms of its practical consequences; hence, the assessment of the truth or validity of a concept or hypothesis according to the rightness or usefulness of its practical consequences*" (The Oxford English Dictionary, 2022a). In addition, Cassell, Cunliffe and Grandy (2018:65) explained that pragmatism offers a fresh perspective on the dynamics of change and complexity in organisations, which is richer and more realistic than other paradigms such as rationalist and structuralist theories. Pragmatists aim to find practical solutions to problems, focusing on the research problem and using all available methods to understand the problem (Mir & Jain, 2018:450).

### 1.6.2 Methodology

A qualitative multimethod methodology was employed to gain in-depth primary data on the research topic. Qualitative research is a research approach for exploring and understanding the meaning of individuals or groups ascribed to a social problem. The process of conducting qualitative research involves data typically being collected in a participant's setting to answer specific questions or address a particular problem (Creswell, 2014:14). Although some researchers view qualitative data as having lower reliability than quantitative data, support for qualitative research is increasing, owing to the richer data collected (Linneberg & Korsgaard, 2019:268). According to Mir and Jain (2018:335), one of the most significant advantages of qualitative data is that it provides the researcher with the flexibility to adapt the data-collection instruments to ensure that the most meaningful theoretical story emerges from the phenomenon under investigation.

Figure 1.1 serves as a preface to the discussion of the methodology followed in this study.

**Figure 1.1: Basic outline of the study**




**Source: Researcher's own compilation**

Figure 1.1 illustrates that, to answer the primary research question of this study, the researcher conducted an extensive literature review to gain insight into the research problem. The purpose of the literature review was twofold. First, the literature review allowed the researcher to gain a comprehensive understanding of the factors pertinent to this study. Second, throughout the literature review, the researcher aimed to identify dynamic capabilities that facilitate internal SCI in omnichannel retailers as identified by other researchers. The identified capabilities were added to a coding frame that initiated the two empirical data-collection phases. In Phase 1, the researcher analysed omnichannel retailers' integrated annual reports (IARs). In Phase 2, primary data in the form of semi-structured interviews were collected among expert participants employed at omnichannel retailers in South Africa. Using different data-collection methods is considered a necessary practice in qualitative studies to increase the trustworthiness of the data collected (Wiener, Hoßbach & Saunders, 2018; Rai *et al.*, 2019b).

The findings from the analysis of the data collected in Phase 1 and Phase 2 were then triangulated to (a) investigate how dynamic capabilities can facilitate internal SCI and (b) develop the conceptual framework of dynamic capabilities that facilitate internal SCI. Phase 1 and Phase 2 of the empirical data-collection process are briefly discussed below.

#### *1.6.2.1 Data collection Phase 1: Document analysis*

Documentation and archival records are considered secondary resources. Van Zyl (2014:214) argued that utilising document analysis as a data-collection method mainly has three advantages. First, analysing documents can provide a researcher with a wealth of information that will not necessarily be gathered through other qualitative data-collection methods. Second, the findings from a document analysis can contradict or confirm information gathered through other data-collection methods, such as interviews. Third, a document analysis allows the researcher to plot developments within a specific organisation/industry. As such, a document analysis can add additional insights to the overall findings of a study.

For the purpose of this study, the integrated annual reports (IAR) of omnichannel retailers were analysed. The purpose of IARs are to provide a comprehensive narrative of an organisation by contextualising the performance, business model, and strategy with regards to the organisation's financial, social, and environmental factors (Roman, Mocanu & Hoinaru, 2019:2).

#### *a) Document selection*

Since the number of omnichannel retailers in South Africa is relatively small and no complete list of such retailers exists, *purposive homogeneous sampling* was employed. Saunders *et al.* (2020:593) defined homogeneous sampling as *"a purposive sampling method which focuses on selecting cases from one particular subgroup in which all the members are similar".* This sampling method allowed the researcher to apply several inclusion and exclusion criteria to identify the documents to be analysed. The researcher employed a four-step approach to determine which documents to include in the analysis:

- **Step 1**: A list of registered companies were obtained from the Johannesburg Stock Exchange (JSE). Since the annual issuing of IARs is only compulsory for JSE-listed organisations, only these organisations were considered for document analysis.
- **Step 2**: The researcher categorised the JSE list according to relevant industry/sectors and only included general retailers for consideration (excluding industries such as oil and gas and mining companies).
- **Step 3**: The researcher downloaded each of the listed general retailers' latest IARs. Each report was reviewed and only retailers who identified themselves as omnichannel retailers in their latest IARs were included.
- **Step 4**: The researcher downloaded the IARs of all qualifying retailers and only retailers who had followed an omnichannel strategy for at least five years (2016 – 2020) were selected for the final document analysis.

On conclusion of these four steps, the IARs of eight omnichannel retailers were included in the analysis. In total, 40 IARs (five reports per retailer) amounting to 4 205 pages of document data were included in the analysis. A more detailed discussion of these four steps is presented in Chapter 7, Section 7.4.1.1.

### *b) Document analysis*

When conducting a document analysis, many epistemological or ontological approaches can be employed (Gross, 2018:5). To analyse the documents for this study, the researcher relied on *deductive qualitative content analysis*. Elo and Kynäs (2008:175) define content analysis as *"… a method of analysing written, verbal or visual communication".* Content analysis is considered more qualitative in nature as no extensive statistical analysis is performed. Content analysis instead focuses on interpreting the hidden meanings locked within written or verbal communications and building an understanding of these meanings in terms of the context wherein it resides. This study used content analysis as the qualitative data-analysis technique, and retailers' IARs were analysed based on the coding frame developed from the literature review. The process of conducting the document analysis is outlined in detail in Chapter 7, Section 7.4.2.

#### *1.6.2.2 Data collection Phase 2: Semi-structured interviews*

According to Picot-Coupey *et al.* (2016:344), relatively unexplored and poorly understood issues require direct access to the phenomenon, for example in the form of interviews. As a result, *semi-structured interviews* were selected as the primary data-collection method for this study. Interviews are a popular method to collect primary data in qualitative research because interviews can be adapted to fit almost any type of study, regardless of the industry or purpose of the research (Turner, 2010:754).

##### *a) Participant selection*

Non-probability sampling is most often used in qualitative research due to the nature of the collected data, i.e. no identifiable population exists (Saunders *et al.,* 2020:596). For this study, three cycles of non-probability purposive sampling were employed to identify and select participants. These sequential cycles were *expert sampling, theoretical sampling,* and *snowball sampling* (discussed in depth in Chapter 7, Section 7.5.1.1). Participants had to meet three expert selection criteria: have at least *ten years' experience* in retail supply chain (or related) operations, hold a *top-management position* within the organisation, and be *directly involved* in managing one or more of the organisation's omnichannel supply chain processes.

The researcher conducted 17 semi-structured virtual interviews with participants who met the above criteria throughout February and March 2021.

##### *b) Interview analysis*

*Inductive reflexive thematic analysis* (TA) was used to analyse the data following the six-phase process outlined by Braun and Clarke (2006). TA is defined by Clarke and Braun (2017:297) as a qualitative data-analysis method *"… for identifying, analysing, and interpreting patterns of meaning (themes) within qualitative data*". This study followed the adapted version of the reflexive TA approach (Hogan, Clarke & Ward, 2021:938), which involves *thematically organising codes under topic headings*. The findings of this analysis were triangulated with the findings of the document analysis

to develop the conceptual framework of dynamic capabilities that facilitate internal omnichannel SCI.

### 1.6.3 Methods to ensure rigour in qualitative research

To establish quality (or trustworthiness) in this study, four naturalistic axioms outlined by Lincoln and Guba (1985) were used. These authors cited *credibility, transferability, dependability,* and *confirmability* as measures that qualitative researchers can employ to signal validity in their research. *Credibility* is the confidence placed in the truth of the research (Korstjens & Moser, 2018:121) and was established in this study through conducting interviews with 'expert' participants, and through the triangulation of primary (interviews) and secondary (IARs) data sources. *Transferability* refers to the extent to which the conclusions of one study can be applied to another setting or circumstance (Groat & Wang, 2013:85). Transferability was achieved throughout this study by providing rich, detailed accounts of the data-collection and -analysis processes (see Chapter 7). *Dependability* in qualitative research ensures that the findings of a qualitative study will be repeatable if the study occurred within the same cohort of participants, coders, and context (Forero *et al.*, 2018:3). The researcher established dependability by keeping an audit trail (a stepwise account of the procedures followed) and providing a rich description of the methods used in this study. *Confirmability* is the confidence with which the results of a study can be confirmed or corroborated by other researchers. This was achieved by triangulating the data and providing detailed descriptions of the processes followed.

A detailed discussion of how these methods were employed in this study is presented in Chapter 7, Section 7.6.1.

## 1.7 CONTRIBUTION TO KNOWLEDGE

As mentioned in the introduction and research context, omnichannel literature is still in its infancy (Lee *et al.*, 2019:91; Hsia *et al.,* 2020:2; Du, 2021:533). Therefore, Picot-Coupey *et al.* (2016:337) emphasised that *"…a better understanding of the challenges faced by retailers in designing and implementing a successful omnichannel strategy is thus both a priority issue for retail managers and of critical academic relevance".*

Doctoral research, by definition, typically makes a modest contribution to the body of knowledge (Gary, 2011). This study aimed to make such a contribution by yielding to the call of other scholars who have identified unexplored but pertinent factors within the scope of this study. For example, Eriksson, Norrman and Kembro (2019:1232) stated that "*the retail industry is currently going through a digital revolution with a rapid shift towards a mix of physical store and digital online sales…*". Castaldo and Grosso (2020:98) added that a 'new' need for retailers to implement omnichannel management practices has emerged in the literature as an imperative to the current retail context. However, these authors critiqued previous research for lacking a broad perspective on the topic, stating that, essentially, previous research studies only referred to a specific aspect of an omnichannel purchase event or to a specific subcomponent (task) of the value-creation process. Accordingly, this study adopted an end-to-end perspective when investigating omnichannel SCI and considered all the significant processes concerning omnichannel SCI. Additionally, this study makes the following theoretical, methodological and practical contributions.

### 1.7.1 Theoretical contribution

This study made a unique theoretical contribution by creating a greater theoretical understanding of omnichannel retailing, internal SCI, and the DCV. Ternstrand *et al.* (2015:21) argued that a prerequisite for success for omnichannel retailers in the future is to *"… move to a fully integrated, customer-oriented supply chain that meets the omnichannel customers' expectations being able to receive and return goods whenever and wherever they want".* This study filled a gap by outlining how dynamic capabilities can promote the internal SCI of omnichannel retailers. By doing so, the researcher followed the call from several authors (Mirsch *et al*., 2016; Sternberg & Bertilsson, 2016; Ailawadi & Farris, 2017; Grewal *et al.,* 2017) for more research on ways in which omnichannel retailers can adapt and be competitive in the dynamic markets in which they operate.

Additionally, some authors (Ye, Lau & Teo*,* 2018:659; Ürgüplü & Hüseyinoğlu, 2021:1487; Zhang *et al.,* 2021:19) stated that a need exists for more studies on

omnichannel retailing and supply chain management to be conducted in emerging economies as little attention had been given to this area. As such, this study was conducted within a South African context and made a unique contribution by providing a developing-country perspective on the topic.

### 1.7.2 Methodological contribution

This study took a novel methodological approach to the investigation of omnichannel SCI through the employment of a qualitative multimethod methodology. Kotzab *et al*. (2021) found in their bibliometric study of SCI literature that "… *the SCI research front is characterised by a strong empirical-quantitative research base …".* Fabbe-Costes and Jahre (2008) also called for "... *rigorous quantitative studies [on SCI] to be complemented by qualitative studies"*. Mahadevan and Joshi (2021) stated that "*qualitative or case-based research outlining how specific retailers have migrated to the omnichannel retailing model could provide great insights for other retailers to follow suit"*.

From the perspective of the DCV, Spina *et al.* (2016:28) called for more qualitative studies to employ management, economic, and social theories in supply chain research. These authors stated that there is an opportunity to strengthen the use of external grand theories (EGTs) in combination with qualitative approaches to increase the theoretical maturity of purchasing and supply chain management research. Accordingly, this study submitted to these scholars' calls by following a qualitative research design to investigate the dynamic capabilities that facilitate internal SCI. Additionally, Zhang *et al.* (2021:19) advocated for future research on omnichannel supply chains to incorporate new data sources (e.g., combining primary and archival data). This study yielded to the call of Zhang *et al.* (2021:19) through the triangulation of multiple qualitative methodologies.

### 1.7.3 Practical contribution

This study developed a conceptual framework of dynamic capabilities that facilitate the internal SCI of omnichannel retailers. Mirsch *et al.* (2016:8) argued that an in-depth

investigation of dynamic capabilities and the application in practice could serve as the foundation for meaningful managerial prescriptions. Accordingly, this study made a practical contribution by identifying and defining the most crucial dynamic capabilities that omnichannel retailers need to successfully integrate their internal supply chains. These capabilities can assist omnichannel retailers to make informed and timely decisions. Additionally, these capabilities can aid managers in determining where to redirect investments and where the current skill set is lacking.

To a large extent, previous studies considered factors surrounding omnichannel management either from an exceptionally broad perspective, considering all organisational functions (marketing, human resources, logistics, and supply chain) (Mrutzek *et al.,* 2020:207), or from quite a narrow approach, considering isolated factors such as omnichannel SCI from a human resources perspective (Song & Song, 2020:5). This study took a broad approach by developing a dynamic capabilities framework from an end-to-end internal supply chain perspective. This means that insights gained from this study can assist omnichannel managers to materialise seamless internal omnichannel integration across all the major channels (physical and digital) and supply chain operations (front-end, back-end, and last-mile). To the best of the researcher's knowledge, no such framework currently exists. Therefore, this study made a unique practical contribution by constructing such a framework as a roadmap for omnichannel retailers in South Africa to identify the dynamic capabilities required to integrate internal supply chains.

## 1.8 RESEARCH ETHICS

Research ethics covers not only the criteria of privacy and anonymity of the participants and organisations but also includes the researcher's accountability towards the practice of scientific research. This research was guided by the ethical standards set by the University of South Africa (UNISA). Additionally, the researcher followed the seven ethical principles of research outlined by Eisend and Kuss (2019:216): *honesty, carefulness, objectivity, openness, freedom, fair credit allocation,* and *respect for human subjects*. Chapter 7, Section 7.6.2, describes how these principles were implemented and met in this study.

The cooperation of all participants was requested by means of an informed consent form. The extent and importance of participation was explained prior to and during the data collection. In addition to the informed consent form, all data and information obtained were treated as confidential. Therefore, throughout this study, pseudonyms were used when referring to participants and/or organisations involved. Ethical clearance was granted by the Department of Applied Management's Research Ethics Review Committee (DAM-RERC) in December 2020 (see Annexure E).

## 1.9 CHAPTER OUTLINE

The complete study consists of nine chapters:

Chapter 1 provided a brief overview of the study, which presented the problem statement, research objectives, and the scope of the study.

Chapter 2 to Chapter 6 constitute the literature review of this study and presents a detailed discussion of the theoretical lens of this study (i.e. DCV). Chapter 3 and Chapter 4 address the literature on SCI, in particular the three pillars of SCI (information integration, process integration, and social capital integration). Chapter 5 and Chapter 6 review the literature on omnichannel integration and discuss the main omnichannel supply chain processes (front-end integration, back-end fulfilment, and last-mile distribution).

Chapter 7 outlines the methodology employed in this study and provides a detailed discussion of the processes followed in participant selection as well as data analysis.

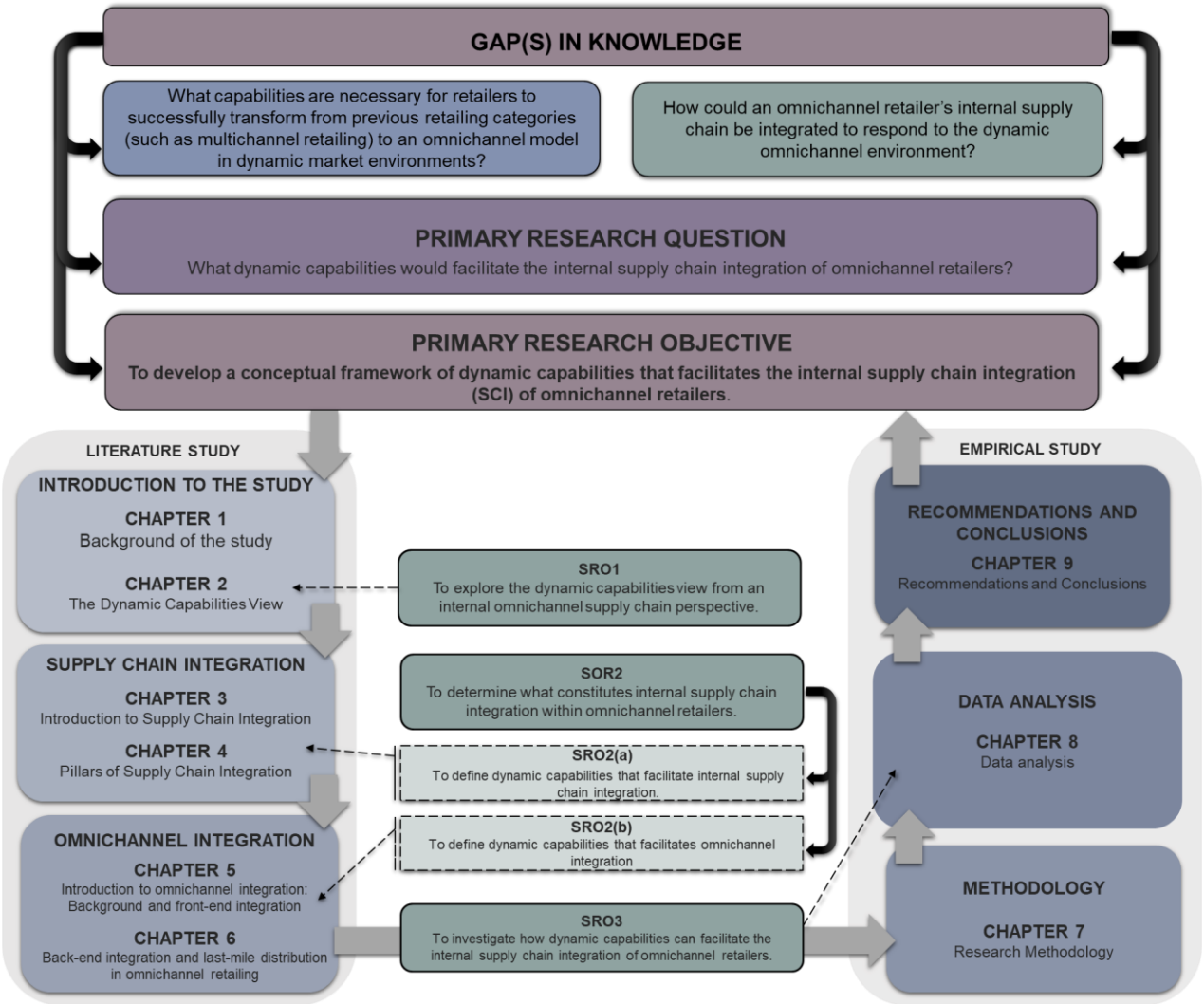
Chapter 8 presents the findings of the empirical data and provides detailed descriptions of the dynamic capabilities that facilitate internal SCI, substantiated by verbatim quotes from the participants and the retailers' IARs.

Chapter 9 summarises the findings and concludes the study. This chapter links the literature findings (Chapter 2 to Chapter 6) with the findings from the empirical analysis (Chapter 8) and includes a discussion of how the primary and secondary research

objectives were obtained. Chapter 9 concludes by outlining the limitations of the study and makes recommendations for future research.

Figure 1.2 serves as a visual illustration of the contribution made by each chapter towards achieving the primary and secondary research objectives. This figure was used throughout this study as a roadmap to plot the progress of the study.

**Figure 1.2: Visual representation of the study**




**Source: Researcher's own compilation**

## 1.10 CHAPTER CONCLUSION

Becoming an omnichannel retailer is one of the most significant challenges modern retailers can face. Supply chains, which were once simple support mechanisms within

an organisation, have become catalysts of growth in rapidly changing and turbulent market environments (such as omnichannel retailing). From the above discussion, it is clear that to become truly successful in the modern retail environment retailers need to evolve to keep abreast of changes. However, such an evolution is complex and challenging and requires the integration of front-end, back-end, and last-mile omnichannel operations. Several authors highlighted a gap in the literature on how omnichannel retailers can transform internal supply chains to stay competitive in the omnichannel environment, in particular the dynamic capabilities that enable omnichannel retailers to adapt and respond to the fiercely competitive market in which they operate. This study investigated how dynamic capabilities can promote the internal SCI of omnichannel retailers.

# CHAPTER 2
# THE DYNAMIC CAPABILITIES VIEW

## 2.1 CHAPTER INTRODUCTION

The internet has created a dynamic and unstable business environment, resulting in the competitive advantage of an organisation becoming transient and temporary (Stander, 2018:107). This means that an organisation's competitive advantage can be gained, lost, and regained cyclically (Wójcik, 2015:84). Chapter 1 established that management theories (also referred to as theoretical lenses) are essential to understand the complex business environment in which organisations operate (Spina *et al.,* 2016:21) and that authors within the field of supply chain management (SCM) called for research studies to be grounded in more prominent, dominant, and relevant theory (Van Weele & Van Raaij, 2014:68). This chapter (Chapter 2) aims to consider the application of management theories (theoretical lenses) to supply chain integration (SCI) in detail.

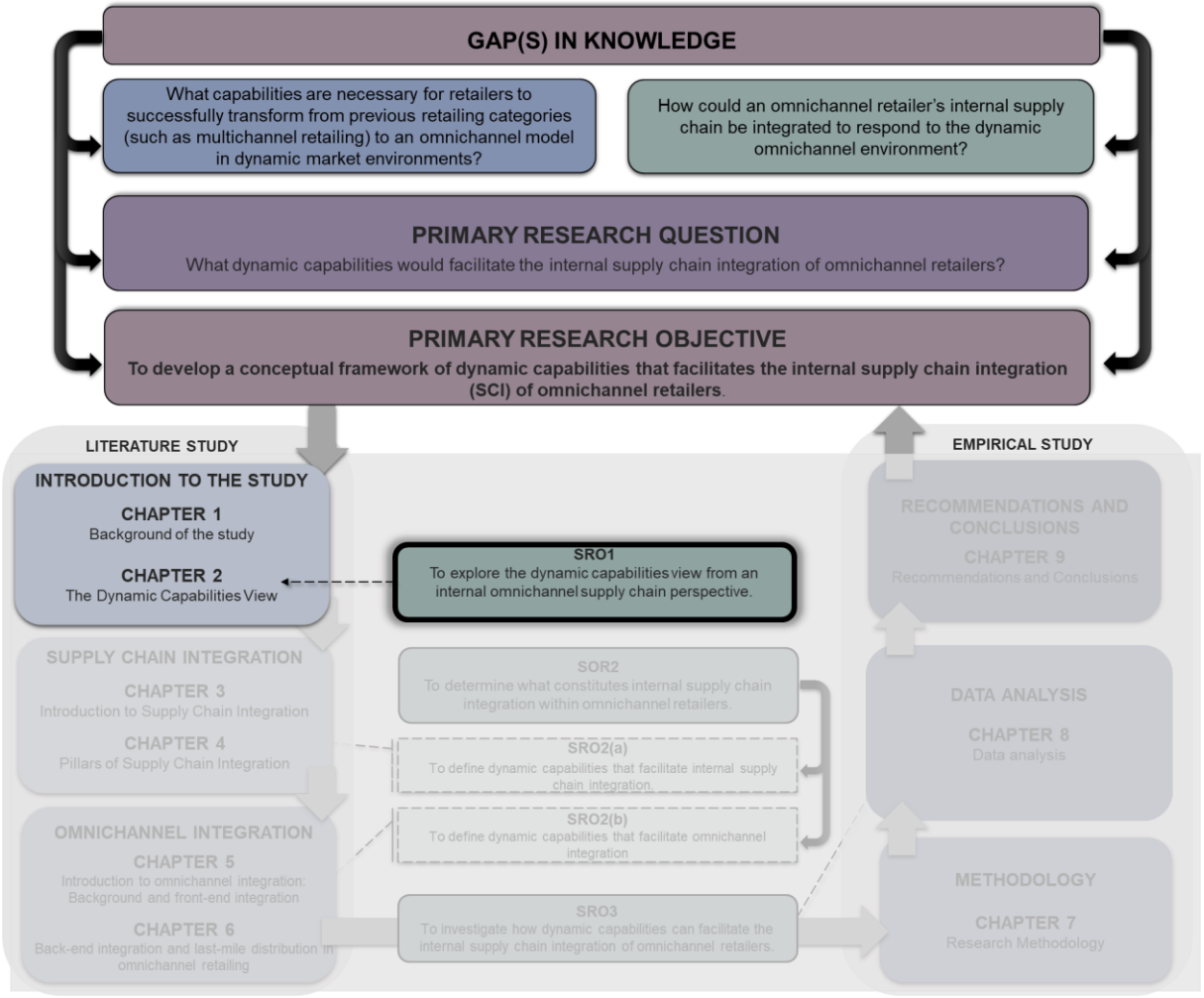
The function of a theory *"is that of preventing the observer from being dazzled by the full-blown complexity of natural or concrete events"* (Bacharach, 1989:496). Spina *et al.* (2016:19) explained that management theories can provide a comprehensive view of reality, typically solving conflicts arising from empirical generalisations and that the purpose of a theory is to organise and communicate a concept. Different management theories support organisations, researchers, and practitioners in understanding how to operate and navigate a competitive environment. Some of the popular management theories included the market-based view (MBV), the resource-based view (RBV), the systems theory, and several of Michael Porter's theories, namely the five forces of competition model (threats from potential entrants, supplier power, buyer power, substitute products, and internal rivalry), the value chain, and the three generic competitive strategies (cost leadership, differentiation, and focus strategies) (Napshin & Marchisio, 2017; Gellweiler, 2018). In response to some critiques of these popular management theories, Professor David Teece developed the dynamic capabilities view (DCV).

The DCV is an influential theoretical framework in strategic management literature for understanding how organisations generate and sustain a competitive advantage in anticipation of and response to environmental change in rapidly changing market environments (Furnival, Boaden & Walshe, 2019:826). According to Wójcik (2015:84), the DCV adds value to research studies by allowing researchers to analyse organisational change in alignment with industry dynamism. In doing so, researchers can define ways of functioning in an industry shaped by a nonlinear, discontinuous, and open innovation.

This study was conducted based on the management theory of the DCV. In the literature, the DCV is often considered from a systems theory perspective (Burisch & Wohlgemuth, 2016; Teece, 2018a; Dutta, 2021) as both the DCV and the systems theory adopt a holistic view of the organisation and calls for all internal organisational elements to be in alignment. The systems theory views organisations as social systems made up of sub-units that must inter-relate in a harmonious (congruent) manner to be effective (Teece, 2018a:360). Teece (2018a) outlined dynamic capabilities as part of a system comprising of the organisation's strategy and resources. Since the purpose of this study was to investigate how dynamic capabilities could promote the *internal* SCI of omnichannel retailers, considering the DCV from a systems theory perspective allowed the researcher to demarcate which dynamic capabilities form part of the internal supply chain of omnichannel retailers and how these dynamic capabilities promote internal supply chain integration. Therefore, this study followed the recommendations of Teece (2018a) and considered the influence of strategy and resources on the development and deployment of dynamic capabilities.

This chapter addresses secondary research objective 1 (SRO1), which aims *to explore the dynamic capabilities view from an internal omnichannel supply chain perspective*. Figure 2.1 serves as a visual illustration of this study and the purpose of this chapter.

**Figure 2.1: Visual illustration of the study – the purpose of Chapter 2**




**Source: Researcher's own compilation**

Chapter 2 is structured as follows: first, an in-depth discussion of the DCV is presented by addressing the bifurcation in literature and clarifying the interpretation of the many different branches of the DCV. Second, the three foundational elements of the DCV are discussed individually, namely *strategy, resources* and *capabilities*.

## 2.2 THE DYNAMIC CAPABILITIES VIEW (DCV)

The DCV explains why some organisations are adept at anticipating and exploiting opportunities via advances in technology and rapid changes in markets that are volatile, uncertain, complex, and ambiguous (VUCA) while other organisations struggle to adapt and possibly go out of business (Schwar *et al.,* 2019:11). Enders (2019:41) reported that published research on the DCV has grown significantly since

1997. This statement was supported by the research of Albort-Morant *et al.* (2017:43), who conducted an extensive bibliometric literature review of 3 852 published research items on the DCV. Their findings suggested that the application of the DCV to a broad range of disciplines has critically affected the consistency of key concepts and the definition of the theory among scholars and, therefore, no universally accepted definition of the DCV currently exists.

However, based on various literature sources, the following description of the DCV applied to this study: *The theoretical framework of DCV, as an extension of the Resource-Based View (RBV), states that, for organisations to achieve a competitive advantage in rapidly changing market environments, the possession of valuable, heterogeneous resources are simply not sufficient. The DCV therefore builds on the RBV by focusing on organisational transformation in reaction to environmental change, through alterations in the resource base of the organisation, to achieve a competitive advantage. Organisational transformation is achieved through organisational processes*[7] *that use resources, specifically the processes to integrate, coordinate, reconfigure, gain, modify, and release an organisation's valuable, rare, and irreplaceable internal and external resources to match and create industry change in turbulent market environments.*

The next section provides a holistic view of the DCV by clarifying the bifurcation in literature.

### 2.2.1 Clarifying the bifurcation of the dynamic capabilities view (DCV)

Despite a rise in interest and influence of the DCV, criticisms of the theory continue to grow (Di Stefano, Peteraf & Verona, 2014:308). Common concerns include a lack of consensus on basic theoretical elements and limited empirical progress (discussed in Section 2.4). Peteraf *et al.* (2013) aimed to consolidate the different branches of the DCV in literature with their article entitled '*The elephant in the room of dynamic*

[7] Scholars (Takahashi *et al.,* 2017; Wu, 2017; Enders, 2019) used the terms 'organisational processes' and 'routines' interchangeably. For consistency throughout this study, organisational processes was used as a blanket term when referring to the repetitive, recognisable patterns of interdependent actions carried out by multiple actors within a single organisation (Felin *et al.,* 2012:1355).

*capabilities: bringing two diverging conversations together'.* The authors highlighted that research on the DCV had developed under the strong influence of two seminal papers.

The first was a paper authored by Teece *et al.* (1997), who coined the term 'dynamic capabilities', and was entitled *'Dynamic Capabilities and Strategic Management'*. Teece *et al.* (1997) argued that dynamic capabilities refer to the behavioural orientation of an organisation to constantly integrate, reconfigure, renew, and recreate its resources and capabilities and, most importantly, upgrade and reconstruct its core capabilities in response to the changing environment to attain and sustain competitive advantage. According to several bibliometric studies, the article by Teece *et al.* (1997) is still deemed the most cited journal article about the DCV (Peteraf *et al.,* 2013; Di Stefano *et al*., 2014; El Gizawi, 2014; Spina *et al.,* 2016) with over 45 000 citations by 2022 (Google Scholar Citations, 2022). David Teece himself is also still considered the most prolific author in the domain of the DCV, with his citations exceeding 170 000 by 2022.

In 2000, Eisenhardt and Martin published the second seminal paper on the DCV, entitled *'Dynamic Capabilities: What are they?'* From these authors' perspectives, the term 'dynamic capabilities' refers to those organisational processes that use resources (specifically the processes which integrate, reconfigure, gain, and release resources) to match or create market change. The authors therefore considered dynamic capabilities to be the organisational and strategic 'routines' by which organisations achieve new resources configurations as markets change or emerge, collide, split, evolve, and die. Accordingly, in Eisenhardt and Martin's interpretation of dynamic capabilities, dynamic capabilities can create and respond to market change. The most evident distinction between the views of Teece *et al.* (1997) and Eisenhardt and Martin (2000) is the *aim* of dynamic capabilities. Teece *et al.* (1997) claimed dynamic capabilities lead to a competitive advantage while Eisenhardt and Martin (2000) claimed that dynamic capabilities lead to market change. In general, the interpretations by Eisenhardt and Martin (2000) included both differing and contradictory understandings of the DCV. In fact, one of the main critiques[8] of the DCV is lack of

[8] Critiques on the DCV are discussed at length in Section 2.4 of this chapter.

clarity and consistency, given the development path of the theory (Helfat & Peteraf, 2009:91).

Several authors have investigated the contrasting interpretations of Teece *et al.* (1997) and Eisenhardt and Martin (2000) (Helfat & Peteraf, 2009; Di Stefano *et al.,* 2014; Burisch & Wohlgemuth, 2016; Albort-Morant *et al.,* 2017; Takahashi *et al.,* 2017; Collis & Anand, 2019). They found that the most significant difference between the interpretations of these authors relates to the relationship between an organisation's competitive advantage or performance and dynamic capabilities. Teece *et al.* (1997) posited that an organisation can obtain a sustainable (long-term) competitive advantage through the correct deployment of dynamic capabilities while Eisenhardt and Martin (2000) maintained that competitive advantage in rapidly changing business environments can only temporarily be obtained and that dynamic capabilities are actually 'best practices', 'simple rules', or 'routines' (Peteraf *et al.,* 2013; Wójcik, 2015; Albort-Morant *et al.,* 2017; Laaksonen & Peltoniemi, 2018). Notwithstanding these distinctions, Helfat and Peteraf (2009:97) argued that, although Teece *et al*. (1997) and Eisenhardt and Martin (2000) disagreed regarding the extent to which dynamic capabilities confer competitive advantage and organisational performance, these authors did agree that dynamic capabilities have both a direct and indirect effect on organisational performance and competitive advantage through the reconfiguration of organisational processes and resources.

Since the birth of the DCV, numerous articles were published on the topic, with each author interpreting the DCV from the perspective of either Teece *et al*. (1997) or Eisenhardt and Martin (2000). Also, Teece *et al*. (1997) and Eisenhardt and Martin (2000) published their own stream of journal articles expanding their perspectives. Noticeably, Eisenhardt and Martin published a stream of research focusing on *simple rules*, with titles such as "*Simple rules: How to thrive in a complex world"* or "*Simple Rules for a complex world*". Teece continued to build on his interpretation of dynamic capabilities by publishing a string of research articles expanding the conceptualisation of dynamic capabilities (Teece 2007, 2018a; Arndt & Pierce, 2017; Teece & Linden 2017) and publishing replies to comments and critiques of the DCV from other authors, as seen in the paper *"Remarks on Pisano: 'toward a prescriptive theory of dynamic capabilities'"* (Linden & Teece, 2018).

To avoid adding to the already inconsistent literature on the topic, authors (Wang & Ahmed, 2007; Albort-Morant *et al.,* 2017; Altintas, 2019) stressed the need to acknowledge which academic journals, authors, and articles a new research study is based on to highlight the ambiguities and inconsistencies in the DCV and how these aspects are to be clarified within the scope of a study.

### 2.2.2 Clarifying the interpretation of the study of the dynamic capabilities view (DCV)

Di Stefano *et al.* (2014) conducted a content analysis of definitions used to describe the DCV. The purpose of their investigation was to determine the main points of contention. The findings of Di Stefano *et al.* (2014) drew attention to five structural inconsistencies within the literature: (1) the *nature* of the construct (what is a dynamic capability?); (2) the *agent* (who exerts the dynamic capability?); (3) the *action* (by doing what?); (4) the *object* of the action (what is the effect of the dynamic capability?); and (5) the *aim or purpose* of the construct (what is the ultimate goal?). Although the original research of Di Stefano *et al.* (2014) aimed to only study the points of dispute within the definitions of the DCV, further investigation of the literature on the DCV by these authors showed that a discussion regarding inconsistencies within literature can be structured around these five constructs.

Table 2.1 illustrates and builds on the main findings of Di Stefano *et al.* (2014) by contrasting some of these inconsistencies and clarifying how these inconsistencies were mitigated in this study. It should be stated here that the findings of Di Stefano *et al.* (2014) went beyond simply examining the opposing views of Teece *et al*. (1997) and Eisenhardt and Martin (2000) to include most inconsistencies found in the literature. Table 2.1 does not explicitly indicate the perspectives of either Teece *et al*. (1997) or Eisenhardt and Martin (2000) but focuses on most the inconsistencies found in the literature on the DCV.

**Table 2.1: Clarification of different perspectives on the DCV**

| CONSTRUCT | OPPOSING PERSPECTIVES | DESCRIPTION | FUNDAMENTAL DIFFERENCES | EXEMPLARY QUOTES | APPLICATION TO THIS STUDY |
|---|---|---|---|---|---|
| **Nature**<br>What is a dynamic capability? | *A latent action:*<br>Ability/capacity/ enabling device | An invisible action that only becomes observable when called into action (Di Stefano *et al.,* 2014:313). | Level of observability | "the *firm's ability to integrate, build, and reconfigure* internal and external competences to address rapidly changing environments" (Teece *et al.,* 1997:516) | In this study, the nature of the construct was aligned with the views of Teece *et al.* (1997:516) and Di Stefano *et al.* (2014:313). For example, a **dynamic capability**[9] relates to the organisation's ability to integrate resources and competencies in response to changing market conditions. |
| | *Constituent elements:*<br>Process/routine | Several components are integrated together; a more concrete observable form (Kay *et al.*, 2018:631). | | "the *firm's processes* that use resources—specifically the processes to integrate, reconfigure, gain and release resources—to match and even create market change" (Eisenhardt & Martin, 2000:1107) | |
| **Agent**<br>Who exerts the dynamic capability? | Managers | Individual managers' experiences and real-world utilities form the basis of dynamic capabilities (Altintas, 2019:1). | Level of analysis | "the capabilities with which *managers* build, integrate, and reconfigure organisational resources and competencies" (Altintas, 2019:1) | This study viewed the agent of dynamic capabilities as the entire organisation, as presented by Pavlou and Sawy (2011:260) and Alinaghian, Kim and Srai (2020:112), meaning the entire organisation exerts the dynamic capabilities that promote internal omnichannel SCI. |
| | Organisations | Dynamic capabilities are present within the entire organisation (Pavlou & Sawy, 2011:260). | | "a *firm's ability* to purposefully create, extend or modify its resource base, namely, an ability necessary to stay abreast or ahead of changes in business environments" (Alinaghian *et al.,* 2020:112) | |

[9]As explain in Chapter 1, Section 1.6.2, throughout the literature review the researcher aimed to identify dynamic capabilities that facilitate internal SCI in omnichannel retailers. The identified capabilities were added to a coding frame used as part of the empirical data analysis. The coding frame identifier (Dynamic capabilities) was used throughout the literature review to highlight elements of the literature that were used to construct the coding frame elements related to *dynamic capabilities* in general.

| CONSTRUCT | OPPOSING PERSPECTIVES | DESCRIPTION | FUNDAMENTAL DIFFERENCES | EXEMPLARY QUOTES | APPLICATION TO THIS STUDY |
|---|---|---|---|---|---|
| **Action**<br>The dynamic capability is exerted by doing what? | Existing resource base | Act on existing resources or capabilities to exert change (Kareem & Alameer, 2019:405). | Origin of the dynamic capability | "…those capabilities that help units extend, modify, and reconfigure their *existing operational capabilities* into new ones that better match the changing environment" (Pavlou & Sawy, 2011:242) | This study viewed the action of dynamic capabilities as the recombination and reconfiguration of existing resources and capabilities, as offered by Kareem and Alameer (2019:405) and Pavlou and Sawy (2011:242). However, in doing so, the study did not reject the assumption that, through the modification of existing capabilities and resources, new dynamic capabilities might be developed. During the data analysis (Chapter 8), it was found that retailers develop new capabilities to integrate internal omnichannel supply chains. |
| | Create a new resource base | Develop new resources/ abilities to exert change (Wang & Ahmed, 2007:34). | | "A learned and stable pattern of collective activity through which the organisation systematically *generates* and modifies its operating routines in pursuit of improved effectiveness" (El Gizawi, 2014:8) | |
| **Object**<br>What are the effects of dynamic capabilities? | Competencies/ resources | Closely linked to the RBV, dependent on human activity to develop competencies/resources to respond to change (Wójcik, 2015:89). | Vehicle of growth, learning, and organisational change | "…a firm's ability to develop or maintain competitive advantage using *its essential competence and collective ability* to innovate, coordinate, and reconfigure internal resource skills. Thereby, the firm improves business processes, meets market challenges, and influences corporate performance under economic turbulence" (Takahashi *et al.,* 2017:217) | This study considered the object of dynamic capabilities from both perspectives. It deliberated on how the existing resource bases of organisations can be used *to identify opportunities* in the market that will allow retailers to adequately *adapt to the changes in the market*. Accordingly, this study did not regard these two perspectives as mutually exclusive. |
| | Opportunities | Closely linked to Porter's five competitive forces model, the ability to identify opportunities in the market and respond to these opportunities (Enders, 2019:48). | | "… processes concerning the sensing and *seizing of opportunities* and the strategic shaping of ordinary capabilities" (Wilden & Gudergan, 2017:809) | |

| CONSTRUCT | OPPOSING PERSPECTIVES | DESCRIPTION | FUNDAMENTAL DIFFERENCES | EXEMPLARY QUOTES | APPLICATION TO THIS STUDY |
|---|---|---|---|---|---|
| **Aim**<br>What is the ultimate goal of dynamic capabilities? | To adapt to changing market conditions | Dynamic capabilities allow for the exploiting exploitation of existing or new opportunities to respond to changing environments or changes in the market, i.e. advances in technology (Alonso & Kok, 2018:323). | The ultimate outcome of dynamic capabilities | "… a company's ability to transform resources, processes and capabilities at its disposal to address a rapidly or moderately rapidly changing environment" (Wójcik, 2015:100) | Although the researcher acknowledges the large body of knowledge that draws parallels between competitive advantage and dynamic capabilities, it was beyond the scope of this study to determine if the dynamic capabilities identified in this study will contribute to a competitive advantage. As such, for this study, the perspectives of Alonso and Kok (2018:323) and Wójcik (2015:100) were followed. Consequently, this study regarded the aim of dynamic capabilities as the organisation's ability to exploit new opportunities and respond to changes in the market, i.e. to be **adaptable**[10]. Although it was assumed that it will lead to a competitive advantage, whether or not it does was not determined by this study. |
| | To achieve a competitive advantage | An organisation's ability and alertness to change quickly are costly for others to imitate and therefore dynamic capabilities can be a source of sustained competitive advantage (Wang & Ahmed, 2007:36). | | "… dynamic capabilities enable organisations to achieve competitive advantage through a mechanism that continuously implements a strategy based on environmental changes" (Ju *et al.*, 2016:8) | |

**Source: Compiled by author**

[10] Considering that the ultimate outcome of dynamic capabilities is *adaptability*, the coding frame identifier (Adaptability) is used throughout the literature review to highlight elements of the literature that were used to construct the coding frame elements related to adaptability.

Considering Table 2.1, it is apparent that there are many different interpretations of the DCV. These interpretations may be partly complementary but, in most instances, they do not share a common theoretical grounding (Burisch & Wohlgemuth, 2016:110). Several scholars (Eisenhardt & Martin, 2000:1108; McKnight, 2012:8; Di Stefano *et al.,* 2014:316; Burisch & Wohlgemuth, 2016:110) stated that many of the inconsistencies evident in the literature on the DCV are caused by tautology (authors developing their own definitions of the DCV) which consequently creates boundaries to the interpretations of the DCV. These definitions and boundaries are either broad and arbitrary or rigid and inflexible, prompting other scholars to develop their own (sometimes inaccurate) understanding of the theory (Burisch & Wohlgemuth, 2016:113). Felin *et al.* (2012:1357) argued that such variation underscores the complexity of dynamic capabilities and emphasises the need for well-defined, clear, and transparent declarations of an author's interpretation of the DCV.

Although the consistency of key elements of the DCV has been called into question, the purpose of the DCV stays constant and can generally be classified as twofold. First, dynamic capabilities allow organisations to respond and adapt to rapidly changing market environments (Barbero *et al.*, 2017; Keinz *et al.,* 2018; Teece 2018a:360; Torres *et al.*, 2018; Enders, 2019). Second, where the competitive landscape of the industry is shifting, dynamic capabilities become a source of competitive advantage (Eisenhardt & Martin, 2000; Wójcik, 2015; Alonso & Kok, 2018; Enders, 2019).

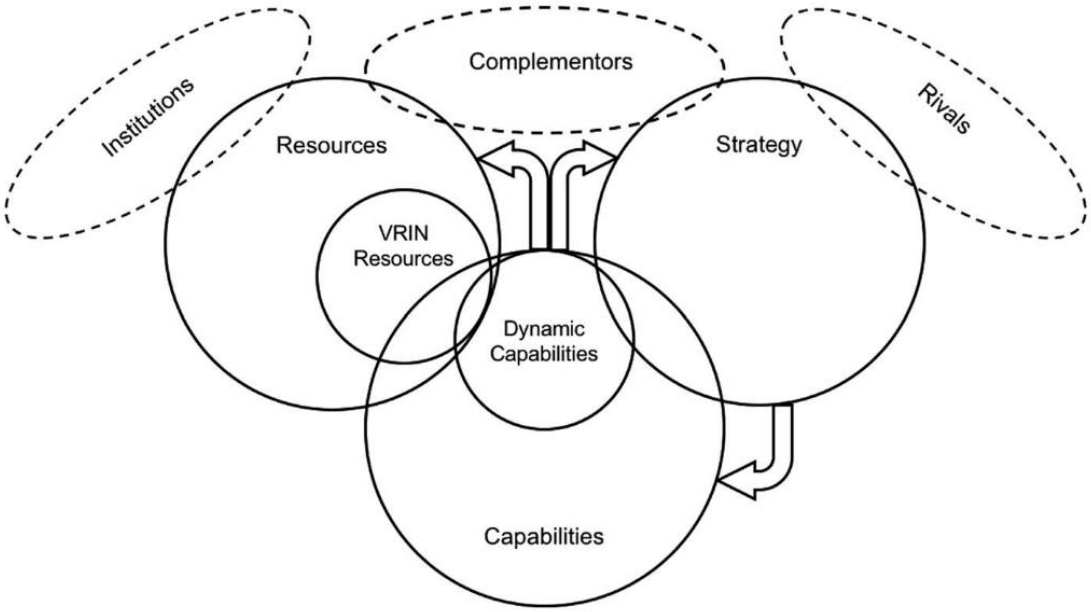
Since the above discussion clarifies the understanding of the many branches of the DCV relevant to this study, the following section delves deeper into the underlying constructs of the DCV. As stated above, the DCV is a system comprised of three foundational elements, namely *strategy*, *resources*, and *capabilities*.

## 2.3 FOUNDATIONAL ELEMENTS OF THE DYNAMIC CAPABILITIES VIEW (DCV)

In the most recent work of Teece (2018a), the author aimed to consolidate the broad application of the DCV and the many interrelated constructs of the theory to outline

the foundational elements of the DCV. Figure 2.2 represents the original DCV framework as presented in the publication of Teece (2018a).

**Figure 2.2: The foundational elements of the DCV framework**



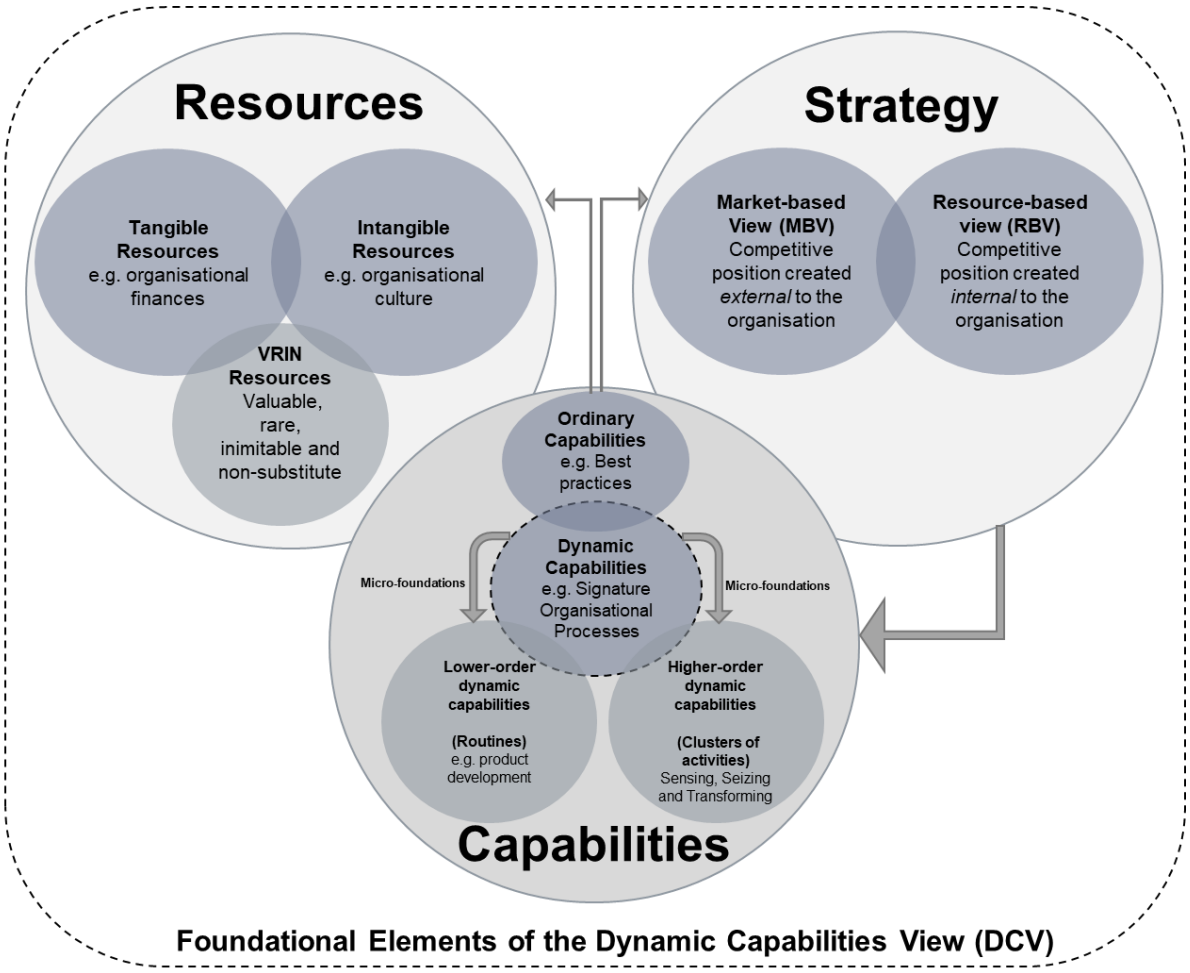

**Source: Teece (2018a:363)**

Figure 2.2 illustrates the three foundational elements of the DCV as *strategy, resources* and *capabilities*. Institutions, complementors, and rivals are elements *external* to the organisation (indicated by dashed lines) that can also influence an organisation's dynamic capabilities. However, since this study focused on investigating dynamic capabilities *internal* to the organisation, these external elements were not investigated within the scope of this study.

Teece (2018a) explained that capabilities lie at the 'core' of the DCV while strategy and resources serve as 'major influences'. However, the author argued that each of the three foundational elements of the capabilities framework are vital in creating dynamic capabilities and thus the ability to be competitive. This study followed the classification of the DCV as presented by Teece (2018a), namely emphasising and investigating primarily the *capabilities* of organisations yet remaining cognisant of the influence of strategy and resources on the development and deployment of dynamic capabilities.

Figure 2.3 builds on Figure 2.2 to provide a more detailed description of the different foundational elements of the DCV as presented by Teece (2018). All factors populating Figure 2.3 are addressed in the subsections of this chapter.

**Figure 2.3: Foundational elements of the DCV discussed in Chapter two**




**Source: Compiled by author**

In the next section, strategy and how strategy impacts the development and deployment of capabilities is investigated. Thereafter, resources and capabilities are considered.

### 2.3.1 Strategy

Strategy within business and economics comprises of manifold areas, levels, and phases. Scientists from various groundworks and viewpoints deliberates on the concept of strategy, each dealing with specific sections and linkages to other subjects

within the space of strategy formulation. No sole description for organisational strategy is generally accepted and the application of strategy appears to be multidimensional (Gellweiler, 2018:3). In general, strategy relates to a set of dynamic choices made by management about how the organisation intends to engage and compete within its environment. Teece (2018a:365) argued that strategy helps determine the timing of market entry and how to keep competitors from gaining access to customers. The goal of a strategy is, therefore, to outmanoeuvre competitors by taking advantage of their mistakes and leveraging in-house strengths. From the DCV, strategy informs the dynamic capabilities that are core to enhancing processes and exploiting possibilities. Organisations with weaker capabilities require different strategies than organisations with stronger capabilities (Kay *et al.,* 2018:629; Teece, 2018a:359).

According to Rumelt (2011:6), a good strategy has three attributes. First, a *diagnosis* is made, identifying the obstacles restricting an organisation from reaching its goals. A diagnosis simplifies the complexity by identifying aspects that are crucial for the organisation to focus on. Second, a good strategy has a *guiding policy* that specifies an approach to overcoming the obstacles identified in the diagnosis. Third, a good strategy contains a *coherent plan of action* that implements the guiding policy. A good strategy often does not appear fully formed but emerges over a period of trial and error (provided the environment is sufficiently forgiving to allow experimentation) (Teece, 2018a:365). In conclusion, a good strategy is a culmination of a set of complex organisational attributes and hierarchical levels. The different hierarchical levels in strategy are discussed next.

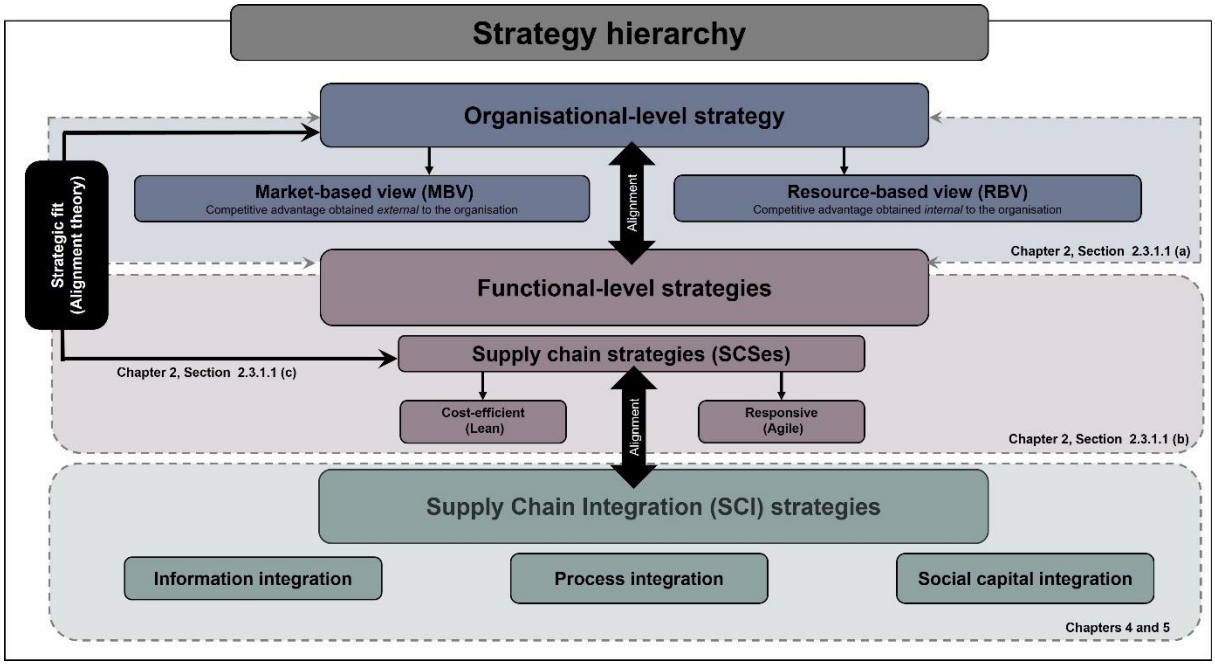
#### *2.3.1.1 Strategy hierarchy*

In general, the following two different levels of strategy exist: organisational-level strategy (e.g., overarching corporate strategy) and functional or operational strategies (e.g., the deployment of activities, processes, and resources to achieve the organisational-level strategy).

Figure 2.4 illustrates the strategy hierarchy by depicting the relationship between organisational-level strategy and functional strategies. Figure 2.4 also illustrates the

relationship between strategy (organisational and functional level) and supply chain integration (SCI). It should be highlighted that strategy within the context of this study should be viewed from two perspectives. First, strategy is a significant influencer of the DCV, as addressed by Teece (2018a) and discussed above. Second, many authors argued that strategy is used to guide the integration process in SCI. Zsidisin *et al*. (2015:553), for example, argued that functional-level supply chain strategies (SCSes) have an important impact on SCI as functional-level SCSes should guide SCI initiatives. Additionally, Autry and Moon (2016:29) added that: *"the goal of integration is to achieve the right outcomes for the right processes. This means that a clear and relevant mission or value focus is needed".* For the purpose of this study, strategy was considered both within the context of the DCV as well as in terms of its role in guiding the integration process.

**Figure 2.4: Strategy hierarchy**




**Source: Researcher's own compilation**

Figure 2.4 illustrates the strategy hierarchy comprising of organisational and functional level strategies. Functional-level strategies include all functional areas of an organisation (e.g., marketing, logistics, and human resources). Since only SCSes were considered for this study, Figure 2.4 illustrates the necessary alignment between SCSes and SCI. Additionally, it demonstrates the alignment between the organisational-level strategy and the SCSes as the strategic fit or the alignment theory.

Figure 2.4 also shows the two-way relationship between the strategic fit and SCI strategies and indicates the subsection where each of the aspects regarding strategy is considered within this study.

### *a) Organisational-level strategies*

An organisation's competitive strategy (organisational-level strategy) is a set of dynamic management choices on how the organisation intends to engage and compete within its environment. These choices primarily involve selecting a target industry in which to create a competitive position (competitive advantage) (Stander, 2018:13). An organisational-level strategy should be built around providing customers with product and service availability and being responsive to customer demands (Chopra & Meindl, 2016:31). Ambe (2012:128) posited that all organisations have a competitive strategy, whether the strategy is planned or not, because it determines the purpose and goal of the organisation.

In strategic management literature, an intense debate exists on the most appropriate theories related to organisational-level strategy (Kraaijenbrink, Spender & Groen, 2010:350; Huang *et al.,* 2015:617; Napshin & Marchisio, 2017:470; Gellweiler, 2018:3; Stander, 2018:104). Most authors agree that all strategic management theories for developing a sustained competitive advantage are derived from two main schools of thought: the market-based view (MBV) (often referred to as industrial organisation economics) and the resource-based view (RBV) (Huang *et al.,* 2015; Wójcik 2015; Napshin & Marchisio, 2017; Gellweiler, 2018; Van Weele, 2018).

The MBV asserts that competitive advantage is obtained when an organisation has a stronger market position than its competitors (competitive advantage is obtained *external* to the organisation). The RBV, on the other hand, considers organisational resources and capabilities as a source of competitive advantage (competitive advantage is obtained *internal* to the organisation). It should be underscored here that the purpose of this study was neither to conduct an in-depth analysis of strategic management theories nor to investigate the relationship between organisational-level/functional-level strategies and SCI as such relationship has already been

established in the literature (see discussion on the strategic fit in Section 2.3.1.1(c) below).

Gellweiler (2018:4) stated that, when considering organisational-level strategies, two aspects need to be 'brought into an optimal equilibrium': 1) what an organisation *might* do given changes in the competitive environment and 2) what the organisation *can* do considering the organisation's internal abilities. The MBV supports answers to the first question while the RBV supports the latter. The MBV and RBV present opposing arguments relating to strategy formulation (Wójcik, 2015:84). The MBV takes an outside-in (exogenous) perspective, meaning the strategic position of an organisation depends on the industry or market within which the organisation competes and disregards internal antecedents and consequences (Gellweiler, 2018:3). The RBV takes an inside-out (endogenous) perspective, meaning the resources and capabilities an organisation possesses determine both the rate and direction of organisational growth (Huang *et al.,* 2015:618). However, the RBV neglects the influence of the 'outside' environment on the organisation's ability to create a competitive advantage.

Previous authors presented many critiques against both the MBV and the RBV. The biggest criticism of both lies in their inability to respond to changes in the industry as these theories assume that the organisation operates in a static or stable environment where little adaption or change is required (Fawcett *et al.,* 2011:39; Wójcik, 2015:94; Takahashi *et al.,* 2017:216; Gellweiler, 2018:3). However, an increasing number of scholars suggest that formerly stable environments are becoming uncertain due to accelerating technological change, globalisation, industry convergence, aggressive competitive behaviour, and deregulation (Huang *et al.,* 2015:619). To address this issue, scholars developed an extension of the RBV (the DCV) based on the rationale that to effectively exploit inside-out capabilities a match with outside-in capabilities is needed (Chang *et al.,* 2016:293). The DCV links the inside-out approach of the RBV with elements of the outside-in approach of the MBV (Wójcik, 2015:100), for example internal SCI (as an inside-out capability) can aid organisations to more effectively capitalise on the potential benefits of the outside-in capabilities such as external supplier and customer integration (Chang *et al.,* 2016:293). The next subsection briefly considers both the MBV and RBV theories.

- **The market-based view (MBV)**

The MBV[11] is rooted in the structure-conduct-performance (SCP)[12] paradigm of Bain (1968) (Stander, 2018:100). The MBV asserts that competitive advantage can be achieved when the organisation has a stronger market position in an industry compared to competitors (Huang *et al.,* 2015:617). Several of Michael Porter's strategic analytical tools have contributed to the development of the MBV (Gellweiler, 2018:3), in particular Porter's five forces model (Kraaijenbrink *et al*., 2010:367; Napshin & Marchisio, 2017:470) and Porter's three generic competitive strategies (Van Weele & Van Raaij, 2014:60; Sillanpää, 2019:98).

According to Porter's five forces model, by analysing five significant industry structural forces (threats from potential entrants, supplier power, buyer power, substitute products, and internal rivalry) an organisation can exploit its competitive advantage. Therefore, the organisation can position itself in an optimal market and sustain a competitive advantage by erecting entry barriers for competitors (Huang *et al.,* 2015:624). Entry barriers are key industry structural factors (such as economies of scale, large capital investments, or producing differentiated products) to deter competitors from entering the market (Gellweiler, 2018:5). However, the relevance of Porter's five forces model in turbulent and dynamic markets was critiqued by some authors (Teece, 2007:1325; Napshin & Marchisio, 2017:472; Enders, 2019:43). The main argument was in the reliance of the model on simple market structures and, therefore, its inability to be applied to collaborative industries because of its focus on creating competition in the market (Stander, 2018:100). The most applicable critique of Porter's five forces model in terms of this study was its inability to be applied to dynamic markets (Gellweiler, 2018:6). Today, the acronym VUCA is often used to describe the external business environment: volatile (V), uncertain (U), complex (C), and ambiguous (A) (Bennett & Lemoine, 2014; Du & Chen, 2018; Pandit *et al.,* 2018). VUCA is particularly relevant to this study, considering the dynamism of omnichannel

[11] The MBV is also referred to by other authors as market-oriented theory (Gellweiler, 20184), industry organisational theory (Huang *et al*., 2015:618), industrial organisation economics (IOE) (Napshin & Marchisio, 2017:470), or an extension of Porter's generic competitive strategies (Van Weele & Van Raaij, 2014:57; Sillanpää, 2019:98).

[12] The SCP framework found its roots in industrial organisation economics (IOE). The theory argued that organisations can achieve a competitive advantage by responding to the characteristics of the industry in which they compete (Ralston *et al.,* 2015a:49).

retailing characterised by the mushrooming of commerce channels and short delivery times, all fuelled by continued technological advances.

Similar to Porter's five forces model, Porter's competitive strategies (differentiation, cost leadership or focus), also contributed to the development of the MBV. Gellweiler (2018:4) provided an example of Porter's generic competitive strategies, stating that, if an organisation resolves to pursue one of Porter's (1980) three generic competitive strategies, the organisation must *develop or acquire necessary resources and skills* accordingly. The nature of Porter's generic competitive strategies is encapsulated by the argument that resources and skills can generally be obtained external to the organisation. The MBV, therefore, suggests that a competitive advantage can be achieved when the organisation develops or acquires the internal resources and dynamic capabilities needed to implement strategies dictated by the external environment (Louw & Venter, 2013:26), for example skilled human resources can be contracted on labour markets. As such, Carpenter and Sanders (2009:100) concluded that the MBV places organisations on the path to acquiring missing resources and the capabilities essential to compete within the market environment.

Since the focus of this study was to develop a conceptual framework of dynamic capabilities that promote the *internal* supply chain integration of omnichannel retailers, the MBV was not an appropriate theory for this study, considering its overwhelming focus on the *external* environment. However, Gellweiler (2018:4) reported that the MBV, particularly Porter's contributions to the development of this theory, represents the groundwork for the RBV. Kraaijenbrink *et al.* (2010:350) and Gellweiler (2018:6) stated that the RBV should not be considered as an opposing view to the MBV but should rather be seen as an alternative approach to the development of a competitive position as, in some cases, elements of the RBV complement the MBV.

- **The resource-based view (RBV)**

In contrast to the MBV, the RBV adopts an inward approach by focusing on the configuration and bundling of the organisation's internal resources. According to Barney (1991), these resources comprise all assets, capabilities, organisational processes, attributes, and knowledge that are owned and controlled by a single

organisation to enable strategy formulation for improved efficiency (e.g. cost reduction) and effectiveness (e.g. responsiveness to service improvement). The journal article by Barney (1991) entitled "*Firm Resources and Sustained Competitive Advantage*" is widely cited as the seminal work to the emergence of the RBV. The adoption of the RBV as a strategic management theory took considerable time as most contributions were limited to specialist academic journals, which prevented business practitioners from getting acquainted with the insights from this school of thought (Van Weele & Van Raaij, 2014:60). Nevertheless, the RBV has since become one of the most influential and cited theories in management literature (Kraaijenbrink *et al.,* 2010:366; Huang *et al.,* 2015:617; Napshin & Marchisio, 2017:470; Gellweiler, 2018:4).

RBV advocates that differences in performance among organisations from the same industry cannot primarily be attributed to the products delivered or the market environment in which they operate (Penrose, 1959; Wernerfelt, 1984) but rather that heterogeneity between organisations stems from differing degrees and scope of control over VRIN resources (valuable, rare, inimitable, and non-substitutable)[13]. Barney (1991) advocated that meeting VRIN requirements enables organisations to achieve and sustain a competitive advantage. However, Louw and Venter (2013:23) argued that a competitive advantage can only be sustained for a certain period, given the speed at which competitors copy value-creating capabilities.

As with the MBV, the RBV was criticised by many scholars. First, the RBV lacks a focus on resource development[14]. Second, the RBV does not describe how organisational resources should be reconfigured[15] to respond to rapidly changing environments or industries. Similar to the argument based on the MBV and VUCA, innovation and change are needed to stay ahead of the competition in dynamic environments. According to the RBV, a sustained competitive advantage can be

[13] Several versions of the VRIN resource categories were evident in the literature, these versions are covered in Section 2.3.2.1 below. However, for this study, the researcher followed the direction of Teece (2018a) in using VRIN resources.
[14] In terms of this study, an example of resource development would be the development of the demand forecasting capabilities of an omnichannel retailer. By combining the demand forecasting capabilities of purchasing with the information processing capabilities of IT, improved demand forecasting capabilities can be developed within the omnichannel retailer.
[15] In terms of this study, an example of resource reconfiguring would be when an omnichannel retailer moves away from demand forecasting based on historical data to demand forecasting based on real-time data by using SC software applications.

reached if organisational resources meet the VRIN criteria. However, if an organisation does not adapt to the constantly changing business environment, a competitive advantage will be temporary (Kraaijenbrink *et al.,* 2010:360). Third, the RBV has no managerial implications and does not consider how the redeveloped or reconfigured resources should be utilised within organisational processes to create a competitive advantage (Eisenhardt & Martin, 2000; Wang & Ahmed, 2007; Pavlou & Sawy, 2011; Wójcik, 2015). Fourth, the RBV does not consider the external environment, therefore the RBV assumes that the internal organisation does not need to adapt to the external environment. Consequently, even if an organisation has the resources and the capabilities to gain a competitive advantage, no demand might exist for the product/service. Fifth, and most applicable to this study, in a dynamic environment an organisation's competitive position will only be temporary.

As discussed in Chapter 1, internal integration consists of integrating various core functions of a single organisation. In the previous section of this chapter, two organisational-level strategies were discussed, the MBV and the RBV. Some authors (Louw & Venter, 2013; Qi *et al.,* 2017; Turkulainen *et al.,* 2017) argued that different functional strategies need to be developed to implement an organisational-level strategy. The subsections below consider various functional-level strategies.

### *b) Functional-level strategies*

Each organisation has certain core functional areas that permit it to conduct its day-to-day activities. Louw and Venter (2013:255) stated that typical functional areas include corporate management, research and development, human resources, finance, marketing, customer care, sales, production or operations and logistics, and supply chain management. While a functional-level analysis may allow for the easy identification of dynamic capabilities within each functional area, such analysis does not explicitly consider the value of cross-functional coordination (Cao & Li, 2018:1; Tagashira & Minami, 2019:68).

Since the purpose of this study was to investigate internal SCI, and as there is a vast body of knowledge on functional strategies such as marketing and human resource strategies, only supply chain strategies were considered in this subsection.

- **Supply chain strategies (SCSes)**

Supply chain strategies (SCSes) are pivotal to the success of most contemporary organisations (Hines, 2013:35). SCSes form part of the functional-level strategies and define how the supply chain operations support the overall competitive strategy of the organisation (Chopra & Meindl, 2016:32). SCSes are defined by Ambe *et al.* (2022:31) as *"strategies that integrate all the activities within an organisation, such as procurement, operations and logistics management, as well as considerations from customers and supplier through supply chain relationships*".

The supply chain literature prescribes the ideal supply chain strategy (SCS) based on different product and organisational attributes. In the seminal work of Fisher (1997), the author suggested choosing an SCS according to the predictability of the demand of the product: cost-efficient (or lean) supply chains for products with predictable demand ('functional' products such as grocery items) and responsive (or agile) supply chains for products with unpredictable demand ('innovative' products such as fashion or technology-driven items) (Phadnis & Fine, 2017:2306). Considering the many types of supply chains, Nel (2010:68) maintained that it is to be expected that SCSes will be as varied as the disciplines from which they originated. Eicker (2016:40) added that the basic orientation of an SCS will be to either improve (or maintain a certain level of) responsiveness or cost-efficiency. Table 2.2 summarises the main characteristics of cost-efficient and responsive supply chains.

**Table 2.2: Summary of cost-efficient and responsive supply chain strategies**

| | COST-EFFICIENT (LEAN) SUPPLY CHAIN STRATEGY | RESPONSIVE (AGILE) SUPPLY CHAIN STRATEGY |
|---|---|---|
| **Primary focus** | **Efficiency:** to supply predictable demand at the lowest cost | **Effectiveness:** to have the ability to respond quickly to unpredictable demand to minimise stock-outs and obsolete inventories |
| **Main characteristics** | ▪ Cost-conscious within all areas of the supply chain | ▪ Ability to be highly flexible |
| | ▪ Focus on achieving economies of scale through efficient, streamlined operations | ▪ Adapting and adjusting sourcing, logistics, and sales in response to factors such as changes to the economic climate, technology changes, and customer demand |

| | COST-EFFICIENT (LEAN) SUPPLY CHAIN STRATEGY | RESPONSIVE (AGILE) SUPPLY CHAIN STRATEGY |
|---|---|---|
| | ▪ Cost-efficient strategies rely on forecasting to predict customer demand | ▪ Can adapt easily to unpredictable customer demand |
| | ▪ Suitable for functional and necessary consumer items such as toiletries | ▪ Suitable for innovative, fast-changing products such as fashion |
| | ▪ Reduce the risk of supply uncertainty, mainly through pooling or sharing of resources with suppliers | ▪ Reduce the risk of supply uncertainty, mainly through risk-hedging and safety inventory |
| | ▪ Serve price-sensitive customers | ▪ Serve non-price sensitive customers |
| | ▪ Build long-term relationships with customers, mainly to share knowledge | ▪ Mainly build short-term relationships with customers |
| | ▪ Focus on cost-competition | ▪ Additional capacity and/or suppliers available to enable flexibility |
| | ▪ Products characterised by long lifecycles | ▪ Products characterised by short lifecycles |
| **Identifier** | Cost and waste reduction | Adaptability |
| **Supply chain emphasis** | Economies of scale | Flexibility |

**Source: Adapted from Nel (2010) and Eicker (2016)**

In summary, Table 2.2 shows that a cost-efficient SCS is more suited to organisations with functional products in longer lifecycles and products that customers use every day, such as toiletries. Contrarily, a responsive SCS is better suited to fast-changing products, such as fashion products, which usually become obsolete once a particular style of fashion has passed.

One of the first steps in achieving SCI is reviewing and establishing a SCS because a SCS is developed based on functional-level strategies which should be geared towards supporting the overall organisational-level strategy (Wisner *et al.*, 2019:463). When considering SCSes from the perspective of SCI, the study of Qi *et al.* (2017) was considered significant. These authors quantitatively investigated the relationship between SCSes and SCI by surveying 604 Chinese manufacturers. Their findings suggested that organisations with cost-efficient SCSes are more concerned with external SCI while organisations with responsive SCSes tend to be more focused on internal SCI. The rationale is that responsive SCSes emphasise flexibility and personalisation, therefore responsive SCSes require the synchronisation of internal activities across different functions to respond to changes in the environment.

Additionally, a responsive supply chain does not encourage organisations to invest in external integration, which leads to a 'lock-in' situation for all supply chain partners and restricting of the flexibility required in responsive supply chains. The study of Qi *et al.* (2017) therefore also served as a rationale for the focus of this study on internal SCI as general retailers will most probably employ responsive SCSes, meaning internal SCI would be their first priority.

In terms of SCSes and omnichannel retailing, the literature is noticeably skewed towards responsive (or agile) SCSes (Kruh & Freedman, 2016; Phadnis & Fine, 2017; Yadav, Tripathi & Singh, 2019). For example, McKinsey and Company (2016:11) argued that omnichannel retailing requires big organisations to think and act like start-up businesses to try new ideas in a small context to see if they work. Such innovative thinking can only be supported by agile, flexible, and fast-changing supply chains. Although trade-offs among speed, stability, and resources will remain, these authors argued that finding the right balance has a considerable impact on the success of organisations in an omnichannel environment. In Mak's (2018:6) analysis of proximity (distance to customers) and how quickly operations can be adapted to meet fluctuating demand in omnichannel retail, the author provided a practical example of a responsive SCS within omnichannel retailing. Mak's (2018:6) findings highlighted that non-agile supply chains have low-density distribution facilities[16] to mitigate costs; however, for omnichannel retailing with trends such as same-day and next-day delivery options, low-density distribution areas affect retailers' ability to meet the demand of customers for speedy order fulfilment.

As alluded to in the preceding sections of this chapter, the alignment between organisational-level and functional-level strategies is crucial for achieving the overall competitive goals of the organisation. This alignment is often referred to as the strategic fit.

[16] Only a few distribution facilities are spread across the retailer's operational locations.

### *c) Strategic fit*

The alignment of both organisational-level and SCS is referred to as the 'strategic fit', or the alignment theory (Stander, 2018:104). The purpose of the strategic fit is to create an organisation's competitive advantage (Hines, 2013:45). When an organisation has established a strategic fit, it is represented by the consistency between customer priorities, which the organisational-level strategy aims to satisfy, and the supply chain capabilities, which the supply chain aims to build (Chopra & Meindl, 2016:33). Chopra and Meindl (2016:33) argued that the following aspects need to be aligned to achieve a strategic fit:

- **Coordinated strategies:** All functional- and supply chain level strategies (SCSes) must be coordinated to create the overarching organisational-level strategy.
- **The utilisation of resources and structuring of processes:** Organisational functions must design processes and utilise resources in such a way as to execute supply chain and organisational-level strategies.
- **Supply chain design:** The design of the overall supply chain and the role of each function and process should be aligned to support the SCSes.

Many authors underscored the importance of the relationship between SCI and the strategic fit and investigated this relationship from various perspectives (Fisher, 1997:116; Frohlich & Westbrook, 2001:185; Ambe, 2012:136; Sweeney, 2012:7; Hines, 2013:33; Sabet, Yazdani & De Leeuw, 2017:29; Turkulainen *et al.*, 2017:294; Sillanpää, 2019:37). Rana *et al.* (2015:67) stated that many organisations adopt SCSes to manage the integration of all supply chain activities to achieve a competitive advantage. The following example illustrates the importance of SCI and the strategic fit. When a cross-functional team negotiates contract terms with a new supplier, each team member may have an agenda motivated by their own functional objectives. The representative from the finance function could, for example, take a competitive approach to price negotiations. In doing so, should this team member be successful, the finance function would achieve their departmental objectives and outcomes of saving costs. However, when considering the same negotiation from the perspective

of the purchasing function, the competitive approach of the finance function may damage the ability of the purchasing function to develop a strategic relationship with a new supplier who could offer other benefits to the organisation (e.g., relationships with the supplier's extended network). Before integration takes place, clear overarching outcomes should be developed which are not only 'right' (beneficial) for all functions involved but are also 'right' for the specific process, as well as 'right' and aligned with the organisational-level strategy. Consequently, determining the 'right outcomes' for the 'right processes' should be driven by a clear mission and vision of what the organisation aims to achieve, aligned with the organisation and SCSes (Eicker, 2016:25).

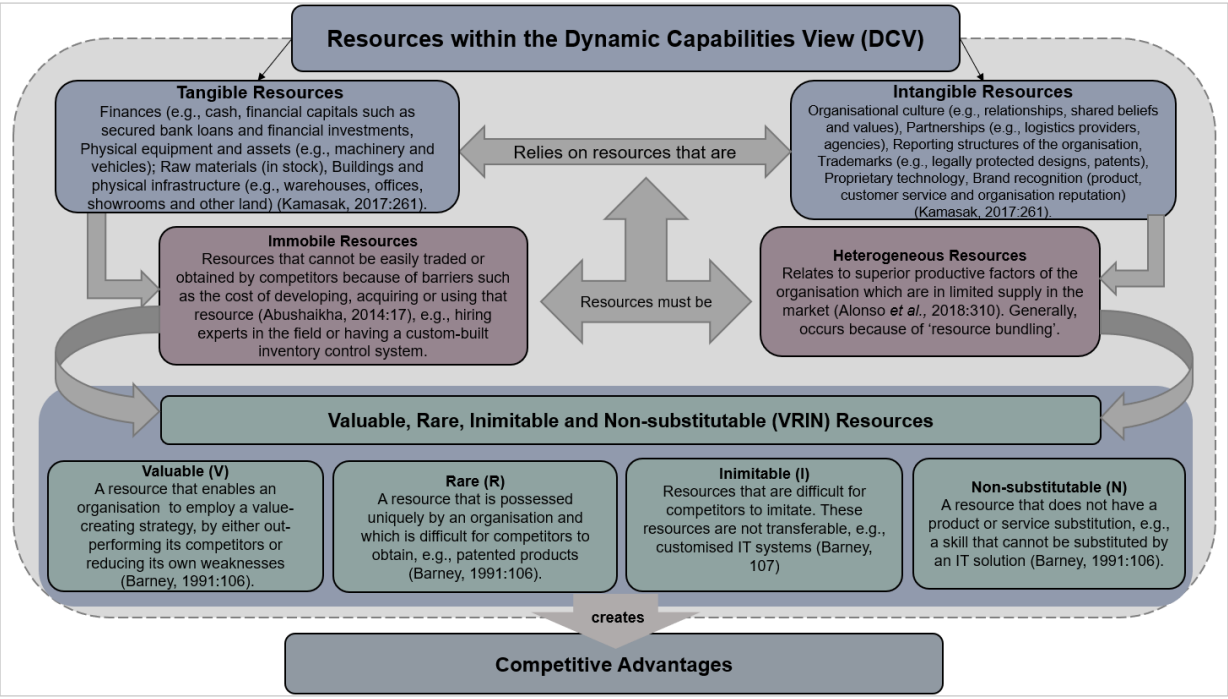
The above discussion establishes grounds for accepting SCSes and organisational-level strategy as the foundation of SCI initiatives. Accordingly, this study did not aim to determine whether there is a relationship between the strategic fit and SCI but instead aimed to determine (as part of the empirical analysis) what role strategy plays in developing dynamic omnichannel SCI capabilities.

At the start of this chapter, the research of Teece (2018a) were presented and identified the three foundational elements of the DCV as strategy, resources, and capabilities. The second foundational element, *resources,* is discussed next.

### 2.3.2 Resources

Resources enable organisations to differentiate themselves from competitors by developing a strategy geared towards effectively utilising organisational resources. Gellweiler (2018:8) explained that resources are not only physical objects used for production (e.g. plant, equipment, raw materials) but also include people with various skills employed by the organisation. Figure 2.5 summarises the main elements of resources within the DCV, followed by a discussion on these elements.

**Figure 2.5: Resources and the dynamic capabilities view**




**Source: Researcher's own compilation**

The DCV distinguishes between *tangible* and *intangible* resources, as evident in Figure 2.5. *Tangible resources* include finances, physical equipment, assets, raw materials, as well as buildings and infrastructure (Kamasak, 2017:261). *Intangible resources* include organisational culture, partnerships, reporting structures, proprietary technology, as well as brand recognition (Gellweiler, 2018:5). Previous researchers found that intangible resources contribute more to a sustained competitive advantage than tangible resources (Abushaikha, 2014:271; Kamasak, 2017:270), mainly because tangible resources can be more easily imitated or substituted by competitors than intangible resources. For example, securing a loan from a bank (tangible resource) is generally easier than developing an organisation's culture (intangible resource). Figure 2.5 offers more examples of tangible and intangible resources.

Figure 2.5 illustrates that resources must be *immobile* and *heterogeneous* for organisations to achieve a sustained competitive advantage. *Immobility* of resources relates to these resources being tailored to organisation-specific needs and customised to a specific transaction or relationship and are considered immobile because of the high transaction costs associated with acquiring these resources

(Abushaikha, 2014:17). Additionally, resources with immobility have no substitutes outside the organisation, therefore this characteristic gives the organisation a competitive advantage (Gellweiler, 2018:5). An example of immobility would be an organisation's customised inventory management system. *Heterogeneity* of an organisation's resources relates to the resource non-uniformity, i.e., the uniqueness of an organisation's resources (Kraaijenbrink *et al.,* 2010:350). Resource heterogeneity is achieved by reconfiguring and 'bundling' an organisation's internal resources (Perdana *et al.,* 2019:192; Yuen *et al.,* 2019:654). Fawcett, Wallin and Allred (2011:40) provide an example of resource heterogeneity through resource bundling by explaining that, when an organisation uses data from different functions in an organisation (e.g. resources are bundled) to synchronise decision-making across the supply chain, each function can be assigned to proper roles and responsibilities to optimise value creation, which in turn strengthens the organisation's competitive position.

Figure 2.5 also illustrates that, when tangible and intangible organisational resources are immobile and heterogeneous, these resources will also be valuable, rare, inimitable, and non-substitutable (VRIN) (El Gizawi, 2014:1; Barbero *et al.*, 2017:603; Kamasak, 2017:254). In Figure 2.2 (Teece's original DCV framework), it is noticeable that DCV relies on these vital resource attributes because they contribute towards building an organisation's competitive position.

#### *2.3.2.1 VRIN resources*

The VRIN framework, developed by Barney (1991), states that only resources meeting the four attributes identified in the VRIN framework can achieve a sustained competitive advantage for an organisation. According to Barney (1991:106), VRIN resources can be *"thought of as an empirical indicator of how heterogeneous and immobile an organisation's resources are and thus how useful these resources are for generating a sustained competitive advantage".* The VRIN framework forms the foundation for the argument that a sustainable competitive advantage can be obtained internally through organisational resources (El Gizawi, 2014:1; Barbero *et al.*, 2017:603; Kamasak, 2017:254).

Resources with VRIN attributes can be described as follows: a *valuable* (V*)* resource enables an organisation to employ a value-creating strategy by either outperforming its competitors or reducing its own weaknesses (Carpenter & Sanders, 2009:103). To be regarded as valuable, a resource must either increase efficiency regarding outputs or inputs or increase the organisation's revenue (Venter, 2015:123). Often, valuable resources are considered 'table stakes' (necessary to compete within a specific market). If an organisation possesses a valuable resource that is also *rare* (R) within the market, such resource can create a competitive advantage for the organisation, for example patented products or technology (Venter, 2015:123). Valuable and rare attributes can be a source of competitive advantage only if competitors cannot obtain or replicate the resource (Oseku, 2015:7). With an *inimitable* (I) resource, imitation becomes difficult for competitors because they are unable to identify, discern, or observe the resource. Examples of inimitable organisational resources include knowledge of the organisation and the trust relationship between stakeholders (Abushaikha, 2014:17; Venter, 2015:123). Resources should also be *non-substitutable* (N), meaning only a few, if any, resources exist that are strategically equivalent (Collis & Anand, 2019:5).

Not all organisational resources will possess VRIN attributes, therefore several authors attempted to extend the VRIN framework, such as Carpenter and Sanders (2009:103) who included an (E) for *exploitable*, thus leading to VRINE. These authors stated that merely possessing VRIN resources is not enough to sustain a competitive advantage since an organisation also needs to be able to exploit the VRIN resources by having the ability to get value out of any resource or capability that the organisation generates. Similarly, Venter (2015:131) posited that VRIN resources should enable the organisation to address market segments that are *large* (L) enough. Other authors stated that these four criteria are not mutually exclusive. Some VRIN attributes, for example, may need significant capital investment to secure VRIN attributes (Cardeal, 2012:10164). Based on the critiques of the RBV, and particularly considering the current competitive environment of rapid and unpredictable changes, the emphasis on unique organisational resources has shifted towards an organisation's capabilities (Louw & Venter, 2013:23).

### 2.3.3 Capabilities

Capabilities relate to an organisation's capacity to deploy resources to create a competitive advantage within a specific industry (Barbero *et al.,* 2017:595). Consequently, capabilities are widely seen as the 'building blocks' or 'glue' of an organisation's ability to adapt to change (Qaiyum & Wang, 2018:207; Schwarz *et al.*, 2019:2). Capabilities cannot be bought off the shelf (Dalkir, 2017:243) since they are inherent to an organisation and must be developed within an organisation. Capabilities comprise the organisation's value and are not transferable to other organisations, for example experience is not transferable from one human resource to another (Gellweiler, 2018:9). This attribute of capabilities makes them extremely valuable for organisations.

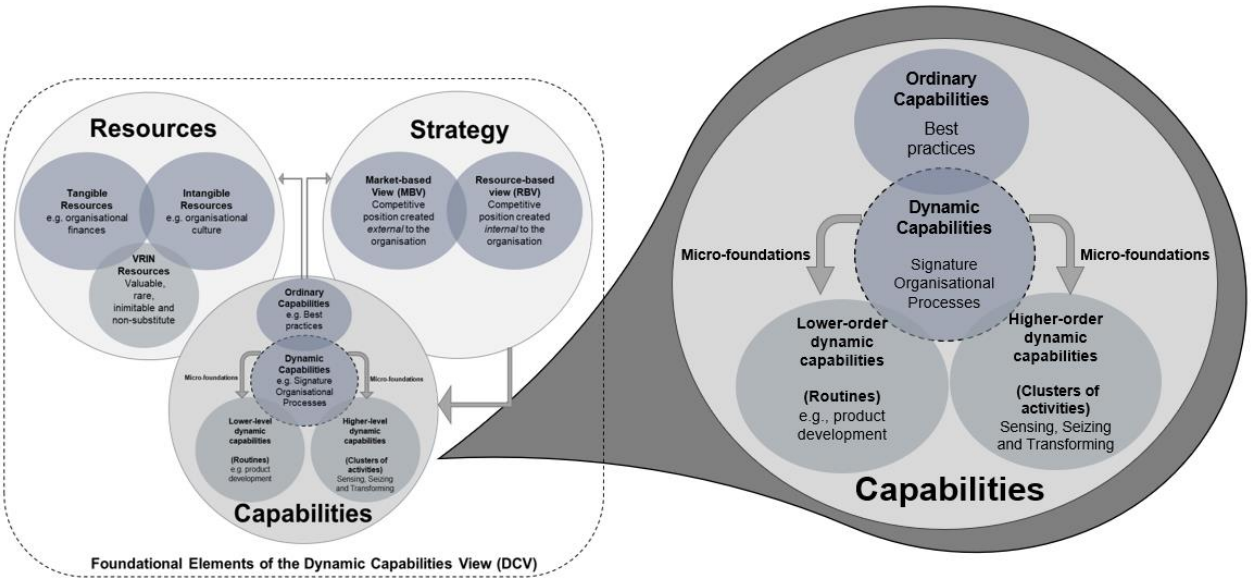
Felin *et al.* (2012:1355) described a capability as a high-level routine (or collection of routines) that determines how effectively and efficiently the inputs in the organisation are transformed into outputs. Routines are described as *"repetitive, recognisable patterns of interdependent actions, carried out by multiple actors"* (Deken *et al.,* 2016:660). As such, routines are explicitly collective rather than individual-level phenomena that emphasise interactions rather than the individuals who are interacting (Felin *et al.,* 2012:1355). Capabilities themselves are associated with putting resources (and other inputs) into action. From this perspective, capabilities imply an action (verb), which means that an organisation 'performs' capabilities (Wójcik, 2015:88). Ehlers and Lazenby (2019:116) explained that the foundation of many capabilities lies in the skills and knowledge of employees and their functional expertise, that the essence of capabilities is the human capital of the organisation. While employees are working, combining tangible and intangible resources within the structure of organisational processes, these employees accumulate knowledge and expertise related to the creation of value from resources. This knowledge allows organisations to turn resources and skills into possible distinctive organisational capabilities (dynamic capabilities).

Typical examples of capabilities are tasks and processes within the fields of primary or support activities of Porter's generic value chain. Thus, capabilities are often

classified according to the functional areas of the organisation (Qaiyum & Wang, 2018:207), namely the effective empowerment skills in the human resource department, effective customer management skills in the marketing department, or the ability to envisage the future as a general management capability. The difference between resources (refer to Section 2.3.2) and capabilities is that resources can generally be transferred via markets for human resources or physical objects (Gellweiler, 2018:9) (e.g. skilled employees, providing required experience and knowledge, can be contracted on labour markets or intellectual property rights can be gained through licensing if traded on markets) whereas capabilities cannot be bought off a shelf but have to be cultivated, as evident from the examples of capabilities previously mentioned (Mrutzek *et al.*, 2019:2).

Capabilities and their many layers serve as the final foundational element of Teece's DCV framework. To guide the reader through the discussion of capabilities within the DCV, Figure 2.6, an adapted version of Figure 2.2, is provided to serve as a reminder of the key components of capabilities.

**Figure 2.6: Foundational elements of the DCV - Capabilities**




**Source: Researcher's own compilation**

Teece (2018a) distinguished between two types of capabilities: *ordinary* and *dynamic* capabilities, termed the 'nested capability hierarchy'. The core of the DCV is the nested capability hierarchy, which is a system of nested elements and activities.

#### *2.3.3.1 The nested capability hierarchy: Ordinary and dynamic capabilities*

Central to the DCV is the nested capability hierarchy, according to which capabilities are subdivided into *ordinary capabilities* and *dynamic capabilities* (Wu, 2017; Qaiyum & Wang, 2018; Teece, 2018b). The main difference between ordinary and dynamic capabilities is that ordinary capabilities exploit the organisation's current strategic assets and existing resources to ensure continuity of the organisation's day-to-day operations while dynamic capabilities are required to alter an organisation's resource base by integrating, building, and reconfiguring competencies to respond or adapt to changes in the market (Takahashi *et al.*, 2017:242; Wu, 2017:29; Kay, Leih & Teece, 2018:625; Qaiyum & Wang, 2018:205).

Qaiyum and Wang (2018:207) provided the following comparative examples of ordinary and dynamic capabilities: an ordinary technological capability refers to an organisation's ability to leverage current technologies while a dynamic technological capability refers to an organisations ability to identify and adopt new technologies. Similarly, an ordinary marketing capability refers to an organisation's ability to serve existing markets while a dynamic marketing capability entails an organisation's ability to detect and enter previously unserved markets. Although these examples seem to draw a clear distinction between dynamic and ordinary capabilities, Laaksonen and Peltoniemi (2018:186) warn that, since ordinary and dynamic capabilities are locally defined (within a specific organisation or context), the line between these capabilities is 'unavoidably blurry' and capabilities may have both ordinary and dynamic purposes.

Both ordinary and dynamic capabilities hold distinct value for an organisation within different capacities. These differences are explored in the below discussion.

### *a) Ordinary capabilities*

*Ordinary capabilities* (also referred to as 'zero-order', 'zero-level', 'static', or 'operational' capabilities) consist of the processes that deploy people, facilities, and equipment (existing resource base) to carry out the day-to-day operations of the organisation (Plattfaut, 2014:25; Wójcik, 2015:96; Qaiyum & Wang, 2018:212). Teece (2018a:364) argued that management's approach to ordinary capabilities can have systemic effects because the relentless pursuit of efficiency in operational tasks reduces an organisation's capacity to create change. Therefore, the reason to maintain ordinary capabilities is that maintaining peak efficiency is easier when tasks remain fixed.

Ordinary capabilities are often classified as the organisation's standard operating procedures or best practices (Peteraf *et al.,* 2013:1395; Kay *et al.,* 2018:625; Rialti *et al.*, 2019:2056). Qaiyum and Wang (2018:206) argued that ordinary capabilities hold the most value within stable environments since ordinary capabilities serve as the minimum (or zero-level) capability for competitiveness. Additionally, ordinary capabilities lend themselves to being measured and benchmarked, which allows these capabilities to be easily replicated by an organisation's competitors. Takahashi *et al.* (2017:242) maintained that ordinary capabilities may be perceived as a means to operationalise best practices for an organisation. However, according to Arndt and Pierce (2017), the concept of best practices is insufficient to explain, in the face of innovation and change, how organisations can ensure current standard operating procedures or best practices do not represent the best practice of yesterday.

Ehlers and Lazenby (2019:117) debated that, because organisations are faced with dynamic and complex environments, the capabilities required to lead an organisation to a competitive position in the future may need continuous change. Unfortunately, ordinary capabilities are insufficient to address and respond to the turbulent (or VUCA[17]) business environments (Qaiyum & Wang, 2018:207). Herein lies the value of dynamic capabilities since dynamic capabilities relate to the organisation's ability to

[17] See discussion on VUCA in Section 2.3.1.1 (a).

restructure ordinary capabilities to address rapidly changing business environments (Pavlou & Sawy, 2011:239; Pandit *et al.*, 2018:327; Kareem & Alameer, 2019:402).

### *b) Dynamic capabilities*

*Dynamic capabilities* are the antecedent organisational and strategic routines (or processes) by which managers alter the resource base, acquire and shed resources, integrate them together, and recombine them to generate new value-creating strategies. As such, dynamic capabilities are the drivers behind the creation, evolution, and recombination of other resources into new sources of competitive advantages (Teece *et al.,* 1997). Dynamic capabilities are geared towards effecting and driving organisational change and are strategic in nature (El Gizawi, 2014:5; Plattfaut, 2014:5; Kay *et al.,* 2018:625).

Teece (2018c:43) stated that dynamic capabilities enable an organisation to upgrade its ordinary capabilities and direct these 'new' dynamic capabilities to high-payoff endeavours. The strength of an organisation's dynamic capabilities determines the speed and degree (and associated cost) of aligning the organisation's resources with customer needs. To achieve this, organisations must be able to continuously sense and seize opportunities and periodically transform aspects of the organisation and culture to proactively reposition the organisation to address new threats[18] and opportunities as they arise.

As illustrated in Figure 2.6, the nested capability hierarchy distinguishes between two 'micro-foundations' of dynamic capabilities, namely *lower-* and *higher-order dynamic capabilities*. Felin *et al.* (2012:1356) stated that two key questions need to be considered with regards to micro-foundations and dynamic capabilities. First, how do capabilities emerge from micro-foundations? Second, how are capabilities changed (for example, by managerial intervention, employee turnover, or knowledge transfer) or maintained (for example, incentives and monitoring)? The section below aims to address these questions.

[18] Literature on dynamic capabilities categorise environmental change as opportunities and/or threats (Teece, 2018a:363; Enders, 2019:50; Mikalef *et al.,* 2020:4)

- **Lower-order dynamic capabilities (LODCs)**

*Lower-order dynamic capabilities* (LODCs) refer to organisational processes (or routines) such as forming external partnerships with a supplier or developing new products. Teece (2018a:364) argued that the main difference between ordinary capabilities and LODCs is that the routines associated with LODCs are employed less often than the routines of ordinary capabilities. Collis and Anand (2019:11) explained that the difference between ordinary capabilities and lower- and higher-order dynamic capabilities is the relative ease with which competitors can imitate such a capability. Felin *et al.* (2012:1356) added that a distinction between lower- and higher-order dynamic capabilities is often made based on the flexibility or rigidity of the capability.

Rigid routines such as LODCs consist of sequences of actions that must be carried out in a specific manner. These routines draw on previously accumulated knowledge, maximising solutions to coordination tasks or problems. For example, organisations who have to execute activities in a highly consistent manner (such as hospitals) or who require efficient replication of specific processes across multiple units (such as franchises in fast-food restaurants) often leverage rigid routines. On the other hand, higher-order dynamic capabilities (HODCs) are purposively more flexible than rigid, allowing for substantial managerial discretion in the execution.

- **Higher-order dynamic capabilities (HODCs)**

*Higher-order dynamic capabilities* (HODCs) refer to the proficiency of an organisation to sense and seize opportunities in the organisation's competitive external environment (opportunity discovery) by rapidly reconfiguring and coordinating (transforming) the organisation's capabilities and resources (Keinz *et al.*, 2018:1109; Bitencourt *et al.,* 2020:117; Kurtmollaiev, 2020:7; Mikalef *et al.,* 2020:3). An organisation's proficiency in developing HODCs is largely determined by certain strategic decisions, for example investments in organisational learning (Winter, 2003:994) and the organisation's knowledge management processes (consisting of knowledge acquisition and knowledge application) (Kaur & Mehta, 2016:42). Kaur and Mehta (2016:42) argued that the possession of organisational knowledge facilitates

the reconfiguration of an organisation's resource base; therefore, knowledge serves as a pre-eminent resource for building various other capabilities.

Collis (1994:149) defined HODCs *as "capabilities that allow organisations to overcome the path dependence that led to the inimitability of the lower-order capabilities".* Path dependence explains how the historical accumulation of past decisions tends to delimit future decisions (Suddaby *et al.,* 2020:533). Collis (1994:194) clarified that, even though LODCs are often observable, they still might not be easily copied because they require accumulated organisational learning. Although it may be impossible to copy how a competitor develops a product, a process, or a service, in principle nothing prevents an organisation from developing a better or alternative way to gain the valuable capability. Eisenhardt and Martin (2000:1114) argued that path dependence can more accurately be described in terms of learning mechanisms that guide the evolution of dynamic capabilities. For example, practice is an important learning mechanism for developing dynamic capabilities. Practice helps organisations to fully understand processes and develop more effective ways of organising processes. Therefore, any organisational capability could be superseded by an HODC that eliminates path dependence through learning mechanisms.

Bitencourt *et al.* (2020:117) aimed to identify and test the main antecedents of dynamic capabilities. The authors found that HODCs come to fruition due to organisational learning. In addition, these authors found that knowledge management and learning are key elements in creating and renewing dynamic capabilities based on *sensing, seizing,* and *transforming*, which positively impacts organisational performance. As such, the development of HODCs is subdivided into these three clusters of activities (Barbero *et al.,* 2017; Keinz *et al.,* 2018; Teece, 2018; Alinaghian *et al.,* 2020). As stated in Chapter 1, it should be underscored that, although a brief discussion of the nested capability hierarchy and the clusters of dynamic capabilities are presented in this chapter, it fell beyond the scope of this study to classify the identified dynamic capabilities within these domains. However, since these classifications are central to the DCV, a discussion on these factors is warranted.

- *HODCs: Clusters of activities*

At the core of staying competitive within a dynamic environment is an organisation's ability to identify opportunities (Khan, Daddi & Iraldo, 2020:1480). Teece (2007:1323) stated that opportunity discovery can originate primarily from two sources: the cognitive and creative capabilities of an individual (or individuals) and learning from organisational processes such as research and development activities within the organisation. Opportunity creation and/or discovery by individuals requires both access to information and the ability to recognise, sense, and shape developments. To provide structure to the literature on the DCV, Teece (2007:1323) developed the three clusters of activities associated with strategic organisational change:

i. **Sensing** involves analytical systems of scanning, learning, and interpretating activities across markets and technologies to identify possible expansion opportunities (Conboy *et al.*, 2020:657). Enders (2019:45) explained that sensing allows organisations to make sense of the changes in the environment by gathering and interpreting relevant information (Barbero *et al.,* 2017:596) such as customer needs and latent demands, the characteristics of markets, as well as supplier and competitor competencies (Khan *et al.,* 2020:1480). Enders (2019:47) maintained that the ability to identify new opportunities means having the ability to determine if an opportunity exists, which is achieved by analysing information about opportunities. To do this, external information sources must be investigated, and the output needs to be effectively analysed. As such, the process of sensing brings disorganised information and unstructured external data into the internal organisational system (Teece, 2018:364).

   Suddaby *et al.* (2020:535) claimed that a HODC to sense opportunities from external data goes beyond the typical employment of organisational memory systems or performance data. Instead, organisations need to develop a high degree of historical depth and breadth of a situation (or opportunity), which is achieved through an individual manager's ability to sense an opportunity by capturing subtle shifts in the market environment. Three progressive steps encompass an individual sense-making activity: scanning, learning, and

interpretation (Enders, 2019:47; Khan *et al.,* 2020:1480). These steps are identical to the steps of information processing (Zsidisin *et al.*, 2015:551).

Torres *et al.* (2018:824) argued that, while sensing is a necessary step to adapt to changing market conditions, if isolated it is not sufficient to facilitate organisational change because identified opportunities and threats must be seized by organisations through the building of consensus among stakeholders, effective decision-making, and investing in organisational resources.

ii. **Seizing** is described by Teece (2007:1326) as *"…maintaining and improving technological competencies and complementary assets and then, when the opportunity is ripe, investing heavily in the particular technologies and designs most likely to achieve marketplace acceptance".* Therefore, sensing (an antecedent to seizing) capabilities determines how quickly the internal organisation can respond to opportunities and threats through strategic investment and timing decisions (Olovsson & Lundstrom, 2010:22). Once sensing has taken place, leadership must identify and mobilise financial and human resources (Suddaby *et al.,* 2020:539) and organisational infrastructure to align to identified opportunities (Barbero *et al.,* 2017:598). To seize opportunities effectively, management must have the ability to make sound investment decisions, create suitable business models, improve technological competencies, maintain assets, and motivate employees (Khan *et al.,* 2020:1480). Furnival *et al.* (2019:828) specified that seizing relates to the decision-making processes within an organisation to (dis)assemble capabilities in response to and anticipation of opportunities identified. As such, seizing does not imply the actions that might directly lead to change and reconfiguration but instead to internal decision-making.

In one of Teece's latest publications (Teece, Raspin & Cox, 2020:30), the author subdivided seizing into two categories, namely *organise* and *value capture*. Organise, within this context, is described as the leaders' ability to build flexible structures and processes that enable the organisation to innovate and embrace change. An essential aspect of organising is an organisation's ability

to fill competency gaps that arise when entering a new market or revamping its operating model. The authors further argued that value capturing requires leaders to execute strategic priorities by orchestrating the organisations' tangible and intangible assets, including capital, strategic partnerships, and intellectual property. Value capture also entails a retailer's ability to determine which activities can safely be outsourced and which must be retained in-house because they are critical to an organisation's product roadmap or value delivery system. To achieve value capture, management must define clear priorities and objectives along with metrics to gauge the progress of change initiatives. After an organisation has decided on and detailed different opportunities, the next step is to reconfigure resources and competencies in response to these organisational decisions (Torres *et al.,* 2018:825).

iii. **Transforming** entails creating, renewing, or reconfiguring the organisation's ordinary capabilities in response to organisational decisions regarding how they aim to seize new opportunities (Torres *et al.,* 2018:825). Collis and Anand (2019:11) stated that, of the three clusters of activities, transformation is the most valuable and challenging to build because it requires the metaprocess of resource orchestration to build, deploy, and reconfigure resources. Part of the transformation process is keeping internal organisational system elements aligned with one another and with the organisational-level strategy.

Transforming capabilities are most critical when a new business model involves a significant change to the organisation's design or conflicts with an existing business model, for example when an established organisation adopts a digital business model that risks the cannibalising of existing sales (Teece, 2018:364).

Teece (2018c:41) argued that, since dynamic capabilities are multifaceted, organisations will not necessarily be strong across all three activities. However, the combination of sensing, seizing, and transforming capabilities may ensure the efficiency, cost-effectiveness, and state-of-the-art existing resource base necessary for competing in established markets (Kurtmollaiev, 2020:11).

As discussed in Section 2.3.1, the DCV is critiqued by authors from a range of different perspectives. In the following section, these critiques are addressed.

## 2.4 CRITIQUES OF THE DYNAMIC CAPABILITIES VIEW (DCV)

In the preceding section, the main components of the DCV were discussed. However, since the DCV is still in its infancy (Takahashi *et al.,* 2017:274), criticism based on its application and theoretical grounding has developed in literature. Kraaijenbrink *et al.* (2010:350) argued that critiques are valuable for advancing theory in its developing stages because investigations into the limitations of the theory allow for a deeper understanding of the fundamentals of the theory.

### 2.4.1 Lack of clarity and consistency

Helfat and Peteraf (2009:92) argued that the DCV has had little time to develop fully, considering its rise in popularity. Consequently, the theory is still *'rough around the edges'*. In particular, the use of key terms and concepts are *'vague and elastic'*, which might have enabled a flexible development path but have consequently led to a lack of clarity and several inconsistencies in the foundational elements of the DCV (Di Stefano *et al.,* 2014:309). As discussed in Section 2.2.1, the lack of clarity is rooted in the contrasting perspectives of the two seminal papers on the DCV (Helfat & Peteraf 2009; Peteraf *et al.,* 2013; Di Stefano *et al.,* 2014; Burisch & Wohlgemuth, 2016; Harris & Helfat, 2016; Enders 2019). The contrasting views regarding these papers were discussed at length in Section 2.2.1. To avoid repetition, their perspectives on the DCV will not be discussed again here. Although the opposing views of Teece *et al*. (1997) and Eisenhardt and Martin (2000) may be the root of inconsistencies related to DCV in literature, Helfat and Peteraf (2009:92) argued that *"theories that make sense of complexity do not come neatly pre-packaged"* and it would, therefore, be ill-suited of management research to expect the DCV to have clear boundaries.

Apart from the critiques on a lack of clarity and consistency of literature on the DCV, authors also cited weak empirical support and unresolved measurement issues as a critique of the DCV.

### 2.4.2 Lack of empirical measures and tools of DCV

In the above discussion (and Section 2.2.1), the different interpretations of the DCV were highlighted. However, Oseku (2015:15) debated that the concept itself was somewhat tricky to delimitate since no clearcut description was accepted. As a result, many authors struggled to demarcate the DCV and develop measurement tools to accurately measure and operationalise dynamic capabilities (Laaksonen & Peltoniemi, 2018:184). Considering the lack of clarity and consistency within the DCV, it is clear why empirical measurement issues are one of the critiques of the DCV. Multiple interpretations of the DCV exist, with authors even disagreeing on its ultimate aim or purpose. As a result, some authors critiqued the DCV as supported only by weak empirical findings and undefined measurement tools.

Several authors yielded to the call of critics and developed two 'yardsticks' that can be used to measure dynamic capabilities: *technical* and *evolutionary fitness* (Teece, 2007; Helfat & Peteraf, 2009; Pavlou & Sawy, 2011; McKnight, 2012; El Gizawi, 2014; Oseku, 2015; Kay *et al.,* 2018). According to McKnight (2012:106), the concept of fitness addresses the critique that not all dynamic capabilities are or can be created equal. Therefore, scholars use the concept of 'fitness' to capture differences between HODCs and LODCs. *Technical fitness* was described by Teece (2007:1321) as how effectively a capability performs its intended function and is mainly associated with ordinary capabilities and best practices (Kay *et al.,* 2018:625). According to McKnight (2012:104), dynamic capabilities with greater technical fitness enable an organisation to respond to disturbances at less cost.

*Evolutionary fitness* relates to how well a dynamic capability enables an organisation to survive and grow in changing environments by creating, extending, or modifying its resource base (Helfat & Peteraf, 2009:98). In layperson's terms, evolutionary fitness describes how well the capability enables an organisation to sustain itself competitively (El Gizawi, 2014:5). Evolutionary fitness is analysed by investigating the four main components of a dynamic capability: *quality, cost, market demand,* and *competition* (Oseku, 2015:15). Kay *et al.* (2018:625) argued that dynamic capabilities require

organisations to go beyond technical fitness, which is considered the preserve of ordinary capabilities instead of dynamic capabilities aimed at evolutionary fitness.

Also noteworthy in terms of the measurement of the DCV is the study of Laaksonen and Peltoniemi (2018), who conducted a literature analysis on 144 published research articles with a specific focus on determining how dynamic capabilities are measured. The authors found four measurement types for dynamic capabilities:

- **Managers' evaluations:** Such a test includes Likert-scale items with statements such as "*We generally respond very quickly to technological changes in the environment".* Identified dynamic capabilities are based on managers' views and evaluations concerning how well the organisation performs on particular tasks, either relative to competitors or in an absolute sense. The drawback of these empirical studies is that managers' answers cannot be verified from other sources as the information does not exist outside the managers' thoughts and intentions.
- **Financial data:** These studies identified dynamic capabilities by studying numerical data found in the organisation's account books, profit and loss statements, or balance sheets (e.g., R&D expenditure, current assets, marketing expenditure, and sales distribution over product markets). However, these capabilities are only valid at the time of data capture or the issued date of the report.
- **The organisation's experience, actions, and performance:** These studies identified dynamic capabilities based on experience, actions, and organisational performance. Experience, for example, is measured in the number of years operating within a specific geographic market or country. Dynamic capabilities are identified by studying organisational acquisitions, alliances, entry to the market, entry timing to a new market, market exit, product launches, flexible HR practices, hiring employees to explore new markets, and organisational innovation. Performance measures include patents, product awards, technological sophistication, market shares, and manufacturing cycle time.

- **Managers' or employees' experiences, actions, and performances:** These studies identified dynamic capabilities through managers' or employees' experiences, actions, and performances. They build variables related to an organisation's human and social capital (for example, leadership's ability to identify new opportunities).

Although the above discussion indicates that strides have been made in developing empirical measures for evaluating the DCV, Laaksonen and Peltoniemi's (2018:186) argument in this regard is noteworthy. These authors maintained that many studies aim to empirically (though unsuccessfully) test the impact of dynamic capabilities on organisational performance. However, such testing is erroneous as dynamic capabilities cannot explain performance but rather *changes* in performance. The authors explained that superior dynamic capabilities may not lead to superior performance if the operational capabilities are considerably under par. For example, an organisation's capabilities may be exceptional in an absolute sense (e.g., the speed and efficiency of product sourcing) but not be appropriate in the market environment (e.g., failure to offer an omnichannel shopping experience).

Throughout this study, the researcher remained cognisant of these critiques and avoided the pitfalls of applying the DCV as suggested by other authors. Additionally, in this study, the researcher followed the more recent applications of the DCV (Teece, 2018a, Teece *et al.,* 2020), which evolved to address these critiques.

## 2.5 CHAPTER CONCLUSION

In unpredictable environments where new technologies and/or new markets emerge endlessly, the value of resources and capabilities can change, which in turn necessitates organisations to determine new ways of adapting to change. The DCV is a management theory that emphasises the need of an organisation to transform (integrate, build, and reconfigure) resources into dynamic capabilities to be able to compete in these unpredictable environments. At the start of this chapter, it was established that management theories, such as the DCV, can assist organisations, practitioners, and researchers to navigate changes in the market environment. In

particular, management theories allow researchers to create clear boundaries for research studies, which ultimately allow the researchers to designate the theoretical contribution of their studies. This study aimed to develop a conceptual framework of dynamic capabilities that promote the internal SCI of omnichannel retailers. To achieve this objective, several secondary research objectives (SRO) were addressed first. This chapter aimed to answer SRO1 – to explore the DCV from an internal omnichannel supply chain perspective.

To attain SRO1, this chapter provided an in-depth discussion on the DCV, which serves as the theoretical lens for this study. First, it was established that the DCV forms part of an internal organisational system comprising of the organisation's strategy, resources, and capabilities. The discussion on the DCV started by highlighting some bifurcations in literature and clarifying the stance of this study regarding these bifurcations. Next, the three foundational elements of the DCV were discussed individually. It was determined that strategy informs the development of dynamic capabilities. Organisations can develop a competitive position (strategy) by focusing on internal resources and strengths (as presented by the RBV from which the DCV originates). The discussion on strategy within the DCV also considered strategic fit (the alignment of organisational-level strategies and functional-level strategies). Thereafter, resources were discussed. The argument regarding resources within the DCV centred on VRIN (valuable, rare, inimitable, and non-substitutable) resources considered fundamental to the DCV. The main elements of resources within the DCV were illustrated in Figure 2.5, where the action of dynamic capabilities was described as the recombination and reconfiguration of existing resources and capabilities. Hence, by modifying existing resources, new dynamic capabilities can be developed.

After both strategy and resources were discussed and contextualised within the DCV, capabilities were addressed. It was determined that capabilities within the DCV framework comprise the 'nested capabilities hierarchy', including ordinary and dynamic capabilities. Dynamic capabilities include LODCs and HODCs, discussed in Section 2.3.3.1(a) and Section 2.3.3.1(b).

Finally, this chapter concluded with a discussion of the main critiques against the DCV. As explained in Chapter 1, Section 1.6.2, the purpose of the literature review was twofold. It allowed the researcher to gain a comprehensive understanding of the issues pertinent to this study and the researcher was able to identify dynamic capabilities that facilitate internal SCI in omnichannel retailers. These capabilities were added to the coding frame (Annexure A) and used to analyse the integrated annual reports (IARs) of retailers for evidence of these capabilities. Findings from this analysis were then triangulated with the findings of the empirical data (interviews) to rebuke/support and elaborate on the identified capabilities as part of achieving the primary purpose of this study, *to develop a conceptual framework of dynamic capabilities that facilitates the internal supply chain integration (SCI) of omnichannel retailers.* In line with this process, the concepts of '**dynamic capabilities'** and '**adaptability**' were added to the coding frame. Table 2.3 provides definitions of these terms, compiled based on the findings of this chapter.

**Table 2.3: List of dynamic capabilities developed from Chapter 2 and included in the coding frame**

| DC CODING | DEFINITION |
|---|---|
| **Dynamic capabilities** | Dynamic capabilities are the antecedent organisational and strategic routines (or processes) by which managers alter the resource base, acquire and shed resources, integrate them together, and recombine them to generate new value-creating strategies. As such, dynamic capabilities are the drivers behind the creation, evolution, and recombination of other resources into new sources of competitive advantage. Dynamic capabilities are geared towards effecting and driving organisational change and are strategic in nature. The foundational elements of dynamic capabilities include strategy, resources, and capabilities. |
| **Adaptability** | Adaptability signals the ability of a retailer to exploit existing or new opportunities in response to changing environments or changes in the market, such as advances in technology or changing customer needs. |

In the next two chapters (Chapter 3 and Chapter 4), supply chain integration (SCI) is discussed by considering the foundational elements of SCI. This discussion also distinguishes between internal and external SCI.

# CHAPTER 3
# INTRODUCTION TO SUPPLY CHAIN INTEGRATION

## 3.1 CHAPTER INTRODUCTION

Ever-changing and disruptive market dynamics, market developments, technological advancements, and increasing competitiveness require organisations to rethink their traditional modus operandi (Tiwari, 2021:990). Kammerer *et al.* (2018:1) claimed that behind this pervasive disruption is the unsung superhero, the supply chain, which is called upon to bend and agilely adjust to keep up with the ever-changing environment. Superior supply chain capabilities are vital in modern retail and are even described as a *"strategic weapon for improving the organisation's productivity"* (Christiansen, 2016:228). Naturally, organisations with these capabilities are praised for their ability to fulfil customers' current demands as well as to innovate for future demands at incredible speed (agility) and flexibility (Shukor *et al.*, 2021:1741). Effective supply chain management (SCM) is required to build superior supply chain capabilities. Due to the rate of change in modern business environments, SCM necessitates high levels of integration amongst internal organisational functions, customers, and suppliers (Tiwari, 2021:990).

In Chapter 1, supply chain integration (SCI) was defined as *"the scope and strength of linkages of supply chain processes across organisations. These linkages are facilitated by information, operational, and relational integration. SCI can be an effective behavioural response to uncertainty, by facilitating lateral relations that aid collaborating, coordinating and controlling materials and information between members of a supply chain to develop the capability to respond to rapidly changing conditions".* Therefore, it can be argued that the overall goal of SCI is to accomplish highly efficient flows of products and information to add value to the end customer.

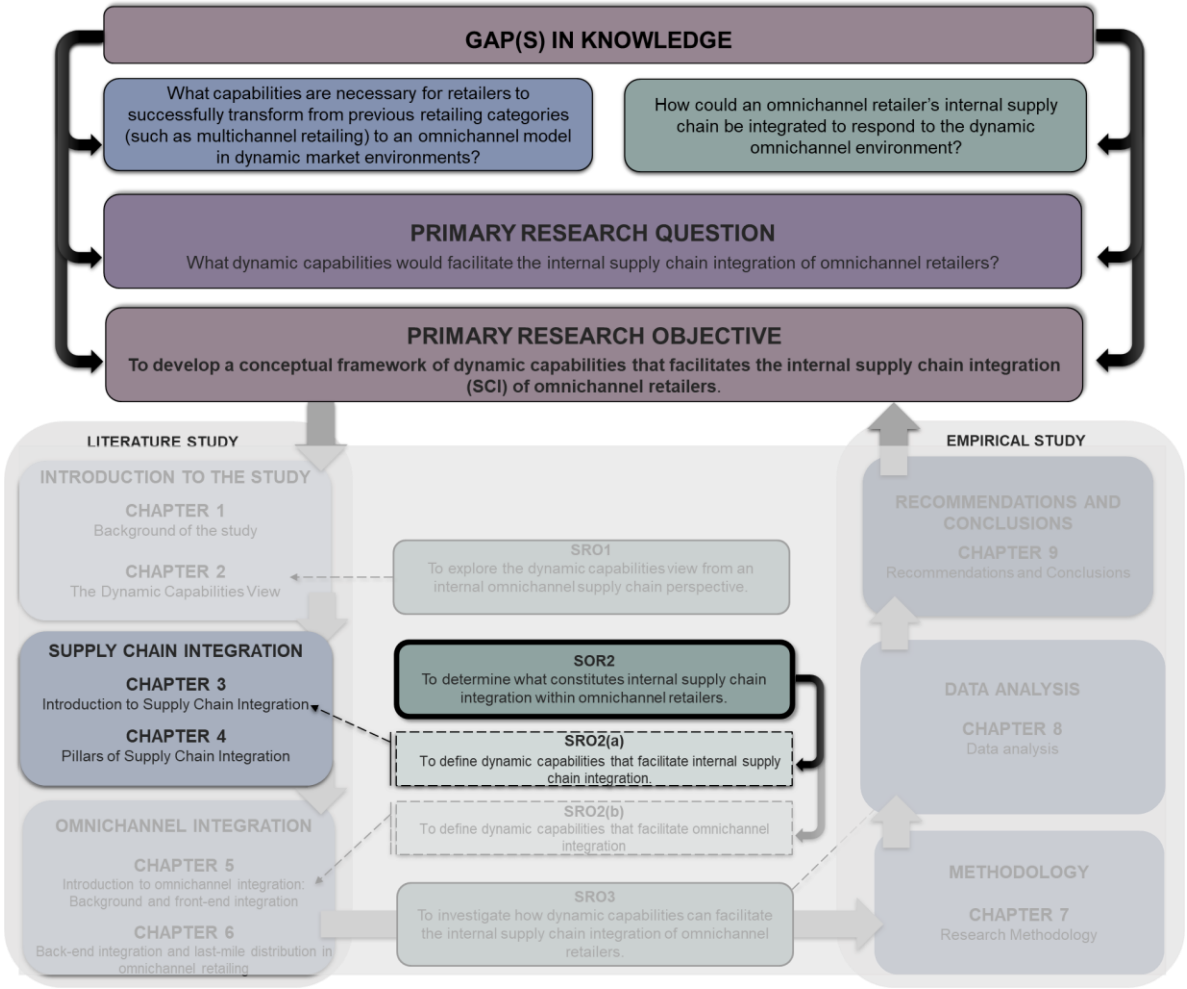
According to Kotzab *et al.* (2021), the quest for SCI as a fundamental part of SCM is undisputable within the SCM discipline. However, despite the importance of SCI,

literature provides provided limited commonly-accepted subdimensions of SCI, and the relationships between different supply chain functions are inconsistently described when comparing previous studies (Huo, 2012:596). Autry and Moon (2016:201) argued that, although SCI is a relatively easy concept to understand, its implementation is quite challenging as lower-level decision-makers are too often left to "*go through the motions*" of SCI without the appropriate mindset, knowledge, skills, motivation, incentives, or structure to execute integration (Lintukangas *et al.*, 2009; Zhang *et al.,* 2015; Autry & Moon, 2016; Tsanos & Zografos, 2016; Turkulainen & Swink, 2017). In yielding to the call of these authors, this chapter (Chapter 3) and Chapter 4 aim to summarise the literature on SCI and to provide a detailed outline of the subdimensions of SCI.

This chapter aims to provide the background to SCI. In doing so, the researcher first addresses the evolution of organisational structures (the First to the Fourth Industrial Revolutions) by describing how siloed and specialised organisational structures paved the way for modern structures and how SCI can aid organisations to break down siloes to better align with the requirements of modern retail. After that, SCI is discussed by distinguishing between two different types of SCI (internal and external). As stated previously, this study was demarcated to investigate only *internal* SCI. As such, several internal SCI barriers are presented as part of the discussion on internal SCI.

Building on the discussion offered in this chapter, Chapter 4 outlines the three main pillars of internal SCI: *information integration, process integration,* and *social capital integration*. These pillars and their sub-dimensions are then covered further in Chapter 4. Figure 3.1 serves as a visual illustration of this study and how this chapter contributes towards achieving the overall objective of this study.

**Figure 3.1: Visual illustration of the study – the purpose of Chapter 3**




**Source: Researcher's own compilation**

## 3.2 THE HISTORY OF ORGANISATIONAL STRUCTURE

Prior to the First Industrial Revolution (1785-1845), organisations were generally smaller and simpler than in the current Fourth Industrial Revolution, or Digital Revolution (1990 to the present) (Autry & Moon, 2016:1). During the First Industrial Revolution, organisations were owned and operated by a small, close-knit group of individuals who mainly sold services and goods within the local community. Furthermore, the manufacturing of products was often done in the owner's home, using hand tools or basic machines, focusing predominantly on providing a livelihood for the owner's family (Hines, 2013; Autry & Moon, 2016).

However, advancements in innovation during the First Industrial Revolution altered the model of economic behaviour substantially and gave rise to capital-intensive production, rapid growth in productivity and living standard, and the formation of large corporate hierarchies (Jensen, 1993:834). Long-distance communications, such as the telegraph and the radio, opened the door to a larger geographic consumer market which provided entrepreneurs with the ability to upscale operations and exploit opportunities to increase wealth.

Industrialisation marked a shift towards special-purpose machinery, factories, and mass production. This resulted in the emergence of a new model of economic behaviour characterised by a unique administration of work within an organisation known as the factory system (Autry & Moon, 2016:2). The factory system required new organisational structures with the increased division of labour and specialisation of separate functions (district organisational functions). These siloed organisational structures are still present in most organisations today (Autry & Moon, 2016:2; Hajdas *et al.*, 2022:3).

The discussion in the next section outlines the various industrial revolutions behind the evolution of organisational structures.

### 3.2.1 The First Industrial Revolution

The factory system was exemplified by the alleged 'father of economics', Adam Smith, and his theory of economic growth. Several authors (Mcguffog & Wadsley, 1999; Nohria, Groysberg & Lee, 2008; Hines, 2013; Ucak, 2015; Autry & Moon, 2016) argued that Smith's famous theory (Smith, 1776), in which he outlined the division of labour (or specialisation) as an engine for organisational growth, depicts the frame of mind many organisations still hold today. According to Smith (1776:5), *"the division of labour occasions, in every art, a proportionable increase in the productive powers of labour. The separation of different trades and employments from one another seems to have taken place in consequence of this advantage*". It is evident from this quote that Smith's arguments were firmly rooted in the division of labour, which relates predominantly to the specialisation of the labour force, essentially breaking down large

jobs into smaller, more dynamic functions. Within Smith's theory, each employee becomes an expert in a single and isolated area of the organisation, thus increasing the efficiency of each employee (Hines, 2013; Ucak, 2015).

Consistent with this logic, Autry and Moon (2016:2) argued that organisations created different functional areas within supply chains to focus on a particular part of the manufacturing process during the First Industrial Revolution. The reason behind this notion was that optimising each set of activities in isolation enhanced the organisation's performance as a whole (Autry & Moon, 2016:2). However, some authors criticised Smith's theory, postulating that it did not consider the drawbacks of overspecialisation (Ucak, 2015:670). One such drawback is that overspecialisation in one particular skill restricts competence in complementary skills. Although specialisation reduces the unit cost of production or services, it may be wasteful since each function operates according to its own rules and focuses on its own objectives, which might be to the disadvantage of other functions and the organisation as a whole.

### 3.2.2 The Second and Third Industrial Revolutions

During the Second Industrial Revolution, electric power was introduced, which enhanced the sea, rail, road, and air links, further supporting the growth of international trade and mass production. During the Third Industrial Revolution, electronics and information technology changed the way organisations conducted day-to-day business through the automation of production (Jensen, 1993:835). However, in contrast to the First and Second Industrial Revolutions, which focused on the mass production of goods, the Third Industrial Revolution focused on integrating services and goods. According to Tien (2012:1861), the Third Industrial Revolution was based on the confluence of three major technological enablers (Big Data analytics[19], adaptive

[19] Big data is defined by Badenhorst-Weiss *et al.* (2017:67) as "*a term applied to datasets whose size is beyond the ability of commonly used software tools to capture, manage, and process the data within a tolerable elapsed time*." Data is considered 'big' when it contains a few terabytes or petabytes of data. Therefore, Big Data analytics refers to the analysis of a massive amount of data with the purpose of better decision-making.

services[20], and digital manufacturing). These technological enablers underpinned the integration or mass customisation of services and goods.

### 3.2.3 The Fourth Industrial (or digital) Revolution

Today, the Fourth Industrial Revolution is building on the Third. The digital revolution is regarded as a fusion of technologies that blurs the physical, digital, and biological spheres (Monczka *et al.,* 2021:26). Recent innovations in information technologies (IT) enable many organisations to shift the spheres of operation yet again, primarily in the development of electronic links and networks. The digital economy, dealing in intangibles such as information and fiscal exchange, contributes to economic growth and development of trade alongside the physical economy of moving tangible goods to markets (Hines, 2013:9).

According to Lima (2015:10), the Digital Revolution is to the retail industry what the Industrial Revolution was to the manufacturing industry. Nevertheless, Autry and Moon (2016:2) argued that, although times have changed, the siloed approach to organisational structures has not and that such siloed organisational structures are no longer as effective as they were during the First Industrial Revolution because, in the digital revolution, inter-functional collaboration could potentially enhance efficiencies and improve the performance of all functions and, ultimately, the entire organisation (Koçoğlu *et al.,* 2011; Bakker, Boehme & Van Donk, 2012; Näslund & Hulthen, 2012; Fekpe & Bray, 2015; Tate *et al.,* 2015). Greiner (1988:1) argued that, historically, key retail executives held on to an organisation's legacy structures long after it had served its purpose and considered the legacy organisational structure as a source of power. Research by scholars in the fields of operations, marketing, and supply chain management pointed to the conclusion that greater specialisation (or operating in functional silos) is no longer the engine of growth it once was (Mcguffog & Wadsley, 1999; Hines, 2013; Abushaikha, 2014; Kozlenkova *et al.,* 2015; Autry & Moon, 2016). These authors found that a) higher costs are associated with the specialisation paradigm, b) activities and priorities in one function become disconnected from

[20] According to Wisner *et al.* (2019:473), adaptive services refers to the way organisations utilise Big Data analytics to guide them in adapting their services to meet the needs of their customers.

activities and priorities in other functions within the organisation, and c) different functions lose visibility on the unique value they contribute to the customer. These factors result in internal conflicts, wasted resources, and dissatisfied customers. The results of these studies suggest that, in dynamic organisations of today, specialisation should only form a part of the equation as all organisational functions need to be integrated and work collaboratively towards achieving common goals (Hines, 2013; Kozlenkova *et al.,* 2015; Autry & Moon, 2016). It could, therefore, be concluded that all parts of the organisation which were initially segmented to improve efficiency should be overhauled in such a way as to increase profitability and efficiency.

From the above discussion on the history of the organisational structure, it was established that, in the dynamic business environments organisations find themselves today, overspecialisation and the silo approach to organisational management may limit the organisation's competitive position. To work more effectively, integration is required. In the next section, SCI is considered as a way for organisations to stay competitive in ever-changing business environments.

## 3.3 SUPPLY CHAIN INTEGRATION (SCI)

As a starting point to the discussion of SCI, it might be helpful to consider the origin of the word 'integration'. Kotzab *et al.* (2021) explained that the term 'integration' originated from Latin and means 'restoring of a whole'. Therefore, the essence of integration relates to combining two or more things that, by design, function more efficiently together than apart. Considering this description within the context of SCM, the function of SCI becomes conceivable. As discussed in Chapter 1, some authors posited that SCI is the core of successful SCM, which is further corroborated when considering the various definitions of SCM. Although SCM encompasses a wide range of aspects, most definitions of SCM explicitly underscore the centrality of *integration* or *coordination* in the management of the supply chain. Table 3.1 provides a brief overview of some SCM definitions to support this argument.

**Table 3.1: Definitions of supply chain management (SCM)**

| DEFINITION | CITATION |
|---|---|
| **ACADEMIC DEFINITIONS** | |
| "The **integration** of key business processes regarding the flow of materials from raw material suppliers to the final customer" | Wisner *et al.* (2019:535) |
| "Supply chain management encompasses the planning and management of all activities involved in the sourcing and procurement, conversions, and all logistics management activities. Importantly, it also includes **coordination** and **collaboration** with channel partners, which can be suppliers, intermediaries, third-party service providers, and customers. In essence, supply chain management **integrates** supply-demand management with and across organisations." | Horn *et al.* (2020:13) |
| "The management of interconnected value-adding activities and channel relationships for long-term value chain benefit. By its nature, it **collaboratively** helps to break down silos and self-centred thinking within a value chain, thus ensuring the creation of a shared vision for sustainable long-term, win-win partnerships. It is a set of business processes that seamlessly **work together** to ensure that requirements of the end-user are at all times satisfied within a reasonable time and cost limits." | Boateng (2021:534) |
| "Supply chain management involves proactively managing the two-way movement and **coordination** of goods, services information and funds (i.e., the various flows) from raw materials through end-user. Accordingly, supply chain management requires the **coordination** of activities and flows that extend across boundaries." | Monczka *et al*. (2021:13) |
| **PRACTITIONER'S DEFINITIONS** | |
| "Supply chain management is an **integrating** function with primary responsibility for linking major business functions and business processes within and across companies into a cohesive and high-performing business model. It includes logistics management activities, as well as manufacturing operations, and it drives **coordination** of processes and activities with and across marketing, sales, product design, finance, and information technology." | (Council of Supply Chain Management Professionals (2022) |
| "Supply chain management encompasses the planning and management of all activities involved in sourcing, procurement, conversion, and logistics management activities. It also includes **coordination** and **collaboration** with channel partners, which can be suppliers, intermediaries, third-party service providers, and customers<br>In essence, supply chain management **integrates** supply and demand management within and across companies." | Institute for Supply Chain Management (2022) |

**Source: Researcher's own compilation**

Based on these definitions, the centrality and importance of SCI in SCM can be established. This leads to the question: *Why is SCI critical in SCM?* When considering definitions of SCI, it becomes evident that organisations go to great lengths to integrate because successful integration leads to improved performance (Basnet, 2013; Williams *et al.,* 2013; Wisner *et al.,* 2016; Badenhorst-Weiss *et al.,* 2017; Monczka *et al.,* 2021). However, some debate in the literature exists on what improved performance entails. Wong *et al.* (2011:164) found that internal SCI led to better performance in terms of quality and cost while external SCI led to better delivery and flexibility. Ralston *et al.* (2015:48) argued that organisations who integrated successfully achieved higher levels of customer satisfaction, resulting in increased value creation for the end-customer. When organisations are successfully integrated, resources and capabilities between organisational functions are allocated to supporting and advancing the overall organisational strategy (Lintukangas *et al.,* 2009).

Despite the importance of SCI, both practitioners and researchers continue to report that organisations find it challenging to achieve SCI (Sila, Ebrahimpour & Birkholz, 2006; Duffy & Narayanan, 2010; Flynn *et al.*, 2010; Ralston *et al.,* 2015; Srinivasan & Swink, 2015). According to Flynn *et al.* (2010) and Autry and Moon (2016), one probable cause may be the contrasting conceptualisation of SCI between practitioners and researchers. These scholars explained that many authors referred to SCI without specifying the 'ingredients' of integration, resulting in the construct 'integration' becoming a universal phrase yet contributing little to illuminate the basic concepts of the construct. Autry and Moon (2016:5) further debated that the lack of clarity in outlining key concepts central to SCI and the failure of academia to prescribe frameworks for SCI has placed decision-makers in the unenviable position of implementing their SCI agenda with little or no guidance on how to achieve success.

To ensure that this study did not follow a similar path, several critical elements of SCI are elaborated on and discussed in this chapter and Chapter 4, all of which are essential to gaining an in-depth understanding of SCI and eventually addressing the primary research objective of this study, namely, to develop a conceptual framework

of dynamic capabilities that facilitates the internal supply chain integration (SCI) of omnichannel retailers.

The first dimension to consider as part of SCI is the different types of SCI. Literature differentiates between two types of SCI, *internal* and *external*.

### 3.3.1 Types of SCI

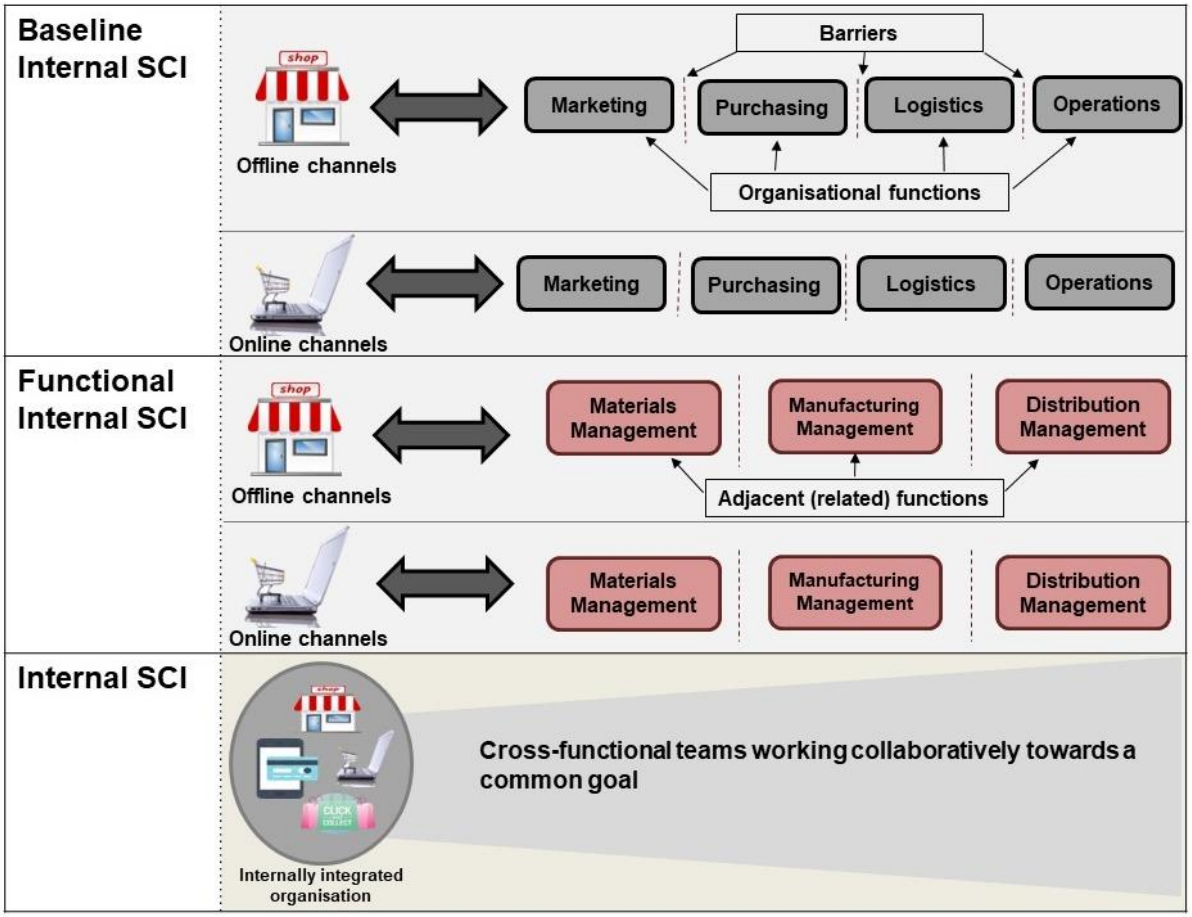
In literature, SCI is subdivided into internal and external SCI. *Internal SCI* refers to the extent to which intra-organisational functions such as operations, logistics, sales and marketing, purchasing, research and development and engineering work together ( Badenhorst-Weiss *et al.,* 2017; Monczka *et al.,* 2021). *External SCI* refers to the integration of supply chain processes outside the organisation. External SCI expands the scope of information sharing (Basnet, 2013; Ralston *et al.*, 2015) and collaboration (Wong *et al.* 2011; Badenhorst-Weiss *et al.*, 2017) to include customers and suppliers in the design and planning processes of the organisation (Badenhorst-Weiss *et al.,* 2017:64). Academics debate the different stages of internal integration, with most authors (Srinivasan & Swink, 2015; Chopra & Meindl, 2016; Wisner *et al.,* 2019; Monczka *et al.,* 2021) referring simply to internal integration without distinguishable stages. However, Nel (2010), Basnet (2013), Hines (2013), and Ambe *et al.* (2022) argued that internal SCI can be subdivided into three different stages. The arguments of the latter authors are considered below to provide structure to the presentation.

#### *3.3.1.1 Internal SCI*

Internal SCI is the consolidation and synchronisation of internal organisational processes that provide a product or service to the customer (Kotzab *et al.,* 2021). Song, Shi and Song (2021:2303) added that internal SCI facilitates collaboration within all departments (functions) by breaking down functional barriers to improve continuous information exchange, joint operations, the conflation of order fulfilment processes, and to facilitate the integration of inventories across channels. Accordingly, Wisner *et al.* (2016:469) argued that internal supply chains can be complex, particularly if organisations have multiple divisions and global organisational structures. Previous authors subdivided internal SCI into the following three stages: *baseline internal SCI*,

*functional internal SCI*, and *internal SCI*. Figure 3.2 serves as a visual representation of these three stages. Several barriers to internal SCI (as illustrated in Figure 3.2) are addressed after the discussion on the three stages of internal SCI.

**Figure 3.2: Stages of internal SCI**




**Source: Adapted from Nel (2010), Basnet (2013), Hines (2013) and Ambe *et al.* (2022)**

### *a) Baseline SCI*

Baseline SCI refers to an internally focused organisation where organisational functions are managed separately and performance monitoring is based on achieving functional goals (Khanuja & Jain, 2019:276). In baseline SCI, processes, activities, and organisational structures are not based on horizontal processes across the supply chain but are structured around the individual optimisation of organisational functions (Nel, 2010:135). Consequently, in some instances, no internal communication takes place between functions or processes (Badenhorst-Weiss *et al.,* 2017:13) and all organisational functions are independent and strive to optimise operations without

considering the effects of the operations on other organisational functions (Sila *et al.,* 2006:493). Figure 3.2 illustrates that, when an organisation has different commerce channels (as in the case of omnichannel retailing), these channels are managed as functional silos; for example, the marketing function may be divided into different teams responsible for online marketing and traditional in-store (physical) marketing (Adivar *et al.,* 2019:260).

Badenhorst-Weiss *et al.* (2017:13) provided the following list of 'formidable pitfalls' organisations may experience during baseline SCI:

- Some individuals might show signs of natural resistance to change.
- The reluctance of some internal functions to share knowledge with other functions in the supply chain.
- Further SCI initiatives can be inhibited because of insufficient resources allocated for SCI.
- Top management's satisfaction with the status quo can result in their lack of involvement with SCI initiatives.
- Information technology (IT) and systems are not considered a priority and are therefore reactively implemented.

### *b) Functional SCI*

In functional internal SCI, the organisation starts to realise the importance of at least a limited degree of integration (Basnet, 2013:155), which is usually initiated by managers from either the supply or distribution function of the organisation (Ambe *et al.*, 2022:70). As a result, adjacent (related) organisational functions are integrated through collaboration and information sharing. Although the purchasing and marketing functions can, for example, be integrated into materials management, the integration between materials and manufacturing management might still be lacking (Sila *et al.,* 2006:493).

Ambe *et al.* (2022:71) reported that, during this stage of integration, a strong focus on cost reduction (particularly in purchasing price, inventory holding cost, transportation,

and elements of the distribution activity) was detected. As such, to facilitate the integration process, managers typically start by consolidating inventories, reducing the supplier base, introducing material requirements planning (MRP) and just in time (JIT) practices, and establishing an internal cross-functional team to address the typical problems of a functional organisational structure. At this stage, particular efforts are made to understand the supply chain design and strategy while also considering the organisation's overall goal, with the aim of achieving alignment between the supply chain and organisational strategies (Badenhorst-Weiss *et al.,* 2017:13).

Another matter that is usually addressed during functional SCI is the historical fragmented information system (or legacy system) as managers will aim to start integrating the information systems of some functions, usually by means of an enterprise resource planning (ERP) system (discussed in more detail in Chapter 4).

### *c) Internal SCI*

Internal SCI pertains to how the internal organisational functions work collaboratively towards a common goal (Wong *et al.,* 2011:568). Chopra and Meindl (2016) and Wisner *et al.* (2016) argued that integration can only be successful if all organisational functions are geared towards a common goal. This common goal should align with the overall supply chain strategy and the overarching organisational strategy. Additionally, Van Weele (2014:69) explained that organisations become more process-oriented during this internal SCI stage of internal SCI. Badenhorst-Weiss *et al.* (2017:13) added that at this stage managers should develop an 'end-to-end' planning framework to represent a holistic view of what managers envisage as an integrated supply chain. Such a framework should align organisational goals with the supply chain strategy and provide initiatives on achieving integration over the long-term (Ralston *et al.,* 2015:56). During the final stage of internal SCI, factors such as top management's support and the expertise of cross-functional teams become vital in establishing a corporate culture that supports SCI (Bakker *et al.,* 2012; Ellegaard & Koch, 2012; Badenhorst-Weiss *et al.,* 2017; De Abreu & Alcantara, 2017). Further development of cross-functional teams sees these teams establishing alliances with external supply chain partners, which foster better relationships among all supply chain members (Ambe *et al.,* 2022:72).

Before considering external SCI, the barriers associated with internal SCI (as illustrated in Figure 3.1) should be considered. The section below provides a holistic overview of the main internal SCI barriers identified by previous authors.

#### *3.3.1.2 Barriers to internal SCI*

From the above discussion on the three stages of internal SCI, it is evident that many different facets of the internal organisation need to work harmoniously to achieve SCI. Naturally, there will also be barriers to reaching internal SCI. Autry and Moon (2016) stated that it is essential to understand how the different types of barriers might inhibit the achievement of internal SCI. Ambe *et al.* (2022:73) added that barriers to SCI should be anticipated during the integration process. From the outset, it should be stated that barriers associated with SCI are subdivided into internal and external SCI barriers. Since the scope of this study was demarcated to the investigation of *internal* SCI in omnichannel retailers, only the barriers related to internal SCI were considered as part of this discussion. It should also be stated that different authors' perspectives influenced how they presented an aspect as either a barrier or a facilitator of SCI (for example, a lack of trust as a barrier as opposed to high levels of trust as a facilitator). To avoid duplicating these aspects, only a discussion on barriers is presented.
Table 3.2 summarises a list of potential barriers identified by previous authors.

**Table 3.2: Barriers to SCI and citations**

| INTERNAL SCI BARRIER | CITATIONS |
|---|---|
| **The Silo Mentality[21]** | Ralston *et al,* (2015); Ziaullah *et al.* (2015); Chopra & Meindl (2016); Badenhorst-Weiss *et al.* (2017); Hajdas *et al.* (2020) |
| **An organisational culture characterised by a resistance to change** | Bakker *et al.* (2012); Badenhorst-Weiss *et al.* (2017); Wisner *et al.* (2019) |
| **A lack of staff training and capacity-building for SCI** | Bakker *et al.* (2012); Song *et al.* (2019) |
| **Performance measures, reward, and incentive systems not contributing to the organisation's drive towards SCI** | Bakker *et al.* (2012); Zhang *et al.* (2015); Rockson *et al.* (2017) |

[21] The silo mentality refers to a situation where an organisation fails to see the bigger picture and only acts in regard to a single department within an organisation or supply chain (Wisner *et al.*, 2016:473), therefore operating independently of organisation's strategic objectives (Hines, 2013:102).

| INTERNAL SCI BARRIER | CITATIONS |
|---|---|
| **A lack of top management support** | Zhao, Feng & Wang (2015); Vermeulen, Niemann & Kotzé (2016); Shah *et al.* (2020) |
| **A lack of trust between organisational functions** | Ziaullah *et al.* (2015); Chopra & Meindl (2016); Ogunlela & Lekhanya (2016); Badenhorst-Weiss *et al.* (2017); Wisner *et al.* (2019) |
| **The high cost associated with the implementation of SCI** | Zhao *et al.* (2015); Chang *et al.* (2016); Badenhorst-Weiss *et al.* (2017); Wong *et al.* (2017) |
| **The complexity of implementing SCI** | Autry & Moon (2016); Chang *et al.* (2016); Badenhorst-Weiss *et al.,* (2017); Kotzab *et al.* (2021) |
| **SCI is time-consuming** | Koufteros *et al.* (2005); Badenhorst-Weiss *et al.* (2017); Wisner *et al.* (2019) |
| **A lack of communication and information infrastructure** | Prajogo & Olhager (2012); Liu *et al.* (2016); Van Weele (2018) |
| **A lack of information visibility** | Williams *et al.* (2013); Van Weele (2014); Chopra & Meindl (2016); Ogunlela & Lekhanya (2016); Picot-Coupey *et al.* (2016); Badenhorst-Weiss *et al.* (2017); Wisner *et al.* (2019) |

**Source: Researcher's own compilation**

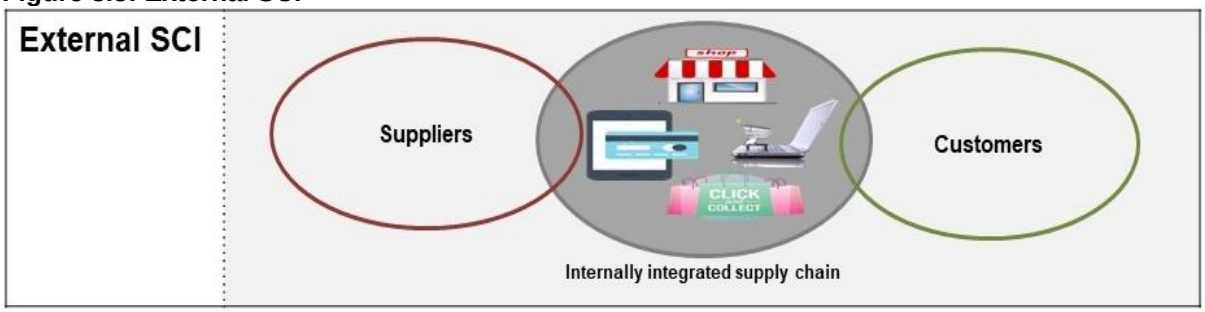
Table 3.2 outlined the most cited barriers to internal SCI. These barriers inhibit an organisation's ability to integrate its supply chain internally. Therefore, organisations should anticipate these barriers and actively develop mitigation plans to lower the impact of such barriers.

Successful internal SCI is a prerequisite for external SCI (Srinivasan & Swink, 2015:850; Liao, Hu & Chen, 2021:2). Ellegaard and Koch (2012:148) argued that, before high levels of external integration can be realised, the focal organisation must consider how to get suppliers to mobilise resources to prioritise the focal organisation in the first place (Reyes & Giachetti, 2010; Evangelista *et al.,* 2012; Horn, Scheffler & Schiele, 2014). The authors argued that resource mobilisation is a key intermediate process linking internal and external SCI. Although this study only considered internal SCI, external SCI should be briefly discussed to indicate the scope and boundaries that applied to this study.

### *3.3.1.3 External SCI*

External SCI is conceptualised as linking the internally integrated supply chain to chosen strategic suppliers and customers (external supply chain partners) (Basnet, 2013; Ceccagnoli & Jiang, 2013; Bernon *et al.*, 2016; Badenhorst-Weiss *et al.,* 2017). Several authors (Yu *et al.,* 2013; Badenhorst-Weiss *et al.,* 2015; Flynn *et al.,* 2016; Wisner *et al.,* 2019) subdivided external SCI into two categories: integration with suppliers and integration with customers. As an extension of Figure 3.2, Figure 3.3 illustrates external SCI.

**Figure 3.3: External SCI**




**Source: Adapted from Nel (2010); Hines (2013) and Ambe *et al.* (2022)**

Flynn *et al.* (2016:10) argued that the principles of external SCI reflect similar relational behaviours to internal SCI, with the difference of external integration taking place between an internally integrated focal firm and its suppliers and customers. According to Badenhorst-Weiss *et al.* (2017:14), extending the SCI efforts beyond organisational boundaries requires extraordinary leaders who fully grasp the importance of a paradigm shift to include external supply chain participants in the decision-making process. A significant step towards achieving this paradigm shift is departing from the traditional management focus of functional optimisation and profit maximising to solely focus on customer value creation (Ralston *et al.,* 2015:56), a drive that Chen, Daugherty and Landry (2009:34) termed ‘market sensing’ or the ‘market-oriented’ approach. Liao *et al.* (2021) further argued that, during the external stage of SCI, managers’ perceptions of the organisation should change from viewing the organisation as a single entity to understanding that the organisation forms part of a larger unit, the integrated supply chain. Therefore, successful external SCI would see total collaboration between all supply chain links.

*Customer integration* pertains to how an organisation uses processes to incorporate customer requirements into organisational planning and implementation. Organisations achieve customer integration through inter-organisational processes that allow them to collaborate with customers in sharing information about production plans, inventory levels, and delivery frequencies (Basnet, 2013; Yu *et al.,* 2013; Srinivasan & Swink, 2015). Badenhorst-Weiss *et al.* (2017:14) argued that relationship management and team management are key to the success of external integration as organisations learn to rely increasingly on the customer market for internal planning and suppliers to be reliable partners in the supply chain. During this stage, supply chain participants start to utilise activity-based costing and balanced scorecards to turn the supply chain into a chain of allies working together towards the same strategic objectives (Pasanen, 2015; Badenhorst-Weiss *et al.,* 2017). Similarly, *supplier integration* is the extent to which information regarding suppliers' capabilities (such as on-time delivery, order fulfilment rates, and returns) are incorporated into the planning and execution of organisational processes (Srinivasan & Swink, 2015:829).

Therefore, while internal SCI focuses on integrating different functions of the supply chain, external SCI considers the integration of the organisation with external suppliers based on the information of customers.

## 3.4 CHAPTER CONCLUSION

This chapter aimed to present a background to SCI by providing the reader with a brief history of the organisational structure and rationale for SCI's importance in modern organisations. Within this discussion, the First to Fourth Industrial Revolutions were summarised. Herein, it was found that the First Industrial Revolution was characterised by a division of labour (or the creation of specialised functions), which provided higher levels of efficiency for organisations during the First Industrial Revolution. However, as organisations' operating environments evolved, siloed or specialised structures were not as effective as during the First Industrial Revolution. Nevertheless, these structures are still present in most modern organisations. During the Fourth Industrial Revolution, characterised by high levels of change, overspecialisation no longer leads to efficiency because employees with end-to-end thinking capabilities who can review

a process in its entirety and quickly develop response plans can be more valuable than functional experts.

Accordingly, the value of SCI came to the fore, namely integrated supply chains allow organisations to review processes in its entirety, creating flexibility and transparency. This chapter distinguished between the following two types of SCI: internal SCI and external SCI. Internal SCI was described as integrating all functions of the internal supply chain. Three stages of internal SCI were outlined as part of the discussion on internal SCI: baseline internal SCI, functional internal SCI, and internal SCI. In the last-mentioned and highest stage of internal SCI, all organisational functions work towards a common goal, having an end-to-end vision of the supply chain, executed by cross-functional teams and supported by the organisation's top management. External SCI refers to integrating processes with external suppliers and customers. In Section 3.3.1.1(d), several barriers to internal SCI were tabulated and it was argued that organisations should anticipate these barriers to actively develop mitigation plans and lower the impact of such barriers.

The next chapter offers a broad but detailed discussion of the specific facets of internal SCI. Herein, the three pillars of internal SCI (information integration, process integration, and social capital integration) are discussed at length.

# CHAPTER 4
# PILLARS OF SUPPLY CHAIN INTEGRATION

## 4.1 CHAPTER INTRODUCTION

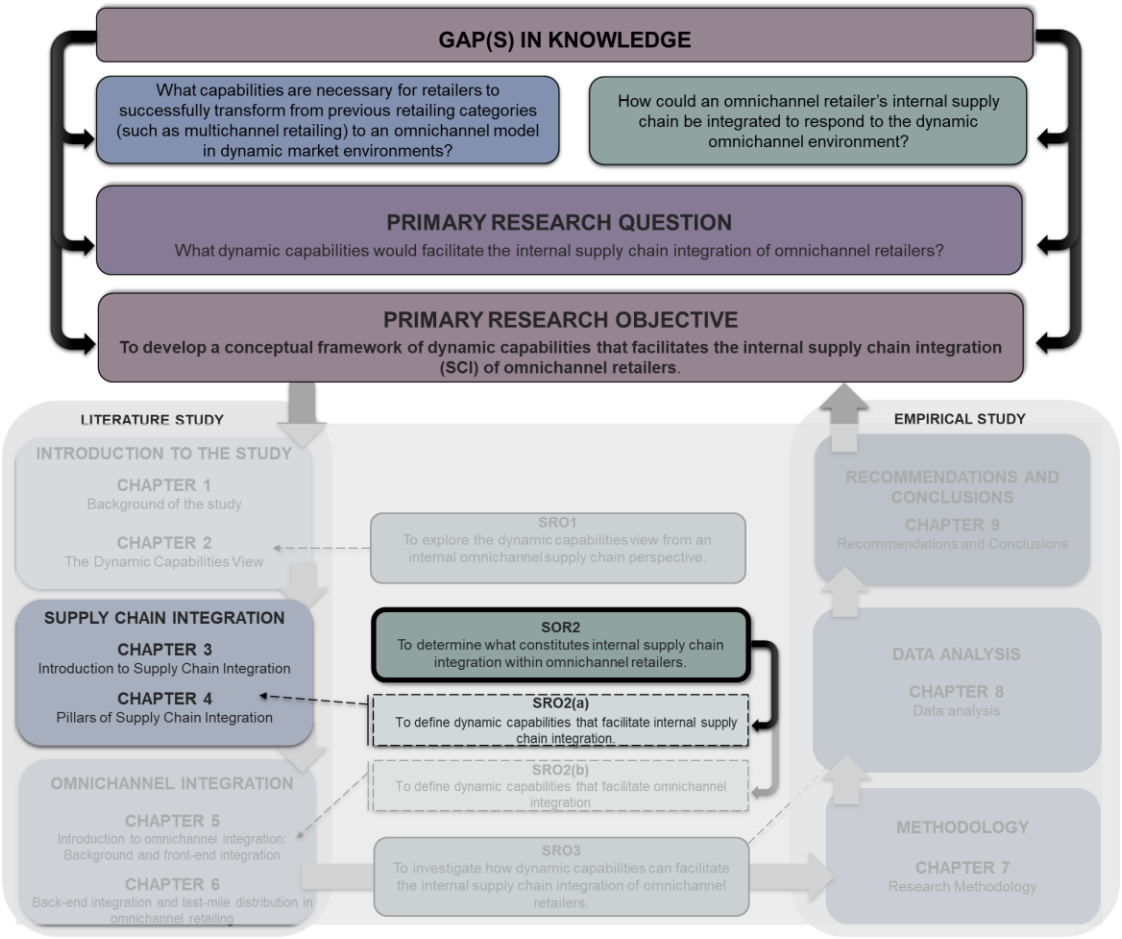
The literature on supply chain management (SCM) has long extolled the benefits to be gained by organisations seeking to integrate supply chains (Duffy & Narayanan, 2010:1). Therefore, organisations highlight supply chain integration (SCI) as an essential facet of a dynamic supply chain (Krishnapriya & Baral, 2014:45). Supply chain integration (SCI) is characterised by its suitability, connectedness, coordination of people, processes, information, knowledge, and strategy in terms of all the supply chain members (Perdana *et al.*, 2019:186). SCI is consequently considered a complex endeavour, even for the most successful organisations (Zhao *et al.,* 2015:164; Rajaguru & Matanda, 2019:305), and demarcating the different components of SCI is an essential starting point for any organisation's SCI efforts (Perdana *et al.,* 2019:186).

Chapter 3 aimed to provide a background on SCI by discussing the history of organisational structure (First to Fourth Industrial Revolutions), SCI types, and SCI barriers. However, Chapter 3 did not explicitly address the different components of SCI. Countless articles on SCI have been published. Most of these articles focused on their own set of components to achieve SCI. Some of the most cited components for achieving SCI include the use of cross-functional teams (Kosmol, Reimann & Kaufmann, 2019:5; Srai & Lorentz, 2019:82; Song & Song, 2020:12), the organisational structure (Sabet *et al.*, 2017:37; Tarifa-Fernández, de-Burgos-Jimenez & Cespedes-Lorente, 2019:1590; Shah *et al.,* 2020:3), the level of information sharing across the supply chain specifically relating to coordination, communication, and collaboration (Khanuja & Jain, 2019:274; Perdana *et al.*, 2019:189; Tarifa-Fernández *et al.,* 2019:1590), and whether the culture of the organisation promotes SCI (Wong, Sancha & Thomsen, 2017:555; Rajaguru & Matanda, 2019:304; Yuen *et al.,* 2019:656). However, these components only represent a small sample of the different

components of SCI cited by previous authors. The purpose of this chapter (Chapter 4) is to deliberate on the various components (hereafter, pillars) of internal SCI.

Figure 4.1 serves as a visual illustration of this study and how this chapter contributes towards achieving the overall objective of this study.

**Figure 4.1: Visual illustration of the study – the purpose of Chapter 4**




**Source: Researcher's own compilation**

As seen from Figure 4.1, the purpose of this chapter is to partially address secondary research objective 2 (SRO2) by answering one of its subobjectives, SRO2(a). Secondary research objective 2(a) (SRO2(a)) aimed to define dynamic capabilities that facilitate internal supply chain integration. Throughout Chapter 3 and Chapter 4, SRO2(a) is addressed.

Chapter 1, Section 1.4.1, stated that the classification of SCI as presented by Autry and Moon (2016) serves as the basis for the discussion on the three pillars of internal

SCI, namely *information integration*, *process integration*, and *social capital integration*. The justification for such categorisations is based on these authors' findings that the categories mentioned above are present in most definitions of SCI. Accordingly, this chapter is structured as follows: in Section 4.2, internal SCI is presented as a metaphor of a portico colonnade (a structure of columns or pillars stemming from a foundation that supports a triangular roof); thereafter, the three internal SCI pillars are discussed individually by considering the distinct subcomponents of each pillar.

Also, each section of this chapter considers the pillars from the perspective of the dynamic capabilities view (DCV). Several literature findings from this chapter (as well as from Chapter 5 and Chapter 6) populated the coding frame used to conduct the content analysis of retailers' integrated annual reports (IARs). These coding frame elements are indicated throughout this chapter in the following way: ($^{DCx}$)[22]. This chapter concludes with a summary of the key literature findings and lists the coding frame elements obtained from the discussion.

## 4.2 INTERNAL SUPPLY CHAIN INTEGRATION: A METAPHOR

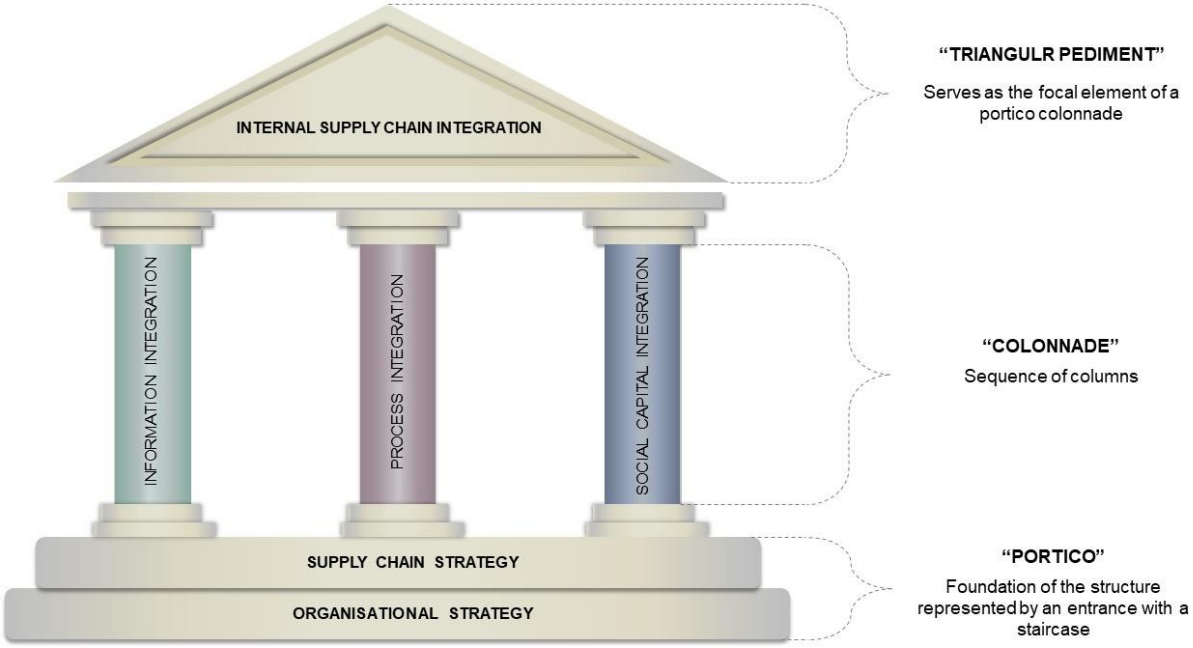
As stated previously, internal SCI is considered to be a multidimensional construct (Turkulainen *et al.,* 2017:291). Khanuja and Jain (2019:275) stated that it is apparent from SCI literature that the definitions and dimensions discussed in literature are neither unique nor consistent. As a result, authors publishing within the field of SCI are yet to collectively agree on the taxonomy of SCI. Autry and Moon (2016:5) reported that these disparities create confusion among researchers and practitioners regarding what should be prioritised as part of the organisations' SCI efforts. Consequently, several authors called for more specific and clear guidance on the components and capabilities necessary to achieve SCI (Näslund & Hulthen, 2012:481; Perdana *et al.*, 2019:199; Shah *et al.,* 2020:13).

[22] Due to the close similarity of certain capabilities, a conceptual framework element indicator (for example $^{DC1}$) may be presented more than once. In such cases, two or more closely related literature findings are consolidated into one conceptual framework element.

In answering the call of these authors, this study metaphorically depicts internal SCI as the architectural structure of a 'portico colonnade'. A portico colonnade is a structure characterised by columns (or pillars), stemming from a foundation, that supports a triangular roof. In management research, metaphors are often used to better articulate principles and make the relationships among variables more explicit (Di Stefano *et al.,* 2014:318). Metaphors also provide an author with a powerful means for creating, exchanging, and preserving meanings of certain concepts (Johnson, Elliott & Drake, 2013:330). The following relevant examples illustrate the effective use of metaphors in management research. First, Teece *et al.* (1997) used the 'crown jewels' metaphor to describe an organisation's unwillingness to share technological innovations, viewing this as '*losing their kingdom*'. A second example refers to Lampret and Potočan's (2014) description of organisational culture as an iceberg, existing of two levels. In level one, culture cues are visible to all within the organisation, and it refers to the part of the iceberg which sits '*above the surface*'. In the second level, invisible culture cues are represented by the part of the iceberg '*below the surface*'.

It is evident from the discussion above that many authors successfully used metaphors to explain nuances simply and concretely. Accordingly, this study uses the metaphor of a portico colonnade to visually articulate the hierarchical relationship between the organisational and supply chain strategies (SCSes) and the three pillars of internal SCI (see Figure 4.2). The subsequent sections of this chapter will elaborate on the metaphor and its interpretations, as relevant to the study.

**Figure 4.2: Internal SCI: A metaphor**




**Source: Researcher's own compilation**

The rationale for using a portico colonnade as a metaphor for internal SCI is that the components of the structure of a portico colonnade mirrors an organisation's internal SCI efforts. As illustrated in Figure 4.2, three main structural components distinguish a portico colonnade, namely the *portico*, the *colonnade*, and the *triangular pediment*. The first component, the *portico*, serves as the foundation for the structure of the portico colonnade and represents the entrance of the structure with a staircase. Within the context of this study, the portico represents the organisational and supply chain strategies. As discussed in Chapter 2, Section 2.4.1, all SCI efforts should stem from the organisation's supply chain strategy. The supply chain strategy should, in turn, be based on the organisational strategy. Just as the purpose of the portico in the portico colonnade is to provide a foundation and an entrance to the structure, the supply chain and organisational strategies should provide the basis and starting point for an organisation's internal SCI efforts.

The next component of the portico colonnade is the *colonnade* itself. The colonnade consists of several circular bricks stacked to form columns. In this study, each of the columns (pillars) consists of several components (structural and social components). When these components are stacked together, a complete column is formed. Each of these components are considered in depth in this chapter. Another critical design

feature of the colonnade, particularly relevant to this study, is that each column needs to be completely aligned to support the roof structure. Likewise, literature points to the fact that an organisation should be proficient in all three pillars to achieve internal SCI as being proficient in one pillar but lacking in another will inhibit the organisation's integration ability.

The last element of the portico colonnade is the *triangular pediment*. The pediment is a central point or crowning feature of the structure of the portico colonnade. A pediment is often used to symbolise a solid, regal, and stately structure. In this study, the pediment (internal SCI) serves as the central point with the colonnade (the pillars) and the portico (organisational and supply chain strategies) all aiming to support the organisation's internal SCI efforts (the pediment).

In Chapter 2, Section 2.3.1.1, organisational and supply chain strategies (SCSes) were discussed as part of the three foundational elements of the DCV, namely strategy, resources, and capabilities. As part of this discussion, two overarching organisational-level strategies were presented: the market-based view (MBV) (organisations developing a competitive advantage based on the *external* environment) and the resource-based view (organisations developing a competitive advantage based on *internal* resources and capabilities). Also, two SCSes were discussed: *cost-efficient* and *responsive* SCSes. After that, the strategic fit, the alignment of both organisational-level and SCSes, were addressed. It was concluded that, before the organisation commences with internal SCI efforts, alignment between the functional-level (supply chain) strategies (SCSes) and organisational-level (MBV or RBV) strategies should first be achieved. As such, within the context of this metaphor, elements of the portico (organisational-level and SCSes) will not be reiterated here. However, the following section considers, at length, the different components of each pillar of SCI.

## 4.3 THREE INTERNAL SUPPLY CHAIN INTEGRATION PILLARS

As established in Chapter 1 and Chapter 3, SCI is considered a core principle to SCM. However, for organisations to be successful in SCI efforts, they need to understand the different components of SCI. In Chapter 1, Section 1.4.1, it was argued that the

researcher relies on the categorisation of three SCI barriers, presented by Autry and Moon (2016:302–308), to discuss the main components (or pillars) of SCI: *information barriers*, *process barriers*, and *relational barriers*. It was also stated that, since the purpose of the study was to develop a conceptual framework of dynamic capabilities that promote the internal SCI of omnichannel retailers, categorising the SCI literature mainly based on SCI *barriers* was not conducive to the framework development process. Therefore, this study considered how the three pillars of SCI, (*information integration*, *process integration and social capital integration)*[23] should be employed to achieve internal SCI.

Autry and Moon's (2016) discussion on the original barriers subdivided each barrier into its structural and social mechanisms. Their rationalisation for this subdivision was that an organisation might employ well-understood and shared practices such as the organisation's values, goals, rules, regulations, and standards (structural mechanism); however, if these practices are not embedded within the social structures of the organisation, such as team dynamics (social mechanism), SCI would be fruitless. Accordingly, for the presentation on the three pillars, each pillar is discussed based on the structural and social mechanisms associated with a specific pillar. In the next section, Pillar 1 is addressed.

### 4.3.1 Pillar 1: Information integration

Functional information-sharing capabilities are essential for effective operations and decision-making at all organisational levels (Mello, Hellingrath & Martins, 2019:438; Yuen *et al.,* 2019:656; Shah *et al.,* 2020:4). According to Khanuja and Jain (2019:289), information sharing increases transparency, enables collaborative relationships, and improves competitive position, leading to improved performance. Zhang *et al.* (2015:1145) argued that the concept of an integrated supply chain only becomes viable once organisations become aware of the value of having access to accurate, timely, and affordable information.

[23] For this study, relational barriers as originally presented by Autry and Moon (2016) were renamed to 'social capital'. The rationale for this change is discussed at length in Section 4.3.3 on social capital integration.

Information integration refers to the merging of information from heterogeneous sources with differing conceptual, contextual, and typographical representations (Koçoğlu *et al.,* 2011:1633). Shared meaning in the form of knowledge is created through data mining[24] and the consolidation of data from unstructured or semi-structured textual resources. Bowersox *et al.* (2013:8) listed four reasons why timely and accurate information has become critical to effective SCM. First, customers demand real-time information and perceive information regarding order status, product availability, delivery tracking, and invoices as necessary in the transaction process. Second, information can be used to reduce inventory and human resource requirements. Third, information increases flexibility concerning how, when, and where resources should be utilised to achieve a competitive advantage. Fourth, information exchange through the Internet facilitates collaboration and promotes supply chain relationships. Thus, for an organisation to be truly integrated, seamless information sharing is crucial (Autry & Moon, 2016:301).

Turkulainen *et al*. (2017) built on the seminal work of Koufteros, Vonderembse and Jayaram (2005), who investigated the reasons for information integration (both internally and externally) in terms of new product development. In the study of Turkulainen *et al.* (2017:291), where interview data were collected from 51 supply chain executives and senior management from 24 global manufacturing organisations, the authors found that two forces of uncertainty and equivocality drive information integration. According to these authors, uncertainty generally refers to a lack of information or a lack of availability of information. When organisations do not have access to the necessary information to make strategic decisions, it negatively impacts the overall performance (Wong, Lai & Cheng, 2011:161; Huang & Chiu, 2018:263). Overcoming uncertainty is achieved by collecting and processing more significant amounts of information and is managed through the structural mechanisms of information integration (discussed below). Conversely, equivocality refers to the ambiguity of information, resulting in confusion, a lack of understanding, and

[24] Data mining is described by Fawcett *et al.* (2014:504) as: "…*the process of analysing data to identify patterns or relationships. Modern data mining is enabled by sophisticated software and involves the systematic process of searching through large volumes of data to uncover relationships hidden in transaction data history.*" Data mining is also referred to as 'knowledge-discovery'.

conflicting interpretations from different information users. Turkulainen *et al.* (2017:291) argued that equivocality can be reduced by the social (intangible) mechanisms of information integration (discussed below) as these mechanisms facilitate mutual adjustments to information and provide a means for synchronous feedback that "*enable debate, clarification, and enactment more than simply providing large amounts of data*".

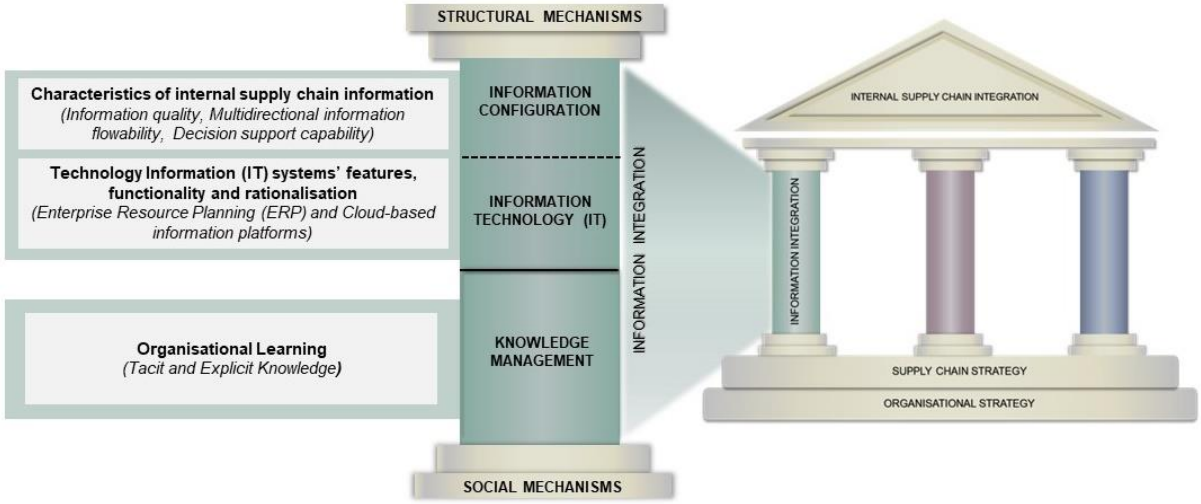
At the most basic level, information records and retrieves critical data and then, through automation, executes and controls the physical and monetary flows within the supply chain (Monczka *et al.,* 2021:706). Practical examples of information technologies include barcodes or radio frequency identification (RFID) technology[25] to track the location of a parcel in the distribution network. Through these information technologies, retailers with more sophisticated information processing systems might even automate decisions such as demand forecasts, order quantities, and established re-order points. In some cases, organisations may also employ information to assist in strategic decision-making, such as customer segment analysis or product lifecycle forecasting (Esper *et al.,* 2010:10).

Information sharing to promote internal SCI holds numerous advantages, which include increased supply chain visibility (Fawcett *et al.,* 2011:42; Williams *et al.,* 2013:543; Abushaikha, 2014:57; Tate *et al.,* 2015:18; Wisner *et al.*, 2019:56), improved supply chain performance (Fawcett *et al.,* 2011:54; Koçoğlu *et al.,* 2011:1630; Vermeulen *et al.*, 2016:1), improved coordination amongst organisational functions (Halldórsson *et al.*, 2007:846; Duffy & Narayanan, 2010:5; Amadi-Echendu & Krüger, 2016:6; Vermeulen *et al.*, 2016:4), and the functionality of information technology (IT) or information systems (Thun, 2010:32; Fawcett *et al.,* 2011:42; De Mattos & Laurindo, 2015:81; Prajogo, Oke & Olhager, 2016:221; Wang *et al.,* 2016:417; Yu *et al.,* 2017:4196).

[25] Radio frequency identification (RFID) technology is defined by Coyle et al. (2017:564) as: *"a technology that enables huge amounts of information to be stored on chips (called tags) and read at a distance by readers, without requiring line-of sight scanning.*"

As outlined in Figure 4.2, the colonnade of the metaphor depicting internal SCI consists of several columns. These columns are built through several structural and social mechanisms of internal SCI. Figure 4.3 serves as a summary of both the structural and social mechanisms of Pillar 1. As evident from Figure 4.3, the structural mechanisms of Pillar 1 relate to information configuration and information technologies. The structural mechanism of information integration is discussed in Section 4.3.1.1. In addition, Figure 4.3 also illustrates that the social mechanisms of internal integration refer to knowledge management. Knowledge management pertains to the 'know-how' of personnel and facilitates SCI by transferring knowledge between different organisational functions. The social mechanisms of information integration are discussed in Section 4.3.1.2.

**Figure 4.3: Visual illustration of the components of Information integration (Pillar 1)**




**Source: Researcher's own compilation**

### *4.3.1.1 Structural mechanisms of Pillar 1: Information integration*

As mentioned above, structural mechanisms relate to the tangible components of information integration (Autry & Moon, 2016:303). The conceptualisation of internal information integration revolves around the fundamental concept of developing an information-sharing infrastructure with electronic linkages to facilitate timely, accurate, and standardised data exchange across the internal organisation (Wong *et al.,* 2011:162). Monczka *et al.* (2016:707) posited that the purpose of internal information integration is to link higher-level planning and decision-making with lower-level

activities in the organisation. Section 4.3.1.1(b) presents a discussion on the role of IT in internal SCI, where such linkages are addressed in more detail.

Wong *et al.* (2011:162) defined internal information integration as *"the electronic linkages of an organisation's information technology (IT) applications to data acquisition and storage systems to facilitate the sharing of accurate and timely information in support of cross-functional processes".* Wisner *et al.* (2016:469) listed four questions management can ask to determine the organisation's level of internal information integration:

- Does the organisation have a single organisation-wide enterprise resource planning (ERP)[26] system linking functional areas?
- Are all the organisation's legacy systems[27] linked to its ERP system?
- How easy is it to extract the information needed to make decisions?
- Are centralised data warehouses used to collect data from the various organisational functions?

However, to facilitate further deliberation regarding internal information integration, two key questions need to be considered. First, how should the information be configured to achieve SCI? Second, what vehicles can be used to integrate internal information? Sections 4.3.1.1(a) and (b) aim to answer these questions.

### *a) Information configuration*

To determine how information should be configured to facilitate SCI, it is necessary to determine what characteristics information should have to support the organisation's integration agenda. Table 4.1 summarises the characteristics of internal supply chain information. These characteristics are subdivided into three categories: *information quality*, *multidirectional information flowability*, and *decision support capability.* Table 4.1 is followed by a brief discussion on the characteristics in the table.

[26] Enterprise Resource Planning (ERP) refers to organisational software which allows an organisation to automate and integrate the majority of its processes and share common data across the organisation to produce real-time information (Wisner *et al.,* 2019:529).
[27] Legacy systems refer to an organisation's existing software applications (Wisner *et al.,* 2019:531).

**Table 4.1: Characteristics of internal supply chain information**

| CRITERION | DESCRIPTION | AUTHORS |
|---|---|---|
| **INFORMATION QUALITY** | | |
| **Accuracy** | Information should depict reality as meticulously as possible as information drives replenishment planning. | Thun (2010); Coyle *et al.* (2017) |
| **Accessibility/Usability** | Information should be readily available as needed, regardless of the requester's location, and should be useful in guiding decision-makers. | Thun (2010); Wong *et al.* (2011); Ellegaard & Koch (2012); Zsidisin *et al.* (2015); Flynn *et al.* (2016); Coyle *et al.* (2017) |
| **Relevance/Reliability** | Information should come from a reliable source and be pertinent for analysis and decision-making purposes. Extraneous or unnecessary details should be removed from data as they waste time and distract decision-makers. | Thun (2010); Wong *et al.* (2011); Pasanen (2015); Amadi-Echendu & Krüger (2016); Coyle *et al.* (2017) |
| **Timeliness** | Information must be up-to-date and available in a reasonable time frame. Timely data allows decision-makers to respond quickly to supply chain conditions when needed. | Ceccagnoli & Jiang (2013); Hines (2013); Coyle *et al.* (2017) |
| **Transferability** | Information needs to be transferable between different functions of the organisation. As such, information should be digitalised to assist in the conversion and transmission process. | Nel (2010); Koçoğlu *et al.* (2011); Bowersox *et al.* (2013); Autry & Moon (2016); Coyle *et al.* (2017); Wisner *et al.* (2019) |
| **Value** | Information systems (hardware and software) that need to capture and disseminate quality supply chain information is expensive. Decision-makers should ensure that investments in information technology produces tangible performance benefits and add value. | Koçoğlu *et al.* (2011); Bowersox *et al.* (2013); Stank *et al.* (2014); Stevens & Johnson (2016); Coyle *et al.* (2017); Wisner *et al.* (2019) |
| **MULTIDIRECTIONAL INFORMATION FLOWABILITY** | | |
| **Forward** | Information should move seamlessly between organisational functions. Forward information flow entails sharing information on demand forecasts, production plans, capacity changes, new marketing strategies, purchasing plans, delivery dates, product specifications, and order size. Internal information sharing leads to organisation-wide performance optimisation and cross-functional collaboration | Lintukangas *et al.* (2009); Esper *et al.* (2010); Ellegaard & Koch (2012); Coyle *et al.* (2017) |

| CRITERION | DESCRIPTION | AUTHORS |
|---|---|---|
| **Reverse**[28] | Information on product returns is essential as these products are reinserted into the forward flow of the supply chain, and records of such products should be accurate. Information such as reasons for product returns is vital in planning as part of the forward information flow. | Van Donk & Van der Vaart (2004); Oliva & Watson, (2009); Wong *et al.* (2011); Coyle *et al.* (2017); Monczka *et al.* (2021) |
| **DECISION SUPPORT CAPABILITY** | | |
| **Strategic decision-making** | Information should allow decision-makers to make long-term supply chain plans aligned with the organisation's mission and strategies. Useful information can be utilised to evaluate strategic alternatives or to conduct a 'what if' analysis. | Lao & Xing (2007); Coyle *et al.* (2017); Monczka *et al.* (2021) |
| **Routine decisions** | Information should be standardised to allow for operational level decision-making. Standardised information is often processed by the organisation's information technology system to generate transportation routing guides. | Duffy & Narayanan (2010); Thun (2010); Fawcett *et al.* (2011); Parente, Baack & Hahn (2011); Pasanen (2015); Zhang *et al.* (2015); Thornton, Esper & Autry (2016); Wang *et al.* (2016) |
| **Execution and transaction processing** | Information and information systems are successful when fully automated (i.e. no human intervention is required). | Monczka *et al.* (2021) |

**Source: Researcher's own compilation from literature**

[28] The reverse flow of information is especially relevant in online retail with the option of direct-to-store and direct-to-home delivery. Rudolph (2016) found that the return rate of products bought online is 30% as opposed to traditional brick-and-mortar store which is only 9%. Also, Autry and Moon (2016:188) argued that with omnichannel retailing customers have more channels, which imply more return options.

From Table 4.1 follows that the characteristics of internal supply chain information can be divided into three main categories: information quality, multidirectional information flowability, and decision support capability. When information holds these characteristics, it allows the organisation to collect and integrate data from various sources, not only to increase transparency across the supply chain but also to allow for data analysis as a decision-support mechanism.

The importance of collecting and analysing data with these capabilities also comes to the fore when considering the modern trend of Big Data analytics. Mikalef *et al.* (2021) described Big Data analytics as *"the tools and processes applied to large and complex datasets to obtain actionable insights".* Big Data provides organisations with insights into organisational processes and enables them to promote products better by employing analytical techniques such as artificial intelligence (AI), machine learning (ML), and data mining (Khan, 2019:2124). In SCM, previous research has shown that Big Data plays an instrumental role in improving SCM since it allows managers to identify opportunities and respond quickly to pursue these opportunities (Pereira & Frazzon, 2021:11; Sarkis, 2021:67).

Lee (2017:595) listed three reasons why Big Data is particularly relevant for omnichannel retailers. First, the growth of e-commerce has created a need for customers to shop via different physical and digital channels, generating an enormous amount of data every second. The author maintained that organisations failing to develop the capabilities to manage and analyse Big Data struggle to survive. Second, competition in omnichannel retailing is getting fierce. More product information is available online and customers often view merchandise in store while simultaneously searching for more information online, only to buy from competitors' websites. Big Data allows retailers to understand customer purchase behaviour and respond to the market proactively. Fourth, customers expect fast delivery of products after they place an order. This highlights the need for the early prediction of customer purchases to enhance customers' shopping experiences, regardless of the chosen channel.

When considering the ability of retailers to collect, analyse, and interpret data from the DCV, the findings of Warner and Wäger (2019:5) were noteworthy. These authors classified data analytics, what they termed 'digital sensing', as a dynamic capability.

Their evidence suggested that organisations using disruptive technologies, such as AI and data analytics, can collect and analyse large-scale and real-time granular data to predict and capitalise on possible future changes in the market. Talafidaryani (2021:252) supported these findings by adding that the collection, analysis, and interpretation of data (data analytics) allows organisations to enhance customer-sensing activities to align internal capabilities and gain valuable insights into customers' behaviours and preferences. In line with the above discussion and previous authors' classifications of data and information management as a dynamic capability, **data-collection and -analysis capability**[DC1] was added to the coding frame.

In terms of the second question posed at the start of this section, *What vehicles are used to share internal supply chain information?,* the answer relates to the physical structures that organisations have in place to facilitate information sharing referred to as information technology (IT) or information systems (Monczka *et al.*, 2021:21). The subsection below aims to discuss in more detail the role of IT systems in facilitating internal SCI.

### *b) Information technology (IT)*

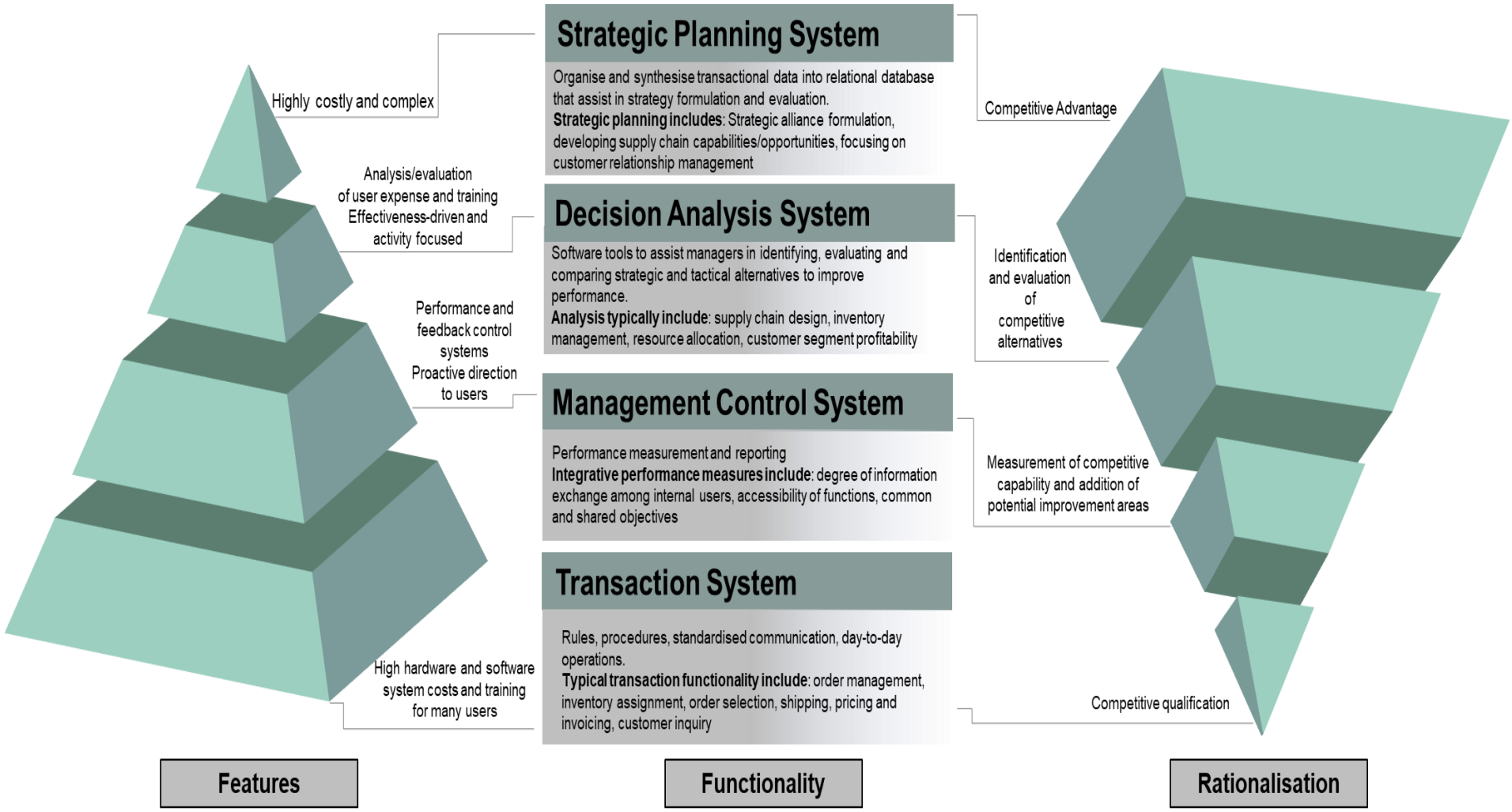
According to Bowersox *et al.* (2013:7), IT systems are the overarching enabler of modern SCM practices. IT systems refer to the real-time systems software or on-demand or cloud-based technology systems that support supply chain planning and execution in terms of demand planning, distribution scheduling, materials replenishment, payment systems, and intranets (Monczka *et al.*, 2021:21) while facilitating decision-making within the organisation (Bowersox *et al.,* 2013:8). Nel (2010:176) listed several IT enablers for SCM, such as the Internet, EDI (electronic data interchange), ERP (enterprise resource planning), radio frequency identification (RFID), collaborative planning, forecasting and replenishment (CPFR), and vendor managed inventory (VMI). However, only the IT systems relevant to internal supply chains were considered for this study.

Internal IT systems refer to the technology a single organisation possesses which facilitates information sharing among different organisational functions. Flynn *et al.*

(2016:5), Prajogo and Olhager (2012:221), Gallino and Moreno (2014:1436), and Tsanos and Zografos (2016:690) argued that integrated internal IT systems are essential for SCI as internal IT systems create a virtual network that aligns all the organisational activities. Yu *et al.* (2017:4206), using survey data from 329 Chinese organisations, investigated the direct and interacting effects of IT capabilities on SCI and found that an organisation's IT capability has a significant positive impact on overall SCI and facilitates communication and collaboration among functions. Considering this, it is clear why many authors listed **the organisation's IT capabilities**[DC2] as a dynamic capability (Teece, 2007:1326; Lee & Rha, 2016:10; Khan *et al.*, 2020:1483). Mikalef *et al.* (2020:4) debated that an IT system's capabilities ultimately strengthen the organisation's competitiveness and could even serve as a tool for developing other dynamic capabilities.

Several authors highlighted the importance of IT systems in SCM, as well as in facilitating SCI (Suishan, Cong & Xia, 2010:3142; Schoenherr & Swink, 2012:102; Ceccagnoli & Jiang, 2013:411; De Mattos & Laurindo, 2015:80; Ralston *et al.,* 2015:51; Flynn, Pagell & Fugate, 2018:7). Additionally, Bowersox *et al.* (2013:7–11) debated that IT systems are the thread that links organisational functions, creating integrated processes. These authors elaborated on the four levels of functionality that an integrated IT system should facilitate. The authors additionally discussed the features and rationalisation of the four functionalities. This significant discussion by Bowersox *et al.* (2013:10) concisely depicted the most relevant components of IT systems as a facilitator to SCI. Figure 4.4 serves as a visual summary of the discussion presented by Bowersox *et al.* (2013:7–13). The contribution of other authors (Basnet, 2013; Autry & Moon, 2016) on the features, functionality, and rationalisation of IT systems have been added to Figure 4.4 to facilitate the thoroughness of this discussion.

**Figure 4.4: Technology Information (IT) systems' features, functionality, and rationalisation**




**Source: Adapted from Basnet (2013), Bowersox *et al.* (2013) and Autry and Moon (2016)**

Figure 4.4 illustrates three dimensions of IT systems: *features*, *functionality*, and *rationalisation*. *Features* represent the factors that need to be considered when implementing IT systems at each functionality level. The *functionality* of IT systems ranges from transactional systems to strategic planning systems, with transactional systems forming the foundation for management control systems, decision analysis systems, and strategic planning systems. *Rationalisation* refers to the advantage obtained by implementing an IT system with these functionalities. As the pyramid shape suggests, the higher the level of functionality of the IT system, the more significant the advantage can be obtained by the organisation.

Considering the different levels of functionality, it is evident from Figure 4.4 that an integrated IT system should not only assist the organisation with day-to-day operational functions, such as order management (see transaction system in Figure 4.4), but the data encapsulated by such a system should also be translatable into a format which assists decision-makers in strategy formulation and evaluation (see strategic planning system in Figure 4.4) (Bowersox *et al.,* 2013:10; Badenhorst-Weiss *et al.,* 2017:66). However, implementing an IT system to support an organisation's strategic planning initiative might be both costly and complex (Bowersox *et al.,* 2013:10; Badenhorst-Weiss *et al.,* 2017:66). Nevertheless, the rationale behind implementing an IT system with a strategic planning functionality is that it could lead to a competitive advantage for the organisation.

In terms of the management control functionality, it is also essential to state that an integrated IT system should not only support traditional performance measurements such as cost, customer service, and productivity (Wisner *et al.,* 2019:500) but should also provide the organisation with data on issues such as the degree of information exchange among internal users (Basnet, 2013:169). This data should be used by management to measure the integration efforts by different organisational functions and structure incentive programmes. An integrated IT system containing data from various organisational functions will allow decision-makers to identify effective competitive alternatives, for example alternative vehicle routing options.

As part of the discussion on internal IT systems, it is essential to briefly consider some of the physical software solutions organisations may use as part of the information

integration process. Monczka *et al.* (2021:713) argued that organisations historically adopted a disconnected approach to system usage, for example each organisational function (accounting, purchasing) had its own unrelated system. However, in modern supply chains, these 'legacy systems' are integrated into a single ERP system used by the entire organisation. Arguably, the most common IT system used for SCM is an ERP system. ERP systems can be operated (or hosted) within the organisation or outsourced to Software-as-a-Service (SaaS) or application service providers (ASP); alternatively, it can be hosted in cloud-based communication platforms. These software applications are discussed below.

- **Enterprise Resource Planning (ERP, ERP II and ERP III)**

ERP systems are described as a single organisation-wide information software system (Wisner *et al.,* 2019:529) for automating and managing real-time data regarding the organisation's processes (operational, support, and administrative) as well as its resources (material and financial) (Van Weele, 2018:422). The purpose of an ERP system is to analyse data for organisational decision-making (Fawcett, Ellram & Ogden, 2014:377) and to facilitate the re-engineering of business processes (Monczka *et al.,* 2021:713).

ERP systems are described as the organisation's 'central nervous system' (Fawcett *et al.,* 2014:377) or 'backbone' (Bowersox *et al.,* 2013:11; Monczka *et al.,* 2021:713) as such systems create cross-functional operations within an organisation by connecting all information flows from varying organisational functions (Wong *et al.,* 2011:167). According to Wisner *et al.* (2019:474), one of the most cited obstacles of SCI is a lack of information visibility. ERP systems alleviate such visibility problems by essentially "*forcing employees to interact together in a single system, even if they prefer not to*" (Monczka *et al.,* 2021:713). Such interaction creates a process approach that enables employees from different organisational functions to not only communicate with each other but also to have access to real-time, accurate information for timely decision-making.

Witcher and Silverman (2016:2) argued that ERP systems are critical in retail. They reasoned that a singular view of the organisation, with access to real-time information,

allows the retailer to determine if a product should be made available for sale and when and how the order can be fulfilled. However, these authors cautioned that, in omnichannel retailing, many ERP systems are ill-equipped to manage orders that transcend physical and digital channels, which necessitates the development of ERP systems to host increasing amounts of data. Therefore, several authors (Chang, Fu & Ku, 2015:1063; Muhic & Bengtsson, 2019:2; Rajaguru & Matanda, 2019:303) stated that **superior ERP systems**[DC2] can be considered a dynamic capability. Moreover, Benitez, Ayala and Frank (2020:3) explained that, in the Digital Revolution (Fourth Industrial Revolution or Industry 4.0), an ERP system forms an essential part of the retailer's ability to collect and analyse information in pursuit of new opportunities.

The definitions of ERP systems mainly indicate that these systems are primarily concerned with the internal information integration of an organisation (Wong *et al.,* 2011; Schoenherr & Swink, 2012; Bowersox *et al.,* 2013; Fawcett *et al.,* 2014; Van Weele, 2018). However, in many cases, organisations do not have the time, knowledge, or infrastructure to buy, build, and maintain effective internal computing or information infrastructures (Wisner *et al.,* 2019:535). As such, independent organisations specialising in providing and maintaining state-of-the-art technology systems such as warehouse management and transportation management developed application-specific software packages for internal use or on a hosted basis. When these software applications are purchased for internal use, they are referred to as Software-as-a-Service (SaaS) or application service providers (ASP) (Bowersox *et al.,* 2013:13). However, when hosted by specialised service providers that provide the application using the capabilities of massive computer resources, the applications are referred to as cloud computing. Nevertheless, the basic facets of these software applications and their relevance to SCI are categorised under the umbrella term 'cloud-based information platforms' and are discussed next.

- **Cloud-based information platforms**

Cloud-based information platforms provide greater visibility, ensure faster time to market, and offer a faster response to changing market dynamics and demands (Wisner *et al.,* 2019:475). Cloud-based information platforms refer to the shared software and information that supply chain members access through the internet.

Rather than storing information on their own physical servers or computer hard drives, members depend on servers sustained by cloud computing software providers such as Google, HP, and IBM (Monczka *et al.,* 2021:23). These software providers are not only storing the data in data warehouses but they are also providing data processing properties that can manage dynamic real-time data, meaning they can process data even as it is changing. Tien (2012:279) illustrated the dynamism of cloud-based information platforms through an example: if an online retailer monitors key social-media feeds and a particular product or organisation suddenly gains popularity, special offers can be appropriately customised to make the most of this spike in demand.

Novais, Maqueira and Ortiz-Bas (2019:302) reported that an increasing number of data warehouses are being located in the cloud where the potential of accessing an unlimited amount of processing and storage power exists. Such storage power can be reconfigured on an on-demand basis and is usually charged on a pay-as-you-use basis, much like electricity use. The need for such storage power is manifested from new information processing technologies such as RFID tags (Wisner *et al.,* 2019:242).

As stated at the beginning of this section, the discussion on each pillar is subdivided into the structural and social mechanisms of the specific pillar. In the section above, the structural mechanisms of information integration (Pillar 1) were discussed. In the next section, the social mechanisms of information integration (Pillar 1) are considered by focusing on the importance of knowledge management and internal SCI.

#### *4.3.1.2 Social mechanisms of Pillar 1: Information integration*

As part of the discussion on the structural mechanisms of information integration, issues surrounding the characteristics of information and information collection were considered. Esper *et al.* (2010), Huo (2012), Ceccagnoli and Jiang (2013), and Dalkir (2017) argued that simply collecting relevant information in the correct format is not enough to achieve SCI and that the organisation should also have a knowledge management system to interpret and internalise the information collected. Accordingly, tangible (resources) and intangible (knowledge and skills) mechanisms are required to achieve information integration. As a social mechanism for information integration, knowledge management is considered next.

### *a) Knowledge management*

Organisational knowledge is recognised as a key intangible resource and a valuable asset that forms the foundation of constant organisational transformation to create a sustainable competitive advantage (Esper *et al.,* 2010; Sangari, Hosnavi & Zahedi, 2015:604). Knowledge is created by transforming data, information, and intellectual assets into valuable insights to inform management actions. Knowledge management is defined by Dalkir (2017:2) as *"...the deliberate and systematic coordination of an organisation's people, technology, processes, and structure in order to add value through reuse and innovation [knowledge capture]. This coordination is achieved through creating, sharing, and applying knowledge as well as through feeding the valuable lessons learned and best practices into organisational memory in order to foster continued organisational learning [knowledge transfer]".* From this definition, it follows that knowledge management is mainly rooted in the knowledge-capture and knowledge-transfer capabilities of a single organisation. Knowledge capture and transfer require high levels of information sharing (Dalkir, 2017:219; Turkulainen & Swink, 2017:43) and communication (Parente *et al.,* 2011:281; Dalkir, 2017:67). Both information sharing and communication are essential to successful SCI (Fabbe-Costes & Jahre, 2008:142; Ellegaard & Koch, 2012:151; Basnet, 2013:154; Vermeulen *et al.,* 2016:3).

The importance of knowledge management for SCI is twofold. First, implementing internal SCI strategies requires detailed knowledge and experience regarding the organisation's supply chain. Second, knowledge creates a shared interpretation of the information; therefore, as new information is introduced, knowledge is needed to interpret and implement the information (Stolze, Murfield & Esper, 2015:53). Hines (2013:39) substantiated the importance of knowledge management by stating that decision-makers interpret information and make assumptions based on knowledge, experiences, and learning from mistakes, which is especially important when making strategic decisions. Ayers and Odegaard (2018:11) argued that the role of knowledge as a key component in supply chain processes is often omitted from supply chain definitions, yet knowledge management, particularly knowledge transfer, forms an essential part of successful SCI.

Authors investigating knowledge management distinguished between two types of knowledge, namely *tacit* and *explicit* (Esper *et al.,* 2010:5; Huo, 2012:597; Dalkir, 2017:6). Dalkir (2017:8) explained tacit versus explicit knowledge as *tacit knowledge*[29] is difficult to express and challenging to put into a tangible format such as words, text, or drawings whereas *explicit knowledge*[30] embodies content captured in a tangible form such as words, audio recordings, or images. Furthermore, tacit knowledge resides 'within the heads of experts' while explicit knowledge is typically contained within tangible or concrete media. Stereotypically, the more tacit the knowledge is, the more valuable it tends to be since tacit knowledge often results in some visible act, particularly when employees understand and subsequently apply their knowledge. For example, if an organisation acquires a new ERP system, explicit knowledge can easily be shared among different organisational functions, such as teaching other colleagues the various functionalities of the new ERP system. Tacit knowledge can also be shared in the form of continued mentoring on the use of the new ERP system and providing colleagues residing outside the IT department with the background as to why the organisations decide to implement a new system. This example illustrates that explicit knowledge can be shared by anyone with IT experience of the ERP system while someone with leadership skills (mentoring) and knowledge of the organisation's history and decision-making is required for tacit knowledge to be shared.

Knowledge management facilitates the development of '*soft or intangible assets*' such as core competencies (Dalkir, 2017:249). Wang *et al.* (2016:419) argued that tacit knowledge facilitates integrated knowledge transfer, which in turn facilitates internal SCI. The authors provided the example of personal relations that personnel have nurtured with specific suppliers through years of effort, which are not easy to imitate or replace, for example personnel's knowledge of a particular supplier's products and preferences. Such knowledge is referred to as 'know-how' and, when shared with

[29] The Oxford English Dictionary (2020a) defines tacit knowledge as: "*The informal understandings of individuals (especially their social knowledge) which they have not verbalised and of which they may not even be aware. This includes what they need to know or assume in order to produce and make sense of messages (social and textual knowledge)*".

[30] The Oxford English Dictionary (2020b) defines explicit knowledge as: "*Knowledge that can be expressed in words, numbers, and symbols. Explicit knowledge can be articulated and easily communicated between individuals and organisations.*"

other organisational functions, might develop a collaborative culture within the organisation.

Knowledge management is categorised under the umbrella of organisational learning (Lyles, 2014:136). To adequately address knowledge management and its role in achieving SCI, organisational learning is considered in more detail.

- **Organisational learning**

As stated in the introduction of this chapter, the purpose of internal SCI is to break down the functional barriers within an organisation to enhance efficiencies and improve the performance of all organisational functions. Additionally, several authors argued that, in modern supply chains, personnel should no longer be specialists in one particular area of the organisation but should possess end-to-end knowledge of the entire supply chain (Sabet *et al.*, 2017:30). This can only be achieved through an organisational culture that cultivates knowledge transfer (Autry & Moon, 2016:69).

Stolze *et al.* (2015:56) and Dalkir (2017:51) argued that knowledge is actively constructed in a social setting when group members produce knowledge through interactions. Therefore, as groups of people communicate, they communally learn from one another and influence one another's views. This is commonly referred to as organisational learning. Organisational learning is defined by Dalkir (2017:339) as *"a process involved in human interaction, knowledge claim formulation, and validation by which new organisational knowledge is created; the ability of an organisation to learn from past behaviour and information and to improve as a result; the capture and use of organisational knowledge to make organisational decision making more efficient and effective. Working and learning become collaborative activities".*

Dalkir (2017:123) argued that the continuing popularity of the 'knowledge is power' paradigm makes it difficult to sell employees on the significance of having their knowledge retained by the organisation as a future hedge for when they are no longer working there. Additionally, Bowersox *et al.* (2013:348) stated that such an unwillingness to share and a general lack of understanding of how to share knowledge

is not uncommon. The authors maintained that, by enforcing functional specialisation which cultivates functional 'experts', the organisation essentially dooms SCI. The transfer of knowledge is particularly important when experienced personnel retire or depart from the organisation. In such instances, replacement personnel will need an extended period to learn from these 'experts'. Therefore, organisations need to develop procedures and systems to facilitate continual knowledge transfer. Tintoré Espuny and Arbós Bertran (2013:4) found five factors facilitating organisational learning:

- **Organisational structure:** A flexible, open, non-linear organisational structure is required with proper communication channels and alignment between the organisation's vision and culture.
- **Adequate organisational resources:** Certain resources (such as human, time, and technological resources) are required to facilitate organisational learning.
- **A culture that promotes change:** An organisational culture with trust, personnel satisfaction, stability, transparency, collaborative participation, and dedicated personnel increases an organisation's learning capability.
- **Leadership characteristics:** Transformational and flexible leaders who promote effective communication and offer support and leadership in times of change are required for organisational learning.
- **Teamwork:** Open and honest communication and acknowledging the interdependence of knowledge between teams are required for organisational learning. Units should be willing to learn from mistakes and be open to other team members' or teams' suggestions.

From the DCV, authors have previously studied both knowledge management (Helal, 2017:25; Wu, 2017:240; Conboy *et al.,* 2020:659) and the organisation's learning orientation (Aslam *et al.,* 2018:2268; Martin & Bachrach, 2018:31; Arranz *et al.,* 2020:1497) as dynamic capabilities. These authors found that knowledge management and an organisation's learning orientation helps members collectively retain and apply more task-critical knowledge, which aids them in the coordination of interactions and performance at higher levels than organisations without knowledge

and learning management systems (Martin & Bachrach, 2018:31). Aslam, Roscoe and Azhar (2020:432) added that organisational learning represents an organisation's strategic orientation and refers to the organisation-wide activity of creating and using knowledge to enhance competitive advantage. Therefore, **knowledge management and organisational learning capability**(DC9)[31] can be considered dynamic capabilities.

Kumar *et al.* (2020:459) added that organisational learning assists the organisation in gathering, interpreting, and sharing relevant information and knowledge. The newly acquired knowledge can then be codified in standard operating procedures and trained across the organisation (Aslam *et al.,* 2020:431). Over time, the pattern of continuous learning becomes routinised, leading to the emergence of 'learning-to-learn' dynamic capabilities. Accordingly, the learning orientation of an organisation supports the development of dynamic capabilities since it reflects an organisation's capacity to change its view of the world by unlearning obsolete perspectives, systems, and procedures and proactively replacing them with methods that are capable of creating and maintaining competitive advantage in dynamic environments (Bitencourt *et al.,* 2020:111). Learning is, therefore, a fundamental part of the capability development process, a process that operates at various levels of the organisation, passing from individuals to functions and across the whole supply chain (Aslam *et al.,* 2020:432).

#### *4.3.1.3 Summary of information integration (Pillar 1)*

The above section considered the first pillar of SCI: information integration. It was established that organisations need to determine the format of information to facilitate value creation. This format should be determined by considering the three characteristics of information: quality, multidirectional information flowability, and decision support capabilities. After establishing the format of the information,

[31] Here it should be clarified that, during the quality review process for the coding frame (outlined in Chapter 7, Section 7.4.2.1), *knowledge management* was recoded and reclassified under Pillar 3: Social capital integration. The rationale for this reclassification was that a central part of social capital integration (discussed in Section 4.3.3) is the organisation's ability to build boundary-spanning relationships to facilitate knowledge sharing and organisational learning. Hence, although knowledge and information sharing are relevant within the context of Pillar 1, it can be argued that it is more essential within social capital.

compatible and appropriate IT systems should be in place to capture and interpret the information. Information also has a social mechanism that organisations should consider when integrating their internal supply chain, namely knowledge management. Knowledge management refers to the 'know-how' of the personnel and facilitates integration by transferring knowledge between different organisational functions. The transfer of knowledge is important for SCI as end-to-end supply chain knowledge is crucial to the success of a modern supply chain and internal SCI. The discussion also highlighted the relevance of the different components of dynamic capabilities within information integration. Table 4.2 serves to conclude and summarise information integration as Pillar 1 of internal SCI.

**Table 4.2: Summary of information integration (Pillar 1)**

| MECHANISM | COMPONENTS | DESCRIPTION |
|---|---|---|
| **Information integration:** The integration of quality multidirectional supply chain information through cloud-based information technology (IT) systems to facilitate decision-making by linking higher-level strategic planning with lower-level transactional systems in the organisation. Social information integration mechanisms include organisational knowledge management, which entails the sharing of 'know-how' that facilitates the shared meaning and interpretation of the information to guide organisational decision-makers. | | |
| **Structural** | **Information Configuration** | Information facilitates internal SCI and is characterised based on its quality, multidirectional flowability, and decision support capability. These characteristics aid collecting, integrating, and analysing data (or Big Data) and create actionable insights for organisations. |
| | **Information Technology (IT)** | An organisation's IT capability is one of the most significant facilitators of internal SCI. The organisation's internal IT system creates a virtual network that links organisational functions, creating integrated processes. Two relevant software applications include: |
| | | **ERP systems**<br>ERP systems facilitate the collecting and analysing of internal supply chain information. ERP systems break down legacy systems to build integrated organisation-wide information systems. |
| | | **Cloud-based information platforms**<br>These software programs have advanced data process properties that can manage dynamic real-time data, meaning that they can process data even as it changes, giving managers across the supply chain access to real-time information from all internal supply chain functions. |
| **Social** | **Knowledge Management** | The knowledge capture and knowledge transfer capabilities of a single organisation. |

| MECHANISM | COMPONENTS | DESCRIPTION |
|---|---|---|
| | | **Organisational Learning**<br>The strategic orientation of an organisation, including organisation-wide activities of integration, creating and using knowledge to enhance the organisation's competitive advantage. |
| **List of codes incorporated into the coding frame** | | |
| **Dynamic Capabilities** | **DC1** | **Data-collection and -analysis capability:**<br>Data are collected, integrated, and analysed from various channels and touchpoints within an organisation, using sophisticated technologies such as artificial intelligence (AI) and machine learning (ML). Through an organisation's data-mining capability, actionable insights can be obtained and certain processes such as demand forecasting can be automated. |
| | **DC2** | **Highly functional information technology (IT) capability:**<br>A highly integrated back-end IT system powered by cloud-based technologies and ERP systems allow organisations to collect and analyse large amounts of data. The IT system facilitates data sharing and collaboration across internal organisational functions, leading to strategic planning and better decision-making. |

**Source: Researcher's own compilation based on the literature discussion**

Although the importance of information as a pillar of SCI is evident from the above discussion, Basnet (2013:155) maintained that information exchange is the minimum requirement for SCI. The author added that another important factor is the coordination of activities and processes, mainly related to the orchestration of interdepartmental activities. Pillar 2 of SCI (process integration) is discussed in the next section.

### 4.3.2 Pillar 2: Process integration

Each organisation has its own independent way of operating, facilitated through operational processes that develop over the years and are ingrained both structurally and socially (Autry & Moon, 2016:304). Organisational operations consist of many activities, and all organisational activities correspond to one or more processes (Suishan *et al.,* 2010:3). Therefore, a supply chain is essentially a sequence of processes and flows within and between different stages of the supply chain to fulfil a customer's need for a product or service (Chopra & Meindl, 2016:20).

One of the significant challenges with process integration is that each organisational function has its own independent way of managing different processes. Independent

structures and processes create complications when integrating and, as such, change is required from one or both ends of the supply chain to enable SCI. Process integration is defined by Wisner *et al.* (2016:460) as *"...the sharing of information and the coordination of resources to jointly manage a process or processes".* Information sharing was already discussed at length as part of information integration (Pillar 1) (see Section 4.3.1.1(a)). Therefore, the focus of the discussion on process integration centres on how functions in an organisation can jointly manage a process (or processes) through the coordination of and joint utilisation of resources.

The relevance of the process-oriented approach to SCI is evident in one of the most recognised models for SCI and supply chain performance measurement – The Supply Chain Operations Reference (SCOR) model (Huo, 2012:598; Schoenherr & Swink, 2012:103; Turkulainen & Swink, 2017:48; Wisner *et al.,* 2019:513–516). The Supply Chain Council's familiar SCOR model illustrates ways to integrate the supply chain based on key processes: plan, source, make, deliver, and return. Although the SCOR model has a component of internal integration termed 'focal firm' integration, the main purpose of the model is to integrate the operations of *all supply chain members* by linking the delivery operations of the *seller* to the sourcing operations of the *buyer* (Wisner *et al.,* 2019:513). Since the model focuses primarily on external SCI, the SCOR model falls beyond the scope of this study.

Another example of the relevance of process integration for SCI is Porter's (1986) value chain framework[32], where processes form the building blocks for the well-known SCM model (Chen *et al.,* 2009:29). Value chains are based on the process view of organisations, namely seeing a manufacturing (or service) organisation as a system of activities (primary activities) made up of subsystems (secondary activities), each with inputs, transformation processes, and outputs (Suishan *et al.,* 2010:3143; Thun, 2010:32; Koçoğlu *et al.,* 2011:1631). However, Thun (2010:32) argued that, by

[32] Although Porter's value chain framework is often used within the SCM discipline, it is important to highlight the difference between a value chain and supply chain. A value chain comprises *primary and support activities* that can *lead to a competitive advantage* for an organisation, when they are configured properly, while a supply chain consists of a *network of organisations* who are involved, through *upstream and downstream linkages*, in the different *processes* and *activities* that produce products and services that satisfy the ultimate customers' needs (Monczka *et al.,* 2021:13-15).

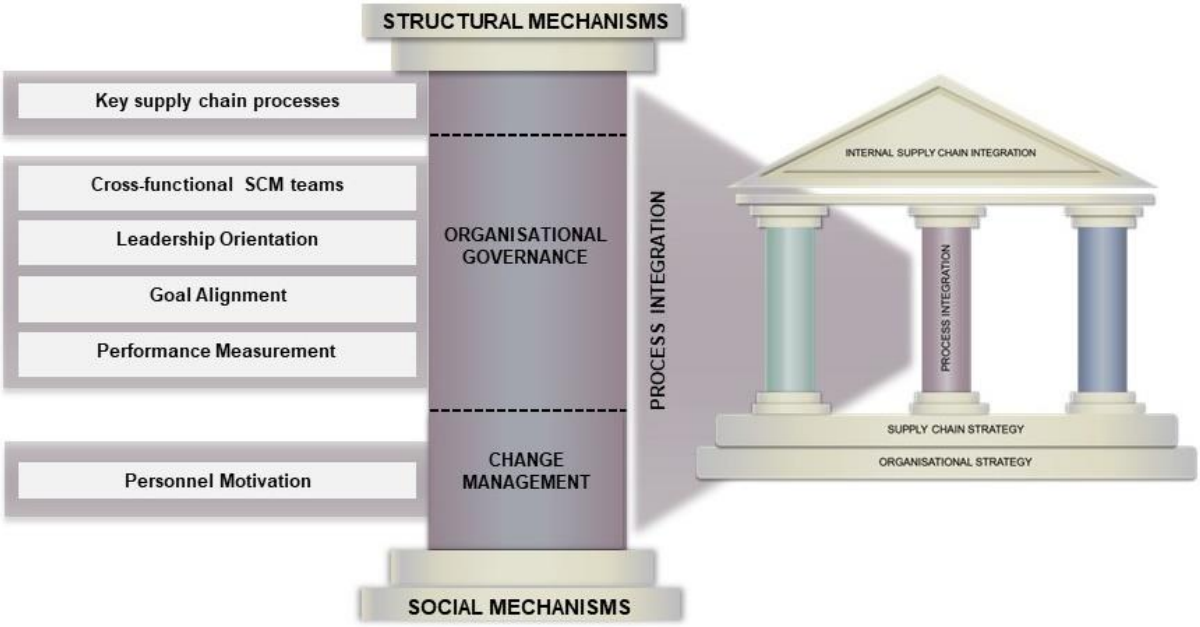
visualising a value chain as a linear flow of materials, authors tend to neglect the importance of process integration as the vehicle to SCI.

When considering process integration from a retail supply chain perspective, a clearly defined and tightly managed set of end-to-end supply chain processes must be in place to operate efficiently. Additionally, it is vital for all participants within the internal supply chain to at least, in principle, agree on the 'set' of supply chain processes. In a study done by The Consumer Goods Forum (2015:6) among 42 senior executives in the consumer goods and retail sector based in Asia, America, Europe, the Middle East, and Africa to determine how the supply chain should be re-engineered for omnichannel retailing, 81% of the retail supply chain managers interviewed stated that their supply chain processes were not 'fit for purpose[33]' in terms of omnichannel retailing. The study also found that re-engineering the supply chain to fit the purpose of omnichannel retailing is challenging as most traditional supply chain processes are managed independently. However, with omnichannel retailing, the management of these processes needs to be integrated. Consequently, the importance of process integration in omnichannel SCI comes to the fore.

The discussion on process integration will answer three main questions. First, what key supply chain processes must be integrated to achieve SCI? Second, what vehicles or governance structures should organisations have to facilitate process integration? Third, how should the organisation manage the change necessary to move from a functional to a process-oriented supply chain structure? Figure 4.5 serves as a visual illustration of how these questions are addressed in the literature discussed below.

[33] 'Fit for purpose' is jargon that refers to the design of a supply chain being well-suited or well-equipped for its designated purpose.

**Figure 4.5: Visual illustration of the components of Process integration (Pillar 2)**




**Source: Researcher's own compilation**

Figure 4.5 illustrates that the discussion on process integration first considers key supply chain processes. Thereafter, structural and social mechanisms are discussed. The structural mechanisms of process integration relate to organisational governance, particularly cross-functional SCM teams, the organisation's leadership orientation, and how the organisation performs goal alignment and performance measurement (see Section 4.3.2.2). In addition, Figure 4.5 shows that the social mechanisms of process integration refer to change management, specifically the organisation's change management processes relating to personnel motivation. The social mechanisms of process integration are discussed in Section 4.3.2.3.

### *4.3.2.1 Key supply chain processes*

SCM literature distinguishes between eight key supply chain business processes (hereafter referred to as supply chain processes) spanning several organisational functions. These supply chain processes were originally coined by Lambert, Cooper and Pagh (1998:8) and are still used in modern SCM textbooks, as seen in Bowersox *et al.* (2013:15) and Wisner *et al.* (2019:464).

**Table 4.3: Eight key supply chain processes**

| SUPPLY CHAIN PROCESSES | DESCRIPTION OF PROCESS |
|---|---|
| **Customer relationship management** | Identifying key customer segments as well as developing and administering relationships with customers (Wisner *et al.,* 2019:464) through cross-functional teams (Lambert, 2004:20) to facilitate strategic information sharing, joint planning, and integrated operations (Bowersox *et al.,* 2013:15). |
| **Customer service management** | The availability of real-time information (Lambert, 2004:21) such as product availability, shipping dates, and order status and how such information is communicated to customers (Wisner *et al.,* 2019:464). |
| **Demand management** | Balancing customer demand with the organisation's output capacity (Wisner *et al.,* 2019:464) to achieve maximum responsiveness to customer requirements (Bowersox *et al.,* 2013:15). Demand management includes not only demand forecasting but also increased flexibility while reducing variability through the effective utilisation of point-of-sale and critical customer data (Lambert *et al.,* 1998:8; Lambert, 2004:20). |
| **Order fulfilment** | The ability to execute superior and sustainable order-to-delivery performance and related essential services (Bowersox *et al.,* 2013:15) such as marketing, production, and distribution plans (Wisner *et al.,* 2019:464). |
| **Manufacturing flow management** | Determining all activities necessary to obtain, implement, and manage the manufacturing process (Lambert, 2004:21) to enable the right mix of flexibility and velocity to satisfy demand (Wisner *et al.,* 2019:464). |
| **Supplier relationship management** | The development and administration of long-term win-win relationships with a limited subset of suppliers (Lambert *et al.,* 1998:8; Lambert, 2004:21) to facilitate strategic information sharing, joint planning, and integrated operations (Bowersox *et al.,* 2013:15). |
| **Product development and commercialisation** | Developing new products frequently and getting them to the market effectively; cross-functional teams collaborate with the customer relationship management team to identify customer needs (Lambert, 2004:20); by integrating suppliers and customers into the processing, time to market is reduced (Wisner *et al.,* 2019:464). |
| **Returns management** | Managing used product disposition, product recalls, packaging requirements, and minimising future returns (Wisner *et al.,* 2019:464) cost-effectively and securely (Bowersox *et al.*, 2013:15). |

**Source: Researcher's own compilation based on cited authors**

From Table 4.3, it can be concluded that in order to facilitate multidisciplinary SCI (also called cross-functional or interdepartmental integration), cross-functional collaboration (different organisational functions working in tandem to achieve the overarching supply chain process) is essential. For example, purchasing and marketing functions can collaborate to improve returns management. Such collaboration among functions is referred to as *horizontal internal integration* and relates to the different types of internal SCI discussed in Chapter 3, Section 3.3.1.1. On the other hand, in many cases, these supply chain processes occur not only across different organisational functions but

also across the different hierarchical levels within the organisation (Rozemeijer *et al.,* 2012:63), which is known as *vertical internal integration*. Returns management, for example, concerns not only the warehouse worker receiving and processing returned items but also members of top management who set organisational return policies and strategies (Lambert *et al.,* 1998:11).

Various scholars maintained that a key component to ensuring the efficient management of supply chain processes is through the standardisation of processes (Klug, 2013:308; Tagg, Ram & Wu, 2014:3; Zsidisin *et al.,* 2015:551; Flynn *et al.,* 2016:10). Therefore, the list of eight key supply chain processes highlighted in Table 4.3 can serve as the starting point to process standardisation. The above discussion addressed the first main question of process integration: What key supply chain processes must be integrated to achieve SCI?

The second question this discussion aimed to answer is: What vehicles or governance structures should organisations have to facilitate process integration? Autry and Moon (2016:84) suggested that the first point of departure for standardising processes is that key decision-makers should decide on the appropriate level of process standardisation across the organisation. Lambert (2004:20) debated that the value of process standardisation comes across when different decision-makers in the organisation use a standard 'language' which enables them to align functional activities with overarching supply chain processes. However, Autry and Moon (2016:84) caution that, although process standardisation creates efficiencies across organisational functions, it limits the opportunities of organisational functions to customise services to cater to specific customer requirements.

According to Fawcett *et al.* (2014:76–81), moving from a functional to a process-oriented organisational structure requires systems thinking, which is defined as *"...the holistic process of considering both immediate and local outcomes and the longer-term systems-wide ramifications of decisions. Traditional functional thinking seeks the local optimum, whereas systems thinking aligns efforts, getting everyone to pull in the same direction".* Evangelista *et al.* (2012:11) reported that numerous organisations have created a significant competitive advantage due to systems thinking. As explained in Chapter 2, Section 2.3, systems thinking means organisations are

cognisant of how a whole system work together. In contrast, process thinking refers to a series of actions, activities, and processes that proceed from one to the next and form part of a larger system. Therefore, process thinking is concentrated and task-specific whereas systems thinking focuses on the interconnected processes which form a whole (Bakker, Boehme & Van Donk, 2012:3).

Fawcett *et al.* (2014:77) outlined five requirements for managing a supply chain within systems thinking. First, holistic process visibility is a prerequisite, therefore decision-makers need to have detailed knowledge of the interrelationships between supply chain processes. Second, enormous amounts of accurate data need to be collected, analysed, and translated into knowledge before well-informed, holistic decisions can be made. This data-collection process should be enabled by information technologies such as barcodes, RFID tags, data warehousing and data mining software, and ERP systems. Third, in order to develop a systems thinking culture within the organisation, cross-functional teamwork is required. Responsibilities, goals, roles, and training are often functionally oriented; however, even though such functional camaraderie is commendable in order to achieve overall organisational and supply chain goals, supply chain members need to work as a team. Fourth, systems thinking can be facilitated when organisational and supply chain performance measurement systems are aligned to the performance of supply chain processes, not functional performance. Bonuses and promotions are commonly tied to local, functional, and short-term goals, which results in decision-makers not grounding decisions on what is best for the overall supply chain process but, instead, base their decisions on what would yield the best outcome for individual function. The last requirement for systems thinking listed by Fawcett *et al.* (2014:80) relates to the more tangible structures that organisations need to set in place to facilitate systems thinking. Fawcett *et al.* (2014:79–81) termed this requirement ‘system analysis’, stating that organisations should have clear goals when setting system boundaries. These goals should indicate the composition of each team as well as to the interrelationships of teams.

The first two requirements of systems thinking as discussed above were already covered in the discussion of information integration (Pillar 1) in Section 4.3.1.1. Over the course of the discussion of process integration, the remaining requirements for

systems thinking will be addressed as part of the structural mechanisms of process integration (Pillar 2).

#### *4.3.2.2 Structural mechanisms of Pillar 2: Process integration*

Processes are formal, disciplined mechanisms that bring together relevant information from different points of view, delivered by different people, to assist the organisational decision-makers in aligning the organisation for goal achievement (Autry & Moon, 2016:19). Irfan, Wang and Akhtar (2019:522) argued that in the business world of today, where industry competition lies primarily between competitors' supply chains, organisations must align dynamic capabilities and supply chain processes. The study of Rajaguru and Matanda (2019:311) found that, by sharing strategic resources and capabilities effectively and efficiently, **supply chain process integration**[DC3] enables the organisation to achieve critical supply chain capabilities such as information sharing, supply chain coordination, and supply chain responsiveness (Irfan *et al.*, 2019; Rajaguru & Matanda, 2019). In essence, supply chain process integration is a higher-order dynamic capability (HODC) through which an organisation can exploit opportunities, acquire new knowledge, and utilise the knowledge to adapt organisational processes pivotal to capitalising on changing market trends (Irfan *et al.,* 2019:522).

The below discussion on the structural mechanisms of process integration (Pillar 2) continues to answer the second question posed at the start of this section: What vehicles or governance structures should organisations have to facilitate process integration? This section, therefore, will outline the formal infrastructures that govern how the organisation conducts its day-to-day activities and the policies and strategic documents that decision-makers use to guide the organisation in meeting long-term goals. To keep the discussion on process integration concise, specific topics such as information processing capabilities and ERP systems, which were already discussed as part of information integration (Pillar 1), were not considered again. However, these topics remain relevant within the scope of process integration.

### a) *Organisational governance*

The International Organisation for Standardisation (ISO) (2017:37) defined organisational governance as *"the system by which an organisation makes and implements decisions in pursuit of its objectives".* Additionally, Hines (2013:234) described organisational governance as an organisation's indirect control over its processes by employing targets and measured performance indicators which are necessary for the governance of any complex system. In the above discussion, it was established that, for organisations to achieve internal SCI, the traditional siloed approach to structuring the organisation should change. In doing so, employees should collaboratively work on a 'set' of supply chain processes, both horizontally (between different functions) and vertically (between different hierarchal levels).

Governance is a homeostatic control measure where (1) the desired results are specified in advance and in a measurable form, (2) some system for monitoring performance against the predetermined specification is in place, and (3) feedback mechanisms are linked to measured performance. The structural components of organisational processes refer to the physical organisational structures that can assist in SCI as well as how the goals and performance measures of an organisation are aligned to facilitate SCI. In a study conducted by Bakker *et al.* (2012:8) among two medium-sized organisations from the Netherlands and two medium-sized organisations from New Zealand, the authors found that a lack of top management support along with poor strategic management and alignment, and insufficient and inconsistent measurement, were identified as the most common barriers to process integration.

Some authors also considered organisational governance within the sphere of the DCV (Takahashi *et al.,* 2017:285; Kay *et al.*, 2018:625; Bogers *et al.,* 2019:85). Bogers *et al.* (2019:85) classified organisational governance as a dynamic capability since an organisation's governance structures determine how quickly the internal organisation is able to respond to opportunities through the mobilisation of organisational resources. Furnival *et al.* (2019:831) added that organisational governance directly relates to the actions taken to ensure that identified opportunities are seized. However, Takahashi *et al.* (2017:285) stated that, although governance is integral to any

organisation, without a supportive investor base and governance system which accommodates constant change, an organisation would barely be able to convert its ordinary capabilities to strong dynamic capabilities. Consequently, **progressive governance structures**[DC4] need to be developed, which emphasises the need for constant change within dynamic environments.

Several strategic decisions influence an organisation's governance structures and can be categorised based on factors such as cross-functional SCM teams, leadership orientation, goal alignment, and the organisation's performance measurement systems. Each of these factors and the role they play in an organisation's internal SCI effort is considered below.

- **Cross-functional SCM teams**

Monczka *et al.* (2021:132) argued that, in an attempt to change the traditional siloed way in which organisations are structured, organisations started using cross-functional (or multidisciplinary) teams. These cross-functional teams serve to promote cross-functional communication, collaboration, and coordination within the organisation. In addition, cross-functional teams aim to provide opportunities for decision-makers to not only share ideas but to also be creative in ways that add value to the organisation (Fawcett *et al.,* 2014:91). Autry and Moon (2016:110) stated that best-in-class supply chains utilise cross-functional teams to manage the most critical organisational processes. One of the significant advantages of cross-functional teams is that knowledge that would potentially only reside within one organisational function is now shared across various other functions. For example, supply chain personnel can bring knowledge required to make critical trade-offs between the desired levels of product functionality, product cost, quality, and deliverability to the purchasing and marketing departments. Involving personnel who possess this unique combination of knowledge and skills in the supply chain process is an effective way to utilise existing knowledge more broadly across the organisation as well as to generate new knowledge in the innovation process (Turkulainen & Swink, 2017:45). To improve cross-functional collaboration, Ellegaard and Koch (2012:150) argued that training in areas outside the personnel's specialisation may improve their ability and understanding of inter-

functional communication. Ideally, cross-functional teams consist of all the relevant functions of the end-to-end supply chain (which will vary based on the industry and product).

In order to build capacity, organisations are also increasingly utilising the practice of job rotation, where personnel are moved through multiple supply chain functions before being assigned to a specific position (Ellegaard & Koch, 2012:149; Basnet 2013:153; Abushaikha, 2014:24; Turkulainen *et al.,* 2017:291). Through job rotation, organisations can foster the end-to-end supply chain knowledge necessary in modern supply chains.

Subsequent to the standardisation of processes (as discussed in Section 4.3.2.1), cross-functional teams are primarily used as a stepping stone to end-to-end SCI (Toivo, 2009:43; Abushaikha, 2014:62). Table 4.4 serves as a consolidated list of the benefits and drawbacks associated with the cross-functional team approach to internal SCI to be considered when planning for SCI.

**Table 4.4: Benefits and drawbacks of the cross-functional team approach to SCI.**

| **BENEFITS** | |
|---|---|
| **Goal alignment** | Cross-functional teams work towards common goals and objectives of the organisation and the supply chain, thereby reducing the phenomenon of subgoal pursuit and silo-thinking (Autry & Moon, 2016:10; Turkulainen *et al.,* 2017:298). |
| **Reduced time to complete a task** | Individuals working in a team can often reduce the time to solve a problem. The cross-functional team approach eliminates the duplication of specific tasks (Monczka *et al.,* 2021:133). |
| **Increased innovation** | The cross-functional team approach is considered a less formal organisational structure. Research has found that informal organisational structures support increased levels of innovation, which leads to a competitive advantage (Monczka *et al.,* 2021:133). |
| **Joint ownership of decisions** | The cross-functional team approach requires joint agreement and ownership of decisions. Decisions made by cross-functional teams are easier to implement because of the overall group buy-in (Autry & Moon, 2016:10; Monczka *et al.,* 2021:133). |
| **Enhanced communication** | The cross-functional team approach encourages open and timely communication (either face to face or using electronic |

| | |
|---|---|
| | communication tools) (Autry & Moon, 2016:13; Monczka *et al.,* 2016:133; Turkulainen *et al.,* 2017:297). |
| **Realising synergies by combining individual functions** | The cross-functional team approach brings together individuals with different perspectives and expertise to perform better on a task compared to individuals or departments acting in isolation (Autry & Moon, 2016:11; Monczka *et al.,* 2016:133; Turkulainen *et al.,* 2017:299). |
| **Better problem resolution** | In general, cross-functional teams possess diverse knowledge and skills, which allow these teams to swiftly identify causes of problems and find solutions (Monczka *et al.,* 2021:134). |
| **Improved internal relationships facilitated by teams** | Cross-functional teams assist in the development of organisational relationship capital, which can improve trust and commitment in the organisation (Monczka *et al.*, 2016:134; Turkulainen *et al.,* 2017:298). |
| **Knowledge transfer** | Cross-functional teams can serve as a vehicle for organisational talent management. Cross-functional expertise and knowledge regarding global and individual country requirements can be transferred to novice personnel as a way to develop, establish, and retain organisational knowledge (Autry & Moon, 2016:10; Turkulainen *et al.,* 2017:298). |
| **DRAWBACKS** | |
| **Team process loss** | Team loss occurs when a cross-functional team does not complete its task in the most efficient manner; members thus become reluctant to share resources (Monczka *et al.,* 2016:135). |
| **The negative effect on individual members** | Members who form part of a cross-functional team might feel pressured to support or conform to a lower norm than the individual's norm. When this occurs, individual performance could suffer (Monczka *et al.,* 2016:135). |
| **Poor team decisions** | A lack of opposition from team members often leads to poor team decision-making, a situation caused by the groupthink phenomenon. In an attempt to reach group uniformity and consensus, optimal solutions to problems may be overlooked (Monczka *et al.,* 2021:135). |

**Source: Researcher's own compilation based on Autry and Moon (2016); Monczka *et al.* (2016, 2021), and Turkulainen *et al.* (2017)**

In addition to the benefits and drawbacks of cross-functional team integration illustrated in Table 4.4, Autry and Moon (2016:10) differentiated between three dimensions of cross-functional team integration, namely *cross-functional collaboration, cross-functional coordination*, and *cross-functional communication*. These three dimensions accurately encapsulate and summarise the main

mechanisms of cross-functional teams. *Cross-functional collaboration* refers to an ongoing process of jointly defining, adjusting, and working towards common goals while maintaining mutual agreement on how best to achieve said goals. *Cross-functional coordination* refers to an ongoing process of ordering supply chain activities across functional areas based on a system-wide approach that consciously optimises a given goal. *Cross-functional communication* relates to the ongoing process of transferring knowledge from one functional area to another to facilitate a mutual understanding of goals.

From the perspective of the DCV, cross-functional team integration is also investigated in the literature. The DCV literature emphasises the importance of cross-functional activities as foundational to developing dynamic capabilities (Roach *et al.,* 2018:564). The authors debated that market learning is not complete until the insight gained from market data is well understood and meaningfully integrated into the organisation's existing knowledge structure. For this purpose, cross-functional knowledge exchange is necessary because new knowledge should be forwarded to and interpreted by the individuals (functions) or planning units to make sense of the data. In doing so, the best possible opportunities for the organisation can be identified. Therefore, in dynamic organisations, eliminating internal boundaries remains a critical capability requiring **cross-functional integration capabilities**[DC5]. This integration enables the organisation to infuse market insights and timely decision-making into organisational governance processes. Therefore, several authors highlighted cross-functional integration as a dynamic capability (Teece, 2007:1322; Herzig & Karlsson, 2017:49; Wu, 2017:47).

From the above discussion, it can be concluded that, in general, the utilisation of cross-functional teams as a point of departure for internal integration is relatively simple and effective. Overall, the use of cross-functional teams ensures that the entire organisation, whether functional or process-oriented, works towards achieving the overall organisational goals.

- **Leadership orientation**

Leadership orientation refers to the degree to which top management shows an active interest in and is actively involved in SCI (Van Weele, 2018:74; Vermeulen *et al.,* 2016:2). Leadership orientation is vital as organisational culture is shaped and reinforced through organisational leadership, and for SCI to be successful all supply chain participants must believe in the integrated approach. According to Autry and Moon (2016:173), the responsibility for SCI cannot be viewed by top management as a straightforward process consisting of several steps which managers simply need to oversee. The authors stated that personnel follow the signals they receive from the decision-makers above them; therefore, an organisation's leadership should send clear, consistent signals that integration is an organisational imperative and that everyone must behave accordingly. These signals from decision-makers are referred to as fostering integrative behaviours.

According to Tate *et al.* (2015:17) and Autry and Moon (2016:70), integrative behaviours refer to organisations educating personnel to empower them to take initiative in terms of integration within their respective functions. Additionally, fostering integrative behaviours would entail incentivising personnel for illustrating leadership in moving integration efforts forward. However, the authors stressed that fostering integrative behaviours is a balancing act as personnel should be guided by standards and policies aligned with the organisation's overall integration efforts. Autry and Moon (2016:173) suggested appointing an 'integration champion' to foster integrative behaviours. Integration champions are located within the internal supply chain to ensure a holistic view and goal alignment across functions within the supply chain or across the organisation (Turkulainen *et al.,* 2017:298). Integration champions accept accountability for each process step and report directly to top management. Additionally, integration champions can take up the leadership of cross-functional teams.

Teece (2007:1336) stated that top management leadership skills are required to sustain dynamic capabilities. Kurtmollaiev (2020:7) agreed and further argued that specific dynamic capabilities may be based on the skills and knowledge of one or more managers. Accordingly, **leadership orientation**[DC6] is classified by many authors as a

dynamic capability. These authors reasoned that, once the opportunity identification activities identify prospective opportunities, leaders must make strategic decisions on resource and organisational infrastructure mobilisation (Barbero *et al.*, 2017:596).

- **Goal alignment**

Ellegaard and Koch (2012:150) highlighted the importance of goal alignment for SCI by stating that an organisation's level of internal SCI is determined by the extent to which functional performance measurement systems and organisational goals are aligned. Goal alignment should reflect collective contributions to the organisation's competitive advantage rather than narrow functional interests. The purpose of goal alignment is to create consistency in priorities across decision-makers in different organisational functions, thus fostering 'a shared vision' for the entire organisation (Turkulainen *et al.,* 2017:298). An essential part of goal alignment for internal SCI is collaboration (Duffy & Narayanan, 2010; Ogunlela & Lekhanya, 2016; Ataseven & Nair, 2017; Rockson *et al.*, 2017). Collaboration not only includes working towards common goals but also refers to an ongoing process of establishing goals and maintaining joint agreement on how best to achieve them (Pundziene, Nikou & Bouwman, 2021:1052). To align functional goals with organisational process goals, supply chain participants should integrate individual goals by negotiating a mutual understanding of group objectives (Autry & Moon, 2016:10).

Wisner *et al.* (2016:463) stated that, once supply chain strategies and objectives are identified, organisations must identify the key processes linking internal supply chain participants and then establish process objectives to ensure that resources and efforts are effectively deployed to support the overarching supply chain strategy. Key process linkages may vary between organisations based on the internal structure, the economic conditions in which they operate, the degree to which functional silos exist, and the nature of existing relationships among organisational functions. In some cases, the organisation may only be able to integrate one essential process between two different functions. In contrast, for other processes, it may be possible to integrate several organisational functions. Pasanen (2015:57) concurred that both goal alignment and supply chain performance measures should be process-oriented to promote internal SCI. Such process-oriented metrics can improve coordination and

integration among various organisational functions. An example of process-orientated metrics in retailing can be illustrated through the implementation of a new digital channel. Traditionally, the success of implementing a new channel was measured based on the total cost of the project and the contribution of each department to the total cost. A process-oriented performance measurement system, on the other hand, takes a cross-functional balanced-scorecard approach to measuring the project by considering cost, outcomes, and customers' response to the project.

From the perspective of the DCV, some authors classified **goal alignment**[DC7] as a dynamic capability (Ambrosini & Altintas, 2019:10; Fawcett *et al.*, 2012:47; Wilden & Gudergan, 2017:815). Wilden and Gudergan (2017:815) argued that, in the decisions on how to prioritise the redevelopment of certain ordinary capabilities into dynamic capabilities, possible conflicting goals should be considered and, through the alignment of these goals, new opportunities can be seized.

Noticeable from this discussion is that goal alignment and performance measurement are closely related and, for an organisation to achieve its SCI goals, performance measures must be in place which supports and promote integration efforts.

- **Performance measurement**

Performance measurement is not a new concept to SCM. Traditionally, supply chain activities were measured; however, Sweeney (2012:13) found that performance measurement along the supply chain was often working at cross purposes, meaning measurement was done in isolation without considering the effect of the performance on the entire process or supply chain. The controversy behind this statement is that fragmented supply chain performance measurement structures resulted in fragmented supply chain management approaches. Wisner *et al.* (2019:468) argued that, in dynamic environments, performance measures should create a consistent emphasis on the overall SCI strategy and corresponding objectives.

To ensure that processes support the overall SCI strategy, performance should continuously be monitored and adapted to ensure that SCI efforts are moved forward.

However, when studying literature on SCI and supply chain performance, an axiom was found that accurately depicts the relationship between supply chain performance and SCI, namely 'what gets measured gets rewarded, and what gets rewarded gets done' (Evangelista *et al.,* 2012:13; Sweeney, 2012:13; Autry & Moon, 2016:175). According to Sweeney (2012:13) "*when functions are interdependent in their work, it is counterproductive to base evaluation and reward systems on individual performance. The nature of such work demands compatible systems such as team-based pay and compensation, performance appraisal and accountability at the team level, and recognition for team results".* Bakker *et al.* (2012:7) added that reward systems aligned to hierarchical organisational structures lead to the silo mentality. Consequently, if SCI is done effectively, integration efforts will be visible in organisational structures (i.e. the deployment of cross-functional teams), organisational goals and objectives, and the organisation's performance measurement and incentive structures.

One of the main assumptions of SCI is that it positively affects supply chain performance (Basnet, 2013:153; Leuschner *et al.,* 2013:34; Abushaikha, 2014:20; Vermeulen *et al.,* 2016:1; Shou *et al.,* 2017:1; Yu *et al.,* 2017:4196; Vallet-Bellmunt & Rivera-Torres, 2018:308). The role of performance in SCI is best synthesised by Flynn *et al.* (2010:60): "*internal integration recognises that different functional areas within an organisation should operate as part of an integrated process. Because internal integration breaks down functional barriers and engenders cooperation to meet the requirements of customers, rather than operating within the functional silos associated with traditional departmentalisation and specialisation, it is expected to be related to performance".* A study by Huo (2012:62) found that internal SCI has the greatest influence on overall organisational performance. The authors also argued that, for organisations to increase performance, they should "*intentionally develop different SCI capabilities*".

Wisner *et al.* (2016:468) argued that performance measures need to create a consistent emphasis on the overall supply chain strategy and corresponding process objectives. For example, if an organisation follows the *efficient* supply chain strategy (e.g. a competitive position mainly based on cost, see Section 2.3.1.1(b)), performance measures for each of the eight supply chain processes (see Table 4.4)

should be developed in line with this strategy. For instance, to align the customer relationship management process with an *efficient* supply chain strategy, the marketing function's performance measures may include the average costs saved on marketing campaigns. Evident from this scenario is that, since the overarching supply chain strategy is cost-centric, organisational objectives will also be cost-driven, which requires that functional and process performance metrics also reflect this orientation (Wisner *et al.,* 2019:469).

When studying performance measurement from the DCV, it is important to first note that most studies investigated the relationship between organisational performance and dynamic capabilities, that is if (and how) dynamic capabilities affect the organisation's performance (Rajaguru & Matanda, 2019; Yu *et al.,* 2019 and Garrido *et al.,* 2020). However, performance measurement for internal SCI relates to the performance measurement of an individual or function within the organisation. Research from this perspective within the DCV is limited; the researcher only found a few published articles considering performance *measurement* as a dynamic capability. These authors (Wilden *et al.,* 2013:83, Wilden *et al.,* 2019:49; Fainshmidt *et al.,* 2019:770) developed and tested a 12-item dynamic capability measurement scale. One of the measurement items was based on the statement: *"in my organisation, we have new or substantially changed ways of achieving our targets and objectives".* These authors classified this measurement item as a dynamic capability, debating that the organisation's ability to realign and refocus **performance measurement**[DC7] is a crucial building block to maintaining a competitive advantage.

At the start of the discussion on process integration (Section 4.3.2), three questions the discussion aimed to address were listed. The first question was: *What are the key supply chain processes that need to be integrated to achieve SCI?* This question was answered in Section 4.3.2.1 (see Table 4.3). The second question was: *What vehicles or governance structures should organisations have to facilitate process integration?* This question was answered in Section 4.3.2.2 (organisational governance). The last question was: *How should the organisation manage the change necessary to move from a functional to a process-oriented supply chain structure?* In the following section, the researcher aims to answer the last question by discussing change management

as a social mechanism of process integration (Pillar 2), explicitly considering personnel motivation.

#### *4.3.2.3 Social mechanisms of Pillar 2: Processes integration*

Effective change management is widely accepted as vital for success in highly competitive and dynamic markets (Buell-Armstrong, 2014:6). Ellegaard and Koch (2012:155) found that organisations who experience low levels of integration must undergo the time- and resource-consuming task of large-scale change management before making significant strides towards achieving integration goals.

The need for change often comes from forces external to the organisation, for example the need for additional commerce channels to fulfil the changing needs of customers. Fawcett *et al.* (2012:47) found that, as an organisation enters a transition phase, resisting internal forces act as counterweights to the external forces which initially necessitated the change. Such resisting forces may incapacitate the strategy-implementation and organisational-transformation processes required to stay competitive in a dynamic industry (Yuen *et al.,* 2019:654). Even when top management develops all the structural mechanisms to facilitate internal SCI, SCI efforts are fruitless if they fail to get the buy-in from personnel. Therefore, organisations need to have formal change management structures in place.

##### *a) Change management*

Change management refers to the discipline that guides an organisation through the implementation of processes, tools, and techniques to equip and support individuals and organisations to adopt change. Autry and Moon (2016:305) debated that the structural change required for internal SCI inevitably leads to some change management issues on the social front of the organisation. Cameron and Green (2019:9) added that individual personnel members, teams (or groups), and the organisation as a whole all play a part in the change process; however, leaders have a particularly tedious responsibility to implement the change. Plattfaut (2014:28) argued that, to manage change successfully, change strategies and the anticipated

advantages of the implemented changes should be communicated within the social structures of the organisation.

From the perspective of the DCV, Plattfaut (2014:28) and Torres, Sidorova and Jones (2018:831) classified change management as a dynamic capability. One of the main advantages of dynamic capabilities is that they provide a competitive advantage in rapidly changing environments (Hong *et al.*, 2018:3510; Furnival *et al.,* 2019:829; Schwarz *et al.*, 2019:10), that is to say environments characterised by high levels of change. Considering the vast number of changes required for internal SCI, having the **ability to adapt**(Adaptability)[34] to implement change rapidly is regarded as a dynamic capability.

One of the most cited subdimensions of change management is personnel motivation (Wu, Chuang & Hsu, 2014:123; Cao *et al.*, 2015:27; Pasanen, 2015:7; Tsanos & Zografos, 2016:688; Wang *et al.,* 2016:422). Personnel motivation, as a key component of change management, is considered next.

- **Personnel motivation**

Cameron and Green (2019:9) argued that individuals are at the heart of organisational change. Once individuals are motivated to act differently, the organisation will truly see the change they envisage come to life. Personnel are, to some extent, governed by the norms of the groups they belong to, and groups are bound together in a whole system that interconnects in various habitual ways (Cameron & Green, 2019:9). As stated in the introduction of Chapter 3, Tate *et al.* (2015:16) found that lower-level personnel are often left to 'go through the motions' of integration without the appropriate motivation. Nohria *et al.* (2008:1) argued that a motivated workforce leads to better organisational performance and organisations should, therefore, actively work towards establishing personnel motivation.

[34] In Chapter 2, Table 2.1, it was stated that the purpose of dynamic capabilities is to stimulate adaptability within the organisation. As such, adaptability serves as a central motif throughout the study. Accordingly, adaptability was not classified as a dynamic capability and number accordingly (for example [DCx]) since it serves as the *outcome* of dynamic capabilities instead of being a dynamic capability. However, considering the centrality of adaptability for this study, it was still incorporated into the coding frame (Annexure A) and included in the analysis of retailers' IARs.

Autry and Moon (2016:305–306) provided two ways to facilitate employee motivation. First, management should show employees that changes are distributed equitably among members. Second, management should ensure that employees understand the benefits of integration. Managing personnel motivation is crucial in change management as changes in goal alignment and performance measurement can potentially exasperate personnel's sensitivity regarding power dynamics and hierarchies in the supply chain. Hines (2013:166) stated that change often creates power inequalities, resulting in higher demands being placed on one function, ultimately creating discontentment amongst personnel.

#### *4.3.2.4 Summary of process integration (Pillar 2)*

The above literature section considered Pillar 2 of internal SCI: process integration. The discussion first considered the eight key supply chain processes that organisations should consider when commencing with process integration efforts. Next, organisational governance was considered as the structural mechanism of process integration. This discussion focused on the influence of cross-functional teams on SCI and the organisation's leadership orientation towards SCI. The role of goal alignment and performance measurement in achieving process integration as one of the three pillars of internal SCI was also discussed. Subsequently, change management as a social mechanism of process integration was addressed. It was established that change management is required for organisations to move from a functional/silo organisational structure to a process-oriented organisational structure. In particular, organisations should strive to motivate personnel to advance SCI efforts.

Table 4.5 concludes and summarises process integration as the second pillar of internal SCI.

**Table 4.5: Summary of Process integration (Pillar 2)**

| MECHANISM | COMPONENTS | SUBDIMENSIONS |
|---|---|---|
| **Process integration** is a holistic approach to SCI which emphasises the joint management of supply chain processes across functional units. Process integration is achieved through organisational governance in terms of leadership support, the cross-functional team approach, as well as the alignment of supply chain goals with organisational objectives and process-oriented performance measures. Process integration requires organisational change and personnel support. | | |
| **Key Supply Chain Processes** | | Customer relationship management, Customer service management, Demand management, Order fulfilment, Manufacturing flow management, Supplier relationship management, Product development and commercialisation, Returns management |
| **Structural** | **Organisational Governance** | Refers to the organisation's internal governance systems by which management makes and implements decisions to pursue its objectives. These systems include physical organisational structures and performance measurement systems to guide internal SCI efforts. |
| | | **Cross-functional teams**<br>Serve to promote cross-functional communication, collaboration, and coordination within the organisation, leading to improved knowledge and skills transfer for internal SCI. |
| | | **Leadership orientation**<br>The degree to which top management leads the internal SCI efforts of the organisation. |
| | | **Goal alignment**<br>Creates consistency in priorities among decision-makers from different organisational functions. Fostering 'a shared vision' for the entire organisation and supply chain. |
| | | **Performance measurement**<br>Performance measures should create consistent emphasis on the overall supply chain integration strategy and corresponding process objectives. Performance measures should be adapted to reward integration initiatives across the internal supply chain. |
| **Social** | **Change Management** | Refers to the process, tools, and techniques used by an organisation to manage the social element of change. Change management strategies aid organisations in creating acceptance from the social structures of the organisation to facilitate internal SCI. |
| | | **Personnel motivation**<br>Group norms govern personnel; once individuals are motivated to act differently, the organisation will truly realise the internal SCI effort. |
| **List of codes incorporated into the coding frame** | | |
| **Dynamic Capabilities** | **DC3** | **Supply chain process integration capability:**<br>The ability of an organisation to restructure supply chain processes to share strategic resources and capabilities effectively and efficiently across the organisation's supply chain. |

| MECHANISM | COMPONENTS | SUBDIMENSIONS |
|---|---|---|
| | DC4 | **Progressive organisational governance capability:**<br>The ability of an organisation to adapt to change by dynamically adjusting the organisation's basic (standard) governance processes. |
| | DC5 | **Cross-functional integration capability:**<br>The ability of an organisation to eliminate internal boundaries and build strong boundary-spanning relationships (for example, relationships across functions and hierarchies within the internal supply chain of the organisation). |
| | DC6 | **Leadership orientation capability:**<br>The ability of a leader to make strategic decisions on resource reallocation and organisational infrastructure mobilisation to advance the organisation's internal SCI efforts. |
| | DC7 | **Dynamic goal alignment and performance measurement capability:**<br>The ability of an organisation to readjust supply chain goals in pursuit of opportunities and simultaneously adapt performance measures to attain new goals. |

**Source: Researcher's own compilation based on the literature discussion**

Although process and information integration will, to a large extent, determine the success of an organisation's efforts to achieve SCI, several authors stated that, if the organisation does not build the necessary relationships to drive its SCI efforts, internal SCI will not succeed (Awad & Nassar, 2010:4; Bakker *et al.,* 2012:7; Ellegaard & Koch, 2012:152; Tsanos & Zografos, 2016:690). Subsequently, the final pillar of SCI will consider relationships (social capital) as a mediator in SCI.

### 4.3.3 Pillar 3: Social capital integration

When investigating internal SCI, information and process integration (Pillar 1 and Pillar 2) are typically more salient and measurable. However, Autry and Moon (2016:301) argued that, for a supply chain to be integrated, a basis for connecting processes and information across functional areas is needed. After all, unless an organisation is fully automated, there will always be individuals working within functional areas to complete specific tasks. In the recent study of Dias and Silva (2022:1), the authors found that social capital makes a significant contribution to the efficient operations of a supply chain by facilitating cooperation, coordination, collaboration, as well as resource and information exchange. In Section 4.3.1 and Section 4.3.2, several dimensions of

information and process integration were discussed. However, authors found that, even if an organisation is successful in the establishment of the structural and social components of information and process integration, without the necessary internal relationships to manage and drive integration the integration efforts are fruitless (Cao *et al.,* 2015:27; Stolze *et al.,* 2015:49; Mbaisi, 2016:1).

For the purpose of this study, relational barriers, as initially presented by Autry and Moon (2016), are renamed 'social capital'. The rationale for this renaming can be explained as follows: relationship integration is described as the ability of two or more functions to develop social connections that serve to guide their interactions when working together (Lamb *et al.,* 2018:223). Horn *et al.* (2014:56) added that supply chain integration refers to the process of interaction and collaboration to achieve mutually acceptable outcomes. The authors, therefore, posited that a close linkage exists between social interaction, social capital, and integration. Min, Kim and Chen (2008) defined social capital as: *"...a set of social resources embedded in the relationships of a supply chain network, including not only relationships per se, but also, interactions among different actors and the processes (or value) that is derived from those relationships within a supply chain".*

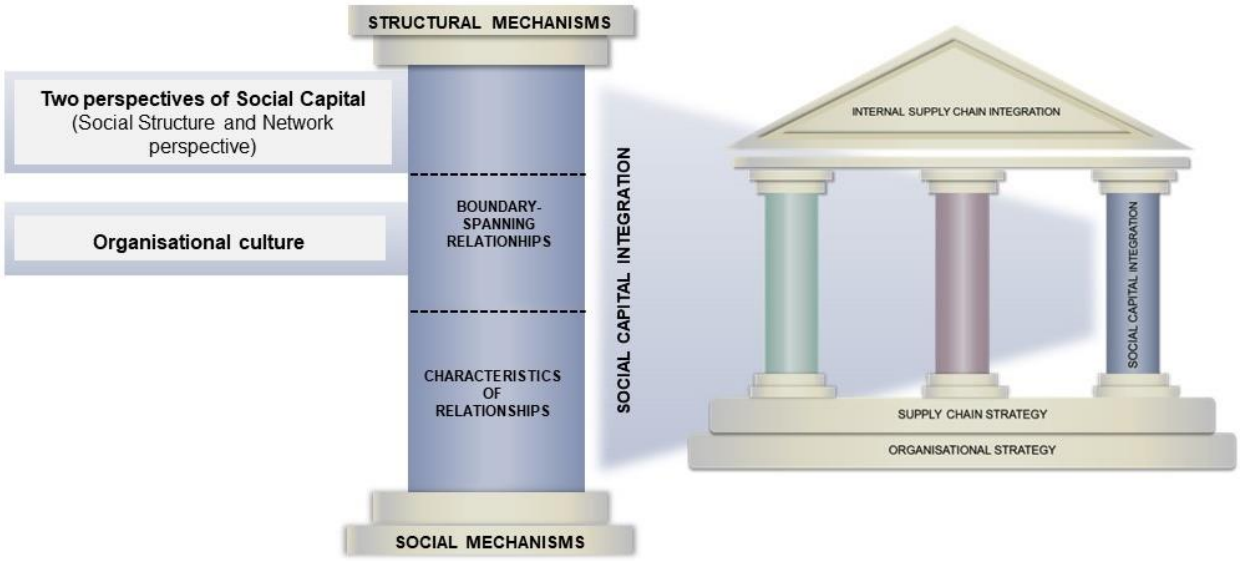
Stolze *et al.* (2015:51) provided additional clarification on the term 'social resource embeddedness in relationships' by stating that social resource embeddedness in supply chain networks is reflected in the information sharing, joint problem-solving, and trust between parties, which positively influence individuals' willingness to integrate across functions. Stolze *et al.* (2015:50) further argued that a broad view of social capital provides an axiomatic foundation through which social resource embeddedness, socialisation, and shared interpretation are all proposed social mechanisms that lead to integration.

When comparing the descriptions of relationship integration with social capital, it becomes apparent that social capital encompasses more than just the value of relationships but also takes into account the value that is created when different 'actors' work together and the processes (or value) that are derived from those relationships (Bentley, Robinson & Zanhour, 2021:2). As such, social capital is considered the last pillar of SCI and aims to answer the following three questions.

First, what type of social capital would be relevant for SCI? Second, what relationships are important for SCI? Third, what organisational characteristics promote social capital integration?

As with the discussion on information and process integration (Pillar 1 and Pillar 2), Figure 4.6 serves as a visual illustration of the pillars of SCI, and particularly how the questions listed above are addressed in the literature discussed below.

**Figure 4.6: Visual illustration of the components of Social capital integration (Pillar 3)**




**Source: Researcher's own compilation**

Figure 4.6 illustrates that the discussion on social capital integration (Pillar 3) starts by addressing the two perspectives of social capital, namely the social structure and network perspectives. Thereafter, the structural mechanism of social capital integration is discussed by addressing the importance of developing a collaborative organisational culture through the implementation of boundary-spanning relationships. The discussion on social capital integration is concluded by describing the social mechanism of social capital integration (Pillar 3).

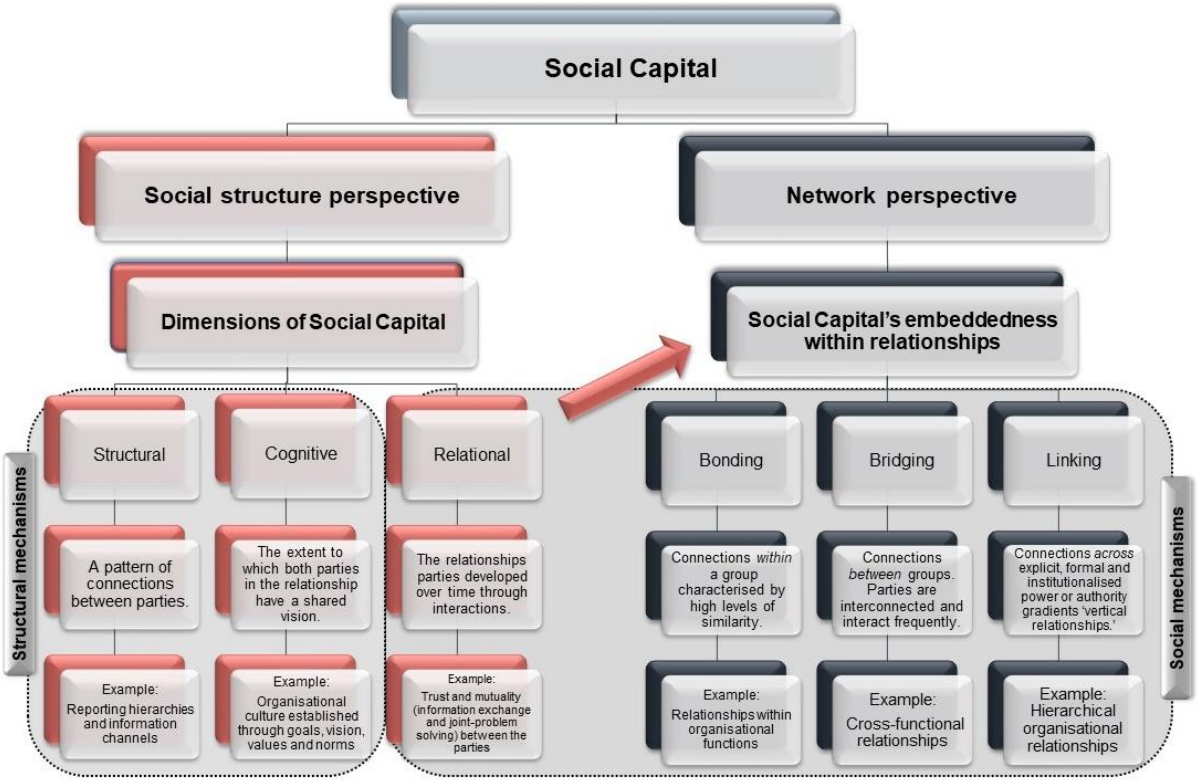
### *4.3.3.1 Two perspectives of social capital*

For organisational functions to work together, social capital, in the form of functioning relationships, is essential, a situation Autry and Moon (2016:301) term 'the relational glue of SCI'. Yim and Leem (2013:625) argued that, although the term 'social capital'

was originally formulated in 1961, the concept only began to receive attention within the realm of supply chain literature in the early 2000s. Social capital as an area of investigation within SCM has become increasingly popular, as seen not only in the series of journal articles published on SCM and social capital (Reyes & Giachetti, 2008; Rozemeijer *et al.,* 2012; Yim & Leem, 2013; El Gizawi, 2014; Kozlenkova *et al.,* 2015; Marshall *et al.,* 2015) but also in articles focusing on social capital and SCI (Stolze *et al.,* 2015; Zsidisin *et al.,* 2015; Thornton *et al.,* 2016; Saleh, 2017; Chen *et al.,* 2018; Dias & Silva, 2022).

Szymczak (2013:205) differentiates between internal and external social capital by stating that *internal social capital* comprises of all personnel's connections and relations within the organisation, which is evident in the standards, attitudes, principles, and customs manifested in the so-called 'spirit of the organisation' or the organisational culture. Internal social capital determines the quality of relationships between and among personnel and departments within the entire organisation. On the other hand, *external social capital* is based on the organisation's involvement in relationships with customers, suppliers, and other organisations (Whipple *et al.*, 2015:17). To stay within the parameters of this study, the researcher only considered literature relevant to *internal* social capital. However, the researcher acknowledges the link between social capital and external relationships with suppliers and customers; for example, when a specific employee has a long-standing relationship with a supplier that he/she can leverage to the organisation's advantage, such a relationship is considered internal social capital. However, for most of the discussion which follows, only social capital aspects directly housed within the organisation were considered. Horn *et al.* (2014:54) argued that, because of the broad application of social capital to multiple academic disciplines, the underlining constructs of social capital has become diluted. Figure 4.7 summarises the two perspectives of social capital: *the social perspective* and *the network perspective*.

**Figure 4.7: Two perspectives of social capital**




**Source: Developed by the researcher based on literature**

In Figure 4.7, social capital is considered from two perspectives, either the *social structure perspective* or the *network perspective* (Claridge, 2017). The reviewed literature observed that social structure is applied by researchers within the field of management sciences, and specifically SCM (Johnson *et al.,* 2013:326; Yim & Leem, 2013:329; Horn *et al.,* 2014:56; Müller, 2014:6; Whipple *et al.,* 2015:6; Gelderman, Semeijn & Mertschuweit, 2016:225), while the network perspective is applied more frequently by researchers within the field of humanities (Hawkins & Maurer, 2010:1779; Poortinga, 2012:287; Aldrich & Meyer, 2015:258; Boeri *et al.,* 2016:97). Therefore, the social structure perspective was applied to this study.

It should, however, be highlighted that the 'relational dimension' of the social structure perspective closely relates to the network perspective, which considers the embeddedness of social capital within relationships. Since many authors (Hawkins & Maurer, 2010:1779; Poortinga, 2012:287; Aldrich & Meyer, 2015:258; Boeri *et al.,* 2016:95) differentiated between the social structure and network perspectives when investigating social capital, Figure 4.7 also illustrates the social and network

perspectives as different perspectives. However, since the relational dimension of the social structure perspective is closely related to the network perspective, the structural mechanisms associated with the network perspective (namely bridging, bonding, and linking) are discussed hereafter as part of the relational dimension of the social structure perspective on social capital.

As with the discussion on information and process integration above (Pillar 1 and Pillar 2), the debate on social capital integration (Pillar 3) is also subdivided into discussions on the structural and social mechanisms of social capital integration. The structural and cognitive dimensions of the social structure perspective are discussed in more detail below as part of the *structural mechanisms* of social capital integration. The relational dimension will be discussed as part of the *social mechanism* of social capital integration. In line with the rationale provided for the classification of structural and social mechanisms discussed in terms of Pillar 1 and Pillar 2, the rationale for considering structural and cognitive social capital as structural mechanisms was that the elements housed within this dimension are more tangible while the elements of relational social capital are more intangible.

**a) *Social structure perspective***

The social structure perspective divides social capital into three dimensions: *structural, cognitive,* and *relational*. The *structural dimension* includes personal linkages and the overall patterns and configurations of connections between parties (Yim & Leem, 2013:325). Examples of the social structural dimension include diversity and centrality as well as boundary-spanning relationships (Gelderman *et al.,* 2016:228), which relate to the connections (or relationships) that span across diverse hierarchical levels (or reporting channels) and functions (Whipple *et al.*, 2015:6). In addition, the social structural dimension also comprises relationships across information channels (Stolze *et al.,* 2015:51) and organisational roles, rules, precedents, and procedures (Claridge, 2017). The *cognitive dimension* (Szymczak, 2013:207) relates to the similarity between parties within the organisation and their shared meanings and understandings (Flynn *et al.,* 2016:10) in terms of the organisational philosophy, goals, and vision (Gelderman *et al.,* 2016:228). Cognitive dimensions are comparable to

codes or paradigms that facilitate the understanding of the social system and its respective goals in terms of values, attitudes, and beliefs (Horn *et al.,* 2014:56). Additionally, Stolze *et al.* (2015:53) found that the cognitive dimension of social capital facilitates cross-functional cohesion in SCI. As such, a shared culture and congruent goals are substantive dimensions of cognitive social capital (Gelderman *et al.,* 2016:225). Examples of the cognitive dimension of social capital include organisational culture, goals, vision and values, and the internal organisation's collective understanding of these aspects. The *relational dimension* (Szymczak, 2013:207) is based on the notion of relational embeddedness and relates to the relationships that people develop with each other over time through interactions (Horn *et al.,* 2014:56; Whipple *et al.,* 2015:6; Gelderman *et al.,* 2016:225). These relationships are shaped based on the history of interactions, mutual respect, friendship, and a personal or emotional attachment (Yim & Leem, 2013:325).

Stolze *et al.* (2015:52) stated that the following three facets are crucial in the relational dimension of social capital: (1) *trust* which underpins governance structures free from opportunism (Horn *et al.,* 2014:56; Wu *et al.,* 2014:123; Rockson *et al.,* 2017:112); (2) *information sharing,* in particular fine-grained and detailed tacit information which reflects the closeness of all members of the organisation; and (3) *joint problem-solving* leading to integration, coordination, and collaboration across functions. Stolze *et al.* (2015:52) argued that these three facets can lead to integration, both horizontally and vertically within the organisation (Johnson *et al.,* 2013:324).

**b)** ***The network perspective***

The network perspective considers the embeddedness of social capital in relationships, which means that the value of relationships is housed within the strength of relationships among parties. Claridge (2017) explained that the network perspective consists of the collection of relationships of an individual. The network perspective outlines three factors as follows:

- **Bonding***:* applies to individuals' social ties (relationships) within the same social group. In terms of SCI, bonding falls within functional units, in terms of

the relationships among personnel and how they interact as well as the unique culture that exists within each functional unit.

- **Bridging:** pertains to the social ties that link individuals from different social groups. In terms of SCI, bridging relates to cross-functional relationships, for example the relationships that exist among cross-functional teams.
- **Linking:** considered an extension of bonding and bridging and refers to the social ties between individuals across explicit and formal power hierarchies. In terms of SCI, linking relates to the relationships between personnel from different power or authority positions within the organisation, for example the relationship between a purchaser and purchasing manager.

The above discussion aimed to answer the first question posed at the start of the discussion on social capital: *What types of social capital would be relevant for SCI?* Based on the above discussion, it can be concluded that relationships form the essence of social capital and that these relationships are complex and intertwined, comprising of many relevant aspects. In the following discussion, these aspects are deconstructed to determine the relevance and impact on SCI.

#### *4.3.3.2 Structural mechanisms of Pillar 3: Social capital integration*

Monczka *et al.* (2016:119) reported on a study conducted among 111 senior supply chain executives of organisations in the USA and Europe to establish the most critical capabilities for modern SCI. In their findings, the researchers reported on their astonishment that top executives did not list standard capabilities, such as process-orientation or financial capabilities, as critical capabilities but instead listed relationship management skills as the single most important capability for SCI. Fawcett *et al.* (2014:341) provided some insight into why relationship management was considered the most critical capability. These authors debated that futurists describe a day when supply chain success will hinge on the agility and strength of the supply chain team rather than on the competitive position of an individual organisation. The authors concluded that relationship management is a critical supply chain capability, requiring managers to manage diverse relationships up and down the supply chain. Autry and Moon (2016:232) added that relationship management creates joint policies that

emphasise the importance of building collaborative working relationships, attitudes, and behaviours. As seen in the definition of social capital, it is evident that social capital encompasses more than just relationships but also includes the interactions among parties as well as the processes derived from those relationships.

Within the domain of the DCV, social capital is often classified as a dynamic capability (Martin & Bachrach, 2018:27; Ambrosini & Altintas, 2019:8; Schwarz *et al.,* 2019:3). The rationale for this classification is that, by leveraging formal and informal social relationships (both internal and external to the organisation), personnel and managers gain access to resources and information which allows them to recognise opportunities before they fully materialise (Martin & Bachrach, 2018:27). The ability of personnel and managers to recognise opportunities and create new opportunities through sense-making is critical to developing dynamic capabilities (Schwarz *et al.*, 2019:3). Therefore, Ambrosini and Altintas (2019:8) debated that managers with superior relationship-building capabilities will be more successful in pursuing identified opportunities. Martin and Bachrach (2018:29) added that social ties can provide access to resources such as financing and skilled personnel needed to pursue opportunities.

From an SCI perspective, advantageous positions within the internal social network may confer power and influence over resources across organisational functions, advancing the organisation's internal SCI agenda. Additionally, Schwarz *et al.* (2019:3) argued that dynamic capabilities require managers to adapt to changes in the environment to enhance and alter the organisational assets, not only through innovation and organisational learning but also through implementing new resources and processes such as SCI. Martin and Bachrach (2018:29) added that the internal power and influence derived from social capital may facilitate alterations in personnel, organisational structure, and physical assets involved in the transforming activity. Moreover, these authors argued that organisations will be unable to acquire, recombine, and release resources without the social capital of individuals. The following section aims to consider these relationships in more detail and how they can facilitate the internal SCI efforts of the organisation.

### *a) Boundary-spanning relationships*

Every group or social system within an organisation has a boundary that separates it from other groups or systems, defining who is in the group and who falls outside of it (Levine & Hogg, 2010:108). Boundary-spanning activities may be a formal part of some individuals' jobs or may be carried out informally by personnel from a specific organisational function. How a group (and, in the case of SCI, a function) manages its boundaries has implications for the processes and performance of other functions. At face value, boundary-spanning relationships might seem similar to the collaboration of cross-functional SCM teams (discussed as part of process integration – Section 4.3.2.2(a)). However, Roach *et al.* (2018:566) highlighted a fundamental difference between cross-functional coordination and boundary-spanning relationships, arguing that the former measures coordination of resources and information while the latter measures horizontal integration based on involvement, communication, and participation. It can, therefore, be argued that boundary-spanning relationships go beyond cross-functional coordination.

The importance of relationships for internal SCI has been established in the discussion presented during the introduction of social capital integration; however, the relationship between patterns and configurations of relationships, often reflected in the organisational structure, still needs to be addressed. Organisational structure refers to the reporting relationships within an organisation (Autry & Moon, 2016:18). Badenhorst-Weiss *et al.* (2017:18) argued that organisational structures either promote or inhibit SCI. Generally, an organisation structured with multiple layers headed by functional managers is not conducive to SCI. Autry and Moon (2016:209) argued that, although hierarchical approaches to SCM offer advantages, they also have disadvantages such as the inherent inflexibility of a structure. The authors argued that a flatter organisational structure with fewer levels and a wider span of control is more appropriate for SCI. One way in which organisations attempt to create organisational structures (and hierarchies) to promote SCI is through the implementation of a matrix organisational structure. In a matrix organisational structure, a sales and operations process owner can, for example, find him-/herself in a matrix role, reporting to both a sales leader and a supply chain leader simultaneously. However, Autry and Moon (2016:19) cautioned that, although such a

structure might be simple to execute, it often only creates the illusion of SCI and can lead to significant role conflict or role ambiguity for all personnel involved.

From the perspective of the DCV, Defee and Fugate (2010:108) stated that sharing and using dynamic capabilities across the internal boundaries of the supply chain can lead to more responsive, adaptive, and ultimately better-performing supply chains. Turkulainen and Swink (2017:42) added that supply chain personnel play unique boundary-spanning roles in an organisation. These personnel can provide knowledge and information to the organisation, allowing them access to insights that can be critical for innovation. Accordingly, Bogers *et al.* (2019:84) classified **boundary-spanning relationships**(DC5)[35] as a dynamic capability by arguing that such relationships can assist organisations in identifying and evaluating valuable external knowledge and establishing cross-boundary collaboration among internal supply chain functions.

Autry and Moon (2016:306) argued that, if the personnel responsible for SCI are not committed to prioritising the integration effort, a fully internally integrated supply chain will not manifest. The authors further maintained that the personnel's attitudes towards integration is synonymous with the facilitation of a *culture of integration* and that establishing a culture of integration can be difficult to achieve if such a culture is lacking within the organisation.

- **Organisational culture**

A popular saying that *"culture eats strategy for breakfast"* (Burchardt & Maisch, 2019:113; Zhang & Watson, 2020:304) implies that, if an organisation's culture does not align with its operations, organisations are ineffective in achieving internal SCI goals. Organisational culture is defined by Wilkinson (2017) as *"... a pattern of the shared basic assumption that has been invented, discovered or developed by a given group as it learns to cope with its problems of external adaptation and internal integration… these assumptions have worked well enough to be considered valid and*

[35] During the coding frame quality review process, boundary-spanning relationships were recoded and combined with other literature findings to constitute **cross-functional integration capabilities**[DC5]**.**

*therefore to be taught to new members as the correct way to perceive, think and feel in relation to those problems".*

Lampret and Potočan (2014:36) argued that culture, in general, represents multi-layered and dynamic content consisting of both visible artefacts (language, technology, myths, stories, and rituals) and espoused values (philosophy, strategy, and goals of the organisation) and, when studied within the context of an organisation consisting of diverse personnel, its complexity deepens. Evident from the definition of organisational culture by Wilkinson (2017), a *shared assumption* or a *shared meaning or understanding* is necessary to translate the organisation's attitudes, values, goals, and practices into organisational culture.

Concerning SCI and social capital, the main objective of an organisation is to establish a collaborative organisational culture (Wong *et al.,* 2011:604; Hines, 2013:38; Abushaikha, 2014:171; Autry & Moon, 2016:20). Cao *et al.* (2015:27) outlined two reasons why a collaborative organisational culture influences SCI. First, an organisation's culture represents an organisation's shared values and beliefs. Such values and beliefs define how an organisation operates, guiding personnel in their conduct. When an organisation rewards and values cross-functional collaboration, a culture of collaboration is instilled within its personnel. Second, SCI requires both the capability and the willingness of leaders and personnel to integrate. A strong integration capability allows an organisation to develop and manage relationships and coordinate cross-functional cooperation, enabling internal SCI. On the other hand, a willingness for SCI cultivates trust and relationship commitment which drives organisations to proactively integrate. Cao *et al.* (2015:27) found that, when an organisation faces SCI difficulties, one possible solution is adjusting its organisational culture. Consequently, it can be argued that a collaborative organisational culture serves as a facilitator of internal SCI (Krishnapriya & Baral, 2014:48; Pasanen, 2015:21; Zhang *et al.,* 2015:1148; Zhao *et al.*, 2015:165; Lii & Kuo, 2016:144). The following three factors need to be considered when establishing a collaborative organisational culture: 1) hierarchical culture, 2) interdependence among functions, and 3) personnel diversity. These factors are briefly discussed below.

A *hierarchical organisational culture* is often characterised as having either a top-down or bottom-up approach to organisational management (Autry & Moon, 2016:21). The Oxford English Dictionary (2018b) defines a top-down organisational structure as: *"...a system of government or management in which actions and policies are initiated at the highest level*". On the other hand, a bottom-up approach is defined as *"... proceeding from the bottom or beginning of a hierarchy or process moving upwards*" (The Oxford English Dictionary, 2018a). Cao *et al.* (2015:29) argued that a top-down hierarchical culture has two implications for SCI. First, personnel from organisations with a top-down hierarchical structure are dominated by a 'mentality of functional silos'. Second, personnel from organisations with a top-down hierarchical structure are used to following rules and regulations, which often inhibit their ability to think outside the box. Therefore, a top-down hierarchical structure creates an organisational culture that is reluctant to adapt to change. Several authors (Capó-vicedo *et al.,* 2011:286; Cao *et al.,* 2015:29; Flynn *et al.*, 2016:12; Herzig & Karlsson, 2017:37; Wang *et al.,* 2019:6) therefore found that a flatter organisational structure (fewer decision-makers at each level) facilitates internal SCI as all members of the organisation contribute to the organisational culture instead of only a few managers (Flynn *et al.*, 2016:5). However, Autry and Moon (2016:50–51) found that SCI cannot be implemented simply from the bottom-up or top-down, or over a short period of time, as building an organisational culture that has the capability and willingness to pursue internal SCI requires a systematic drive across all functions, from strategic to operational level.

The second factor to consider when developing a collaborative organisational culture is the *interdependence* of different organisational functions. Interdependence is synonymous with the SCM as all supply chain members are dependent on each other, either directly or indirectly. Interdependence in the internal supply chain exists when one function within the supply chain does not exclusively control all of the conditions necessary to achieve an action or a desired outcome (Zailani & Rajagopal, 2005:282). However, Flynn *et al.* (2016:5) argued that cooperative interdependence among organisational functions is laborious due to pressures exerted by the organisation on its functions to be simultaneously interdependent and differentiated. These reciprocal interdependent relationships among organisational functions are crucial for integration success since one member's outputs serve as another member's inputs. Autry and Moon (2016:34) debated that the awareness of the interdependence between

organisational functions could be the key to breaking down functional silos and creating a collaborative organisational culture.

The last factor to consider when developing a collaborative organisational culture relates to *personnel diversity*. The implicit and explicit orientations and characteristics of personnel can affect their perceptions of the work environment and their ways of thinking. Rockson *et al.* (2017:105) found that organisations who can bridge diversity differences to support personnel's commonalities can obtain intangible assets such as trust and commitment. In turn, these assets will manifest in the organisation's social structures, relationships, and interactions and will ultimately establish a collaborative organisational culture.

Organisational culture also plays a central role in the organisation's ability to develop dynamic capabilities (Teece, 2018:42). Teece (2018:42) explained that a key characteristic of dynamic capabilities is inimitability. Since an organisation's culture is often developed from idiosyncratic characteristics, dynamic capabilities underpinned by the organisation's culture increase the inimitability of these capabilities. Bitencourt *et al.* (2020:114) added that **organisational culture**[DC8] promotes more interdependence for personnel and that these characteristics are critical elements in developing effective dynamic capabilities in organisations.

#### *4.3.3.3 Social mechanisms of Pillar 3: Social capital integration*

As discussed in Section 4.3.3.1(a) (and seen in Figure 4.6), the social mechanisms of social capital are concerned with the relational dynamics of social capital, for example the relationships that parties develop with the internal supply chain through interactions. Several intangible components of relationships are relevant here, such as trust and mutuality. Szymczak (2013:205) argued that the notion of 'intangible' social capital is gaining importance, mainly due to its proven influence in the following significant areas on adding value or improving competitiveness in the supply chain: information and knowledge (driving innovation), trust and credibility (image creation), and commitment and loyalty (influencing productivity). If an organisation fosters a

collaborative culture (Huo, 2012:599; Dalkir, 2017:273), both processes and information are connected within the supply chain.

A critical social mechanism of social capital is the knowledge exchange ability of an organisation's social structures. Although knowledge management has already been discussed as part of Pillar 1 (information integration, Section 4.3.1.2(a)), the social aspect of an organisation's ability to build relationships that facilitate knowledge exchange should also be underscored. Handoko and Bresnen (2018:90) explained that **knowledge exchange**[DC9] between functions has become progressively more important for organisations wanting to keep pace with the increased competition, product innovation, and growing rate of change in new products and technologies.

In supply chains, an organisation's ability to leverage the knowledge that resides within the internal network has the potential to improve not only functional performance but also the effectiveness of the supply chain as a whole. Saleh (2017:37) explained that, through socialisation, supply chain members may develop a deeper understanding of how each function in the organisation works. However, this requires investment in relationship-building resources. The following section considers the characteristics of relationships that facilitate internal SCI.

### *a) Characteristics of relationships*

Social capital paves the way for a willingness to be engaged in the common goal and cooperative action of an organisation. In addition, social capital relates to the competitive advantage that can be gained through the internal relationships of an organisation. Yim and Leem (2013:325) explained that internal relationships are forged on an ongoing basis between different organisational members, and certain relationship characteristics such as history of interactions, respect, friendship, and personal and emotional attachment influence the development of these relationships. Yet, for relationships to aid the organisation's internal SCI efforts, specific relational characteristics should be present. Previous authors listed numerous relational characteristics which facilitate SCI. Table 4.6 serves to present and briefly describe the relevance of each characteristic.

**Table 4.6: Characteristics of relationships**

| CHARACTERISTIC | DESCRIPTION |
|---|---|
| **Trust** | Trust is a critical component of the creation of social capital (Chopra & Meindl, 2016:263). Several authors argued that trust is a crucial facilitator of SCI (Mbaisi, 2016:2; Willis *et al.,* 2016:759; Gosling *et al.,* 2017:242). This statement is substantiated by Johnson *et al.* (2013:327), who posited that trust facilitates rapid access to information during times of crisis without the necessity for formal requisitions, which is an indicator of a fully integrated supply chain. |
| **Mutuality** | The value of mutuality for SCI has been highlighted by several authors (Kotzab *et al.*, 2005; Ellegaard & Koch, 2012; Gelderman *et al.,* 2016; Tsanos & Zografos, 2016; Huang & Chiu, 2018). Mutuality is best defined by Vocabulary.com (2018) as *"...a reciprocal relation between interdependent entities (objects or individuals or groups)*". Mutuality is closely related to collaboration and is essential in SCI as it signals that organisational functions have joint objectives. |
| **Reciprocity** | Reciprocity relates to the practice of exchanging mutual benefits and has been listed by several authors as a key ingredient of cross-functional relationships (Johnson *et al.,* 2013:325; Yim & Leem, 2013:333; Wu *et al.,* 2014:125; Khanuja & Jain, 2019:281; Song *et al.*, 2019:539). Reciprocity develops a sense of obligation among functions to reciprocate collaborative behaviours (Wu *et al.*, 2014:125). Reciprocity in SCI establishes cooperation and collaboration among functions; hence, functions collaborate to pursue common goals. Johnson *et al.* (2013:325) argued that reciprocity appears as a valuable resource enabling flexibility, velocity, and visibility, which results in the building of SCI capabilities. |
| **Open lines of communication** | Maintaining open lines of communication between functions is the most widely used technique to foster internal SCI (Stank *et al.,* 2014:315) since open lines of communication facilitate information sharing, teamwork, and joint decision-making across internal functions (Wong *et al.*, 2017:555). Open lines of communication were highlighted as an essential characteristic of relationships for internal SCI by many authors (Zhang *et al.,* 2015:1147; Christiansen, 2016:231; Vermeulen *et al.,* 2016:3) |
| **Shared values and norms** | Ataseven, Nair and Ferguson (2018:835) stated that the norms of social capital transform personnel from self-seeking individuals into members of a group that has an identity, shared interests, and a commitment to a common goal. Some authors (Johnson *et al.,* 2013:331; Stevens & Johnson, 2016:32) argued that shared values and norms as a characteristic of relationships create trust, which is essential for an organisation's internal SCI efforts. |

**Source: Researcher's own compilation from literature**

#### *4.3.3.4 Summary of social capital integration (Pillar 3)*

The above literature section considered the third (and final) pillar of internal SCI: social capital integration. Authors were quoted as stating that social capital forms the 'relational glue' which facilitates internal SCI and, without functioning and collaborative relationships, the organisation is unlikely to be successful in their SCI efforts. The discussion on social capital integration (Pillar 3) first set out to differentiate between the two social capital perspectives, namely social structure and network perspectives. Next, the structural mechanisms of social capital (Pillar 3) were presented by discussing boundary-spanning relationships. It was found that, to advance the organisation's internal SCI efforts, relationships across the different boundaries (hierarchical management levels and functions) should be established. To achieve this, organisations should develop an organisational culture that values and rewards coordination and collaboration among personnel. Finally, the discussion on the social mechanisms of social capital considered the intangible relationship characteristics which facilitate an organisation's internal SCI efforts. Table 4.7 serves to conclude and summarise social capital integration as the third and final pillar of internal SCI.

**Table 4.7: Summary of Social capital integration (Pillar 3)**

| MECHANISM | COMPONENTS | SUBDIMENSIONS |
|---|---|---|
| **Social capital integration:** A set of social resources embedded in the boundary-spanning relationships of an internal supply chain, including not only relationships but also a cooperative organisational culture characterised by trust and mutuality, which serve as the relational glue for process and information integration. | | |
| **Two perspectives of social capital** | | **Social structure perspective**<br>The properties and dimensions of relationships among personnel of the internal supply chain are characterised as either structural, cognitive, or relational dimensions. |
| | | **Network perspective**<br>Relates to both the vertical and horizontal associations between personnel within the internal supply chain. The network perspective subdivides social capital into bonding, bridging, and linking. |
| **Structural** | **Boundary-spanning relationships** | Every group or social system within an organisation has a boundary that separates it from other groups or systems. The management of boundaries of one function within the internal SCI has implications for the processes and performance of other functions. |

| MECHANISM | COMPONENTS | SUBDIMENSIONS |
|---|---|---|
| | | **Organisational culture**<br>To ensure the success of internal SCI, a shared meaning or understanding among internal functions is necessary to translate the organisation's attitudes, values, goals, and practices into organisational culture. This is established through interdependence among functions. |
| **Social** | **Characteristics of relationships** | Social capital relates to the competitive advantage that can be gained through the internal relationships of an organisation. For relationships to facilitate an organisation's internal SCI efforts, relationships should have several characteristics: trust, mutuality, commitment, socialisation, reciprocity, open lines of communication, shared values and norms, and shared obligations and expectations. |
| **List of codes included in the coding frame** | | |
| **Dynamic Capabilities** | **DC8** | **Developing a collaborative and disruptive organisational culture:**<br>The ability of an organisation to create a culture that encourages personnel to be innovative and collaborative, with a tolerance for failure, allows organisational resources to be rapidly reallocated in pursuit of SCI opportunities. |
| | **DC9** | **Knowledge management and organisational learning capability:**<br>The ability of an organisation to capture and transfer knowledge and the level of organisational learning that facilitates knowledge ('know-how') transfer between personnel from different functions and hierarchical levels in the organisation. |

**Source: Researcher's own compilation from literature**

In the above discussion, all three SCI pillars were addressed. The following section concludes this chapter.

## 4.4 CHAPTER CONCLUSION

Although all supply chains are integrated to some extent, SCI remains a complex endeavour, even for the most successful organisations. The main objective of SCI is coordinating the relevant resources of internal functions to optimise the overall performance of the supply chain. Therefore, the integration process requires the disciplined application of management skills, processes, and technologies and numerous factors of the internal supply chain need to be aligned to achieve internal SCI.

This chapter aimed to comprehensively discuss the most cited aspects of internal SCI, which resulted in a discussion of the three integration pillars which constitute internal SCI. The first pillar was information integration. The discussion on information integration started with a consideration of information configuration (i.e. the format of information). It was established that organisations should consider the three characteristics of information: quality, multidirectional information flowability, and decision support capabilities. Different information technology (IT) systems were contextualised for internal SCI, such as ERP and cloud-based platforms. The social mechanisms of information integration were presented as knowledge management.

The second internal SCI pillar was process integration. The discussion on process integration first presented eight key supply chain processes. Next, organisational governance was considered as the structural mechanism of process integration. This discussion focused on the influence of cross-functional teams, leadership orientation, goal alignment, and performance measurement in achieving process integration. Subsequently, change management as a social mechanism of process integration was addressed. It was established that change management is required for organisations to move from a functional/silo organisational structure to a process-oriented organisational structure.

The third (and final) internal SCI was social capital integration. The discussion on social capital integration first set out to distinguish the two perspectives of social capital: social structure and network perspectives. Next, the structural mechanisms of social capital were presented by discussing boundary-spanning relationships. Finally, the discussion on the social mechanisms of social capital considered intangible relationship characteristics that facilitate an organisation's internal SCI efforts.

As stated in the introduction of this chapter, the purpose of Chapter 3 and this chapter (Chapter 4) was to partially address SRO2, which aimed to determine *what constitutes internal SCI within omnichannel retailers*. In particular, Chapter 3 and Chapter 4 aimed to achieve SRO2(a): *to define dynamic capabilities that facilitate internal SCI*. Throughout the above discussion, several dynamic capabilities were identified, defined, and incorporated into the coding frame (Annexure A). Table 4.8 summarises

the dynamic capabilities, identified in this chapter, that contributed to the development of the coding frame.

**Table 4.8: List of dynamic capabilities related to supply chain integration (SCI) included in the coding frame**

| | DC CODING | DEFINITION |
|---|---|---|
| **Dynamic Capabilities** | **DC1** | **Data-collection and -analysis capability:** Data are collected, integrated, and analysed from various channels and touchpoints within an organisation, using sophisticated technologies such as artificial intelligence (AI) and machine learning (ML). Through an organisation's data-mining capability, actionable insights can be obtained and certain processes such as demand forecasting can be automated. |
| | **DC2** | **Highly functional information technology (IT) capability:** A highly integrated back-end IT system powered by cloud-based technologies and ERP systems allows organisations to collect and analyse large amounts of data. The IT system facilitates data sharing and collaboration across internal organisational functions, leading to strategic planning and better decision-making. |
| | **DC3** | **Supply chain process integration capability:** The ability of an organisation to restructure supply chain processes to share strategic resources and capabilities effectively and efficiently across the organisation's supply chain. |
| | **DC4** | **Progressive organisational governance capability:** The ability of an organisation to adapt to change by dynamically adjusting the organisation's basic (standard) governance processes. |
| | **DC5** | **Cross-functional integration capability:** The ability of an organisation to eliminate internal boundaries and build strong boundary-spanning relationships (for example, relationships across functions and hierarchies within the internal supply chain of the organisation). |
| | **DC6** | **Leadership orientation capability:** The ability of a leader to make strategic decisions on resource reallocation and organisational infrastructure mobilisation to advance the organisation's internal SCI efforts. |
| | **DC7** | **Dynamic goal alignment and performance measurement capability:** The ability of an organisation to readjust supply chain goals in pursuit of opportunities and simultaneously adapt performance measures to attain new goals. |
| | **DC8** | **Developing a collaborative and disruptive organisational culture:** The ability of an organisation to create a culture that encourages personnel to be innovative and collaborative, with a tolerance for failure, allows organisational resources to be rapidly reallocated in pursuit of SCI opportunities. |

| | | |
|---|---|---|
| | **DC9** | **Knowledge management and organisational learning capability:**<br>The ability of an organisation to capture and transfer knowledge and the level of organisational learning that facilitates knowledge ('know-how') transfer between personnel from different functions and hierarchical levels in the organisation. |

From Table 4.8, it can be concluded that nine dynamic capabilities that facilitate internal SCI were identified in this chapter. It can also be stated that, from a literature perspective, this chapter partially addressed SRO2 and SRO2a by determining and defining dynamic capabilities that facilitate internal SCI. Chapter 8 (Data analysis) will conclude the discussion on SRO2 by determining and defining, based on empirical evidence, additional dynamic capabilities that facilitate internal SCI.

The following chapters (Chapter 5 and Chapter 6) aim to address the second component of SRO2, SRO2(b), which aims to define the dynamic capabilities that facilitate *omnichannel integration*.

# CHAPTER 5

# INTRODUCTION TO OMNICHANNEL RETAILING: BACKGROUND AND FRONT-END INTEGRATION

## 5.1 CHAPTER INTRODUCTION

Retailing has evolved significantly over the last decade due to technology development and changes in customer behaviour (Murfield *et al.*, 2017a:267; Hosseini *et al.*, 2018:75; Shen *et al.*, 2018a:62). Shopping through various physical and digital channels is no longer novel but has become ubiquitous for both customers and retailers (Mahadevan, Bedekar & Joshi, 2021). Customers expect consistent, uniform, integrated services and experiences, regardless of the physical or digital channels and/or touchpoints they use. Therefore, in modern retailing the objective is to blur the natural borders between channels and touchpoints to allow customers to have the optimum mix of hedonic experiences and frictionless shopping activities (Lynch & Barnes, 2020:472).

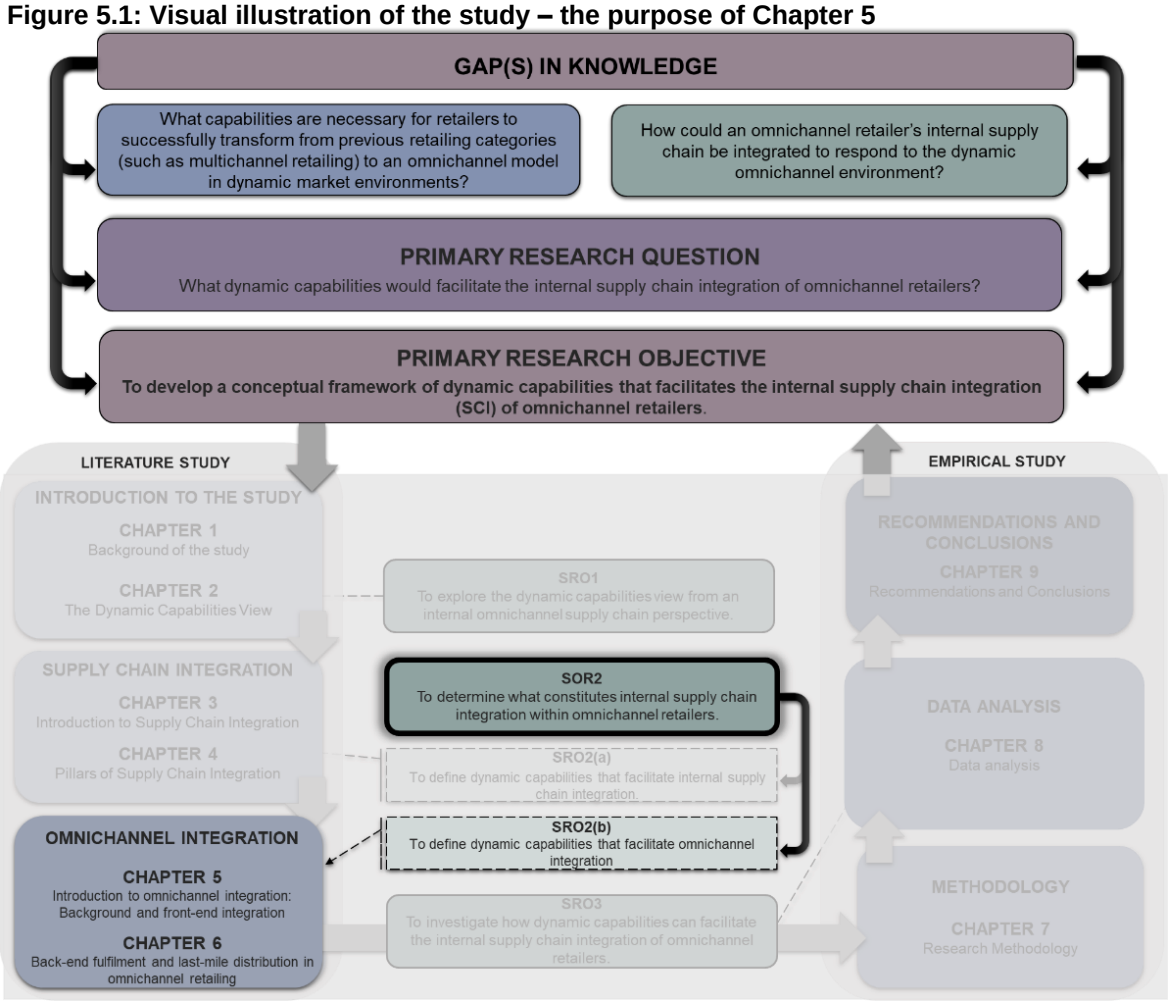
Chapter 1, Section 1.4.3, stated that omnichannel literature lacks a universal taxonomy of the different physical and digital channels and/or touchpoints that form part of omnichannel retailing. As part of this terminology clarification discussion (Section 1.4.3), the researcher provided the definitions of some of the basic terms used throughout Chapter 5 and Chapter 6. To avoid repetition, these definitions are not presented here again but are available for perusal both in Chapter 1, Section 1.4.3, and in the glossary presented at the start of this study. However, it should be stressed here that this study delimited the discussion of omnichannel integration to three main channels (a brick-and-mortar store, a website, and a mobile application) and considered the integration of various physical and digital touchpoints as a way for the retailer to elevate the customer's omnichannel journey.

This chapter (Chapter 5) has two overarching purposes: 1) to provide a basic background to the most critical aspects concerning omnichannel retailing and 2) to discuss front-end integration by considering the most vital channels and touchpoints

used in the omnichannel process. Accordingly, in the next section (Section 5.2), a brief history on omnichannel retailing is presented. Thereafter, different types of retailing are considered (for example, single-channel, multichannel, cross-channel, and omnichannel). Then, the omnichannel supply chain process (mentioned above) is briefly discussed by outlining the three domains of the internal omnichannel supply chain process. Different physical and digital channels and touchpoints are then discussed by considering their advantages, disadvantages, and purpose within the omnichannel retailing process. Finally, data collection and analytics is regarded as the engine that drives the entire omnichannel process. The last two parts of the omnichannel supply chain process, i.e. back-end fulfilment and last-mile distribution, are discussed in Chapter 6.

As with previous chapters, Figure 5.1 serves as a visual representation of the purpose of this chapter within the scope of the entire study.

**Figure 5.1: Visual illustration of the study – the purpose of Chapter 5**




**Source: Researcher's own compilation**

As seen from Figure 5.1, the purpose of this chapter is to partially address secondary research objective two (SRO2) by answering one of its subobjectives, SRO2(b). Secondary research objective two(b) *aims to define dynamic capabilities that facilitate omnichannel integration*. In addressing SRO2(b), this chapter provides a detailed discussion of front-end integration and each section considers the dynamic capabilities required to integrate internal omnichannel supply chain processes.

Several literature findings from this chapter were included in the coding frame (Annexure A) and were used to analyse the retailers' integrated annual reports (IARs). As in previous chapters, these coding frame elements are classified as dynamic capabilities (and shown as $^{DCx}$)[36]. The following section serves as background to the development of omnichannel retailing.

## 5.2 BRIEF HISTORY OF OMNICHANNEL RETAILING

Looking at the main events in retailing, literature reveals that the mutual exchange of goods is not a contemporary concept and can be traced back as far as 800BC to ancient Greece when merchandise was exchanged between the Greeks in the marketplace of Agora (Bruan, 2015). Fast forward to 1890-1920 and this period saw the opening of the first department stores, or so-called 'dry goods stores'. Another 70 or so years later (1994), digital shopping was born. According to Grothaus (2015), some debate exists as to the first online (e-commerce) transaction. However, Grothaus (2015) reported that the first e-commerce transaction, or the one most cited, was by a consumer of an American pizzeria ordering a pizza online. However, the actual credit should be given to the entrepreneur Dan Kohn who sold, via his own website called NetMarket, a Sting CD to a friend. Grothaus (2015) explained that this transaction should be considered the first e-commerce transaction as it was the first transaction where the financial payment was protected by encryption technology. Nevertheless, what is agreed upon is that the first e-commerce transaction occurred in 1994. From there, the pace of evolution sped up with the next significant event taking

[36] Due to the close similarity of certain capabilities, a coding frame element indicator (for example $^{DCx}$) may be presented more than once. In such cases, two or more closely related literature findings are consolidated into one coding frame element.

place in 1997 when Coca-Cola introduced mobile payments at selected vending machines. All these events in retailing led to, and played a part in the history of, omnichannel retailing.

### 5.2.1 Customer-centricity as a launch pad for omnichannel retailing

No official date exists for the invention of the concept of omnichannel retailing. However, some authors drew parallels between the birth of omnichannel retailing and 'customer-centricity'. In 2003, the American multinational consumer electronics retailer, Best Buy, coined the term 'customer-centricity' (Baird, 2015; Bruan, 2015; Helphouse, 2018). Best Buy faced the dilemma of having a competitor (Walmart) who excelled in providing merchandise at lower prices than any other retailer. At the time, Best Buy could not afford to compete with Walmart in terms of their pricing strategy. As a result, Best Buy decided to focus its efforts on building a world-class customer experience. At that stage, Best Buy realised that both digital and physical channels had become equally important for customers. Subsequently, Best Buy decided to become more flexible in accommodating customers. The execution of the customer-centric strategy of Best Buy was that customers could build their own 'path to purchase', which included everything from researching products to aftersales service and support. In essence, Best Buy integrated all its channels (physical and digital) and touchpoints (aftersales services) to offer customers a more seamless shopping experience. Therefore, many authors equated the customer-centric strategy of Best Buy as the start of omnichannel retailing and many other retailers have since attempted to copy this strategy (Baird, 2015; Bruan, 2015; Helphouse, 2018).

### 5.2.2 The large-scale integration of the internet in retailing

The next shift in the history of omnichannel retailing only came in 2008, with the economic recession, when customers became significantly more price-sensitive, searching for coupons and promotions and even using the navigation platform Google Maps to plot shopping trips to save on travel costs (Baird, 2015b). During that period, customers also turned to digital shopping, where they could shop with precision without being tempted by products they could not afford. In addition, customers also

turned to retailers who offered free order delivery. During this time, online retailing became a crutch for customers to save costs and for retailers who experienced declining store traffic and sales. Unexpectedly, the recession in 2008 became significant for omnichannel retailing in that many retailers assumed that customers' shopping behaviours would return to normal as soon as the economy started to restore. Baird (2015b) reported that customers did not revert fully to brick-and-mortar shopping and many retailers still reported a decline in brick-and-mortar sales but an increase in year-on-year online sales.

The next significant locus in omnichannel retailing was in 2011 with the large-scale acceptance of m-commerce (mobile commerce – commercial transactions conducted electronically by mobile phone). Interestingly, researchers reported that, where retailers offered m-commerce, it was overwhelmingly well-accepted by customers. A significant stride towards the acceptance and utilisation of m-commerce was made at the end of 2011 when the e-commerce retailer, Amazon.com, introduced a mobile price-comparison application. The application allowed customers to scan barcodes in local brick-and-mortar stores and compare prices directly with Amazon.com. This application gave Amazon.com a substantial advantage over competitors (Kain, 2011) in that the application changed customers' path to purchase. This application concerned rival retailers (Baird, 2015c). Baird (2015c) stated that some brick-and-mortar retailers even went as far as installing cell phone signal blockers in stores to prevent customers from accessing the internet while they shopped. This price-comparison behaviour of customers remains and has become the norm for most customers in terms of shopping behaviour (Li *et al*., 2018:57; Saghiri *et al.,* 2017:58; Westerlund, Westin & Havila, 2018:14). To compete for the business of these price-sensitive customers, retailers had to find innovative ways of combatting customers' price-sensitivity, such as price-matching policies where brick-and-mortar retailers match prices for the same products found discounted online (Piotrowicz & Cuthbertson, 2014:9; Arora & Sahney, 2017:765; Witcher & Tajima, 2017:10).

Mobile commerce (m-commerce) also changed customers' shopping behaviours in terms of out-of-stock items. Baird (2015c) explained that, if a customer cannot find a product instore, they can use mobile devices to, at best, locate one of the retailers' other stores with stock or, at worst, find another retailer (store-based or online) with

the product in stock. Consequently, retailers needed to recognise that the mobile phone plays a central part in any omnichannel strategy and that both digital and physical channels should be designed in such a way to facilitate the customer's seamless shopping journey through the utilisation of mobile devices.

### 5.2.3 The role of data in omnichannel retailing's development

By 2013, the main focus of omnichannel retailers was to get a 'single view' of the customer, which refers to the integration of all data-points concerning a single customer irrespective of the origin of the data (physical/digital channel/touchpoint) in a single information system to make better decisions in terms of channel assortment and last-mile order fulfilment (Baird, 2015b). By 2014, customers relied heavily on the opinions of peers either through sharing content via social media platforms or using customer reviews and product ratings. This added to the amount of data collected and analysed by omnichannel retailers. From 2016 onwards, personalised, highly-digitalised customer experiences underpinned by Big Data collection had become the norm (IQUII, 2018). Technologies such as proximity technologies (Beacon and Bluetooth), the Internet of Things (IoT), Big Data analytics, as well as virtual and augmented reality were used by retailers to facilitate a personalised shopping experience (FitforCommerce, 2015:27). Data, as a vehicle of growth in omnichannel retailing, is discussed further in Section 5.6.

### 5.2.4 The impact of COVID-19 on accelerating omnichannel retailing

The year 2020, earmarked by the outbreak of the novel coronavirus (COVID-19), marked a period of complete and comprehensive change for both organisations and customers (Bell, 2020). The COVID-19 pandemic provided a catalyst for change, significantly altering how people work and live and also the way in which different industries approach business and growth (Schambach, 2020). Retail supply chains were one of the most dramatically affected areas as supply chains had to adapt to the ripples of change from manufacturing, retail, and customers (Schleper *et al.,* 2021:194; Weber, 2021:2).

The COVID-19 pandemic saw restricted and preventative shopping becoming the norm around the world and, even with some easing of restrictions, many customers substantially reduced physical shopping trips, opting for risk-averse alternatives such as those found online (Nielsen, 2020). Consequently, Schambach (2020) argued that the pandemic ultimately accelerated the adoption of omnichannel retailing and retailers had to build direct-to-consumer retailing models to adapt to the changing retailing landscape. Bresler (2020) supported this argument, debating that lockdown restrictions catapulted digital commerce forward by at least five years. Therefore, the COVID-19 pandemic can be considered the cause of one of the greatest retail revolutions of all time (Deloitte, 2020b; Haines, 2020; Nielsen, 2020).

The COVID-19 pandemic resulted in significant changes in customer demand and shopping behaviours (Schleper *et al.,* 2021:199; Weber, 2021:2). Field (2020) stated that, following the outbreak, some retailers (such as pharmaceutical and grocery retailers) saw an unprecedented and immediate surge in demand in the initial weeks of the crisis. However, other retailers (such as fashion and furniture retailers) experienced a massive decline in sales due to the implementation of restrictive public health measures, which resulted in stores closing down (and, in some cases, online fulfilment centres) for extended periods. These demand changes due to the pandemic pointed to an interesting shift in customers' shopping behaviours. Previously, fashion, travel, and entertainment categories were the frontrunners in the digital retail sphere, with grocery categories being slower to gain traction. However, the lockdown accelerated the adoption of online shopping for these previously 'slow' categories (Field, 2020; Schambach, 2020). For those retailers who had experienced the unexpected surge in demand, the increase in orders came with an amplitude of challenges. Some of these challenges included limited digital commerce capabilities and inadequate omnichannel retailing readiness and resources, particularly related to logistics, digital order fulfilment, mobile applications, supply chain (partner) capacity, and payment options for unbanked customers (Deloitte, 2020b). Weber (2021:11) found that increased supply chain agility and ability to unlock investment in digital channels were some of the mitigation strategies retailers employed to combat the negative impact of the COVID-19 pandemic on retail supply chains.

Haines (2020) stated that lockdown regulations also resulted in regular online shoppers increasing online spending while customers who traditionally did not partake in online shopping started to shop digitally. Historically, one of the biggest obstacles to transacting online for customers was the trust aspect of digital retailing (Zhang, Xu & He, 2018:181; Lorenzo-Romero, Andrés-Martínez & Mondéjar-Jiménez, 2020:3; Shi *et al.,* 2020:331). However, health concerns triggered by the pandemic meant that customers not only started to trust digital forms of retail but, during lockdown periods, also depended on digital commerce for their most basic needs (Bell, 2020). The perceived health risk of visiting a physical retail store outweighed other perceived risks of digital retail (such as not receiving products or the risks around paying for products online). Retailers with fully functional omnichannel processes were, therefore, able to assist existing customers and attract many new customers. Retailers without omnichannel processes were left scrambling to implement digital alternatives to assist customers. However, these sudden changes in customers' shopping behaviours meant rapid changes had to be made to retailers' omnichannel supply chain processes. For example, retailers who traditionally fulfilled online orders from brick-and-mortar stores had to make alternative arrangements in cases where brick-and-mortar stores were not allowed to operate.

The impact of COVID-19 was also significant on South Africa's retail supply chains. In South Africa, a six-week national lockdown was enforced between March and April 2020. This lockdown resulted in a rapid and unprecedented change in South African customers' shopping behaviours. McKinsey and Company (2020) reported a 90% growth in online retail in South Africa during the lockdown period while a study by Nielsen (2020) found that, during the lockdown period, 65% of South African participants indicated that, in general, they were shopping less than before. Also, 37% of the participants indicated that they were shopping significantly more online than before the outbreak of the pandemic. Hartzenberg (2020) reported that South African grocery stores, supermarkets, and bakeries with digital shopping platforms experienced a 357% increase in online sales during the lockdown period. Also, Bresler (2020) studied South African customers' online shopping behaviours by monitoring online payments during different stages of South Africa's national lockdown. The author reported that, during the busiest online shopping day in May 2020, online transactions were four times higher than during Black Friday of the previous year

(2019). Additionally, the payment platform, PayFast, reported a 226% year-on-year increase in new business account registrations (during the lockdown period) as many local retailers pivoted their service offering to provide e-commerce options in an attempt to continue trading during the lockdown (Hartzenberg, 2020). In addition, Goldstuck (2021) found that the total growth for online retail in 2020 in South Africa came to 66%, 50% higher than forecasters had predicted in 2018. Furthermore, 71% of participants in Goldstuck's (2021) survey indicated that they would continue to shop online post-pandemic. Deloitte (2020) also conducted a study on South African customers' online shopping behaviours during the COVID-19 pandemic and found that "…*the COVID-19 crisis fast-tracked the urgency for digital transformation in retail, highlighting the need to operate and serve customers differently".* Accordingly, the pandemic has changed online retailing in South Africa, forcing reluctant customers and retailers to pursue digital retailing models as the way of future shopping.

The previous section briefly considered the origins of omnichannel retailing by discussing how the concept 'omnichannel' came to be. Another vital part of the history of omnichannel retailing is retailers' ability to move from having a single channel to having various integrated channels and touchpoints (omnichannel retailer). The four distinct types of retailing (single-, multi-, cross-, and omnichannel retailing) identified by various authors is discussed in the next section.

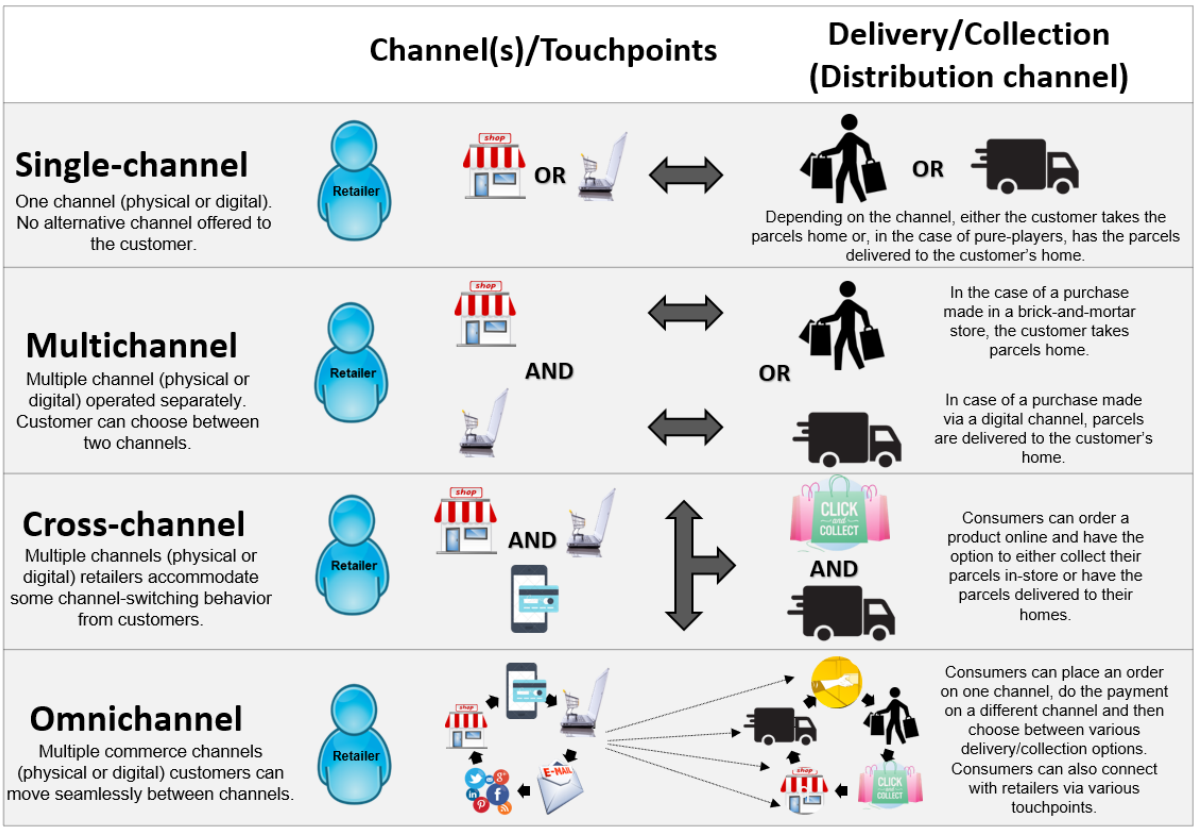
## 5.3 TYPES OF RETAILING

Traditionally, most retailers only offered one channel to customers, for example a brick-and-mortar store. However, the internet changed the retail landscape, introducing various e-commerce options, such as websites and mobile commerce, as alternative (or additional) channels. Beck and Rygl (2015:170); Hübner, Holzapfel and Kuhn (2016:258); Huré *et al.* (2017:315) and Galipoglu *et al.* (2018:366) distinguished between four types of retailing through various channels, namely single-, multi-, cross- and omnichannel retailing. Several authors, such as Jocevski *et al*. (2018:82), Larke, Kilgour and O'Connor (2018:465), and Von Briel (2018:218), argued that, while physical and digital channels serve as the main retail infrastructure for omnichannel retailing, the use of various integrated touchpoints is what truly elevates a multi- or

cross-channel retailer into an omnichannel retailer. It is essential to note from the discussion to follow that the *number* of channels *does not* determine the type of retailing, i.e. offering two channels does not classify a retailer as a multichannel retailer. Instead, *the level of integration between channels and touchpoints* signals the specific type or model of retail followed by a retailer.

Figure 5.2 illustrates the four types of retailing through various channels and touchpoints. The following section will briefly consider the characteristics of each type of retailing and a scenario of Customer X is used to distinguish between the different types of retailing.

**Figure 5.2: Types of retailing through numerous channels**




**Source: Researcher's own compilation based on Avery, Steenburg, Deighton and Caravella (2012) and Chopra (2016).**

### 5.3.1 Single-channel retailing

Single-channel retailing refers to a type of retail where retailers provide products and services to customers through a single channel (Pride & Ferrell, 2016:410). Single-channel retailing does not only refer to traditional brick-and-mortar retailing but also represents pure-player (purely online) retailing. Therefore, if customers choose to buy from a single-channel retailer, the customer can only do so through the one channel offered by the retailer (either a physical or digital store). However, the customer can connect with the retailer through different touchpoints, such as the retailer's various social media platforms. To illustrate single-channel retailing, a scenario from Customer X will be used. Customer X is looking for an evening dress and, on her way from work, stops at a fashion retail store located close to her home. She finds the evening dress she needs, buys it, and leaves the store.

### 5.3.2 Multichannel retailing

As retailers evolve to include e-commerce channels in addition to brick-and-mortar stores, the functions of a retailer's single (or dominant) channel also evolve. GT Nexus (2012:9) argued that traditional brick-and-mortar stores no longer serve as a place to simply purchase an item. In the age of e-commerce, these physical stores also serve as showrooms[37] and distribution centres (Arora & Sahney, 2017:762; Larke *et al.,* 2018:467; Kang, 2019:603; Kateva, 2019:279).

Multichannel retailing is characterised as a type of retailing where customers are served by more than one channel, such as a website and a brick-and-mortar store (Picot-Coupey *et al.*, 2016:341). However, channels are operated separately or as independent entities (Verhoef *et al.*, 2015:175) with the main purpose being optimisation of the outputs of the respective channel (Saghiri *et al*., 2017a:53).

[37] Showrooms combine digital and physical commerce channels at a physical location. At these physical locations, examples of the retailer's product offerings are made available to customers. However, these locations do not hold any inventory. Customers can 'experience' the products (feel, see, and touch) in the showrooms and then place an order for the product online or on a device (tablet, mobile, or desktop) provided by the retailer or on the customer's own device. The product will then be delivered to the customer at a delivery address stipulated by the customer (Bell *et al.*, 2013; Mehra, Kumar & Raju, 2013; Yrjölä, 2014). See extended discussion in Section 5.5.3.2.

Multichannel retailing, therefore, differs from single-channel retailing in that, the retailer offers customers more than one channel.

A distinct characteristic of multichannel retailing is that channels compete with each other (Picot-Coupey *et al.*, 2016:342). Consequently, multichannel retailers are usually focused on successfully managing one dominant channel (either a physical or digital channel). In most cases, the additional channels are only offered to customers to stay on par with competitors, meaning retailers build other channels 'on top of' the historically dominant channel (Picot-Coupey *et al.,* 2016:342; Ailawadi & Farris, 2017:121; Saghiri *et al.,* 2017:55). This could potentially create a culture within the retailer which fears cannibalisation of channels (Kollmann *et al.*, 2012:187; Herhausen, Binder, Schoegel & Herrmann, 2015:311). Multichannel retailing scenario: Customer X needs an evening dress and, on her way home from work, she stops at a fashion retail store. She finds the dress she needs but the store does not have her size in stock. She leaves the store without buying the evening dress. That evening, she logs onto the fashion retailer's website where she finds the evening dress in her size. She places the dress in her virtual cart, pays for the dress with her credit card, and waits for delivery of the dress, scheduled for the next day.

### 5.3.3 Cross-channel retailing

Cross-channel retailing refers to a type of multichannel retailing, with entry-level integration of channels and touchpoints, allowing cross-channel movement of products, currency, and information (Picot-Coupey *et al.*, 2016:340). Cross-channel retailers enable customers to use one channel to prepare a purchase and then switch to another channel to conclude the purchase (Avery, Steenburg, Deighton & Caravella, 2011:100). Cross-channel retailing differs from multichannel retailing in that cross-channel synergies start to form through the integration of channels. Retailers can then enhance the strengths inherent to each channel (Wang, Zheng & Liu, 2021:162). With cross-channel retailing, the retailer integrates components of its different channels to offer customers more options (Li *et al.,* 2018:53). Furthermore, the role of the dominant channel starts to fade as the retailer adopts a more holistic approach to channel management (Picot-Coupey *et al.*, 2016:342). According to Picot-Coupey, *et al.*

(2016:347), it is nearly impossible for retailers to move directly from siloed multichannel retailing to fully integrated omnichannel retailing. As a result, cross-channel retailing is considered the middle ground (or evolution) for retailers with the ultimate goal of becoming fully integrated (mature) omnichannel retailers (Herhausen *et al.,* 2015:311). Cross-channel retailing scenario: Customer X needs an evening dress. During lunch, she logs onto the mobile application of one of her favourite fashion retailers that is installed on her smartphone. She finds the dress she is looking for and places the dress in the virtual shopping cart. However, she gets distracted and logs out of the mobile application before completing the purchase. That evening, she receives an email from the fashion retailer reminding her of the dress in her cart. She clicks on the embedded link, which takes her to the fashion retailer's website. She pays for the dress but then realises that she needs the dress for an event the following evening. Unfortunately, the first available delivery slot is only in two days' time. Luckily, the retailer offers customers the option of collecting items that were purchased online from a list of pre-determined brick-and-mortar stores. She can collect the evening dress from the physical store on her way back from work the following day and have the dress in time for the event.

### 5.3.4 Omnichannel retailing

Despite recent advances around multi- and cross-channel retailing, research on omnichannel retailing is still limited (Berman & Thelen, 2018:601; Hilken *et al.,* 2018:520; Jocevski *et al.,* 2018:89; Larke *et al.,* 2018:466; Lee *et al.,* 2019:91), According to the Harvard Business Review (HBR 2016), a conventional 'omnichannel strategy' for retailers with both brick-and-mortar stores and websites is to encourage shopping across channels so that customers who shop only in stores will also begin buying online and vice versa.

Kourimsky and Van Den Berk (2014:6) maintained that omnichannel retailing is not merely an evolution of multichannel retailing but represents an entirely different approach to commerce. For example, with multichannel retail, the focus is on optimising sales activities within each channel while, with omnichannel retailing, the focus is on optimising sales by addressing customers' specific requirements and

lifestyles to create a unique, complete, and seamless customer experience (Juaneda-Ayensa, Mosquera & Murillo, 2016:1). Beck and Rygl (2015:175) aimed to underscore the difference between multi-, cross-, and omnichannel retailers by categorising these types of retailing from both a retailer and customer perspective. The authors concluded that omnichannel retailing differs from multi- and cross-channel retailing in terms of the number of channels (retailer perspective) and level of channel integration (customer perspective).

Omnichannel retailing is meant to be a seamless integration of channels or customer touchpoints, elements of which will hold different appeal or value-creating opportunities to different customers (Yrjölä, Spence & Saarijärvi, 2018:261). Omnichannel retailing is also significantly more complex than other types of retailing (such as multi- or cross-channel retailing) as some touchpoints are beyond the retailer's control, such as price comparison websites. However, these touchpoints must also be recognised as part of the omnichannel process as they ultimately affect the customer's shopping experience (Saghiri *et al.,* 2017; Yrjölä *et al.,* 2018).

Omnichannel retailing scenario: Customer X needs an evening dress and, on her way home, she stops at a fashion retail store. As she strolls through the store, she notices an evening dress she likes. She logs onto the retailer's mobile application, installed on her smartphone. This mobile application allows her to scan the tag of the dress and provides her with a wealth of real-time information on the dress. She reads a few reviews from other customers who purchased a similar dress. One of the reviews alerts her to a pair of shoes that fits perfectly with the dress. She follows the link to the page where she can view the shoes. She decides to purchase the shoes along with the dress. However, the mobile application indicates that the store that she is currently in is out of stock in the size of the shoes she is looking for (she indicated her shoe size when registering her online profile on the mobile application). She is unsure if she still wants the dress without the shoes; therefore, she logs out of the mobile application and leaves the store without purchasing anything. That evening, she receives an email from the fashion retailer reminding her of the dress and shoes she looked at during her store visit. The email not only contains an embedded link that takes her to the fashion retailer's website but also a discount coupon for the items already in her cart. On the retailer's website, she can determine which of the retailer's physical stores

within her geographical location has the dress and shoes in her size. She identifies a retail outlet situated close to her work and decides to purchase the dress and shoes. Since the event she needs the dress for is the following evening, she selects the click-and-collect[38] delivery option. Click-and-collect allows her to collect her purchase from the retail outlet located close to her work the following day. When she arrives at the stipulated retail outlet the next day, the dress and shoes that she purchased the previous evening are wrapped and ready for collection. Since she has already paid for these items on the retailer's website, she is quickly in and out of the store. A few days after she collected the dress and shoes from the store, she again receives an email from the retailer, this time with a link to review the purchased products. The email also prompts her to 'tag' the retailer in any post she makes on her social media platforms in which she is wearing the items that she bought from the retailer to be a) featured on the retailers' social media platforms and b) entered into a competition currently offered by the retailer.

This scenario shows that Customer X was able to move seamlessly through the different channels offered by the fashion retailer and was able to interact with the retailer after purchasing the items. In the end, because the retailer had access to the customer's information and utilised the information effectively, the retailer was able to complete the purchase and satisfy Customer X's needs.

The above section briefly considered types of retailing through various physical and digital channels. The next section discusses the factors retailers should consider when designing omnichannel processes.

## 5.4 DESIGNING AN OMNICHANNEL SUPPLY CHAIN PROCESS

Omnichannel retailing is a modern-day retail battleground (Mak, 2018:2; Newstore, 2020:22). Many retailers still struggle to achieve omnichannel supply chain success, given the complexity of integrating many processes at the speed and efficiency required in omnichannel retailing (Fleischer, Graf & Lange, 2020:2). A report by

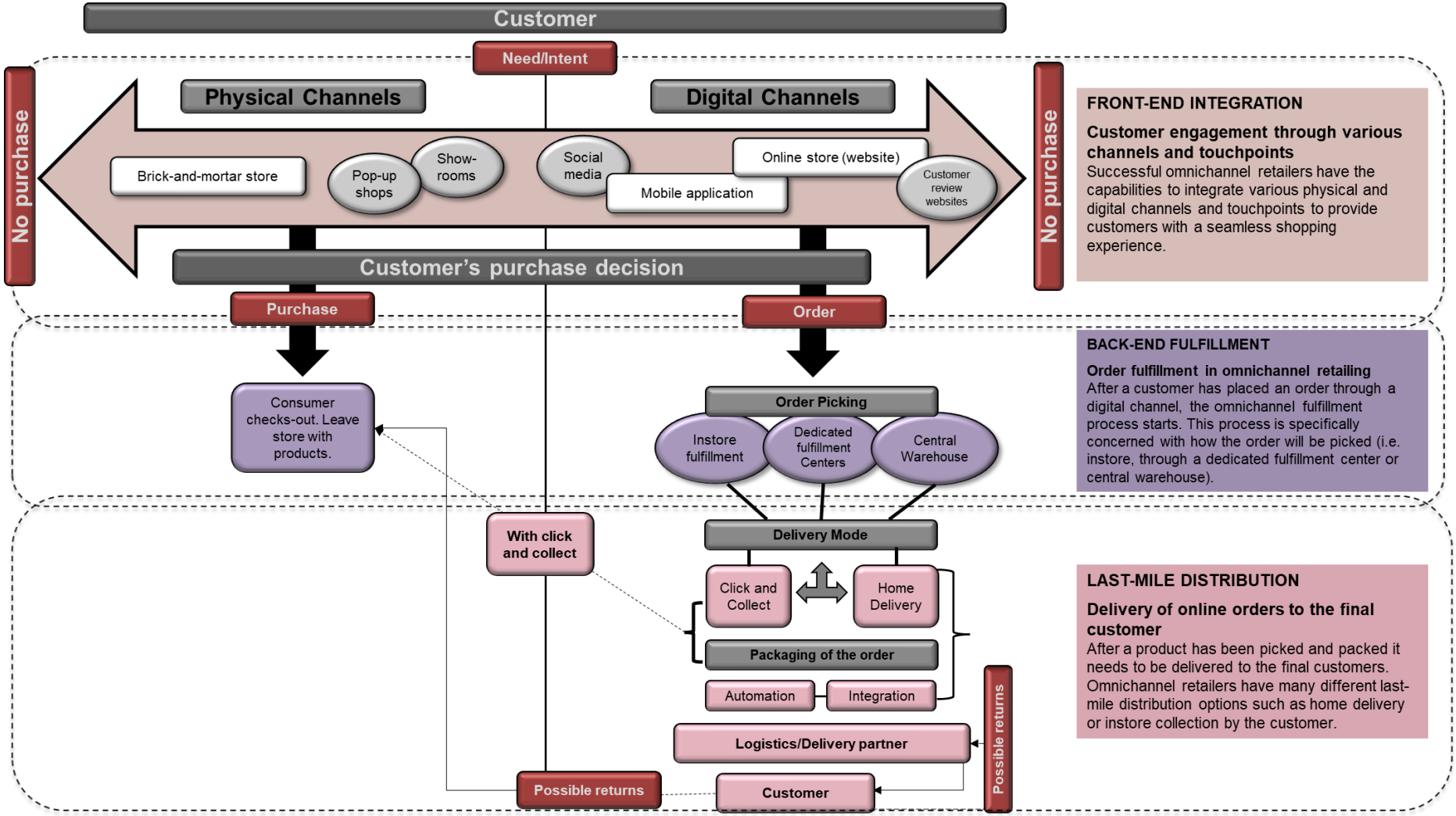
[38] See Chapter 6, Section 6.2.2.1(6.1.1a), for a discussion on 'click-and-collect' as a last-mile order fulfillment option.

Newstore (2020:23), which publishes research based on the assessment of 200 brands' omnichannel competencies showed that, although omnichannel retailers face many supply chain complexities, customers are not privy to these challenges. A consumer actually has no appreciation for any process that takes place after the 'buy now' point. In customers' minds, after the 'buy now' point, they are the 'proud' owner of their purchase, they can visualise the product arriving at their door, and they expect the delivery 'anytime now' or 'very soon' (Snyman, 2014:177). In reality, once a customer has placed an order, a plethora of variables need to fall into place to reliably fulfil the customer's order (Peinkofer *et al.,* 2019:3613). For example, the correct stock needs to be available and personnel at picking locations must be available to pick the order. Then the retailer needs to have delivery capacity to enable delivery at the correct time and location selected by the customer. All these elements need to be considered when a retailer designs its omnichannel supply chain process.

### 5.4.1 The generic omnichannel process

The omnichannel process generally consists of the following three domains: *front-end integration*, *back-end fulfilment*, and *last-mile distribution*. Throughout Chapter 5 and Chapter 6, many variables contributing to the omnichannel process will be considered. Figure 5.3, and the subsequent discussion, serves to provide a broad overview of the omnichannel process within these three domains. It should be highlighted that this chapter discusses front-end integration while Chapter 6 considers the fundamentals of back-end fulfilment and last-mile distribution.

**Figure 5.3: Generic process of omnichannel retailing**




**Source: Researcher's own compilation based on Hübner *et al.* (2016:234) and Weber and Badenhorst-Weiss (2018a:7)**

#### *5.4.1.1 Front-end integration: physical and digital channels and touchpoints*

*Front-end integration* relates to the integration of all the retailer's physical and digital channels and touchpoints. As stated in Chapter 1, Section 1.4.3, channel refers to any physical or digital channel which allows a customer to *complete an order* (place the order and pay for the order). In contrast, touchpoints refer to any other means of communication between the retailer and the customer (such as social media platforms) that *do not allow the customer to complete an order* but serve to facilitate some level of engagement between the retailer and the customer. Figure 5.3 illustrates (in white) that physical channels include the retailer's brick-and-mortar store whereas digital channels include the retailer's website and mobile application. As part of the omnichannel process, retailers may also integrate various touchpoints. Examples of the most common touchpoints include pop-up shops, showrooms, social media platforms, and customer review websites.

Figure 5.3 also illustrates how front-end integration is initiated through the intent of the customer to purchase a product. Retailers can create a need or purchase intent through the utilisation of various touchpoints, for example issuing coupons on social media sites for redemption in store or on the retailer's website. As part of the customer's decision-making process, and depending on the situation (for example, the amount of research the customer wants/needs to conduct before making a purchase decision), the customer might engage with more than one of the retailer's channels or touchpoints. For instance, the customer might consult the retailer's social media page for information on the product but then visit the retailer's brick-and-mortar store to purchase the product. Once the customer has decided to purchase the product, he/she select a preferred channel and complete the purchase. Front-end integration is essential to ensure a seamless customer experience as it leads to sales based on improved interactions with customers (Hosseini, Röglinger & Schmied, 2017:10; Larke *et al.,* 2018:466; Savastano, Bellini & De Marco, 2019:476). Various physical and digital channels and touchpoints are discussed throughout this chapter (see Section 5.5).

From the perspective of the dynamic capabilities view (DCV), Mrutzek *et al.* (2020:209) debated that an omnichannel environment requires retailers to add and integrate new

channels and touchpoints to their existing retail portfolio. This process necessitates an internal structural change to reallocate resources and capabilities towards the new channels and touchpoints. The omnichannel retailer's ability to build organisational processes to integrate 'old' multichannel retail processes into 'new' omnichannel processes can be considered a dynamic capability (Mirsch *et al.*, 2016; Höcker *et al.*, 2018; Mrutzek *et al.,* 2020; Nagula & Liu, 2020). In particular, these authors debated that a retailer's ability to integrate physical and digital channels and touchpoints (**front-end integration capability**)[DC10] to attract new customers and to provide customers with more seamless shopping experiences should be classified as a dynamic capability.

#### *5.4.1.2 Back-end fulfilment: order fulfilment*

The next step of the omnichannel process is *back-end fulfilment* and this relates to the integration of the different methods of order fulfilment as well as the picking and packaging of orders in preparation for last-mile distribution. Once a customer places an order, the process of fulfilling the order then becomes the responsibility of the omnichannel retailer. Order picking can be done either in store or through dedicated fulfilment centres or warehouses. However, omnichannel retailers often integrate the different order picking options to achieve optimal order fulfilment. Back-end fulfilment is an important consideration for omnichannel retailers as retailers have to consider the trade-off between picking efficiency and satisfying customers' expectations in terms of order fulfilment time (Hübner *et al.,* 2016:235; Wollenburg *et al.,* 2018:553; McCarthy *et al.*, 2019:252). Chapter 6 discusses these picking locations and their advantages and disadvantages at length.

#### *5.4.1.3 Last-mile distribution: order delivery and returns*

The final part of the omnichannel process is *last-mile distribution*. Depending on the delivery mode offered by the omnichannel retailer, the customer can choose between various last-mile delivery modes such as click-and-collect (self-collection at a dedicated point) or home delivery. Last-mile distribution is an essential part of the omnichannel process, and Lim and Srai (2018:308) maintained that the design of the last-mile is often the most expensive segment of an omnichannel supply chain. In

addition, Weber and Badenhorst-Weiss (2018a:8) argued that delivery is the only physical engagement the retailer has with a consumer in the digital leg of omnichannel retailing. As such, delivery can significantly impact the customer's perception of omnichannel retailing. Last-mile distribution is also concerned with product returns. Last-mile distribution is discussed in the Chapter 6.

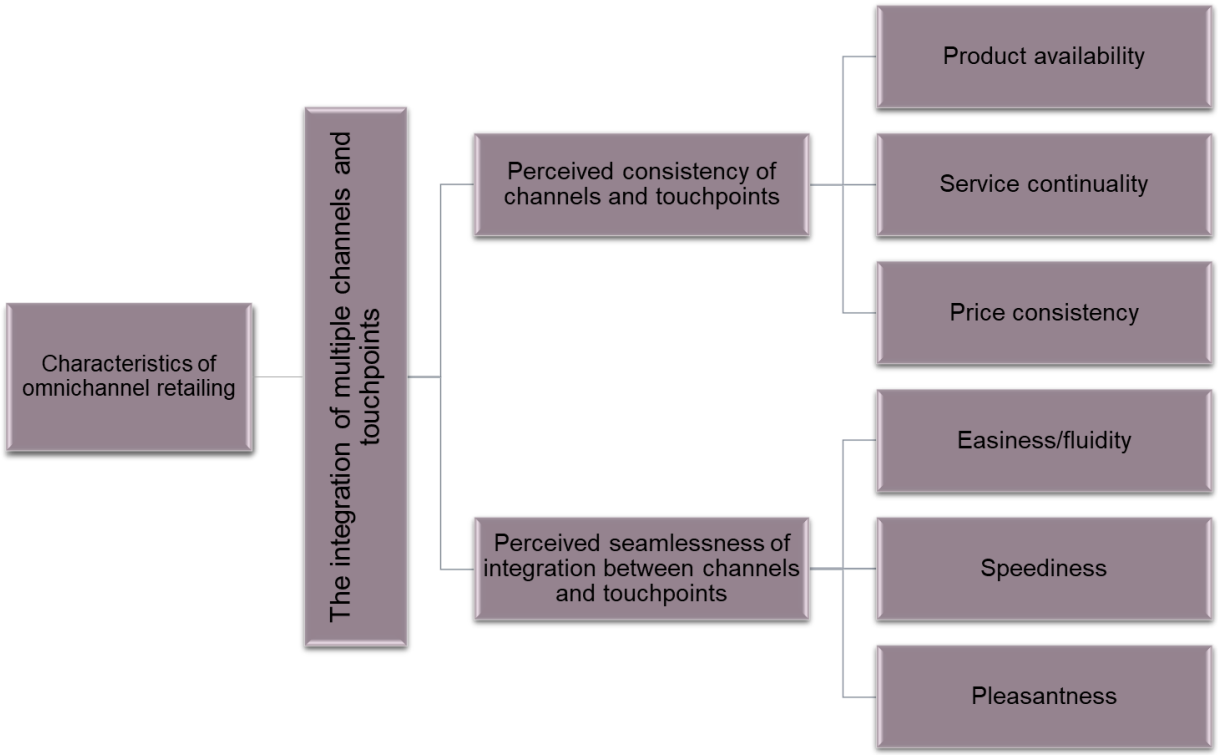
The above section provided a broad overview of the three domains of the omnichannel retailing process. These three domains consist of many factors that retailers need to consider when designing their omnichannel processes. However, when designing the three domains, retailers should remain mindful of some fundamental design factors omnichannel retailing necessitates, i.e. consistency among physical and digital channels and touchpoints and a seamless shopping experience, as discussed next.

### 5.4.2 Key factors in designing an omnichannel process

Several studies (Huré *et al.,* 2017; Murfield *et al.,* 2017a; Larke *et al.*, 2018; Wollenburg *et al.,* 2018) showed that omnichannel retailing creates value for the retailer in terms of customer loyalty. In fact, Tierney (2014) reported that retailers who employ omnichannel strategies have a 91% greater year-on-year customer retention rate compared to retailers who do not employ an omnichannel strategy. However, for retailers to create value from the omnichannel process, some key factors are integral to the omnichannel design process.

Huré *et al.* (2017) conducted a study to determine what creates value for the customer in omnichannel retailing. Figure 5.4 summarises the main findings of Huré *et al.* (2017).

**Figure 5.4: Key factors in designing an omnichannel process**




**Source: Adapted from Huré *et al.* (2017)**

Figure 5.4 illustrates that, to achieve integration of different physical and digital channels and touchpoints, retailers need to consider the perceived *consistency* between channels and touchpoints and the perceived *seamlessness* with which customers can move across channels and touchpoints. Several authors highlighted the two factors listed above as fundamental to omnichannel retailing. First, a customer's perception of consistency across channels and touchpoints was identified by Beck and Rygl (2015); Saghiri *et al.* (2017); Chen, Cheung and Tan (2018), as well as Lim and Srai (2018), as crucial to the success of a retailer's omnichannel processes. Second, the seamless movement between channels and touchpoints was identified by Kozlenkova *et al.* (2015:588), Hosseini *et al.* (2017:2), and Melacini *et al.* (2018:392) as central to omnichannel retailing.

Huré *et al.* (2017:321) further investigated these two factors. In terms of the perceived *consistency* between different channels and touchpoints, the research of Huré *et al.* (2017:321) found that respondents expected to have the ability to use channels and touchpoints interchangeably. Respondents perceived consistency among channels and touchpoints in terms of the following three subcategories: *product availability*,

*service continuity*, and *price consistency*. First, customers expected the exact *product availability* across all physical and digital channels. Customers expressed frustration when viewing a product digitally only to be told that it was out of stock when visiting the brick-and-mortar store. Second, customers expected *service continuity* across all channels and touchpoints. One customer voiced concern when wanting to return a faulty product in store only to be informed that, since the product was purchased online, it could only be returned through the retailer's digital channel(s). Third, customers desired *price consistency* across channels and expressed confusion and discontent when prices were not aligned across channels, with one customer indicating that they were forced to buy a product online, as the price for the same product in store was higher.

The findings of Huré *et al.* (2017:322) also found the consistency of channels and touchpoints to be a prerequisite for *seamlessness*. Seamless integration is related to the following three subsections: *easiness and fluidity*, *speediness*, and *pleasantness*. According to the authors, seamlessness refers to the ability to articulate different channels and touchpoints in the shopping journey, which means that customers can use different channels in various ways to complete the purchase, augmenting the *easiness* of the omnichannel shopping experience. In terms of *speediness*, customers want to be able to quickly switch from one channel/touchpoint to another. One participant in the study of Huré *et al.* (2017:322) indicated frustration, while searching for a product online, to be instructed to visit the store to purchase the product only to be told by the sales representative in the store that the product is kept in a storeroom and he needs to wait while the product is collected. The participant expressed that the digital shopping process felt time-consuming to him. The circuit between channels and touchpoints must also be *pleasant.* Depending on the customer's motivation for shopping, the sum of all interactions with the retailer in the omnichannel shopping journey should delight the customer and is central to the customer relationship-building process, as also found by Mosquera *et al*. (2018:66).

With the DCV, the perceived consistency of the omnichannel process (product availability, service availability, and price consistency) was classified by some authors as an ordinary omnichannel capability (Mrutzek *et al.*, 2020:208). The rationale for this classification is that consistency across channels and touchpoints is a basic

requirement in omnichannel retailing. Yet, other authors classified consistency across channels as a dynamic capability (Hossain *et al.,* 2020:228), arguing that creating consistency across channels fosters reliability and trust among customers, a capability that is not easily achieved in digital retailing.

The seamless integration of channels and touchpoints (the second factor highlighted in Figure 5.4) is central to omnichannel retailing (as discussed several times thus far). Therefore, most authors classified a retailer's ability to **seamlessly integrate channels and touchpoints**[DC11] to design a consistent omnichannel shopping experience for customers as a dynamic capability (Mirsch *et al.,* 2016:8; Höcker *et al.,* 2018:28; Hossain *et al.,* 2020:237; Mrutzek *et al.*, 2020:209). These authors reasoned that the seamlessness of integration of channels and touchpoints is a strategic endeavour requiring constant change.

## 5.5 CHANNELS AND TOUCHPOINTS IN OMNICHANNEL RETAILING

One of the ways in which omnichannel retailers create value for customers is through their channel 'mix' (the different channels or touchpoints they offer customers to interact with them). Yrjölä *et al.* (2018:274) stated that no one correct omnichannel model exists and channel choices must be adapted to suit the particular retailer's context. As explained in both the introduction of this chapter and in the discussion on the omnichannel process (Section 5.4), this study differentiated between physical and digital channels and touchpoints. In the following section, physical and digital *channels* are considered as well as some of the advantages and disadvantages of these channels. Thereafter, in Sections 5.5.3 and 5.5.4, physical and digital *touchpoints* are discussed.

### 5.5.1 Physical channels

The most commonly known physical channel is the brick-and-mortar store. Rodríguez-Torrico, Cabezudo and San-Martín (2017:466) argued that, in the past, customers used to visit brick-and-mortar stores to gather information and often to conclude their shopping. The reason for visiting the brick-and-mortar store was that, in many cases,

it was the only channel available for customers to purchase certain products. Also, the brick-and-mortar store was one of the few places where customers could access product information. Nowadays, however, customers tend to combine digital channels and touchpoints with brick-and-mortar establishments during both the search and purchase process, leading to the emergence of omnichannel behaviour.

In the section below, it becomes apparent that the role of physical channels in omnichannel retailing is threefold; first, in omnichannel retailing, physical channels serve as a tangible way for customers to interact with the retailer and their products; second, for many retailers, brick-and-mortar stores serve as a fulfilment centre for online orders; and, third, brick-and-mortar stores can attract new customers who are still reluctant to purchase online.

#### *5.5.1.1 Brick-and-mortar stores*

BusinessDictionary.com (2019) defines brick-and-mortar stores as "…*originally, an organisation's investment was in buildings, housing, offices, warehouses and other facilities. In the internet age, this term is used to differentiate the organisations which operate from built-up properties or storefronts from those which operate entirely (or almost entirely) from their websites*". In layperson's terms, brick-and-mortar retailing refers to physical store retailing, where the retailer interacts with the customers. Having a brick-and-mortar store holds both advantages and disadvantages for omnichannel retailers. The most significant advantage for customers lies in the tangible (or multisensorial) nature of the shopping experience (Oka *et al.,* 2017:6; Larke *et al.,* 2018:474; Mosquera *et al*., 2018:64). With brick-and-mortar retailing, customers can walk into the store to touch, feel, and experience the products and receive personal face-to-face advice from sales personnel (Snyman, 2014:28). Thus, customers have the instant gratification of knowing the specifications of the product and knowing precisely what they are purchasing. In contrast, when buying online, customers only know precisely what they have purchased once the product is delivered (Snyman, 2014:58; Hilken *et al.*, 2018:520). The immediacy (the instant gratification of taking ownership of products) of brick-and-mortar retailing is another advantage for customers (Berman & Thelen, 2018:607; Mosquera *et al.,* 2018:64; Von Briel, 2018:220). Many customers cited that they enjoy the experience of visiting a

shopping mall and consider it to be a form of entertainment (Oka *et al.,* 2017:19; Von Briel, 2018:220; Weber & Badenhorst-Weiss, 2018a:5). Advantages of brick-and-mortar retailing from the retailer's perspective include the ability to establish a brand name and presence quickly (Marchet *et al.,* 2018:450; Wiener *et al.*, 2018:19) as well as attracting new customers who are reluctant to do online shopping (Kim & Chun, 2018:6). Also, for brick-and-mortar retailers wanting to become omnichannel retailers, brick-and-mortar stores provide retailers with several options to ease the initial burden of digital retail, such as order fulfilment in store and click-and-collect as last-mile distribution options (Hübner *et al.,* 2016:229; National Retail Federation (NRF), 2017:7; Wollenburg *et al.*, 2018:543).

On the other hand, brick-and-mortar stores also have some disadvantages in terms of moving towards omnichannel retailing. From the customers' perspective, disadvantages include limited operating hours of the store due to staff availability (Snyman, 2014:30; Westerlund *et al*., 2018:33) as well as the physical distance that customers must travel to reach stores (Chopra, 2016:136; Ailawadi & Farris, 2017:121). Additionally, compared to digital shopping, brick-and-mortar stores only offer a limited assortment of products, which may also vary between different stores (Hagel *et al.,* 2015:9; Ternstrand *et al*., 20154; Chaturvedi *et al*., 2016:61). Some of the disadvantages of brick-and-mortar retailing from the retailer's perspective include the high start-up and maintenance cost (Hübner *et al.,* 2016:256; Larke *et al.,* 2018469) as well as finding suitable locations to open the physical brick-and-mortar store (Gallino & Moreno, 2014:1444; Ishfaq *et al.,* 2016:546).

As mentioned previously, the most significant advantage of the physical channel is the tangibility of the shopping experience offered to customers. Pure-online retailers acknowledge that the intangibility of online retailing serves as a significant barrier to digital shopping and respond by investing in, and opening, brick-and-mortar stores. In fact, Forbes predicts that by 2023 there will no longer be a differentiation between online and brick-and-mortar retailers; reference will instead be made to 'retailing' in general as most retailers will have some sort of digital and physical channel by then (Maloney, 2018). This trend (moving away from being either purely digital or a brick-and-mortar retailer) is already emerging, with many international and local examples of brick-and-mortar retailers opening digital versions of physical stores. Examples of

retailers who primarily operated from physical stores but now also have digital stores include general retailer Walmart in the USA, grocery retailer Tesco in the UK, and general retailers Woolworths and Pick n Pay in South Africa. More recently, prominent pure-online retailers have decided to open brick-and-mortar stores. The biggest example is Amazon.com, the largest e-commerce retailer in the world (Pajović, 2018), who opened several Amazon physical stores (Amazon Books, Amazon 4-star, Amazon Fresh, Amazon Pop-up, and Amazon Go). The first physical store of Amazon.com (opened in 2016) was meant only for employees; however, in 2018, physical stores were opened to the general USA public (Berthiaume, 2019). As of 2022, Amazon.com had opened 89 stores in the USA.

In South Africa, Yuppiechef, one of South Africa's premier kitchen and homeware e-commerce retailers (Hasserman, 2018), had opened seven brick-and-mortar stores by 2022. Yuppiechef incorporates valuable information from digital stores into brick-and-mortar stores to provide customers with an omnichannel experience. Some examples of information include the online ratings of a product that is displayed on the product shelf and quick response (QR) codes[39] displayed along with each product, giving customers access to short video clips illustrating how the product should be used (Hasserman, 2018).

In modern retail, the use of new data types and sensor technology to complement a customer's in-store shopping experience is on the rise. Mirsch *et al.,* 2016 and Nagula and Liu (2020) stated that, for retailers with a brick-and-mortar store to be successful in omnichannel retailing, they must adapt in-store offerings to allow for a more synchronised in-store shopping experience by including digital channels and touchpoints. An example of this can be seen in Yuppiechef's utilisation of QR codes, discussed above. Hence, the following section outlines the digital channel retailers can use to elevate their omnichannel offering.

[39] "*QR code is an abbreviation for quick response; with reference to a type of two-dimensional machine-readable code consisting of an array of black and white squares, typically used for storing URLs or coding information for reading by a camera phone*" (Oxford English Dictionary, 2019b)

### 5.5.2 Digital channels

Traditional retailers selling commodities through brick-and-mortar stores took their time to start considering digital channels (online retailing) as a feasible medium of commerce (Makame, Kang & Park, 2014:84). Rigid and conventional thinking at boardroom level is to blame for the slow start. Managers considered the internet as a retailing tool as just a passing fad (Snyman, 2014:25), which prevented many retailers from even considering digital channels for commercial use while other retailers feared that they would be cannibalising sales (Kim & Chun, 2018:6). Although managers have since 'seen the light' and realised the potential value of the internet, Du (2018:30) argued that many brick-and-mortar retailers are considering a digital platform merely as a defensive measure because former loyal customers are switching to internet-based competitors offering round-the-clock purchasing facilities and customised products and services. Rooney (2019) revealed that in February 2019, for the first time in history, general merchandise sales in the USA were higher in online retail than in brick-and-mortar retail, indicating that digital platforms can (and should) no longer be considered a passing fad but, rather, an essential component of competitiveness in the omnichannel environment. This argument becomes even more relevant when considering the impact of the COVID-19 pandemic on customers' migration to, and acceptance of, digital channels (as discussed in Section 5.2.4).

Digital channels offer both retailers and customers many advantages but also pose challenges. Some of the benefits of digital shopping for customers include the convenience of the service, in particular not having to travel the physical distance to the retailer's store (Kollmann *et al*., 2012:186; Snyman, 2014:245; Weber & Badenhorst-Weiss, 2016:448) and having access to information such as price, promotions, and product which allows a customer to search and compare products to make more informed purchasing decisions. Online retailing also poses some challenges for customers. Customers indicated that online shopping necessitates a high level of planning, especially in terms of receiving the delivery of the ordered item. Arrangements need to be made to ensure someone is present at the delivery location to receive the parcel (Snyman, 2014:245; Weber & Badenhorst-Weiss, 2016:448). Also, customers indicated that the perceived risk in terms of trust and personal information safety also influenced their perceptions of online shopping (Makame *et al.,*

2014:84; Snyman, 2014:245; Herhausen *et al*., 2015:13; Kim & Peterson, 2017:44). Other disadvantages of online shopping from the customer's perspective include paying shipping/order delivery costs (Ishfaq *et al.,* 2016:558; National Retail Federation (NRF), 2017:7; Wollenburg *et al.*, 2018:573), order delivery waiting times (Gallino & Moreno, 2014:17; Snyman, 2014:196; Kim & Chun, 2018:7), and the laborious process of online returns (Bernon *et al.*, 2016:585; Chopra, 2016:142).

An advantage from the retailer's perspective is that digital channels allow the retailer to expand its footprint without the initial capital outlay of a physical store (Snyman, 2014:245; Weber & Badenhorst-Weiss 2018a:448). In addition, digital channels serve as a significant collection point of data related to customer demographics and behaviour, resulting in the discovery of untapped opportunities for retailers (Lee, 2016:603; Chong *et al.*, 2017:5142; Von Briel, 2018:225). One challenge of digital channels from the retailer's perspective is the fact that the implementation of digital channels requires substantial investments in technology (Kollmann *et al.,* 2012:186; Saghiri *et al.,* 2017:54) since digital channels differ significantly from physical channels and require unique features and functionalities.

FitforCommerce (2018:10) reported on the findings of their Omnichannel Retail Index[40] by listing the five most essential functionalities customers require in online (digital) retailing channels: 1) the ability to easily search for and find products; 2) positive reviews and feedback on products; 3) the ability to purchase from a mobile device; 4) product videos embedded as part of the product information; and 5) the ability to buy online/pick up in store. Also, when retailers add a digital channel to their traditional distribution systems, retailers face potential channel conflicts that might result in one cannibalising channel sales from the other (Kollmann *et al.,* 2012:186; Herhausen *et al.,* 2015:309; Kim & Chun, 2018:6; Wollenburg *et al.,* 2018:549).

In a recent study conducted by Schaefer and Bulbulia (2021:9) among 1 004 South African customers, the authors found five key factors that influence a customer's

[40] FitForCommerce created the Omnichannel Retail Index ("the Index") in 2015 to evaluate how retailers from multiple industries were implementing key omnichannel features across web, mobile, store, and cross-channel. The methodology saw 120 retailers evaluated by 'expert mystery shoppers' against 250 'index' criteria.

choice of online stores. These are (in order of importance): 1) effective check-out processes, 2) low delivery fees, 3) access to and support from customer service, 4) reassurance regarding returns and refunds, 5) and trust in the brand. Therefore, customers (return or new) are likely to support an omnichannel retailer with the ability to incorporate these elements into their online store.

Another major functionality of digital channels is the online payment 'ecosystem' (Hosseini *et al.,* 2017; Saghiri *et al.,* 2017; Jocevski *et al.,* 2018). Digital payment systems are an essential part of the omnichannel process (Oka *et al.,* 2017:23) since retailers need to provide customers with a range of different (and modern) payment technologies. FitforCommerce (2017:15) debated that a retailer's payment process is vital in creating the seamless customer experience idiosyncratic to omnichannel retailing. They explained that the 'cart and checkout' functionality of online retailing continues to evolve as retailers work towards streamlining the purchase process. Central to streamlining this process is offering customers a range of different payment solutions. Most countries have a collection of preferred payment options, such as Alipay and WeChat (eWallets) in China or PayPal and Venmo (eWallets) in the USA (Nuruzzaman & Weber, 2021). In South Africa, the most common online payment method is credit or debit cards. However, other online payment solutions such as electronic fund transfers (EFTs) using payment systems such as Ozow and PayFast or reward programmes such as eBucks and Discovery Miles are unique to South Africa and often used by South African customers to make online transactions (Dlamini, 2020). Modern payment solutions such as cryptocurrencies have also started to gain popularity for e-commerce transactions globally (Goga & Paelo, 2018:7). Therefore, in omnichannel retailing, **advanced payment eco-systems**[DC12] were highlighted as a dynamic capability (Mrutzek *et al.*, 2020:209). Ternstrand *et al.* (2015:7) posited that customers want quick, safe, and simple payments solutions, and the availability of such payment solutions often determines the customer's purchasing decision.

In conclusion, digital channels in omnichannel retailing have three broad overarching purposes for both customers and retailers. First, digital channels serve as a source of information. For customers, information is collected to facilitate purchasing decisions whereas, for retailers, digital channels serve as a rich information source to collect and analyse data on customer behaviour. Second, digital channels assist both retailers

and customers in overcoming the physical barriers of brick-and-mortar retailing. For customers, the digital channel provides the benefit of not having to physically travel the distance to a brick-and-mortar store. For retailers, digital channels allow them to connect to any customer, irrespective of the physical distance between the retailer and the customer, hence digital channels substantially increase retailers' potential customer-base. Third, digital channels facilitate the omnichannel supply chain process. For customers, digital channels allow them to connect with retailers anytime from anywhere on many different devices. For retailers, digital channels are vital in creating a seamless shopping experience central to omnichannel retailing.

The following sections consider the two main digital channels, the retailer's website and the retailer's mobile application.

#### *5.5.2.1 The retailer's website*

The Oxford English Dictionary (2022b) defines a website as "*a collection of related and linked web pages hosted under a single domain name, typically produced by a single organisation*" and an online store as "*a website or other facility by means of which goods or services are sold via a computer network (esp. the internet)*" (The Oxford English Dictionary (2021b). By these definitions, a digital store is a type of website. It is important to note that many retailers have websites as a way for customers to view products and promotions online. However, not all retailers' websites can be classified as digital stores as some websites do not offer customers the option to purchase directly from the website (Mosquera *et al.,* 2018:76). Weber and Badenhorst-Weiss (2018b:87) pointed out that, in many cases, the website serves as the only link between the retailer and the customer in the digital shopping environment. Therefore, if the website is not user-friendly and negatively affects the retailing experience, the customer will most likely not convert from simple web browsing to active online shopping.

Snyman (2014:57–59) listed four elements that retailers need to consider as part of the website design, namely *product information quality*, *customer service quality*, *e-business quality*, and *website usability (or ease of navigation).* Table 5.1 summarises the critical elements of a retailer's website design.

**Table 5.1: Elements of retailers' website design**

| WEBSITE DESIGN ELEMENT | DESCRIPTION AND EXAMPLE |
|---|---|
| **Product information quality** | The website should contain detailed product information, substantiated by media such as pictures, instructional videos, customer reviews, and ratings. |
| **Customer service quality** | Well-designed retailer websites provide customers with an avenue for direct interactions with the retailer (such as Live Chatrooms). In addition, the website should allow customers to solve problems, for example tracking, cancelling, or changing orders. |
| **E-business quality** | The website should enable customer order processing from payment to obtaining the information necessary to ensure delivery. Also, the quality of communication provided to the customer regarding the progress of orders is essential. |
| **Website usability (or ease of navigation)** | Website usability (or ease of navigation) relates to how easily a customer can complete a shopping task within a reasonable amount of time. |

**Source: Adapted from Snyman (2014:57–59)**

The role of a website in omnichannel retailing may be, amongst others, to combat the disadvantages of brick-and-mortar retailing. While physical brick-and-mortar retailing can provide a tangible shopping experience, a digital store provides the customer with a wealth of information that they would not have access to in a brick-and-mortar store, such as detailed product information (Meixell & Luoma, 2015:268; Hilken *et al.*, 2018:510), product reviews and ratings (Verhoef *et al.,* 2015:175; Chong *et al.,* 2017:5144), and product availability (Marchet *et al.,* 2018:443; Wollenburg *et al.,* 2018:556).

From the perspective of the DCV, authors classified the retailer's website as an ordinary capability (Mirsch *et al.,* 2016:2; Lundberg, Nguyen & Esparza, 2019:9; Mrutzek *et al.*, 2020:11). The reason for this classification is that the website only serves as the bridge for implementing omnichannel retailing, meaning all omnichannel retailers will/should have a basic website. Additionally, as discussed in Chapter 2, Section 2.3.3.1(a) ordinary capabilities lend themselves to being measured and benchmarked, allowing them to be easily replicated by an organisation's competitors. Since a retailer's website is in the public domain, any potential competitor can simply copy unique features such as functionalities from a retailer's website. In line with this discussion, having a website is not classified as a dynamic capability of a retailer.

Although websites were the first digital channel introduced by many omnichannel retailers, mobile applications have since gained significant popularity, considering customers' relationships with their mobile phones. The following section considers mobile applications as part of the omnichannel retailer's strategy.

#### *5.5.2.2 The retailer's mobile application*

Internet use 'from the pocket' has become a vital part of customer behaviour (Özge *et al.,* 2018:712). According to Newman, Wachter and White (2018:211), mobile applications (known as apps) represent an emergent self-service technology that has greatly contributed to the rise of m-commerce. Mobile commerce (m-commerce) is defined as *"any transaction, involving the transfer of ownership or rights to use goods and services, which is initiated and/or completed by using mobile access to computer-mediated networks with the help of mobile devices"* (Özge *et al.,* 2018:715).

Mobile commerce (m-commerce) offers several unique advantages for both retailers and customers. Newman *et al.* (2018:211) and Özge *et al.* (2018:715) argued that the most significant advantage for customers is the mobility (or portability) of shopping through a mobile device. On the other hand, retailers regard m-commerce's broad reach and scalability as the biggest advantage, which allows them to enter markets not considered previously. Other advantages of m-commerce include more in-depth and accurate data about customer behaviour (Weinswig, 2018:4). Mobile commerce allows brands to reach the customer at the right time whenever the customer is browsing for an item or shopping in store. In fact, according to Von Briel (2018:225), in the future, mobile devices are going to be key to providing location-based information, blurring the boundaries between physical and digital channels, identifying individual customers in store, empowering store associates with real-time information on customers' purchasing histories and preferences, and even reinventing the checkout process.

Despite these advantages, m-commerce also poses many disadvantages, such as increased competition, as more customers and competitors start exploring m-commerce. With m-commerce comes the increased risk of fraud as well as privacy concerns. Angus and Westbrook (2019:26) argued that, as retailers are given more

access to customers' data, they also have a higher responsibility to protect data, which many retailers are not doing (Pandey & Chawla, 2019:193). Digital channels, such as retailers' websites and mobile applications, are often seen as impersonal; therefore, these digital channels require substantial investment to establish unique and valuable customer connections (Arora & Sahney, 2017:770). Other factors relating to m-commerce are social media and third-party (review) sites and applications. Smartphones allow the customer to share their satisfaction (or their dissatisfaction) instantaneously after a shopping experience.

Smith (2016) stated that, to succeed in m-commerce, retailers need to understand that a separate application needs to be developed since merely allowing customers to connect to the retailer's website via smartphones is not sufficient. Kruger (2019) argued that a big challenge for the technical teams within retailers is the development of mobile applications that comply with the speed and back-end features that m-commerce requires. Table 5.2 summarises some of the design elements a retailer should consider when designing a mobile application, as highlighted by Smith (2016).

**Table 5.2: Design elements of a retailer's mobile application**

| APPLICATION FUNCTION | DESCRIPTION |
|---|---|
| **Automatic device detection** | Both the website and the mobile application should be able to intuitively adapt to accommodate the device the customer is using. This will facilitate a more user-friendly experience for the customer. |
| **Tap-friendly links** | The importance of buttons (or links) should be reflected in the size of controls to prevent errors. For example, buttons such as 'add to cart' and 'check out' should be larger than buttons for 'product information'. |
| **'Live' text links** | Certain text on the mobile application, such as phone numbers, should be displayed as text and not images. This will allow users to 'tap-to-call' or copy and paste the number to share with friends. |
| **Appropriate visual content** | Since mobile applications are usually viewed 'on the go' and on much smaller screens, utilising visual content such as infographics and videos would be more appropriate than reading lengthy text. |
| **Application navigation** | Ease of navigation is important with the design of the mobile application. Menu items should be well-populated to allow the customer to easily access the subsection (department) they are interested in. |
| **Contact form inputs** | Retailers should use information already collected as part of the registration process during the finalisation of the order to speed up the order-to-completion time. Smartphone users are on the go and appreciate the time-saving functions of mobile applications. |

**Source: Adapted from Smith (2016)**

Table 5.2 illustrates that retailers need a new set of skills to develop well-functioning applications that meet customers' requirements. Retailers also need to consider how mobile applications will enhance customers' overall omnichannel experiences and the role mobile applications play in the overall omnichannel customer journey (Beck & Rygl, 2015:177; Hosseini *et al*., 2017:3; Von Briel, 2018:217).

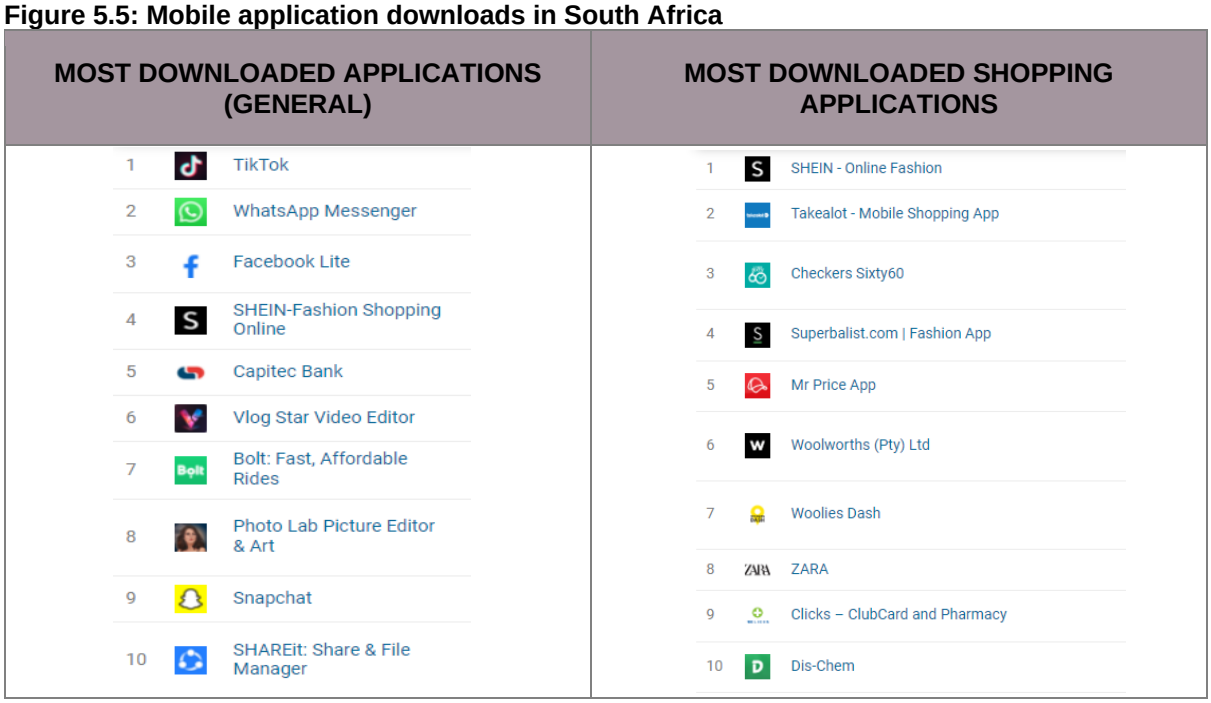
A global study done by Deloitte (2017a:5) found that 91% of people had a mobile device and that, in developing countries, 82% of these mobile devices were smartphones[41]. McLeod (2018) found that the average smartphone user spent up to five hours a day on their smartphone while Criteo (2018) showed that, worldwide, m-commerce transactions represented 47% of all online retail transactions. Furthermore, research has indicated that customers use smartphones during the pre-purchase phase to research other customers' opinions, conduct price comparisons, and familiarise themselves with product features (Mosquera *et al.,* 2018:75).

In terms of the popularity of m-commerce among South African customers, Businesstech (2018) reported that South Africans are becoming more comfortable with mobile shopping due to easy-to-use applications for ordering car rides (for example, Uber) and fast food (for example, Mr D and UberEats). In addition, Businesstech (2018) argued that the convenience of m-commerce is changing how South Africans approach e-commerce. Their research indicated that 62% of South African customers who shopped digitally used smartphones to complete a purchase. Additionally, Schaefer and Bulbulia (2021) found in their study among 1 004 South African customers that two out of three customers drastically changed their shopping behaviours to include online shopping due to lockdown restrictions imposed to curb the spread of coronavirus. These customers also preferred to use mobile phones to shop. Given these customers' strong preferences for mobile phones as the key mode for online shopping, the customer experience needs to be optimised for mobile phone shopping.

[41] Smartphones are defined by the Oxford English Dictionaries (2019c) as: *"A mobile phone that performs many of the functions of a computer, typically having a touchscreen interface, Internet access, and an operating system capable of running downloaded apps [application]."*

When reviewing the list of most downloaded mobile applications by South African smartphone users compiled by SimilarWeb (2022) in February 2022, some meaningful findings can be observed regarding South African customers' mobile shopping behaviours. Figure 5.5 provides a screen capture of the top 10 most downloaded mobile applications (column on the left) and the most downloaded shopping applications (column on the right) by South African customers.

**Figure 5.5: Mobile application downloads in South Africa**




**Source: Researcher's own compilation based on SimilarWeb (2022)**

The first column (left) of Figure 5.5 shows that the most downloaded mobile application (app) is the social media app TikTok, followed by several other social media apps such as WhatsApp and Facebook Lite. While only one ride-sharing app (Bolt) is listed among the top 10 most downloaded apps, no fast-food apps are listed. Also, only one shopping app is listed in the top 10 most downloaded apps, namely the Chinese fashion retailer SHEIN (ranked 4th). Figure 5.5 also lists the most downloaded *shopping* apps (right). From Figure 5.5 it is noticeable that on-demand (within-an-hour) grocery shopping apps are becoming popular among South African customers, with Checkers Sixty60 and Woolies Dash ranking among the top 10 most downloaded shopping apps in South Africa. This could signal that the demand for within-an-hour shopping services is on the rise in South Africa.

From the perspective of the DCV, Hosseini *et al.* (2017:13) classified a **highly functional and integrated mobile application**[DC13] as a dynamic capability. These authors debated that, since not all omnichannel retailers invest in the development of mobile applications, having a fully functional mobile application gives a retailer a competitive advantage. The reason is threefold. First, as discussed above, customers have their smartphones 'in their pocket' all the time and in their hands, browsing, on average five hours a day. Therefore, retailers with mobile applications can 'sense' a customer's situational context and take shopping opportunities to the customer at times most convenient to them (Hosseini *et al.,* 2017:13). Second, mobile applications attract new customers, particularly from competitors who do not offer customers an option to purchase through a mobile application (Nagula & Liu, 2020:35). Third, mobile applications serve as an additional (and rich) data-collection point to create comprehensive customer profiles (the creation of customer profiles is discussed as part of data analytics in omnichannel retailing in Section 5.6). Also, mobile applications afford retailers the ability to gather real-time data to customise a customer's shopping experience, for example push notifications can be used to alert customers to in-store promotions (Mrutzek *et al.,* 2020:207). Accordingly, these authors argued that a retailer's mobile application and its integration into the omnichannel process can be considered a dynamic capability.

As mentioned in Section 5.3, while physical and digital channels serve as the main retail infrastructure for omnichannel retailing, the integration of various physical and digital touchpoints is what truly elevates an omnichannel retailer's omnichannel processes. As such, it is essential to also consider various physical and digital touchpoints omnichannel retailers incorporate into omnichannel processes. Therefore, physical and digital touchpoints in omnichannel retailing are considered next.

### 5.5.3 Physical touchpoints

As the retailing industry evolves towards a seamless omnichannel retailing experience, the distinctions between the physical and digital environment are starting to vanish, turning the world into a showroom without walls (Shen *et al.,* 2018a:67; Savastano *et al.,* 2019:476; Cai & Lo, 2020:1). Although a perception exists that the

influx of digital retailers will lead to the eventual demise of brick-and-mortar retailing (Moody's, 2017), Lobaugh *et al.* (2014:9) maintained that the brick-and-mortar store is not a thing of the past but has become a powerful asset in creating the omnichannel shopping experience of the future. The reason being that customers tend to combine the many digital information sources with physical channels and touchpoints to search and buy products, leading to the emergence of omnichannel behaviour *(*Rodríguez-Torrico *et al.*, 2017:465).

As discussed in Chapter 1, Section 1.4.3, touchpoints relate to any episode of direct and/or indirect engagement between the customer and the retailer *which does not explicitly result in a purchase*. Accordingly, the purpose of touchpoints in the omnichannel process is to stimulate a continuous shopping journey, allowing customers the opportunity to interact with the retailers more frequently than they would in a traditional retail setting. Physical touchpoints refer specifically to when a retailer and customer physically engage in exchanging information but, during this exchange, the customer does not purchase a product from the retailer. The two most common physical touchpoints used by omnichannel retailers are pop-up shops and showrooms. These two physical touchpoints are discussed below.

#### *5.5.3.1 Pop-up shops*

As mentioned in the discussion on physical channels (Section 5.5.1), one of the major advantages of a brick-and-mortar store for customers is the tangibility of the physical shopping experience. However, from the retailer's perspective, a brick-and-mortar store requires significant investment in terms of start-up and maintenance costs. As a result, retailers are finding innovative ways to integrate the elements of physical retail into digital retail through the implementation of pop-up shops. Pop-up shops (or flash retailing) is a type of physical retailing that relies on temporary locations, such as storefronts, stalls, or trucks, to display and, in some cases, sell products (Alexander, Nobbs & Varley, 2018:488). These short-term retail environments enable customers to experience products first-hand. As such, e-commerce merchants often use pop-up shops to reach new customers and test out a physical retail environment (Big Commerce, 2019).

Some of the advantages for retailers in opening a pop-up shop lie in the flexibility of the retail model, which allows retailers to test, adapt, position, and disseminate growth opportunities with minimal economic exposure (Marketline, 2014:13; Alexander *et al.,* 2018:488). A pop-up shop can also serve as a branding tool for retailers without a physical store presence (Alexander *et al.,* 2018:488). Despite these advantages, pop-up shops also face some disadvantages, such as the difficulty in finding suitable space for a pop-up shop and the possibility to rent for only a short period of time. Also, in terms of omnichannel retailing, pop-up shops create a gap in the customer's shopping journey in that the short-term nature of pop-up shops may create the expectation among customers that the retailer will permanently have a physical store or be available in a certain location (Marketline, 2014:13; Alexander *et al.,* 2018:488).

Pop-up shops are commonly used by smaller retailers to overcome the intangibility of digital shopping (Marketline, 2014:11). When pop-up shops are integrated with other physical and digital channels and touchpoints, the pop-up shop provides the customer with a more seamless shopping experience. Alexander *et al.* (2018:489) argued that the overall aim of the pop-up shop is to drive demand rather than generate sales. Therefore, the ability of pop-up shops to foster an exciting and immediate form of communication means that pop-up stores can position a retail brand in a geographically new target market. However, retailers have to keep the lines of communication open (through social media, for example) to truly benefit from the short-term pop-up shop.

#### *5.5.3.2 Showrooming*

While pop-up shops relate to the retailer temporarily opening a showroom to allow customers to physically view products, *showrooming* refers to a behaviour by customers to view products in a physical channel or touchpoint (Arora & Sahney, 2017:762; Westerlund *et al*., 2018:2) but then purchase the product through a digital channel or touchpoint (Arora & Sahney, 2017:762; Westerlund *et al.,* 2018:2; Kang, 2019:602; Kateva, 2019:278)[42]. Showrooming allows customers to experience the

[42] Showrooming should not be confused with webrooming, which is the inverse of showrooming. Webrooming implies the usage of digital channels before buying a product in a physical store (Arora & Sahney, 2017:762).

physical product and therefore aids in overcoming the intangibility of digital retail while also increasing online sales for retailers (Yrjölä *et al.,* 2018:262). However, many authors, such as Ailawadi and Farris (2017:121), Arora and Sahney (2017:763), and Westerlund *et al.* (2018:8), warned of the similarity of showrooming to 'freeriding'. Freeriding refers to a customer's use of one retailer's channel to evaluate products and obtain information only to later purchase the product from another retailer. Some of the adverse effects of freeriding include loss of revenue for retailers and loss of opportunity costs since sales personnel's time and resources prevent the personnel from serving non-freeriding customers (Wang, 2018:40).

Mosquera *et al.* (2018:61) claimed that channel-switching behaviour like showrooming makes selling to customers in an omnichannel environment complex. Li *et al*. (2018:51) posited that omnichannel retailers who seek to acquire and retain customers should be vigilant against the possibility of losing customers to competitors through showrooming and freeriding. Mosquera *et al.* (2018:75) provided some guidelines to combat showrooming behaviour, stating that retailers must facilitate traffic between the digital and physical store by making the same offers, conditions, and services available on both channels. In doing so, customers are able to compare prices, check stock availability in real time or interact with the brand, and make the shopping process more accessible and more pleasurable while preventing freeriding customer behaviour. The authors argued that, in doing so, 'showroomers' will first make sure of the product they want to buy by visiting the retailer's store and then use smartphones or other technological devices available at the store to complete the shopping process after researching opinions, prices, or product features.

In Section 5.4.2, **DC11**, **Seamless and consistent integration of physical and digital channels and touchpoints** was listed as a dynamic capability. Building on the discussion presented in Section 5.4.2, Höcker *et al.* (2018:44) also classified a retailer's ability to integrate physical touchpoints, such as pop-up shops and showrooms, into the omnichannel offering as a dynamic capability. Cao (2014:74) added that, through the integration of physical touchpoints into physical and digital channels, retailers can provide more value to customers, thereby transforming omnichannel processes and how customers can engage with them.

### 5.5.4 Digital touchpoints

As already highlighted above, omnichannel retailing entails the integration of various physical and digital channels and touchpoints to create a seamless shopping experience for a customer. Shi *et al.* (2020:36) stated that integrating digital touchpoints into physical and digital channels allows retailers to emphasise the benefits of each channel, meaning retailers can offer customers a 'universal' shopping experience. Deloitte (2019:3) further debated that digital touchpoints permit retailers to understand customer behaviour in ways that were impossible in an exclusively brick-and-mortar retailing model. The authors reasoned that the amount of customer data retailers can collect with digital touchpoints enables them to transform themselves into omnichannel retailers. As such, these retailers are better positioned to adapt to market change and to create sustainable growth in the digital retail landscape.

Digital touchpoints refer to any digital engagement between the retailer and the customer. Digital touchpoints can, in general, be classified into two categories, namely webrooming and social media platforms. In footnote 42, it was established that webrooming is the inverse of showrooming, specifically when a customer visits one of the retailer's digital channels or touchpoints to view a product only to purchase the product through one of the retailer's physical channels. Accordingly, to avoid repetition, webrooming will not be discussed in this section. Nevertheless, the importance of social media as a digital touchpoint is addressed. According to Shelton and Rodriquez (2019:2), social media platforms include not only social media sites (such as Facebook) but also social content sharing sites (such as blogs). Therefore, Section 5.5.3.1 does not only address the influence of social media sites on omnichannel retailing but also includes other social media platforms.

#### *5.5.4.1 Social media platforms*

Social media platforms employ mobile and web-based technologies to create highly interactive platforms via which individuals and communities share, co-create, discuss, and modify user-generated content (Kietzmann *et al.* 2011:241). Social media platforms have changed how people live as well as the way in which they connect and

communicate with friends, family, and even organisations (Kaplan & Mazurek, 2018:1).

Most retailers use digital touchpoints, such as social media sites, to extensively engage with customers (Hansen & Sia, 2015:1). Although retailers may draw millions of customers to their social media sites, this does not imply that customers will purchase their products. Thus, the social media component of an omnichannel strategy needs to lead customers to an increased and continuous desire for products and services, which results in sales (National Retail Federation (NRF), 2017:7). Due to the nature of social media platforms, a large part of the content created and shared on social media platforms falls outside of the retailers' control. Consequently, social media platforms revolutionised how customers interact with brands and retailers (Bianchi & Andrews, 2018:364). In this study, social media platforms include social media sites (for example, Facebook, Instagram, Twitter, Pinterest, TikTok, and Snapchat), content sharing sites (for example, YouTube), blogs[43] (for example, "Spatula" by Yuppiechef), and wikis[44] (for example, the South African customer review website www.hellopeter.com).

According to Chen *et al.* (2018:3), the growth of social media has allowed customers to not only check on product ratings and promotions in real time but to also share thoughts, opinions (reviews), pictures, and videos with contacts (Chong *et al.,* 2017:5148). In turn, this has created unprecedented opportunities for retailers to extend their touchpoints by employing customers as brand advocates through engaging them with the retailer's brand and products (Jocevski *et al.*, 2018:88). Labrecque *et al.* (2013:257) added that social media has created omnipresent connectivity, which has been intensified through mobile devices that not only enhance access to information but also allow customers to create content and amplify their voices across the world to anyone willing to listen. For example, Hilken *et al*. (2018:512) and Yrjölä *et al.* (2018:265) found that, through the 'live' and 'vote' or 'Q&A'

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43 Blogs are defined by The Oxford English Dictionary (2019d) as: *"a frequently updated website, typically run by a single person and consisting of personal observations arranged in chronological order, excerpts from other sources, hyperlinks to other sites. An online journal or diary"*.

44 Wikis are defined by The Oxford English Dictionary (2019e) as: "*a type of web page designed so that its content can be edited by anyone who accesses it, using a simplified language".*

feature of Facebook, Instagram, and Snapchat, customers commonly involve peers, such as family and friends, to support them in product or service evaluation. The findings of Hilken *et al.* (2018:512) suggested that peers' comments may influence how customers see themselves and ultimately impact their purchase intention.

Social media offers omnichannel retailers several advantages, such as reduced marketing costs (Fenech & Perkins, 2015:2), increased sales (FitforCommerce, 2017:2), increased traffic to omnichannel retailers' websites (Deloitte, 2017b:3), enhanced customer engagement, the opportunity to get customer feedback (Oka *et al.,* 2017:56), the opportunity to collect data on customer behaviour, and the opportunity to create the type of end-to-end experience that builds loyalty and a competitive advantage in omnichannel retailing (FitforCommerce, 2017:2). Despite these advantages, social media platforms also pose some challenges, for example additional resources are needed to manage social media platforms as social media sites require daily (even hourly or continuous) monitoring (Kietzmann *et al.,* 2011:244). Another challenge is retailers' lack of control over the engagement and content (such as customer reviews) customers can post on social media platforms (Kwark, Chen & Raghunathan, 2014:95).

Several authors – Lima (2015:37); Schmaus, Maekelburger and Felsmann (2017:17); Hosseini *et al.* (2018:74) and Özge *et al*. (2018:714) – stated that, although most retailers are aware of social media platforms and its advantages, only a few retailers have developed strategies to effectively incorporate social media platforms into their the omnichannel process. FitforCommerce (2017:14) found that only 46% of retailers offered customers the ability to upload photos online and just 30% of retailers pulled Instagram photos into the online experience. These authors maintained that retailers can use social media sites as a lubricant for communication with customers during the omnichannel process (Schmaus *et al.* 2017:17). Hosseini *et al*. (2017:1) provided an example of how a retailer can include social media in the omnichannel process. Hummel, a European sports fashion company, combined the customers' in-store experiences with the social media activities of the retailer. Customers who tried Hummel products in bricks-and-mortar stores could upload pictures of themselves on Instagram. Pictures of customers with the hashtag "#hummelsport" were shown on live screens in the store as well as on the global website of Hummel.

From the perspective of the DCV, many authors classified the **integration of social media platforms into the omnichannel process**[DC14] as a dynamic capability (Hosseini *et al.,* 2017:9; Mrutzek *et al.*, 2020:9; Nagula & Liu, 2020:39; De Oliveira *et al.,* 2020:10). It is noteworthy that the management of social media platforms is considered a basic requirement for any retailer. However, the retailers' ability to *integrate* social media platforms as digital touchpoints into omnichannel processes is regarded as a dynamic capability. The reason is threefold. First, the integration of social media platforms allows retailers to collect data on customer behaviour. This data enables retailers to sense demand changes from customers, adapt to these changes, and ultimately enrich the customers' shopping experiences (Mrutzek *et al.*, 2020:209; Nagula & Liu, 2020:39). Second, the integration of social media platforms allows retailers to create opportunities to attract new customers (Nagula & Liu, 2020:40). However, De Oliveira *et al.* (2020:10) stated that many retailers find it difficult to integrate social media platforms into physical and digital channels, considering the substantial investment required to achieve such integration. Third, Nagula and Liu (2020:41) and De Oliveira *et al.* (2020:10) debated that, based on the real-time information collected from social media platforms, retailers are able to continually review and renew opportunities and transform omnichannel processes to keep abreast of customers' demand changes. Yet, most authors (Hosseini *et al.,* 2017:9; Mrutzek *et al.*, 2020:9; Nagula & Liu, 2020:39; De Oliveira *et al.,* 2020:10) argued that retailers often lack the technical capabilities to integrate social media platforms into omnichannel processes.

In conclusion, the above section discussed front-end integration as the retailer's ability to integrate various physical and digital channels and touchpoints to create a seamless shopping experience for the customer. The final section of this chapter addresses the use of data in omnichannel retailing, which some authors have called the 'heart' (Newstore, 2020:2) or 'lifeblood' (Chen, Goh & Zou, 2018:354) of a retailer's omnichannel strategy.

## 5.6 DATA IN OMNICHANNEL RETAILING: THE ENGINE OF GROWTH

As already discussed, digital technologies have come to shape the retail landscape of the future. The phrases ‘disruptive innovation’ or ‘disruptive technologies’ are now common terms in matters relating to the Fourth Industrial Revolution (or industry 4.0), characterised by high levels of automation and data exchange (Lu, 2017:3). Disruptive technologies were described by Gibson and LaBruno (2018:13) as any technology that will significantly change how a traditional retail supply chain works.

Several authors highlighted that a vital component to the success of front-end integration is the utilisation of advanced digital technologies (for example, Big Data and cloud computing) to collect and analyse customer data (Von Briel, 2018:225; Alexander & Cano, 2020; Cai & Lo, 2020:7). Data analytics aids retailers in gaining an understanding of how customers are interacting with the retailers’ physical and digital channels and touchpoints, and consequently allows retailers to tailor the omnichannel process to address customers’ specific needs (Savastano *et al.,* 2019:487). However, as the number of channels and touchpoints increases, so does the amount of basic customer data (resulting in customer knowledge) retailers can collect. (Hosseini *et al.,* 2017:10).

Basic customer knowledge stems from personal data (the customer’s name, address, and date of birth) and descriptive data (demographics, household structure, and lifecycle). Furthermore, a retailer’s data pool can be enriched through other structured data sources (for example, point-of-sale data) or unstructured data sources (for example, customer reviews). Accordingly, data analytics is needed to extract hidden knowledge from the data to aid organisational decision-making. Gibson and LaBruno (2018:13) explained that data analytics allows retailers to shift focus from reactive analytics (how the organisation operated yesterday) to proactive analytics that accurately predicts demand and improves the omnichannel journey for the customer.

Omnichannel retailers collect customer data for various reasons, including developing systems that support complex supply chain activities (Larke *et al.,* 2018:466) such as improved inventory control and logistics planning (Hoehle *et al.,* 2018:704). Having these insights into customer wants, allows retailers to make better strategic decisions

(Hoogveld & Koster, 2016:30; Larke *et al.,* 2018:468). Data collection and analysis also allows retailers to build so-called '360-degree customer profiles' (Gregory *et al.,* 2015:4; Mirsch *et al.,* 2016:8; Hilken *et al.,* 2018:512). Since generating and creating customer profiles requires specific, technology-driven capabilities, many authors classify the **creation of comprehensive customer profiles**[DC15] as a dynamic capability. Based on these customer profiles, organisations must provide up-to-date customer information, ideally in real time, to personalise the relevant channel and create a seamless customer experience across all channels.

Data analytics in omnichannel retailing focuses on three broad areas: the Internet of Things (IoT), Big Data, and artificial intelligence (AI). The Internet of Things (IoT) and Big Data are concerned with collecting, organising, and storing data while AI is responsible for analysing data and providing retailers with valuable consumer insights to improve decision-making. Kaplan and Haenlein (2019:17) differentiated between IoT, Big Data, and AI by explaining that IoT pertains to the idea that devices are equipped with sensors and software to collect and exchange data, specifically data external to the organisation. Therefore, IoT is one input towards Big Data. Big Data is broader than IoT since it also includes data collected through other means such as social media platforms. On the other hand, AI uses external data (obtained through IoT and other Big Data sources) as input for identifying underlying patterns in the data by relying on approaches from *machine learning* (ML). Machine learning (ML) relates to the capacity of a computer to learn from experience, which is to modify its processing based on newly acquired information without explicitly being programmed to do so (The Oxford English Dictionary, 2019a). Machine learning (ML) is an essential part of AI, but AI is broader than ML since it also covers the ability of a system to perceive data (for example, natural language processing or voice/image recognition) and manipulate objects based on learned information, be it a robot or another connected device. These three areas of data analytics are considered below.

### 5.6.1 Internet of Things (IoT)

The Internet of Things (IoT) not only relates to traditional digital devices but also to 'things' that are traditionally not considered to be electronic. In layperson's terms, IoT

refers to the interconnection of computing devices through the Internet, enabling these computing devices to send and receive data. Once IoT devices have collected the data, Big Data captures, organises, and stores the data (Lee, 2016:594). This process is unique in omnichannel retailing as data collected by IoT devices was traditionally siloed information but is now integrated on a large scale (Bloem *et al.,* 2014:16). Erfanmanesh and Abrizah (2018:980) explained that *"[IoT] covers any real-world objects, such as food, clothing, furniture, materials, parts and equipment, merchandise... The technologies required for this are radio frequency identification (RFID) tags for tracking objects, low-power sensors for gathering data on everything from temperature and air quality to footsteps and motion detection, and finally, low-power actuators that can switch anything on and off… ".*

Bloem *et al.* (2014:13) and Dai, Zheng and Zhang (2019:8074) argued that the main advantage of IoT in retail lies in its potential to deliver relevant, personalised, real-time, interactive communication with customers. The Internet of Things (IoT) furthermore serves as a facilitator of the movement of customers along the path to purchase (Đurđević *et al.,* 2016:7) and can improve logistics and infrastructure for more effective retailing and store management (Dai *et al.,* 2019:8074). Therefore, IoT also plays an essential role in omnichannel retailing as retailers use it as a tool to facilitate a seamless customer experience (Mosquera *et al.,* 2018:75). Some examples of modern data sources retailers can use to collect data from customers are briefly considered below.

#### *5.6.1.1 Virtual reality (VR) and augmented reality (AR)*

Virtual reality (VR) and augmented reality (AR) is set to transform the retail experience by offering customers an enhanced sensory perception of the shopping experience, with immersive experiences that showcase products and services in exciting ways (Grewal *et al.,* 2017:5). Although often used interchangeably, VR and AR differ. AR ( also referred to as mixed reality) allows customers to view 'the real world' but it is augmented with additional information. Hence, AR embeds digital content (such as product information, images, and animations) into the customer's physical environment, interactively and in real time (Hilken *et al.,* 2018:510). On the other hand, VR replaces the physical world with an entirely computer-generated world. For

example, with AR a customer is able to hold up their smartphone in a store, within a specific aisle, and additional information such as promotional coupons and customer reviews will be displayed on their smartphone screen. Terry (2018) argued that in future, instead of incurring the cost of erecting a brick-and-mortar store location, the retailer might simply design a 360-degree panorama view of the store for customers.

#### *5.6.1.2 Beacons*

Beacons are signal transmitters that recognise smartphones with Bluetooth, Low-Energy (BLE) technology within a specific range (FitforCommerce, 2015:24). Beacons are installed at various points in brick-and-mortar stores, such as entry and exit points, as well as being spread across the different aisles of such stores (Oka *et al.,* 2017:22). A customer with a smartphone passes by these beacons and their location is uploaded to a server (given that the store's mobile application is installed on the customer's smartphone and the Bluetooth function of the customer is enabled). Based on the customer's location and purchase history, the server can send, in real time and automatically, customised offers to such customers' smartphones (even when just passing by the brick-and-mortar store).

#### *5.6.1.3 Chatbots 'Live Chat' and virtual assistants*

Chatbots and virtual (also called digital) assistants use AI to converse with customers through both speech and text, irrespective of the time of day the customer is online (Kruger, 2019:3). These technologies allow customers to ask questions and receive answers in 'natural language'[45] in real time (Van der Meer *et al.,* 2018:17). Chatbots are already well-established in retail and are used to provide customer service that goes beyond offering basic responses to frequently asked questions (Weinswig, 2018:5). Natural Language Processing (NLP) and ML are used to create chatbots. These technologies rapidly improve a retailer's ability to automatically diagnose and solve customer problems rather than simply return static responses that prompt the customer to take further action. Through these technologies, the retailer can confirm

[45] Natural language is computing jargon for any human language such as English used in computer communication. In particular, it refers to how computers are programmed to analyse and interpret large amounts of 'human language'.

with the customer whether the solution presented is acceptable and then execute it (Zeng, 2018:95). Chatbots, Live Messaging services, and virtual assistants have shown to be effective in increasing customers' repurchasing intentions (Chong *et al.,* 2017:5153).

Once IoT devices collect data from various data sources, these data sources need to be stored and organised before analysis can occur. The process of organising and storing data is called Big Data.

### 5.6.2 Big Data

Big Data is defined as the holistic approach to manage, process, and analyse the five dimensions (five Vs) of data, namely volume, variety, velocity, veracity, and value (Lugmayr *et al.,* 2017:197; Verma & Singh, 2017:1504; Kaplan & Mazurek, 2018:8). As the word 'big' suggests, large *volumes* of data related to products, marketing promotions, and online reviews is collected by organisations to form Big Data (Chong *et al.,* 2017:5143). Big Data is accumulated from a *variety* of sources. The sources can include anything from a store loyalty card (indicating where and when the customer shops) to wearable technologies (such as smartwatches providing retailers with information such as the customer's habits, hobbies, needs, and desires) (Ferraris *et al.,* 2019:1926). *Velocity* is the speed of data creation (Engelseth & Wang, 2019:1208; Khan, 2019:2126). Ferraris *et al.* (2019:1926) maintained that the speed of data creation is even more important than the volume as the economic world is becoming more competitive and one of the key factors for success is an organisation's ability to make decisions faster. The *veracity* of the data collected relates to the fact that data may be 'cluttered' or incomplete and out-of-date (Ferraris *et al.,* 2019:1926; Khan, 2019:2126). In Big Data, the quality of data and the level of trust in various data sources is crucial (Santoro *et al.,* 2018:1893). The last dimension of Big Data is *value*. The process of capturing, storing, and organising data should create value for the organisation (Santoro *et al.,* 2018:3; Engelseth & Wang, 2019:1206). It is essential to extract economic benefits from the available Big Data as the value of the data is often linked to the ability of the organisation to make better decisions (Ferraris *et al.,* 2019:1926). Through the successful management of the five dimensions of data,

retailers can create actionable insights for sustained value delivery, measuring performance and establishing competitive advantages (Ferraris *et al.,* 2019:1926; Santoro *et al.,* 2018:1892; Engelseth & Wang, 2019:1202; Khan, 2019:2124).

However, investments in Big Data technologies are not enough to create value and build new sources of competitive advantage (Ferraris *et al.,* 2019:1925). An organisation needs a unique bundle of resources to create capabilities that are superior to those of competitors, that are dynamic in relation to the change of the external environment, and that are difficult to imitate. Lugmayr *et al.* (2017:198) added that most organisations already know how to collect and analyse data but the scalability and integration of these data sources to serve as a competitive advantage remains the challenge. As such, Big Data is becoming a significant differentiator between high-performance and low-performance retailers as it allows organisations to attain a long-term vision, decrease customer acquisition costs, and raise organisational revenue (Ferraris *et al.,* 2019:1926).

After various data sources are collected, organised, and stored, insights need to be extracted from the data. These insights are then often used to develop ML and AI.

### 5.6.3 Artificial intelligence (AI)

Artificial intelligence (AI) is defined by Merriam-Webster (2019) as *"a branch of computer science dealing with the simulation of intelligent behaviour in computers, i.e. the capability of a machine to imitate intelligent human behaviour*". Kaplan and Mazurek (2018:15) added that AI refers to a system's ability to correctly interpret external data, learn from such data, and use such learnings to achieve specific goals and tasks through flexible adaptation. One of the major advantages of AI is its ability to make sense of integrated structured and unstructured data (Kruh & Freedman, 2016:24) to gain meaningful insights into customer behaviour (Hosseini *et al.,* 2017:10).

From an omnichannel perspective, Naigeon (2017) posited that retailers who harness technology (such as AI) to blur the lines between the digital and physical worlds of

retailing are able to find novel ways to capture customers' attention. Grewal *et al.* (2017:5) provided an example of the use of AI within omnichannel retailing by highlighting the use of 'query-based response' AI applications, such as Siri on the Apple iphone, Cortana on Microsoft, or Alexa on Amazon.com's Echo. Through these applications, customers can gather information about where products are physically located within a store and receive answers to questions about the functionalities of a product (Grewal *et al.*, 2017:5), utilising AI in such a manner can result in more informed and engaged customers.

As mentioned above, a retailer's ability to handle all aspects of data has been highlighted by many previous authors as central to omnichannel retailing. This centrality is also reflected in research on omnichannel dynamic capabilities (Mirsch *et al.,* 2016:8; Hosseini *et al.,* 2017:4; Höcker *et al.,* 2018:11; Mrutzek *et al.*, 2020:208; De Oliveira *et al.,* 2020:4). The process of retrieving, combining, incorporating, and structuring heterogeneous data from different sources in homogenous databases is key to the success of a retailer's omnichannel processes (as discussed in Chapter 4, DC1). Once omnichannel data integration is mastered, retailers need appropriate tools and technologies that allow them to process and analyse the data. In addition, analytical and technical data management capabilities are required in omnichannel retailing. These capabilities relate to the use of innovative integrated information technology (IT) systems with the ability to handle vast amounts of heterogeneous data (as also discussed in Chapter 4, DC2). By using different approaches such as visual, predictive and prescriptive analytics, data mining, ML, and AI, retailers can derive meaningful insights to build comprehensive customer profiles (as discussed in DC15).

Although the digital and physical channels discussed previously remain the most popular channels for customers, Mosquera *et al.* (2018:64) debated that retailers must adapt to customers' demands and incorporate new omnichannel technologies and practices (such as those highlighted in the section above) to offer the best real-life and virtual shopping experiences for customers. In other words, physical stores should use a mixed model, combining the immediacy and multisensorial experience of a brick-and-mortar store with the access, interactivity, and convenience of a digital store while also fusing disruptive technologies, such as social media, into the customers' experience. Several authors maintained that the ability of a retailer to incorporate

disruptive technologies into omnichannel offerings is an indicator of adaptability (Szymczak, 2013:68; Oka *et al.,* 2017:24; Shang, Miao & Abdul, 2019:221)

## 5.7 CHAPTER CONCLUSION

The purpose of this chapter was to address, in part, SRO2(b), which is to *define dynamic capabilities that facilitate omnichannel integration.* As stated in the introduction (Section 5.1), the omnichannel process encompasses the integration of three main domains of omnichannel retailing: front-end integration, which relates to the integration of the retailer's physical and digital channels and touchpoints; back-end fulfilment, which is concerned with order fulfilment (such as warehouse configuration and order picking); and last-mile distribution, which encompasses the different last-mile delivery options available in omnichannel retailing. This chapter aimed to discuss the first domain of the omnichannel supply chain process by considering the history of omnichannel retailing, the types of retailing (single-, multi-, cross-, and omnichannel), the omnichannel process, the most popular physical and digital channel and touchpoints employed by omnichannel retailers, and how data and data analytics drives the entire omnichannel process.

During the introduction of this chapter, a distinction was made between physical and digital channels and touchpoints, although it was established that, for omnichannel retailers to elevate the shopping experience for customers, retailers need to be able to use a mix of physical and digital channels and touchpoints. Therefore, the value of omnichannel retailing lies in the possibility to create a seamless shopping experience for customers across channels and touchpoints. This chapter established that customers equate seamlessness to the ability to use channels and touchpoints interchangeably and that customers expect both content and process consistency across all channels and touchpoints.

From the discussions above, it also became evident that both traditional brick-and-mortar retailers and pure-online retailers are starting to realise the opportunities offered by the inverse channel and are subsequently starting to move towards providing an omnichannel shopping experience. However, considering the

competitiveness of omnichannel retailing, retailers are realising that merely adding a brick-and-mortar or digital store to existing facilities is not enough to secure a competitive advantage. Consequently, omnichannel retailers rely on digital touchpoints, such as social media, to understand customers better. In doing so, retailers can offer customers a unique and personalised omnichannel shopping experience.

What was noticeable from this chapter was that the nature of omnichannel retailing makes the constant shifting of goalposts inevitable. New technologies (such as beacons) and new touchpoints (such as showrooms) are constantly emerging, which means that, while retailers might gain the front-end capabilities of one element of omnichannel integration (such as the integration of social media into the customer's shopping journey), the same retailer might be lagging in providing modern payment options (such as cryptocurrencies). Retailers, therefore, need to realise that omnichannel retailing requires consistent change and evolvement to stay competitive.

Along with the discussion on front-end integration in omnichannel retailing, this chapter also identified several dynamic capabilities that facilitate the internal SCI of omnichannel retailers. Table 5.3 summarises the dynamic capabilities identified in this chapter, which were added to the coding frame (see Annexure A).

**Table 5.3: Dynamic capabilities contributing to the coding frame of the study**

| | DC CODING | DEFINITION |
|---|---|---|
| **Front-end integration:** The integration of a retailer's physical and digital channels and touchpoints to provide customers with a seamless and consistent shopping experience across the retailer's channel mix. | | |
| **Dynamic Capabilities** | **DC10** | **Front-end integration capability:**<br>The ability of a retailer to create an 'omnichannel environment' to continuously identify and integrate additional physical and digital channels and touchpoints into the omnichannel offering to attract new customers. |
| | **DC11** | **Seamless and consistent integration of physical and digital channels and touchpoints:**<br>The ability of a retailer to integrate physical and digital channels and touchpoints to create an easy, consistent, speedy, and pleasant shopping experience for customers. |

| | DC CODING | DEFINITION |
|---|---|---|
| | **DC12** | **Advanced payment ecosystem:**<br>The ability of a retailer to implement an advanced payment ecosystem which allows customers to pay for products through any of the customers' preferred payment solutions. |
| | **DC13** | **Highly functional and integrated mobile application:**<br>A retailer with a mobile application can reach customers when it is most convenient for them, can attract new customers, and can collect rich real-time information on customer behaviour. |
| | **DC14** | **Integrating social media platforms into the omnichannel process:**<br>The ability of a retailer to integrate various social media platforms into the omnichannel process to collect customer data and create opportunities to attract new customers and to continuously renew the omnichannel process in response to real-time demand changes from customers. |
| | **DC15** | **Creation of comprehensive customer profiles:**<br>The ability of a retailer to integrate and share data across channels and touchpoints to create detailed and comprehensive customer profiles to personalise the shopping experience for each customer. |

**Source: Researcher's own compilation**

The dynamic capabilities listed in Table 5.3 were added to the dynamic capabilities already identified in Chapter 2 and Chapter 4 (see Table 2.3 and Table 4.8) along with the dynamic capabilities identified in Chapter 6. Together, these dynamic capabilities constituted the coding frame used to conduct the content analysis of retailer integrated annual reports (IARs) as outlined in Chapter 1.

Chapter 6 discusses the two remaining domains of the omnichannel supply chain process: back-end fulfilment and last-mile distribution.

# CHAPTER 6

# BACK-END FULFILMENT AND LAST-MILE DISTRIBUTION IN OMNICHANNEL RETAILING

## 6.1 CHAPTER INTRODUCTION

Omnichannel retailing requires complex trade-offs between delivery responsiveness, product variety, and convenience and relies on organisation-wide information sharing (Lim & Srai, 2018:308). Since some of the processes in omnichannel retailing are not visible to the consumer, problems and delays during order fulfilment and delivery can cause frustration for consumers (Kourimsky & Van den Berk, 2014:12).

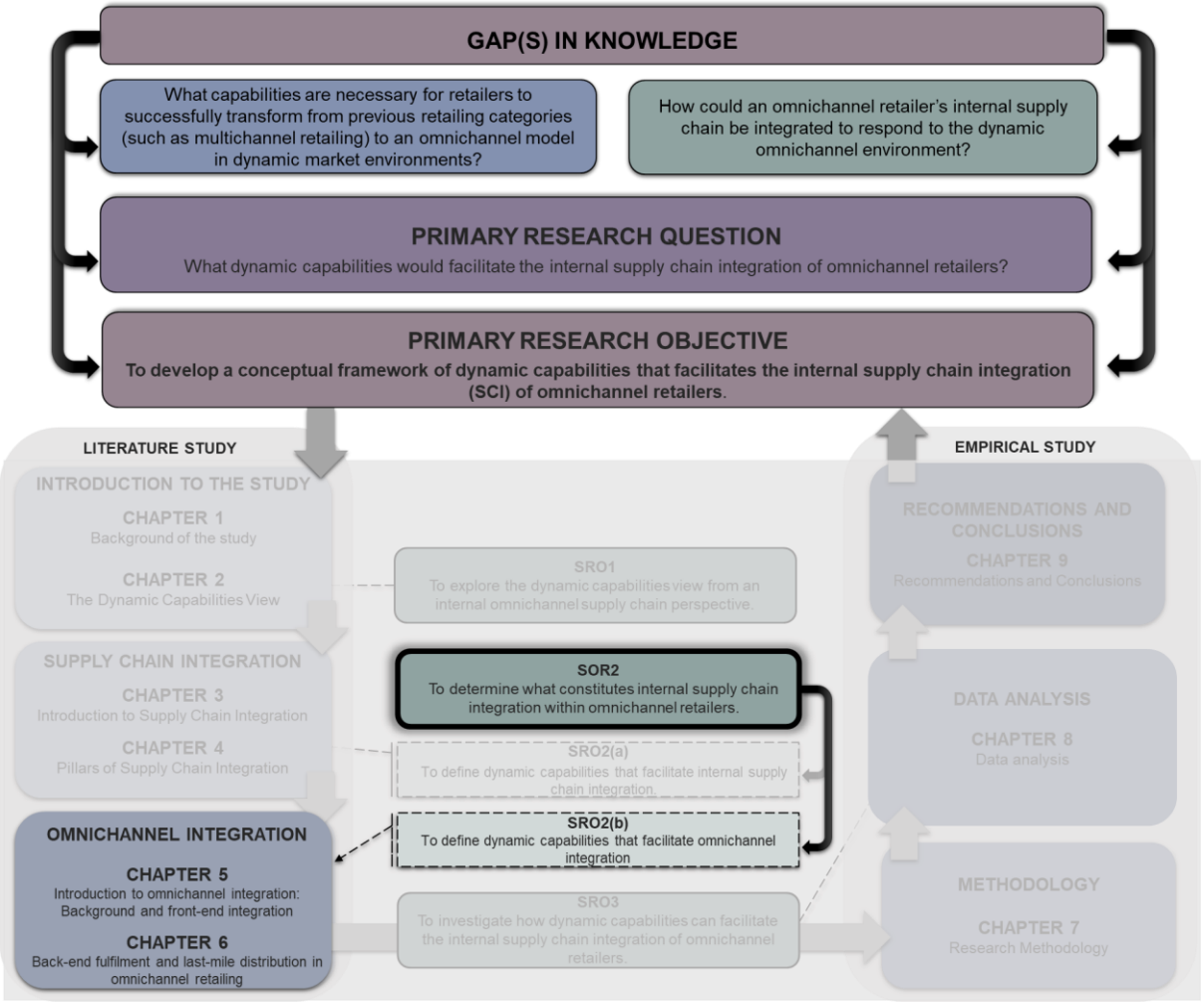
Omnichannel processes are more complicated than traditional brick-and-mortar processes (Kembro, Norrman & Eriksson, 2018:906) since retailers have several design alternatives for back-end fulfilment and last-mile distribution processes, depending on the retailer's inventory management strategy, service speed (DHL Consulting, 2016:4), and market and operational capabilities (Zhang *et al.,* 2019:498). Taylor *et al.* (2019:868) maintained that, to date, omnichannel retailing literature is inconclusive in identifying and addressing the distinct logistical aspects of omnichannel processes that facilitate the integration of retailers' physical and digital channels. Several strategic decisions regarding omnichannel retailers' back-end fulfilment and last-mile distribution processes need to be made (Weber & Badenhorst-Weiss, 2018a:2). Some of these decisions include whether to insource or outsource logistics (Rai *et al.,* 2019b:272), whether online orders should be fulfilled in store or from a dedicated warehouse for online orders (Wollenburg *et al.,* 2018:430), and whether the brick-and-mortar store and online inventories should be integrated or kept separate for order fulfilment (Hübner *et al.,* 2016:234). These decisions are usually guided by considering a trade-off between agility (flexibility and speed) and cost.

In Chapter 5, Section 5.4.1, a generic omnichannel process was presented, consisting of three sequential domains: *front-end integration*, *back-end fulfilment*, and *last-mile*

*distribution*. Chapter 5 aimed to address the main factors of front-end integration, particularly the integration of various physical and digital touchpoints and channels. It was argued that, after a customer places an order through one of the omnichannel retailer's digital channels, several methods of order fulfilment (back-end fulfilment) and order delivery (last-mile distribution) need to be orchestrated to deliver customers' purchases to them. This chapter discusses the main factors concerning *back-end fulfilment* and *last-mile distribution*.

Figure 6.1 serves as a visual representation of the purpose of this within the scope of this study.

**Figure 6.1: Visual illustration of the study – the purpose of Chapter 6**




**Source: Researcher's own compilation**

As Figure 6.1 illustrates, the purpose of this chapter is to partially address secondary research objective 2 (SRO2) by answering one of its subobjectives, SRO2(b). SRO2(b) aims *to define dynamic capabilities that facilitate omnichannel integration*. In particular, Chapter 6 seeks to investigate the different back-end fulfilment and last-mile distribution aspects omnichannel retailers need to consider when attempting to integrate their internal supply chains. Each section of this chapter also identifies and defines the dynamic capabilities required to integrate internal omnichannel supply chain processes. From the perspective of the dynamic capabilities view (DCV), Yumurtacı, Metehan and Börühan (2018:1214) argued that many ordinary capabilities (for example, having a returns process) are necessary for omnichannel retailers to survive in the short-term. However, many dynamic capabilities that transform existing processes are required for omnichannel retailers to achieve the necessary change to be competitive in the long-term. Additionally, the authors maintained that the rapid advancement of technology will inevitably generate new physical and digital channels. Therefore, the reintegration of these channels will always require dynamic capabilities. Again, the dynamic capabilities identified in this chapter contributed to the coding framework used to analyse retailers' integrated annual reports. The different coding frame elements are classified as dynamic capabilities and shown as ($^{DCx}$)[46].

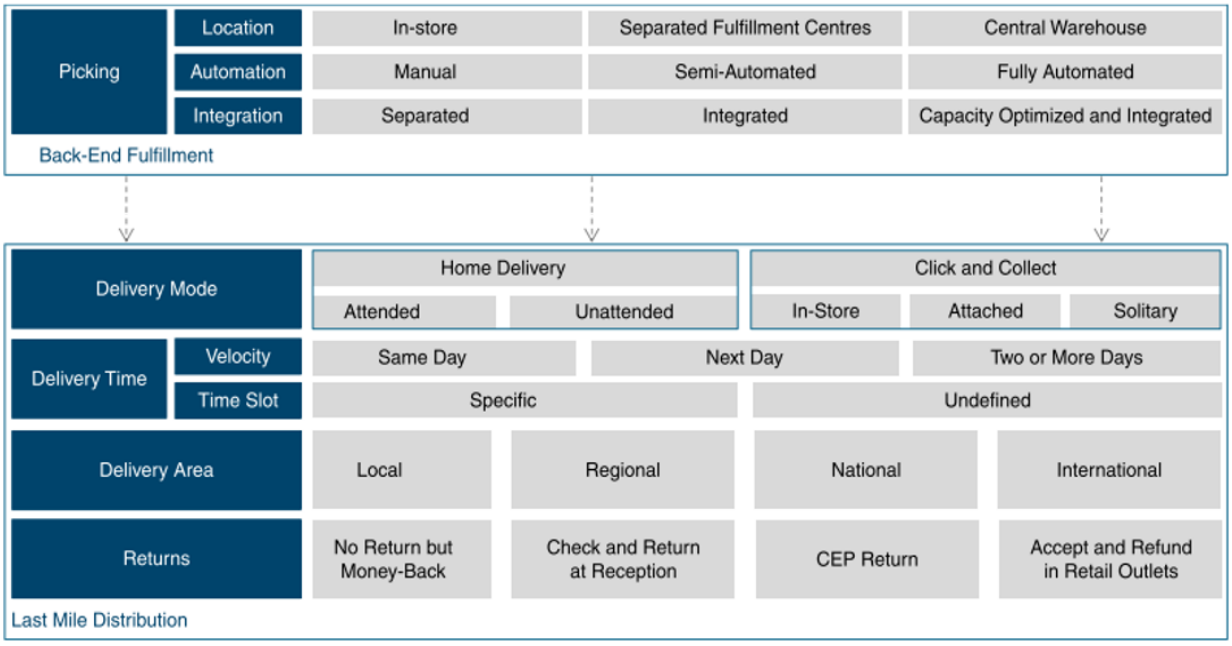
The strategic planning framework for last-mile order fulfilment and delivery developed by Hübner *et al.* (2016:234) is used to structure the discussion of this chapter. The framework provides a comprehensive representation of most of the critical design elements of last-mile order fulfilment and delivery in omnichannel retailing. Many authors cited this framework as seminal in the literature on the last-mile omnichannel process (Brusset, Teller & Kotzab, 2017; Jara *et al.,* 2018; Larke, Kilgour & O'Connor, 2018; Marchet *et al.,* 2018; Melacini *et al.,* 2018; Rai *et al.*, 2019; Savastano *et al.*, 2019). Section 6.2 provides a brief background to the framework before discussing each of its design elements.

[46] Due to the close similarity of certain capabilities, a coding frame element (for example $^{DCx}$) may be presented more than once. In such cases, closely related literature findings are consolidated into one coding frame element and clearly indicated to the reader.

## 6.2 STRATEGIC PLANNING FRAMEWORK FOR LAST-MILE FULFILMENT AND DELIVERY IN OMNICHANNEL RETAILING

According to Hübner *et al.* (2016:234), effective supply chain planning is essential for coordinating last-mile order fulfilment and delivery in omnichannel retailing. The purpose of the framework developed by Hübner *et al.* (2016:234) was to address a gap in the literature *"…dealing with the logistics interaction between e-commerce and traditional retailing".* The authors argued that, at the time, literature lacked a comprehensive view of the back-end fulfilment and last-mile distribution processes required in omnichannel retailing. Previous frameworks did not consider the integration of physical and digital channels holistically. Figure 6.2 illustrates the strategic planning framework for last-mile fulfilment and delivery in omnichannel retailing developed by Hübner *et al.* (2016:234).

**Figure 6.2: Strategic planning framework for last-mile fulfilment and delivery in omnichannel retailing**




**Source: Hübner *et al.* (2016)**

Figure 6.2 shows that Hübner *et al.* (2016:234) differentiate between back-end fulfilment (order picking) and last-mile distribution (order delivery). Similarly, the following discussion considers back-end fulfilment and last-mile distribution individually.

### 6.2.1 Back-end fulfilment

In omnichannel retailing, back-end fulfilment entails the process of preparing orders for delivery (Rai, 2019a:28). When considering the strategic planning framework for last-mile order fulfilment and delivery proposed by Hübner *et al.* (2016:234), the authors subdivided back-end fulfilment into the following three domains: *picking location*, *automation*, and *integration*. Hübner *et al.* (2016:234) and Marchet *et al.* (2018:452) argued that considerations in terms of these domains are driven by the distinct preferences in shopping behaviours from customers within different countries. Although the framework of Hübner *et al.* (2016:234) provided strategic considerations in terms of picking location, automation, and integration for back-end fulfilment, retailers still need to consider their specific country's demographic and geographic factors when designing back-end fulfilment strategies (Lee 2016; Oka *et al.*, 2017; Schmaus *et al.,* 2017; Lim & Srai, 2018).

Weber and Badenhorst-Weiss (2018:10), for example, argued that the omnichannel landscape in South Africa is unique. In these authors' qualitative study, both customers' and retailers' perspectives were drawn on through interviews and focus groups to gain an understanding of the nature of last-mile logistical challenges hindering the efficiency of omnichannel retailing in South Africa. Weber and Badenhorst-Weiss's (2018:10) study found that South African customers are 'spoilt for choice' as extensive retail areas are developed in the suburbs, mainly because of a lack of public transportation systems and suburbanisation. Thus, South African customers have several closely located retail stores to choose from, which decreases the need for online retailing. Consequently, the advantage of density is lost for retailers and orders are dispersed over broad geographic areas. Also, the omnichannel retailer who participated in their study indicated that, since they fulfilled online customers' orders from an 'in-store[47]' fulfilment model, they incurred additional costs to move products around (namely out-of-stock items from one store to the next). Therefore, South African omnichannel retailers have to consider specific socio-geographic factors when designing back-end fulfilment strategies.

[47] In-store fulfillment models are discussed in Table 6.1.

Mention should be made of the impact the COVID-19 pandemic had on changing omnichannel retailing in South Africa. While Chapter 5, Section 5.2.4 addressed the pandemic's impact on accelerating omnichannel retailing, it should be highlighted that, for customers, a major advantage of online shopping during the pandemic was their ability to have products delivered *safely* to their homes (last-mile delivery). This served as the primary catalyst for the acceleration of online shopping in South Africa during the pandemic. Hossain *et al.* (2020:237) explained that the perceived health risk of visiting a physical retail store outweighed other perceived risks of digital retail (such as not receiving products or the risk of paying for products online). Weber (2021:11) showed that South African omnichannel retailers with agile supply chains and decision-making abilities capitalised on the opportunities the COVID-19 pandemic presented by implementing new fulfilment and distribution channels to meet demand surges. Jenvey (2020) reported that online grocery retailers in South Africa saw an increase of between 200 and 500% in orders when lockdowns were implemented. Weber (2021:11) explained that, to meet the rising demand surges of online shopper traffic, new (or alternative) fulfilment channels, such as click-and-collect or on-demand (within-an-hour) delivery channels, were implemented by retailers during the pandemic. These new fulfilment and distribution channels are expanding retailers' e-commerce capabilities, allowing for accelerated growth of the online retail sector in South Africa.

According to the framework by Hübner *et al.* (2016:234), picking location (discussed next) is the first strategic consideration for retailers when designing back-end fulfilment strategies.

#### *6.2.1.1 Picking location*

Designing an omnichannel back-end fulfilment process is a complicated endeavour. In fact, Lim and Srai (2018:309) debated that traditional retail structures are insufficient in offering the back-end fulfilment structures necessary for omnichannel retailing. The purpose of a picking location is to fulfil orders after purchases are made by the customer (through one of the digital channels). Kourimsky and Van den Berk (2014:14) stated that, generally, pickers collect items for several customer orders from the

storage location; thereafter, the items are sorted per customer and finally packaged, ready for delivery.

According to DHL Consulting (2016:11), well-operating picking locations see orders being allocated in real time, based on several parameters such as shipping cost, picking cost, inventory levels, demand forecast, unit value, and the number of days to fulfil the order from a specific location. Askew (2018:9) added that, in terms of picking location, only two significant aspects, *cost* and *origin of demand*, need to be considered. The *cost* implication of different picking locations is a relatively straightforward concept in that, when picking an online order from an already-established brick-and-mortar store, the cost is significantly less than building a new fulfilment centre for online orders. However, the *origin of demand* relates to the density of demand within a specific area, which means that, while the demand for digital shopping might be high in a particular geographic location, the retailer might not have the established infrastructure for order picking specifically within that geographic location. Therefore, Askew (2018:9) cautioned that it is a complicated process to draw a comparison between cost and origin of demand. Accordingly, picking-location decisions should be considered an ongoing process that needs to be continuously measured, strategised, and readjusted as costs change and customer expectations evolve.

In the strategic planning framework for last-mile fulfilment and delivery in omnichannel retailing, Hübner *et al.* (2016:234) differentiated between three order picking locations: *in store*, *separate fulfilment centres*, and *central warehouses*. Table 6.1 provides a description, the key considerations, and the advantages and disadvantages of each picking option.

**Table 6.1: Picking locations for omnichannel retailers**

| PICKING LOCATION | IN STORE | A SEPARATE (DECENTRALISED) FULFILMENT CENTRE | CENTRAL WAREHOUSE |
|---|---|---|---|
| **Description** | An order picker fulfils the online order by collecting products directly from the shelves of the omnichannel retailer's existing brick-and-mortar store. In-store picking is usually the primary picking option for brick-and-mortar retailers starting with omnichannel retailing. | These fulfilment centres are dedicated solely to the fulfilment of online orders (also referred to as 'dot.com fulfilment centres' or 'dark stores'). Usually strategically located close to large consumer markets. | Large warehouses (usually heavily automated) fulfil customer orders for direct distribution to the customers. |
| **Key consideration** | ***Trade-offs***:<br>The retailer must consider the trade-off between picking efficiency in each store by considering delivery distances, delivery times, and delivery costs. A comparison between these trade-offs should determine at which brick-and-mortar store the online order should be picked and delivered. | ***Cost:***<br>Large initial capital outlay. Often this picking option is only viable after online orders reach a specific benchmark. Retailers need to contrast cost with scalability, considering the cost involved with operating decentralised fulfilment centres. | ***Re-engineering processes***:<br>Picking at integrated centralised warehouses for direct customer distribution and store delivery requires comprehensive and sophisticated processes. |
| **Advantage(s) of the picking option** | ▪ The retailer can offer a full product range because of existing brick-and-mortar store structures;<br>▪ Allows for rapid expansion without investing in new fulfilment and logistics facilities;<br>▪ Less costly to install processes for online order picking in existing stores;<br>▪ Brick-and-mortar stores are usually situated close to customers, i.e. shorter delivery distances;<br>▪ The brick-and-mortar store benefits from online sales;<br>▪ Successfully utilise the idle capacity of store personnel. | ▪ Warehouses are designed for online picking; therefore, more efficient picking can be done and it is easier to scale up for larger volumes;<br>▪ Improved inventory transparency for digital channels;<br>▪ Shorter transportation distances to the customer, resulting in more accurate delivery time predictions, enhancing customer satisfaction. | ▪ Lower picking costs with higher-order volume;<br>▪ Synergies in inventory deliveries via joint delivery from the supplier;<br>▪ Consolidated inventory leads to a higher turnover per warehouse;<br>▪ Lower in-bound transportation costs as deliveries are made to a single location in large volumes. |

| PICKING LOCATION | IN STORE | A SEPARATE (DECENTRALISED) FULFILMENT CENTRE | CENTRAL WAREHOUSE |
|---|---|---|---|
| **Challenges of picking option** | ▪ Inventory planning is more complicated as additional logistics and replenishment processes are required to accommodate online sales volume to the store;<br>▪ Store layout and space restrictions are designed for displaying a limited number of products; the brick-and-mortar store layout is consequently not optimally suited for inventory 'picking';<br>▪ In-store picking complicates inventory transparency, both in store and online;<br>▪ Picking is mainly done while other shoppers are in store, which could affect in-store customers' shopping experiences;<br>▪ Stock-outs negatively influence both physical and digital channels;<br>▪ Stock-outs for online orders often occur as in-store customers buy products that are already sold to online customers;<br>▪ In-store picking is costly and inefficient compared to warehouse fulfilment, and safety stock is increased to combat out-of-stock situations. | ▪ High fixed cost for setting up fulfilment centres;<br>▪ No integrated inventory and capacity management across physical and digital channels;<br>▪ Additional inbound transport handling costs are incurred, either from the supplier or the central warehouse. | ▪ Longer average distances to customers, meaning higher outbound delivery costs;<br>▪ The picking system requires adjustment to facilitate integration. |

**Source: Adapted from Hübner *et al.* (2016:237); Marchet *et al.* (2018:452) and Weber and Badenhorst-Weiss (2018:7)**

Considering Table 6.1, it can be concluded that the retailers should not only consider the cost and origin of demand when determining the best picking location but should also consider the numerous advantages and disadvantages associated with each picking location.

The next factor that Hübner *et al.* (2016:234) highlighted, as part of back-end order fulfilment in the strategic planning framework, was the automation of order picking.

#### *6.2.1.2 Automation*

In terms of *automation* in back-end fulfilment, Marchet *et al.* (2018:449), Van der Meer *et al.* (2018:29) and Wollenburg *et al*. (2018:418) claimed that retailers should not overlook the influence of picking automation in the omnichannel process. Automation in order picking refers to the level of automation in the receiving and picking process of orders. Forte (2014:2) claimed that, in more extensive facilities with more advanced picking processes, dissemination of order information to the pickers in a timely and efficient manner is critical to omnichannel performance. Even in well-designed, unautomated warehouses, single-order picking can limit the productivity of pickers and bottleneck the fulfilment process, causing a ripple effect downstream to delivery (Oka *et al.,* 2017:40). Automation in order fulfilment often signals that an omnichannel retailer has reached a certain level of supply chain maturity (Szymczak, 2013:34; DHL Consulting, 2016:17; Hübner *et al.,* 2016:326; Saghiri *et al.,* 2017:58; Witcher & Tajima, 2017:11; Kembro *et al.,* 2018:903; Marchet *et al.,* 2018:449).

Marchet *et al.* (2018:449) differentiated between three types of picking automation, namely *manual, semi-automated,* or *fully automated*, depending on the fulfilment methods discussed in Section 6.2.1.1. *In-store picking* involves a manual picking procedure as automation cannot be used in a brick-and-mortar store where customers are shopping. In manual solutions, pickers prepare online orders in traditional picker-to-parts[48] systems. In *semi-automated systems*, conveyors connect different picking

[48] Picker-to-parts is a materials handling approach where the order picker(s) move(s) to collect products necessary for one order (Coyle *et al.,* 2017: 413).

zones; however, picking is still carried out manually (pick-and-pass systems)[49]. Parts-to-picker[50] systems are used in fully-automated warehouses (Marchet *et al.,* 2018:449). Whether a retailer chooses to pick orders in warehouses in a manual, semi-automated, or fully-automated way impacts the omnichannel supply chain's investment and operating costs (Kembro *et al.*, 2018:903).

Automation also influences fulfilment time, which in turn influences customer satisfaction in omnichannel retailing. Whereas all levels of automation can be found at decentralised fulfilment centres, most integrated warehouses use at least supporting picking technologies (for example, radio frequency and voice-directed picking) (Forte, 2014:8). Automation can increase picking speed, resulting in savings in operating costs and lower costs per pick (Kourimsky & Van den Berk, 2014:14). However, rather than merely investing in automation, retailers need to focus on the layout and design principles of the fulfilment centre and how automation can play a part in the planning of the picking process (Hübner *et al.,* 2016:236).

After decisions regarding picking location and automation are made, a retailer needs to consider inventory integration in back-end fulfilment, which entails making decisions regarding whether inventory from physical and digital channels are integrated to allow for integrated order fulfilment or if inventory is allocated to channels separately.

#### *6.2.1.3 Inventory Integration*

*Inventory integration* in back-end order fulfilment relates to the level of integration of inventories between physical and digital channels (brick-and-mortar inventory and online inventory). For a retailer managing both physical and digital channels, the most critical decision regarding inventory management is whether to separate or integrate

[49] A pick-and-pass system, also called a progressive zoning system, divides a picking line into picking zones. Each zone is typically assigned to a picker and they are often connected by a conveyor in a warehouse (Pan, Shih & Wu, 2015:238).

[50] Parts-to-picker is an automated picking system usually operated through an automatic storage and retrieval system. These automatic systems retrieve stock keeping units (SKUs) from storage locations to deliver them to pickers standing at dedicated picking stations. All SKUs are connected through a conveyor and, as the SKU travels from the stocking area to the picking area, a picker takes the number of items needed for his/her order (Martina, Alessandro & Fabio, 2018:1476).

inventories for different channels. Hübner, Holzapfel and Kuhn (2015:88) argued that inventory management, warehouse operations, and capacity management are structured differently, depending on the decision to either integrate or separate offline and online inventories. If the integrated approach to inventory management is chosen, the level of integration depends on the retailer's organisational structure, attitude towards IT investment, and maturity of the digital channel(s). The backbone of an integrated inventory management system is the retailer's ability to integrate inventory information across physical and digital channels.

According to Kourimsky and Van den Berk (2014:14), well-integrated back-end fulfilment in omnichannel retailing is characterised by an information platform that enables retailers to promote and sell products through various channels and touchpoints. Hübner *et al.* (2016:263) added that an integrated inventory information system holds certain advantages such as balanced capacities across back-end fulfilment, pooled risks across organisational functions, and reduced stock-outs and lead-times. As such, an integrated inventory information system ensures a single view of product data, pricing, and promotion for both customers and retailers. For example, if only part of an online order is located at a specific store, the order can be combined with the rest of the order from another store and shipped in one package to the customer, reducing costs and improving the customer's experience. The option of online order fulfilment at different locations decreases the possibility of stock-outs. However, with this approach, information sharing is crucial. Jocevski *et al.* (2018:85) added that legacy systems separately designed for each physical/digital channel act as the main barrier to integrating omnichannel supply chains.

Hübner *et al.*'s (2016:263) strategic planning framework for last-mile fulfilment and delivery in omnichannel retailing identified the following three typical industry practices for inventory integration in the management of omnichannel retailing: *separate, integrated and capacity-optimised,* and *integrated* (Gallino & Moreno, 2014:1436; Hübner *et al.,* 2015:88; DHL Consulting, 2016:8; Hübner *et al.,* 2016:234; Murfield *et al.,* 2017:267; Kembro *et al.,* 2018:905). Melacini *et al.* (2018:392) stated that, while a total separation strategy may meet the specific requirements of a physical/digital channel individually, an integrated omnichannel strategy can provide economies of

scale and reduce total costs. These inventory integration practices are differentiated below.

### *a) Inventory integration: Separated inventory picking*

*Separated inventory picking* represents the most basic model of order fulfilment (Hübner *et al.,* 2015:94) and refers to a situation where the picking of physical store orders and online orders are managed separately. In particular, the inventory pools are also stored in separate locations for physical or digital order fulfilment (Kembro *et al.,* 2018:904). Advantages of separated order picking is that no expensive IT investment is required (DHL Consulting, 2016:8), order fulfilment is significantly simplified (Hübner *et al.*, 2015:91), and retailers (particularly retailers new to omnichannel retailing) are able to focus on optimising each physical/digital channel's offer individually.

Hübner *et al.* (2015:91) maintained that retailers cited a lack of storage space, sales volume, and brick-and-mortar structures as reasons for inventory separation in the picking activity. However, separate inventory picking limits the retailer in optimising front-end and back-end inventory management in cases where product ranges overlap substantially (DHL Consulting 2016:8). Separated inventory picking also inhibits the retailer's flexibility in adapting to demand spikes from physical or digital channels.

### *b) Inventory integration: Integrated inventory picking*

With *integrated inventory picking*, two separate inventory pools are maintained and managed manually for different physical/digital channels; however, the inventory is stored at the same location. The difference between separated inventory picking (discussed in Section 6.2.1.3(a)) and integrated inventory is the location(s) of the inventory. With separated inventory picking, inventory for different physical/digital channels is stored at separate locations while, with integrated inventory, inventory is earmarked explicitly for either a physical or digital channel while being stored at the same location. This approach achieves some distinct integration advantages such as shared warehouse space, parallel processes, joint safety stock, and shared personnel for handling brick-and-mortar store replenishment and online inventory (Kembro *et al.,*

2018:904). In particular, integrated inventory systems enable retailers to keep less inventory and achieve a higher overall service level due to inventory pooling. However, since the coordination effort and cost are high, the reaction to demand fluctuation can be slow (DHL Consulting, 2016:9). Consequently, integrated inventory picking requires an ongoing effort from retailers to develop adaptable and cost-efficient picking systems (Hübner *et al.,* 2015:94). In many cases, retailers use one channel, such as the brick-and-mortar store, as a supplier for other channels. For example, at the end of each season or at the start of seasonal sales, retailers can shift slow-moving items from physical channels to the digital channel warehouse for end-of-season sales.

### *c) Inventory integration: Capacity-optimised and integrated inventory picking*

*Capacity-optimised and integrated inventory picking* is described by Marchet *et al.* (2018:449) as the optimal use of resources to reduce stock-outs and lead times. In contrast to integrated inventory picking (discussed in Section 6.2.1.3(b)), inventory is not solely earmarked for a specific digital or physical channel. Instead, the retailer pools inventory across all physical and digital channels to optimise fulfilment. With this approach, retailers are dealing with one integrated inventory system which can be dynamically allocated in the most cost-efficient way across channels in real time (DHL Consulting, 2016:8). The capacity-optimised and integrated inventory approach embraces an authentic omnichannel customer experience and enables back-end inventory integration.

The advantage of capacity-optimised and integrated inventory picking is that shared resources can lead to reduced overheads and inbound transportation costs (Hübner *et al.,* 2016:236) while improving inventory visibility (Ye *et al.*, 2018:661). However, capacity-optimised and integrated inventory requires design adjustments to prepare locations for efficient online order picking. Consequently, capacity-optimised and integrated inventory picking is an intricate process since it is responsible for handling inventory and managing storage systems simultaneously for both physical and digital channels (Hübner *et al.*, 2016:237). Also, this approach requires a significant up-front investment to facilitate inventory transparency and transferability across channels (DHL Consulting, 2016:8).

Apart from the three models of inventory picking described above, another model for inventory management is being used by retailers more recently: the 'marketplace model'. The marketplace model within the context of omnichannel retailing can be described as a 'virtual shopping mall' (Hänninen, Mitronen & Kwan, 2019:380). Like in traditional shopping malls, the website of a retailer replaces the physical structure of the shopping mall in a virtual shopping mall while the physical vendor/retailer's store is replaced by a 'brand portal' on the retailer's website. An online marketplace is unlike a retailer's own e-commerce website. With an online marketplace, the website owner (online retailer) allows third-party sellers to sell various products on their online marketplace under the name of the website owner (Mantin, Krishnan & Dhar, 2014:1937). Marketplace models (which essentially include many external parties and could be categorised as part of the external supply chain, consequently falling beyond the scope of this study) signal a potential future expansion of the omnichannel retailing process and warrant a brief consideration.

### *d) Inventory integration: Marketplace models*

Hänninen *et al.* (2019:380) underscored the importance of marketplace models by arguing that, while large retailers were dominant during the past few decades because of distribution optimisation (often considered a differentiating factor for omnichannel retailers), a new trend towards increased disintermediation is emerging in the retail value chain. This trend sees new entrants applying advances in information technology to create novel combinations of value for end-customers in the form of a wide assortment of products (Brusset, Teller & Kotzab, 2017:687). Additionally, Hänninen *et al.* (2019:386) argued that marketplace models provide retailers with the opportunity to expand (or integrate) vertically, horizontally, and globally. *Vertical integration* can be made in the form of logistics where several retailers, like Amazon.com, have invested in their own logistics fleet (Weinswig, 2018:6). *Horizontal integration* allows retailers to move from pure-online retailing to open physical retail stores, for example Yuppiechef.com (Chapter 5, Section 5.5.1.1). *Geographical integration* relates to the boundaryless nature of online marketplaces, allowing retailers to expand and sell products online to customers from various locations, for example Yuppiechef.com now sells products in neighbouring African countries such as Botswana, Mauritius, Namibia, and Zambia (Yuppiechef, 2019).

Zacharia (2019:3) stated that, while not every retailer intends to incorporate a marketplace model in the omnichannel offering, it is becoming increasingly difficult to find a retailer who has not at least considered how a marketplace model can be incorporated into omnichannel processes to better support customer needs. Consequently, marketplace models are challenging traditional retailers to rethink their value proposition and how they can build and sustain a competitive advantage in the 21st century.

From the perspective of the DCV, Mrutzek *et al.* (2020:207) listed the **inventory harmonising capabilities**DC16 of a retailer as a dynamic capability. Inventory harmonising relates to the creation of innovative and modern inventory management processes with the ability and agility to react to constant market shifts. This includes the retailer's ability to fulfil orders from various locations (warehouses and distributions centres) to fulfil a customer's order as quickly as possible. Hosseini, Röglinger and Schmied (2017:16) added that inventory availability is vital to customers' seamless omnichannel shopping experiences. Therefore, a key component of inventory harmonising is sharing timely and accurate inventory data across channels. Data integration capabilities as a dynamic capability has already been discussed in Chapter 4, Table 4.2 (DC1).

In conclusion, back-end fulfilment was described by means of inventory picking within three domains: picking location (Section 6.2.1.1), picking automation (Section 6.2.1.2) and inventory integration (Section 6.2.1.3). From the above literature discussion, the assumption was made that omnichannel retailers are faced with many options to 'build' back-end order fulfilment processes. However, trade-off decisions need to be made to determine which combination of picking location, picking automation, and inventory integration best suits the omnichannel retailer. The literature findings also showed that a retailer's ability to harmonise (integrate) inventory management processes across all channels are categorised as a dynamic capability.

As evident from the strategic planning framework of Hübner *et al.* (2016), back-end order fulfilment encompasses only one leg of omnichannel order fulfilment. The other part of the omnichannel retailing process is last-mile distribution. Last-mile distribution in omnichannel retailing is discussed below.

### 6.2.2 Last-mile distribution

Last-mile distribution (also referred to as last-mile delivery) relates to the movement of goods from the transportation hub (or storage facility) to the final delivery destination (the end-customer) (Ni *et al.,* 2019:896). Last-mile distribution is one of the functions of the supply chain that can easily cause customer dissatisfaction and is also the most complex and difficult-to-control functions within the omnichannel environment (Snyman, 2014:79). In omnichannel retailing, last-mile delivery is often the only physical touchpoint the retailer has with a customer and can significantly impact the customer's perception of the retailer (Weber & Badenhorst-Weiss, 2018:6). While the brick-and-mortar store was traditionally the end point of transactions, digital retail channels place logistics at the front end of the omnichannel process (Rai *et al.,* 2019b).

It has been widely established in the literature that last-mile distribution is one of the, if not *the*, most significant contributor to ongoing omnichannel retailing cost (Hübner *et al.,* 2016; Lim & Srai, 2018; Weber & Badenhorst-Weiss, 2018; McCarthy *et al.*, 2019; Rai *et al.*, 2019; Taylor *et al.*, 2019). For digital channels, the retailer primarily takes on the cost of packaging, delivery, and returns. In contrast, customers bear most of the 'last-mile' cost when purchasing products from a brick-and-mortar store (Larke, Kilgour & O'Connor, 2018:469). Gevaers *et al.* (2014:409) found that last-mile distribution accounts for 13-75% of the total supply chain cost in the business-to-customer supply chain. Their findings were based on eight 'last-mile cost drivers', namely level of consumer service, security needs, type of delivery mode, geographical area of delivery, market density/penetration of geographical area, fleet technology, and relevant environmental factors. These findings indicated the importance of considering cost drivers when designing the last-mile distribution process. For example, Gevaers *et al.* (2014:409) found a significant difference in the delivery costs for the retailer in densely populated areas (>1 500 inhabitants/km$^2$) compared to deliveries in rural areas (<50 inhabitants/km$^2$). Additionally, the authors found that introducing order collection points for customers creates favourable cost reductions for omnichannel retailers.

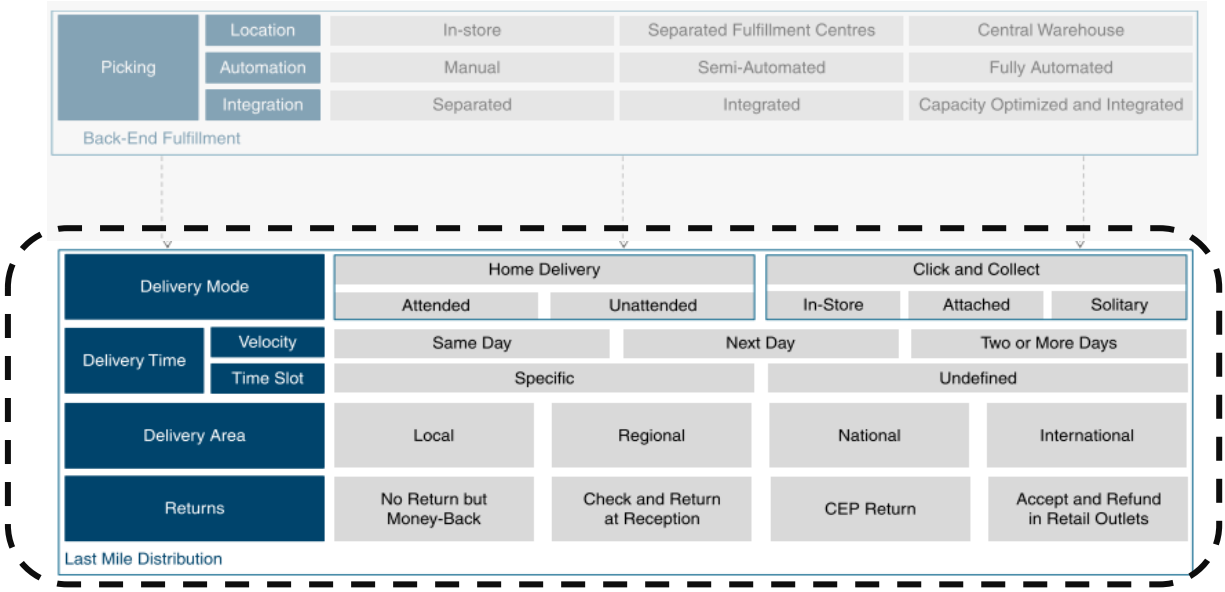
Last-mile delivery of online orders can be between five and 23 times more expensive for retailers than products sold in brick-and-mortar stores (Allen *et al.,* 2018:332).

Moreover, some customers are unwilling to pay for delivery services (Rai *et al.,* 2019a:40). Ma (2017:1102) explained that these customers consider delivery charges negatively and deem such charges an unfair profit source for retailers. As a result, customers expect free delivery. The author provided a rationale for customers' unwillingness to pay for delivery services by stating that customers are almost twice as sensitive to changes in the delivery fee as they are to changes in the product's price. However, the authors found that customers are willing to pay for delivery when retailers offer shorter delivery times. In support of Ma's (2017:1102) findings, FitforCommerce (2017:18) found that 54% of customers abandon online shopping baskets once the delivery cost has been calculated. Additionally, FitforCommerce (2017:18) found that 83% of customers felt that free delivery was the most important factor when ordering online. Subsequently, to stay competitive, retailers need to focus on making it easy, fast, and inexpensive (preferably free) for customers to receive the products they want. Similarly, Bower and Maxham (2012:111) stated that flexible delivery options increase the probability of converting a customer to ordering from the retailer.

Although the last-mile distribution process ideally ends with product delivery, customers sometimes need to return products. Product returns add an additional layer of complexity to last-mile distribution and contribute to the cost of the last-mile distribution process. Several authors highlighted the burden of product returns within omnichannel retailing from both a cost (Wollenburg *et al.,* 2018:543; Zhang *et al.*, 2018:309; Xu & Jackson, 2019a:119) and operational management perspective (Schmaus *et al.*, 2017:9; Marchet *et al.,* 2018:441; Melacini *et al.,* 2018:403). Therefore, the last-mile distribution process requires substantial efforts to integrate returns since it has a significant impact on operations costs, customer service, and customer satisfaction in omnichannel retailing (Wollenburg *et al.,* 2018:541).

Figure 6.3 serves to remind the reader of the factors concerning last-mile distribution as indicated by Hübner *et al.* (2016:234). From Figure 6.3, it is noticeable that last-mile distribution can be subcategorised into *delivery mode*, *delivery time*, *delivery area*, and *returns*. These last-mile design elements form the main discussion points for the remainder of this chapter.

**Figure 6.3: Strategic planning framework for last-mile fulfilment and delivery in omnichannel retailing: Last-mile distribution**




**Source: Hübner *et al.* (2016)**

### *6.2.2.1 Delivery mode*

In the strategic framework of Hübner *et al.* (2016:234), delivery mode relates to where the end-customer receives the merchandise ordered online. Hübner *et al.* (2016:234) subdivided delivery mode into *home delivery* and *click-and-collect*. Home delivery is further subcategorised as *attended* and *unattended delivery*, while click-and-collect is subcategorised as *in-store, attached,* and *solitary*. According to Hübner *et al.* (2016:237), the relative efficiency of different delivery models varies depending on the population density, local competition, and availability of third-party logistics providers (3PLs). From the retailer's perspective, decisions regarding delivery mode depend mainly on the geographic situation of the omnichannel retailer (Marchet *et al.,* 2018:450) since the geographical distance between retailers and customers influences delivery lead-time (Lim & Srai, 2018:323), delivery costs (Ishfaq *et al.,* 2016:546), and customer satisfaction. Furthermore, customer shopping behaviours vary from one geographical location to another (Lee, 2016:595). Other factors that omnichannel retailers should consider when designing delivery modes are product value and order volume (Ishfaq *et al.,* 2016:546), delivery flexibility (Geissbauer, Roussel & Schrauf, 2013:4), and the retailer's current logistics infrastructure (Galipoglu *et al.,* 2018:367). While home delivery is mostly associated with online

orders, click-and-collect (as a delivery mode in last-mile distribution) has increased customer frequency at physical stores. Home delivery and click-and-collect as delivery modes are discussed individually in Sections 6.2.2.1(6.1.1a) and 6.2.2.1(b).

### *a) Home delivery*

Home delivery is described as a process through which retailers deliver merchandise to the customer's home (The Oxford English Dictionary, 2022c). Home delivery of products has created an opportunity for retailers to extend services to customers beyond the traditional retail space (Lim, Jin & Srai, 2018:309). From the customer's perspective, the availability of unrestricted shopping hours (the convenience of online shopping) combined with the ability to receive products without having to leave the comfort of their own home has unprecedentedly changed the way customers view shopping (Chiu *et al.,* 2014:92). However, retailers who were traditionally only responsible for sourcing and selling products now have to possess the capabilities to offer efficient delivery services as part of their online offering. According to Weber and Badenhorst-Weiss (2018:8), one of the most significant barriers impeding retailers' ability to offer online solutions effectively, is the lack of a suitable home delivery infrastructure and not having the capabilities to design such last-mile logistics infrastructure. To grasp the concept of home delivery within the omnichannel environment, Hübner *et al.* (2016:234) subdivided home delivery into *attended* and *unattended home delivery.* More recent literature (Behrend & Meisel, 2018; Mak, 2018; Behrend *et al.,* 2019; Le & Ukkusuri, 2019; Ni *et al.,* 2019; Rai, 2019) has included *crowdshipping* as an extension of home delivery. Attended and unattended home delivery, as well as crowdshipping, is discussed next.

- **Attended and unattended home delivery**

Home delivery provides customers with the option of delivering the products to an address specified by the customer for a specific delivery fee (Saghiri *et al.,* 2017:58). Home delivery is the most expensive form of delivery for retailers (Gevaers *et al.,* 2014:399; Chopra, 2016:137) since the opportunity to consolidate orders by destination is limited (DHL Consulting 2016:9). With home delivery, the frequency of

undeliverable orders (due to the absence of customers to sign and receive the order) adds to the cost of this delivery mode.

As illustrated by the strategic planning framework from Hübner *et al.* (2016:234), and highlighted by other authors such as Galipoglu *et al.* (2018:367), Lim *et al.* (2018:315), Wollenburg *et al.* (2018:419), and Xu and Jackson (2019:121), home delivery is subcategorised into *attended* and *unattended delivery*. This categorisation influences the planning of home delivery operations in terms of time-slot management, delivery-window length, and cost and performance (Melacini *et al.,* 2018:404). With *attended* home delivery, the customer must be at home to receive the parcel (Hübner *et al.,* 2016:241), which presents additional complexities in the operational management process of home delivery (Melacini *et al.,* 2018:404). Additionally, *attended* home delivery significantly increases delivery failure rates as customers might not be at home as per prearranged agreement (Gevaers *et al.,* 2014:399). Attended home delivery significantly increases the convenience of the shopping process for customers (Chopra, 2016:141; Goga & Paelo, 2018:3; Hänninen *et al.,* 2019:386). Rai *et al.* (2019:41) argued that exact percentages on product delivery failure rates are scarce and inconsistent. However, home delivery failure rates can range from as low as 2% to as high as 30%. With attended home delivery, retailers need to be able to assign time slots while also adjusting delivery routes (Hübner *et al.* 2016:238). This results not only in additional expenses for delivery and handling but also in storing the undelivered products. Moreover, the retailer must set new delivery dates for failed deliveries. A successful attended home delivery model requires high levels of flexibility from an omnichannel retailer (Witcher & Tajima, 2017:3). Furthermore, according to Rai *et al.* (2019b:271), attended home delivery is often the most dominant model for last-mile delivery since this model is considered the safest and most reliable way to ensure that customers receive their parcels.

In contrast to attended home delivery, *unattended* home delivery refers to the situation where the customer is not required to be present for the delivery (Marchet *et al.,* 2018:441). Although unattended delivery increases flexibility for both the retailer and customer, such delivery can only occur when goods can be left safely, for example in the customer's letterbox or garage. Unattended home delivery also largely depends on customers' willingness to accept this type of delivery. Hübner *et al.* (2016:239)

argued that, with unattended home delivery, retailers can reduce the cost of delivery by up to 40% since delivery failures are decreased significantly. However, Ye *et al.* (2018:663) emphasised that the relevance of unattended home delivery is country-specific, particularly in terms of parcel theft.

From a logistics point of view, unattended home delivery has evened out the demand peaks from out-of-working-hours delivery times and has eliminated tight time slots and capacity problems (Hübner *et al.,* 2016:238). The attractiveness of the unattended home delivery model becomes apparent when considering the findings of Hübner *et al.* (2016:238), which showed that, in 50-60% of households, no-one is at home during a typical workday to receive parcels, meaning that the demand for after-hour deliveries is high. Again, it should be highlighted that the novel coronavirus (COVID-19) pandemic has drastically altered people's lifestyles and traditional working conditions as many people started to work from home due to lockdown restrictions. Accordingly, the burden of after-hour deliveries were lessened during the pandemic as people were available to accept deliveries anytime during the day. Businesstech (2021a) reported that, by late 2021, 56% of South Africans were still working from home most of the time. Since it remains unclear as to the extent of which the changes brought on by the pandemic are permanent, it should be highlighted that the significance of attended versus unattended home deliveries may become insignificant as a last-mile design element in future.

Several authors (Hübner *et al.,* 2016:239; Eriksson *et al.*, 2019:4) stated that the attractiveness of home delivery for customers depends to a large extent on the specific demographics of the customer. To this end, Marchet *et al.* (2018:450) found that, in cities, customers preferred to receive goods at home while, in the suburbs, customers were happy to drive to the store and collect their purchases.

Although the strategic framework for last-mile fulfilment and delivery in omnichannel retailing by Hübner *et al.* (2016:234) allows for a structurally sound discussion on last-mile distribution options for omnichannel retailers, the framework lacks perspective on modern home delivery models employed by omnichannel retailers, such as crowdshipping, which has recently gained popularity among retailers. Crowdshipping as an alternative method of home delivery is discussed next.

- **Crowdshipping**

Under intense competition within the retail landscape, fulfilment response time has become a critical competitive priority for retailers (Mak, 2018:2). This competitive environment has required retailers to shift their focus from merely expanding inventory assortment to finding new ways to be competitive regarding product deliveries. Garrett, Straker and Wrigley (2017:161) maintained that a growing number of retailers are leveraging the power of connected peers through the internet to differentiate themselves in terms of delivery models. One of these innovative delivery forms is crowdshipping (also called collaborative consumption) (Ni *et al.*, 2019:895).

Crowdshipping is an emerging trend in freight transportation, primarily accelerated by the rapid development of application-based platform technologies, which facilitate the connection of supply with demand through the internet (Le *et al.,* 2019:83). Behrend and Meisel (2018:228) described crowdshipping as a concept where: *"… registered private drivers with upcoming planned trips by car, execute deliveries… these so-called crowdshippers pick up an item at its current location to deliver it to the location of the consumer. Crowdshippers receive compensation for such a delivery job that (partially) covers the expenses of their own trip".* In layperson's terms, crowdshipping exploits underutilised cars and travel by allowing customers to pick up and drop off parcels for other customers along routes they would have taken regardless.

Crowdshipping is a microcosm of the sharing economy[51] (Behrend & Meisel, 2018:228; Behrend *et al.,* 2019:592; Le & Ukkusuri, 2019:84). The appeal of crowdshipping resides in its ability to pool, mobilise, and structure an individual's resources in ways that would benefit both parties, namely the driver/courier and the online retailer (Labrecque *et al.,* 2013:259). Crowd-based models are successfully implemented across various industries, for example crowd-based creation (Wikipedia), crowd-funding (Backabuddy), and crowd-sourcing (Amazon.com) (Görög, 2018:182). Other examples of crowdshipping are found in the travel industry, which sees customers sharing taxi rides (such as UberPool) or temporarily renting out their

[51] Merriam-Webster (2019) defines a sharing economy as: *"… an economic activity that involves individuals buying or selling usually temporary access to goods or services especially as arranged through an online company or organisation."*

homes, or parts of their homes, to tourists (such as Airbnb). More recently, crowdshipping has become popular as an emerging operations model proposed to tackle the last-mile delivery problem of retailers in urban markets (Allen *et al.,* 2018; Behrend & Meisel, 2018; Mak, 2018; Behrend *et al.,* 2019; Le & Ukkusuri, 2019; Ni *et al.,* 2019).

In fact, during the COVID-19 pandemic in South Africa, Nielsen (2020) reported that, through crowdshipping and the utilisation of the idle capacity of Uber and One Cart drivers, retailers were able to scale operations to keep up with the overwhelming demand spikes for online shopping. According to Görög (2018:175), advances in technology occasioned this paradigm shift that sees people not only willing but also wanting to share intangible assets and underutilised tangible assets for monetary gains. Görög (2018:175) pointed out that managers should be prepared for these changes and be able to adapt and recognise new forms of delivery to stay competitive in a dynamic retail environment such as omnichannel retailing.

Ermagun and Stathopoulos (2018:469) stated that crowdshipping processes follow three steps. First, a shipment order is posted on the website or online platform of the retailer. As part of this step, the service requester (customer) delineates the size of the package, the pick-up and drop-off locations, and any delivery time requirements. Second, the crowdshipping platforms use distinct approaches for matching the service requester and the courier, ranging from centralised (the platform matches the sender and courier centrally using algorithms that optimise the delivery probability) to decentralised (the sender selects directly from a list of available/willing couriers who bid on the request). Third, if any bids are received on the request, the customer selects one of the couriers and pick-up/delivery arrangements are made.

Although crowdshipping as an alternative delivery method can differentiate retailers from competitors, the primary motive for crowdshipping stems from an efficiency perspective (Mak, 2018:3). Crowdshipping piggybacks on trips made by in-store customers and potentially helps reduce the number of delivery trips. Consequently, the delivery costs retailers need to incur as part of last-mile distribution services can be reduced (Ermagun & Stathopoulos, 2018:471; Le & Ukkusuri, 2019:3; Ni *et al.,* 2019:895).

### *b) Click-and-collect (Collection points)*

As highlighted above, in an omnichannel retailing system, retailers are looking for new delivery mechanisms to provide a high service level in a cost-efficient way (Marchet *et al.,* 2018:405). As an alternative to home delivery, many retailers offer online customers the choice of collecting goods bought online at specific locations, called pick-up points, often referred to as 'click-and-collect' (Rai *et al.,* 2019b:271). Özge *et al.* (2018:718) stated that innovative cross-channel services, such as click-and-collect, are vital for omnichannel retailers to establish a seamless shopping experience. Moreover, Piotrowicz and Cuthbertson (2014:10) debated that a click-and-collect model plays a central role in the omnichannel integration process in that click-and-collect does not only bridge the gap between physical and digital channels but also serves as return or exchange points for customers, closing the loop of the seamless shopping experience indicative to omnichannel retailing. Lim *et al.* (2018:318) found that integrating online technologies with physical infrastructures enables retailers to achieve synergies in cost savings, improved brand differentiation, enhanced consumer trust, and market extension.

Click-and-collect provides customers with a lower-cost delivery option and allows for greater flexibility and control since customers can choose a convenient location and time at which to pick up their order (Ternstrand *et al.,* 2015:16; DHL Consulting, 2016:9). Additionally, Hübner *et al.* (2016:239) explained that, since the customer bears the full cost of last-mile fulfilment in click-and-collect, logistics costs can be reduced by up to 70% with the use of this last-mile delivery model. Another advantage of click-and-collect is that the service offers retailers the opportunity to reduce problems with home deliveries and instead allows retailers to ship packages with regular replenishment routes to brick-and-mortar stores (Rai *et al.,* 2019a:271). Click-and-collect also creates opportunities to engage with customers inside the store, generating store traffic and additional purchases (Lima, 2015:16). Accordingly, McDonald (2019) reported that almost 40% of customers who use click-and-collect services will buy something else from the store when they collect their order.

Click-and-collect also challenges retailers in several ways, for example in terms of product assortment. Depending on where the online order is fulfilled, the customer

might not have access to the retailer's total product assortment (Ternstrand *et al.,* 2015:16). Another challenge includes the additional workload and training needed for personnel (Jara *et al.,* 2018:433). Also, communication and accurate information is key to the click-and-collect process to ensure that the ordered product is in stock (Davies, Dolega & Arribas-Bel, 2019:283). A further challenge faced by retailers is designing an appropriate space for the click-and-collect items. Shukairy (2019) stated that most brick-and-mortar stores are designed to fulfil a specific purpose; therefore, designating a portion of the retail space to a click-and-collect counter may disrupt the in-store customer's shopping experience.

According to the strategic planning framework from Hübner *et al.* (2016:234), click-and-collect can be subcategorised as *in-store, attached,* and *solitary*. Recently, another delivery mode has become popular: *lockers* (Melacini *et al.,* 2018a:405; Taylor *et al.,* 2019:884; Ren *et al.,* 2020:6). Depending on the type of locker being used, this delivery mode can be categorised as either attached or solitary. Lockers are presented as the fourth delivery model under click-and-collect. Table 6.2 provides a description as well as the advantages and disadvantages of each click-and-collect delivery mode. Table 6.2 also includes a South African example of each click-and-collect delivery model.

**Table 6.2: Click-and-collect categories**

| CLICK-AND-COLLECT DELIVERY MODEL | IN STORE | ATTACHED | SOLITARY | LOCKERS |
|---|---|---|---|---|
| **Description** | A customer collects an online order from a separate counter or desk situated inside the retailer's brick-and-mortar store. | A customer collects an online order from a separate station attached to the retailer's brick-and-mortar store (i.e. the same location but not inside the store). | A customer collects an online order from a small warehouse (usually a dark store solely dedicated to online order fulfilment). | A customer collects an online order from a delivery locker. Lockers are placed in convenient, easy-to-access locations within high-density shipment areas such as grocery stores, fast food retailers, or petrol stations and are only opened using a code given to the customer on completion of the order. |
| **Advantage(s) of delivery model** | ▪ Retailers can cross-sell products as customers still visit the brick-and-mortar store.<br>▪ Low investment is needed to implement in-store pick-up. | ▪ Investment costs are lower than with solitary delivery models.<br>▪ Opportunity for drive-through solutions.<br>▪ Cross-selling is still possible, since the collection point is situated in the same location as the retailer's brick-and-mortar store.<br>▪ Flexible inventory allocation.<br>▪ Faster order turnaround time. | ▪ Simplifies demand and inventory planning.<br>▪ Allows for market expansion, particularly in areas with little competition. | ▪ Customers save time by not visiting the brick-and-mortar store and waiting in line to receive their order.<br>▪ Lockers are an unattended alternative delivery model and, accordingly, no permanent staff is needed to operate this model. |

| | | | | |
|---|---|---|---|---|
| **Challenges of delivery model** | ▪ Difficult to up-scale due to limited retail space.<br>▪ Less convenient for customers who still need to go to the store.<br>▪ Store personnel carry the additional burden of fulfilling online orders.<br>▪ Time-consuming to prepare orders. | ▪ Investment costs are higher than for the in-store click-and-collect fulfilment model. | ▪ Investment costs are high.<br>▪ Often a lack of integration with brick-and-mortar stores. | ▪ Cross-selling is not possible.<br>▪ Only suitable for certain product types, for example, non-perishable food and apparel. |
| **Example of South African application** | **Mr Price:**<br>The South African general retailer, Mr Price, offers customers the option to buy online and collect in store at a dedicated click-and-collect counter. | **Builders:**<br>The South African building supply retailer, Builders, allows customers to order products online. When customers select the click-and-collect option, they are directed to pick up their order (once ready) at a storage facility at the back of the retailer's brick-and-mortar store. | **Takealot.com:**<br>The South African online retailer, Takealot.com, has opened collection points at several of their warehouses and petrol stations situated across South Africa. | **Makro:**<br>The South African general retailer, Makro, has over 200 lockers across South Africa and allows a customer to select the locker delivery options provided the parcel fits within the size restrictions. |

**Source: Researcher's own compilation based on Ternstrand *et al. (*2015), Hübner *et al.* (2016), Lim *et al.* (2018), Jara *et al.* (2018), Rai *et al.* (2019b)**

From Table 6.2, follows that, while the different variations of the click-and-collect delivery model may assist retailers in achieving the sought-after seamless shopping experience, click-and-collect comes at an additional cost, is less predictable, and is more onerous to operate (Davies *et al.*, 2019:283). Nevertheless, South African customers' use of click-and-collect has increased from 5% in 2015 to 21% in 2019 (Veul, 2019). Furthermore, South Africa's leading click-and-collect service provider, Pargo, reported a staggering 153% growth in 2020 and 240% growth in the first quarter of 2021 (Mybroadband, 2021). Therefore, omnichannel retailers in South Africa will need to navigate the click-and-collect delivery model to stay competitive and meet customers' changing demands.

From the perspective of the DCV, the retailer's ability to offer different last-mile delivery modes was classified by Mrutzek *et al.* (2020:207) as an ordinary capability. The rationale is that a retailer's capacity to offer various last-mile delivery modes is considered a basic requirement for all omnichannel retailers. By contrast, Hosseini *et al.* (2017:10), Höcker *et al.* (2018:44), and Mrutzek *et al.* (2020:207) classified **innovative last-mile distribution processes**[DC17] as a dynamic capability. Innovative delivery modes refer to the retailer's ability to introduce and integrate new infrastructure and transportation options into existing delivery modes. Kembro *et al.* (2018:899) debated that technologies such as live-tracking of orders enable a more customer-centric and convenient delivery service.

#### *6.2.2.2 Delivery time*

Speedy delivery is a high priority for retailers and customers since it plays an important role in terms of customer convenience, service, and satisfaction (Ma, 2017:1101). With delivery time planning, the goal is to minimise the time customers need to wait to receive a delivery while reducing distribution costs and increasing security (Hübner *et al.,* 2016:240). Two aspects are concerned with delivery time planning: *delivery velocity* (which relates to the retailer's ability to deliver products within the shortest lead-time possible) and *time slots* (which relates to the retailer's ability to offer customers the option to select a specific delivery window most convenient for them). These two aspects are discussed below.

### *a) Deliver velocity*

Delivery velocity relates to the fulfilment speed of online orders. Rai *et al.* (2019b) stated that last-mile delivery cost is high and can account for between 13-75% of total supply chain costs. These high costs are partly caused by retailers who promise to serve customers in two days, the next day, the day of purchase itself or more recently within an hour. Such short delivery terms hinder the efficient routing and consolidation of orders. However, within the competitive retail environment, shorter delivery terms are expected by customers (Lee, 2016:593). Velocity in terms of delivery is commonly divided into same-day deliveries, next day deliveries, or deliveries scheduled for a later day ('two or more days') (Melacini *et al.,* 2018b:404; Wollenburg *et al.,* 2018:560). Each of these delivery velocities faces unique challenges and requires different supply chain designs.

*Same-day delivery* allows customers to have products delivered to specified delivery locations within a few hours after purchasing (Ni *et al.,* 2019:894). According to Le *et al.* (2019:97), a challenge when offering a same-day delivery service relates to the lack of market density amidst customers' overwhelming demand for the service. Since customers who select the same-day delivery option are prioritised in order processing, same-day delivery usually comes at an additional processing fee to the customer (Wollenburg *et al.,* 2018:561). Hübner *et al.* (2016:240) reported that customers are often not willing to pay the additional processing fee. Nevertheless, Marchet *et al.* (2018:499) found that 24% of customers want a same-day delivery service. Since the urgency of the customer determines, to a large extent, the value of same-day delivery, this service would be more relevant to a specific product category. Mak (2018:2), for example, found that, with online shopping of grocery products, same-day delivery has gained more popularity since customers often need grocery products for use on the same day. Same-day delivery presents major logistics challenges for retailers in terms of cost and planning (Hübner *et al.,* 2016:240).

While the initial strategic planning framework of Hübner *et al.* (2016) only addressed same-day delivery, the delivery time category has evolved significantly since the publication of Hübner *et al.*'s (2016) framework. Modern customers have now become accustom to 'within-an-hour' or 'on-demand' delivery services, particularly in the

grocery delivery category. Altay, Okumuş and Adıgüzel Mercangöz (2021:129) described the on-demand grocery delivery service as retailers serving customers by providing instant delivery (within an hour) of groceries and other goods through an app that enables customers to order and pay for products with secure payment methods from the comfort of their own homes and phones.

In South Africa, largely due to the drastic increase in online shopping resulting from the pandemic, several retailers developed within-an-hour delivery services, for example Shoprite/Checkers with Sixty60, Woolworths with Woolies Dash, Pick n Pay with ASAP!, and Dischem with Dischem DeliverD. Additionally, third parties started to offer on-demand deliver services in South Africa, with apps such as Zulzi and OneCart offering customer the convenience of purchasing products across a range of different retailers. Customers then receive one same-day delivery including products from all preferred retailers. While the convenience of such a service is evident, offering these services requires large-scale investments and sophisticated technologies to facilitate delivery routing (Bahrami *et al.,* 2021:7).

The second delivery time option listed by Hübner *et al.* (2016:240) is *next-day delivery*. Although next-day delivery provides a greater degree of freedom in terms of delivery planning, this option remains a complex undertaking (Hübner *et al.*, 2016:240). In omnichannel retailing, agility and flexibility are essential. This is exemplified by Zhang *et al.* (2019:499) who found that 65% of customers want a next-day delivery option. These authors argued that faster fulfilment and order processing will allow retailers to expand their customer base by targeting a speed-sensitive customer segment. In fact, several authors maintained that agility and flexibility form the backbone of a successful last-mile omnichannel logistics strategy (Kruh & Freedman, 2016:15; Oka *et al.,* 2017:57; Chen *et al.,* 2018:354; Melacini *et al.,* 2018b:393). Nevertheless, when compared to same-day delivery, next-day delivery offers some relief in terms of delivery planning, with Rai *et al.* (2019b:41) arguing that next-day delivery often forms part of a retailer's standard service offering. One way in which retailers can be more efficient in terms of next-day delivery is by implementing order cut-off times, for example only orders made before a stipulated time are eligible for next-day delivery (Wollenburg *et al.,* 2018:558). Also, instead of offering next-day delivery by default, retailers can offer customers the option to pick a time slot in which deliveries to their

neighbourhood are already scheduled (Rai *et al.,* 2019b:41). However, to achieve this, retailers need to have robust technical systems to consolidate the customers' scheduling.

Delivery between *two or more days* might be the most cost-effective and efficient delivery method for retailers; however, for customers, the longer the delivery time, the less attractive the service becomes (Jara *et al.,* 2018:435). Rai *et al.* (2019b:47) found that customers preferred delivery terms that allow faster deliveries. The most unfavourable delivery time for customers is one that can take more than five days, despite the possibility to choose a delivery date within this term freely.

From the discussion above, it can be concluded that retailers need to closely examine customers' expectations in terms of delivery velocity and determine how, within the capabilities of the retailer, they are able to meet customer expectations. Since last-mile delivery can account for up to 75% of the total supply chain cost, retailers need to be strategic in terms of the delivery terms they provide to customers.

### *b) Time slots*

As highlighted above, offering same-day or next-day delivery can be challenging for retailers. Rai *et al.* (2019:41) stated that, in combatting these challenges, retailers are offering pre-agreed time slots, thus managing customers' expectations in terms of delivery. Weber and Badenhorst-Weiss (2018:5) debated that offering time slots and an accurate view of delivery times may be more valuable for customers than offering same- or next-day delivery. In particular, Lim *et al.* (2018:320) argued that time-poor customers and customers with inflexible schedules prefer a time slot delivery model.
As presented by the strategic planning framework for last-mile fulfilment and delivery in omnichannel retailing of Hübner *et al.* (2016:234), time slots can be divided into *specific* or *undefined* time slots. Marchet *et al.* (2018:447) argued that a retailer's ability to offer either specific or undefined time slots largely depends on the retailer's delivery saturation, namely the number of orders within a specific delivery area. With *specific time slots*, the customers select a time slot, during the purchasing process, when deliveries should take place. These time slots (or delivery windows) can range from as narrow as an hour to as long as four hours (Marchet *et al.*, 2018:447). Enlarged

time slots of between one and three hours will lead to significant cost reductions due to delivery pooling (Hübner *et al.,* 2016:242). Advantages of offering specific delivery time slots include increased success rates on first-time deliveries (Rai *et al.,* 2019b:41) and increased customer satisfaction (Hübner *et al.,* 2016:240). Challenges with offering specific time slots include providing accurate and updated information on available time slots to customers, the high demand of specific time slots, travel time uncertainties for trucks or delivery vehicles, and the fact that narrow time slots necessitate on-time delivery. The cost of delivery with specific time slots is also significantly higher than for delivery without specific time slots (Gevaers *et al.,* 2014:408). In addition, Marchet *et al.* (2018:441) stated that the more control customers have on their desired time slot, the higher the cost incurred for retailers. To combat the cost of setting specific time slots, retailers are starting to differentiate time slots by pricing, which results in better, more cost-effective schedules (Wollenburg *et al.*, 2018:552). Contrary to specific delivery slots, *undefined delivery time slots* require less planning on the retailer's end but result in lower customer satisfaction. As with unattended delivery, unspecified time slots achieve significant cost savings since routes and schedules can be optimised to increase delivery efficiency (Hübner *et al.,* 2016:240).

In the next section, two South African retailers (Takealot.com and Pick n Pay) are used as examples to illustrate how some South African retailers designed time slot allocations in terms of delivery flexibility and price differentiation. Figure 6.4 and Figure 6.5 illustrate the different delivery models of the South African retailers Takealot.com and Pick n Pay. In the section below, the characteristics of time slot and delivery velocity discussed above are considered within the South African context

**Figure 6.4: Delivery models and delivery slot pricing for Takealot.com**

| Standard Delivery | |
|---|---|
| **Delivery Destination** | **Delivery Time** |
| Cape Town, Johannesburg, Pretoria | 2-5 working days |
| Regional Area | 2-6 working days |
| Remote Area | 3-7 working days |

| Premium Delivery Options | | |
|---|---|---|
| Only available in Main Centres (Cape Town, Johannesburg & Pretoria) | | |
| **Delivery Type** | **Delivery Time** | **Cut Off Time** |
| Same Day Delivery | Saturday between 3pm – 7pm | Pay before 10:30am weekdays |
| Next Business Day Delivery | Next Working Day between 7am – 7pm | Pay before 11:59am previous day |
| Saturday Delivery | Saturday between 11am – 7pm | Pay before 11:59pm Friday |
| Saturday Delivery | Saturday between 11am – 7pm | Pay before 11:00am Saturday |

| Standard Collect | |
|---|---|
| **Collect Location** | **Collect Time** |
| Pickup Point: Cape Town, Johannesburg, Pretoria | 2-5 working days |
| Pickup Point: Regional Area | 2-6 working days |
| Pickup Point: Remote Area | 3-7 working days |

| Premium Collect Options | | |
|---|---|---|
| Only available in Main Centres (Cape Town, Johannesburg & Pretoria) | | |
| **Delivery Type** | **Collect Time** | **Cut Off Time** |
| Same Day Collect | Same Day from 3pm | Pay before 10:30am Mon-Sat |
| Next Day Collect | Next Day from 10am | Pay before 11:59pm previous day |
| Collection times vary, please wait for your Ready to Collect email before visiting the pickup point. | | |

| Delivery Options | |
|---|---|
| **Delivery Type** | **Delivery Charge** |
| Standard Delivery (orders R450 or more) | FREE |
| Standard Delivery (orders below R450) | R60 |
| Same Day Delivery * | R120 |
| Next Business Day Delivery * | R95 |
| Saturday & Sunday Delivery * | R100 |
| Delivery Surcharge (Heavy / Bulky Goods) * | R200 per item |
| *Premium delivery only available in Main Centres (Cape Town, Johannesburg & Pretoria) | |

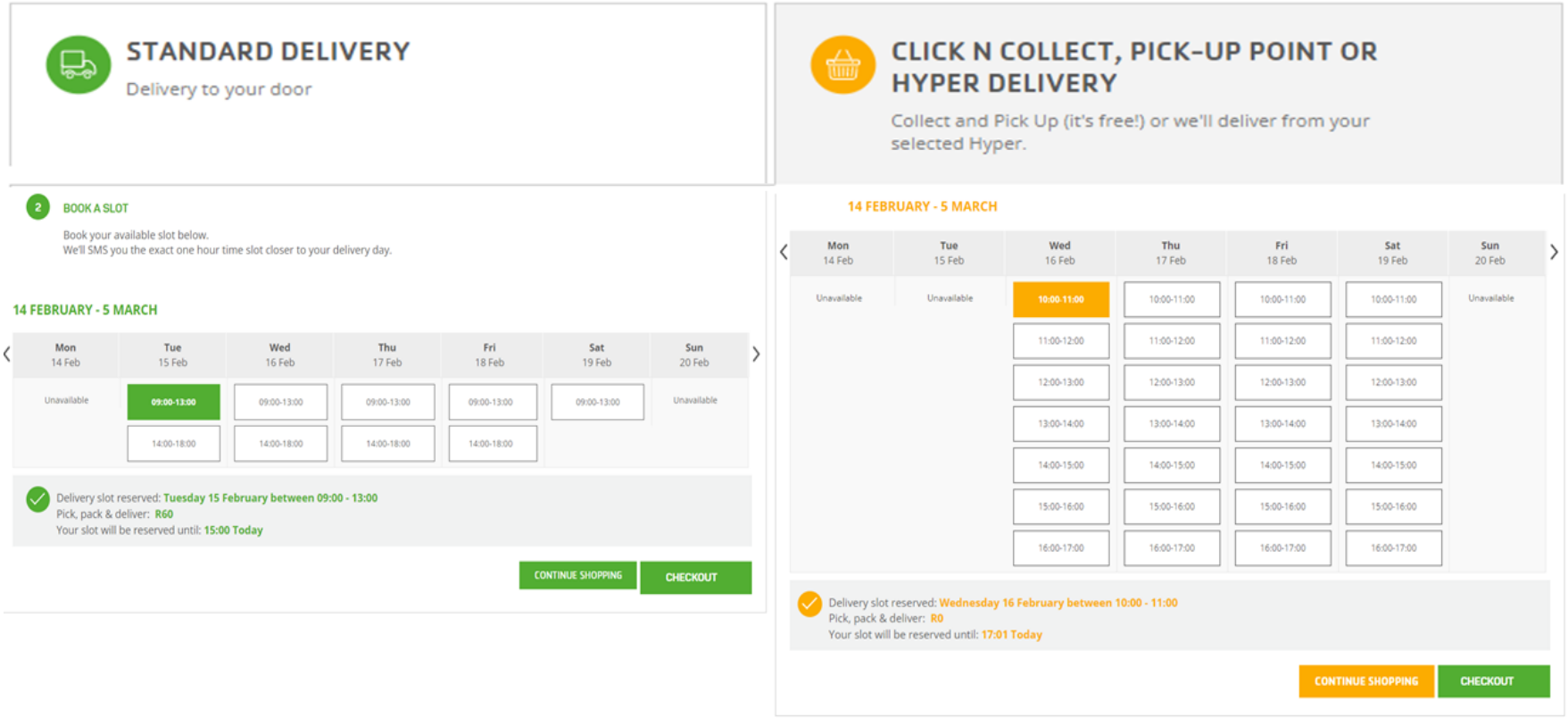
| Collect Options | |
|---|---|
| **Collect Type** | **Collect Charge** |
| Standard Collect (orders R450 or more) | FREE |
| Standard Collect (orders below R450) | R25 |
| Same Day Collect * | R80 |
| Next Day Collect * | R60 |
| *Premium Collect only available in Main Centres (Cape Town, Johannesburg & Pretoria) | |

| Midrand (N1 Bridge) Pickup Point | |
|---|---|
| **Collect Type** | **Collect Charge** |
| Standard Collect | FREE |
| Same Day Collect | R60 |
| Next Day Collect | FREE |

| Takealot Cape Town Warehouse Pickup Point | |
|---|---|
| **Collect Type** | **Collect Charge** |
| Standard Collect | FREE |

**Source: Takealot.com (2022)**

**Figure 6.5: Delivery models and delivery slot pricing for Pick n Pay**




**Source: Pick n Pay (2019)**[52]

[52] To provide context to the screenshots of Pick n Pay's website, it should be noted that the screenshots were taken on the morning of Monday, February 14, 2022. The screenshots illustrate that, for home delivery, the earliest possible delivery date was the next day (15th of February) while, for click n collect, neither same-day nor next-day collection was possible. At the time these screenshots were taken, the earliest collection date was in two days' time (i.e. February 16).

Figure 6.4 and Figure 6.5 show that both Takealot.com and Pick n Pay provide customers with both a home delivery and click-and-collect option. Noticeable from Figure 6.4 is that, although Takealot.com offers same-day, next-day, and weekend deliveries (with stipulated cut-off times), the online retailer does not offer specific delivery or collection windows. In contrast, Pick n Pay (Figure 6.5) offers both home delivery and click-and-collect options, with a five-hour delivery window and one-hour collection window customers may choose from. For Takealot.com, a standard delivery window span of 12 hours exists, which means that delivery can take place at any time between 7 a.m. and 7 p.m. At this stage, it should be emphasised that the product characteristics of these retailers differ significantly, with Takelot.com selling mainly non-perishable products while Pick n Pay is a grocery retailer selling mainly perishable grocery products. The fact that these retailers take different approaches to time slot and velocity planning signals their understanding of what customers value, as highlighted by The Consumer Goods Forum (2015:11), Lim *et al*. (2018:320), and Weber and Badenhorst-Weiss (2018:5).

In addition to time slot and velocity planning, Figure 6.4 further illustrates that Takealot.com implements price differentiation strategies, as suggested by Marchet *et al.* (2018:441) and Wollenburg *et al.* (2018:552). Figure 6.4 indicates that Takealot.com charges a hefty premium (R120) for priority delivery service compared to standard delivery (R60). Takealot.com and Pick n Pay also differ in click-and-collect picking and delivery velocity. While both retailers have an extended waiting period between order and collection times (compared to home delivery options), the cost of these delivery modes is significantly less for customers than the home delivery. While Pick n Pay offers the click-and-collect service free of charge, irrespective of collection point or time, Takelot.com only offers free collection from their central warehouse or above a minimum spend and any other orders are charged a small collection fee.

Of the few literature sources that investigated different aspects of the omnichannel supply chain through the theoretical lens of the DCV (Mirsch *et al*., 2016; Hosseini *et al.,* 2017; Höcker *et al.,* 2018; Yumurtacı *et al.,* 2018; Mrutzek *et al.*, 2019, 2020; Hossain *et al.,* 2020; Nagula & Liu, 2020), only Yumurtacı *et al.* (2018:1214) briefly mentioned delivery time as a contributor to creating a seamless omnichannel shopping process for customers. The lack of discussion related to a retailer's ability to offer agile

delivery options (delivery velocity) and different time slots can indicate the insignificance of delivery time as a dynamic capability for omnichannel retailing. However, when considering broader literature sources (literature outside the narrow scope of omnichannel retailing from a dynamic capabilities perspective), the importance of delivery time as a function of omnichannel retailing comes to the fore. This importance is exemplified by phrases, such as "*same-day delivery is setting a new industry service standard that others will find expensive and difficult to follow*" (Chaturvedi *et al.,* 2016:60) and *"… same-day delivery raises the bar for online fulfilment speed"* (McCarthy *et al.,* 2019:251) or "… *product delivery to a wide range of locations (for example home, store and collection point), and its flexibility in responding to the consumer's heterogeneous and changing choices/instructions indicate the omnichannel adaptability*" (Saghiri & Mirzabeiki, 2021:1687). Similarly, a study by Ma (2017:1100) on the effect of delivery time on customer satisfaction and purchase intention found that customers increasingly want shorter delivery times. Their findings suggested that delivery time determines whether a customer will make a purchase. In terms of supply chain integration (SCI), developing and scheduling delivery times is a complicated endeavour, requiring real-time and accurate information on inventory availability and delivery schedules as well as commitment from various organisational functions to adhere to scheduled delivery times (Hoehle *et al.,* 2018:705; Weber & Badenhorst-Weiss, 2018:5; Yadav *et al.*, 2019:976). Considering the above arguments as well as the definition of dynamic capabilities presented in Chapter 2 (Section 2.3.3.1(b), *the antecedent organisational and strategic routines (or processes) by which managers alter the resource base, for example by acquiring and shedding resources, integrating them, and recombining them to generate new value-creating strategies),* an argument can justly be made for the classification of delivery times as a dynamic capability. Consequently, this study classified the retailer's ability to offer **flexible delivery times and options**[DC18] as a dynamic capability.

As suggested several times throughout the literature discussion, the purpose of omnichannel retailing is to provide a seamless shopping experience for customers. Retailers attempt to do so by implementing several channels and delivery options. Delivery area, as the second-last last-mile distribution consideration, is discussed next.

#### *6.2.2.3 Delivery area*

Omnichannel retailers need to determine if their last-mile services will be offered only within densely populated areas through high market penetration or if they want to expand and deliver to all regions countrywide (Gevaers *et al.,* 2014:407). Certainly, both these scenarios pose unique challenges. Ni *et al.* (2019:895) posited that a retailer's delivery area influences a customer's omnichannel experience directly in terms of convenience and delivery location, namely click-and-collect store or locker near a customer's workplace or home. The strategic planning framework for last-mile fulfilment and delivery in omnichannel retailing of Hübner *et al.* (2016:234) distinguished between the following four different delivery areas: *local*, *regional*, *national*, and *international*. Since the focus of this study is on omnichannel retailing in *South Africa,* and only the *internal* supply chain, possible delivery areas were delineated to include local, regional, and national delivery areas since international delivery areas would: a) fall outside of South Africa, and b) rely on external supply chain partners to be effective (external integration).

Chaturvedi *et al.* (2016:60) listed four matters that a retailer needs to consider when determining the delivery area. First, the retailer needs to map the location of their distribution centres. In a study by Snyman (2014:203) on one of South Africa's omnichannel retailers, the online manager discussed how they determine possible delivery areas by considering the location of their fulfilment centres. The online manager indicated that, through technology, they identify possible delivery expansion areas by considering the most congested fulfilment locations. The retailer indicated that, when they matched the geography with the demand of the region, they could shorten drop-distances and accurately predict the cost-savings of smaller delivery areas.

Second, coupled with the decision on the delivery area, retailers should consider the different delivery modes they offer. Lockers, for example, present retailers with the option of expanding into delivery areas they would not otherwise be able to, since lockers offer an unattended alternative to pick-up counters (Rai *et al.,* 2019b:276). Naturally, lockers are only applicable for specific product categories (non-perishable products). In the study of Snyman (2014:212), the retailer expressed that the cold

supply chain was a significant hurdle to expanding online offerings. The online manager expressed the difficulty of explaining to customers, that they could have one product category delivered via one channel (for example, apparel and homeware through home delivery) but they could not receive groceries through the same (home delivery) channel.

Third, the delivery cost for specific areas is higher than for others. Gevaers *et al.* (2014:408) found that delivery costs in rural areas can be up to three times as high as in densely populated areas. However, large retailers, such as US-based Walmart, has successfully served low population density locations that other larger retailers find unattractive (Hines, 2013:195).

Fourth, if the retailer uses the services of a 3PL, the 3PL's delivery area and ability to expand into different delivery areas become applicable. In South Africa in particular, the geographic landscape, characterised by a growing middle-class living in metropoles and a large population living in underdeveloped rural areas, retailers are challenged in determining which geographic areas they can serve (Weber & Badenhorst-Weiss, 2018:2).

#### *6.2.2.4 Product returns*

Unlike the traditional brick-and-mortar channel, with online retailing customers cannot see or feel the product before making a purchase (Piotrowicz & Cuthbertson, 2014:10). Therefore, free and easy returns become a key decision-making criterion for customers. This holds especially true for fashion products, where the 'fit' of a garment is difficult to translate within online shopping parameters (Hines, 2013:83). Consequently, if the return policy and process are not transparent or convenient, customers may not purchase the product (DHL Consulting, 2016:16).

With omnichannel retailing, product returns can be problematic as customers have the option of purchasing a product from one channel while returning the product via another channel. Such channel-switching behaviours are costly and time-consuming and increase the cross-channel management processes required by retailers. With returns via different channels, effective supply chain integration practices are essential

(Xu & Jackson, 2019b:129). However, Ternstrand *et al.* (2015:18) found in their study among Swedish customers and retailers that retailers do not yet recognise the importance of returns. According to these authors' findings, only 41% of retailers consider return policies necessary, while 81% of customers highlight return policies as a vital consideration to their purchase intention. However, Appriss Retail (2018:6) reported on the return data of 40 000 USA retail stores that almost 13% of all apparel items are returned annually and returns account for nearly $369 billion in lost sales. Consequently, product returns are a cost-drain (Meyer *et al.,* 2017:2).

Rai (2019:60) reported on two main reasons for product returns: ordering unwanted products or receiving faulty products. First, in terms of ordering unwanted products, Rao, Rabinovich and Raju (2014:269) found that customers' dissatisfaction with products often stems from specific product characteristics. This especially applies to digital shopping where customers are limited in their ability to evaluate products in terms of size and colour. The second reason for product returns is faulty products (Boldt & Patel, 2015:24; Rai *et al.,* 2019b:48). Unlike customers who can inspect products before purchasing in a physical store, customers purchasing online seldom inspect products before accepting delivery. In some cases, these customers sign off unopened deliveries and receive faulty products, which requires them to exchange the products later.

Wollenburg *et al.* (2018:561) stated that the main objectives for omnichannel retailing within the domain of returns are, first, to reduce return rates and, second, to ensure fast and efficient return processes. Larke *et al.* (2018:475) argued that return rates for digital channels are double that of the physical channels as customers lose the tangibility of product inspection. Online product return rates are often benchmarked at a rate of 20% (Wollenburg *et al.,* 2018:561; Shang, Ferguson & Galbreth, 2019:878), which means a product return rate below 20% is considered normal and a return rate of above 20% is considered high. Wollenburg *et al.* (2018:561) elaborated on return rates by stating that, for fashion-related retailers, a return rate of below 20% usually indicates that the information provided online such as pictures of items, benchmark items (comparative fit with popular brands), and measurement charts is meaningful and sufficient to prevent returns. This finding was corroborated by Bernon *et al.* (2016:598) who found that effective omnichannel strategies, such as sufficient product

information across a range of omnichannel platforms, reduce the ‘try before you buy’ attitude of customers.

When the customer has a variety of reliable pre-transaction information sources, customer decision-making improves, leading to reduced return rates. According to Hübner *et al.* (2016:285), retailers should use direct contact with customers during the return process to collect information on the reasons behind returns. Shang *et al.* (2019:877) stated that buyer(shopper)-assisted programmes and adjustment of return-time windows are two common methods retailers use to actively reduce return rates. A buyer-assisted programme can improve the customer’s understanding of the product they are purchasing to reduce returns (Ertekin, Ketzenberg & Heim, 2020:1250). Additionally, Wollenburg *et al.* (2018:561) postulated that retailers also implement process-related obstacles for returning items when attempting to reduce return rates. Obstacles to product returns include having customers print out their own return labels, having customers register a return, or rewarding customers via a loyalty programme for ‘no returns’. Fast and efficient return processes are the second objective of omnichannel returns, as listed by Wollenburg *et al.* (2018:561). Hübner *et al.* (2016:286) maintained that fast and efficient returns are vital to the customer’s perception of the omnichannel process as customers expect to be reimbursed immediately for unwanted products.

From an SCI perspective, retailers should consider two factors regarding returns: how to facilitate returns integration across physical and digital channels and how different return modes can be incorporated into the omnichannel process (Melacini *et al.,* 2018a:403). Bernon *et al.* (2016:595) found that offering various omnichannel return processes increases complexity and requires high levels of integration, especially within the following three areas: 1) fulfilment and return logistics; 2) inventory re-balancing; and 3) separate return channel processes. Bernon *et al.* (2016:595) provided an example of fulfilment and return logistics by describing a situation where a retailer solely relies on 3PLs for product deliveries and returns. However, not all 3PLs can handle returns. In such instances, a product exchange may require three vehicle deliveries to complete the transaction: one to drop off the original product, one to pick up the return, and one to deliver the replacement product. Such a laborious

returns process represents neither a seamless experience for the customer nor a cost-effective return solution for the logistics function.

The second area of returns integration is concerned with inventory re-balancing. Product returns via brick-and-mortar stores may lead to inventory being routed to the incorrect storage facility. Often, inventory needs to be recalled to the warehouse for processing and the warehouse is not necessarily designed to accommodate returns. In addition, returned items are often loose items, not suited for storage and handling within a large-scale warehouse.

The last consideration regarding returns integration is separate return channel processes. While the majority of physical and digital channel returns can be administered via a store (physical) return model, for some product categories, such as groceries, it may not be possible to process returns through the same channel, necessitating a separate returns process. The strategic planning framework for last-mile fulfilment and delivery in omnichannel retailing of Hübner *et al.* (2016:234) subdivides product returns into a) no return but a money-back guarantee, b) check and return at reception, c) return by courier, express, and parcel (CEP) delivery, or d) acceptance and refunding in retail outlets.

### *a) No return but money-back*

In some retail categories, such as groceries, returning products are restricted by civil law. In these cases, retailers have a no-returns policy which usually includes a process where the customer needs to provide proof of the undesirable items (for example, a picture of the rotten tomatoes) whereafter a refund is applied. When retailers apply a no-returns policy, they often offer money-back guarantees as a way to reassure customers (Marchet *et al.,* 2018:449). With a money-back guarantee (also called a satisfaction guarantee), retailers promise to refund the full purchase price to customers for any reason, "*no questions asked*" (Huang, Ren & Chen, 2018:463). The American multinational e-commerce retailer eBay is infamous for their 'eBay Money-Back Guarantee', a return policy they offer customers due to the large number of third-party sellers on their website. The eBay Money-Back Guarantee protects customers if they

do not receive their merchandise or if the merchandise received is not as described on their website.

Money-back guarantees offer customers peace of mind and can signal quality in environments where customers cannot directly assess product quality before purchase. Shang *et al.* (2019:878) debated that money-back guarantees hold both price and demand benefits for retailers since many retailers use money-back guarantees as a quality-signalling tool in an attempt to create demand and build customer confidence (Huang *et al.,* 2018:463). Other advantages of a money-back guarantee listed by Johansson (2016) include removing the barrier to purchase for customers and creating differentiation between the retailer and its competitors. A disadvantage of money-back guarantees is that such a return policy attracts poor (for example, non-loyal) customers as some exploit a money-back guarantee policy. Money-back guarantees also complicate accounting, mainly depending on the refund period.

### *b) Check and return at reception*

Check and return at reception refer to a situation where a customer checks the delivery at the moment of acceptance. If the parcel/product does not meet the customer's expectation, the customer returns the parcel immediately (Hübner *et al.* 2016:242). In a study done by Rai *et al.* (2019:49), the authors found that customers are relatively indifferent about reception conditions as long as the retailer has a free return policy. Although a check and return at reception policy reduces the cost of returns, such a process simultaneously decreases delivery efficiencies and complicate delivery planning. Hence, while a check and return at reception policy is helpful for specific product categories such as groceries, it is not suitable for other product categories such as apparel.

### *c) Returns by courier, express, and parcel (CEP) providers*

Returns by courier, express and parcel (CEP) providers entails a 3PL collecting the unwanted product from the customer and delivering the parcel to the retailer's brick-and-mortar store, a distribution centre, or a specialised returns centre (DHL

Consulting, 2016:17). CEP service providers offer retailers a range of advantages, such as realising efficiencies, economies of scale, returns management knowledge, and access to specialist IT capabilities (Bernon *et al.,* 2016:588). CEP returns are the most common form of online returns (Hübner *et al.,* 2016:284), mainly because of its convenience for customers. However, CEP returns are expensive for retailers as it requires a reverse duplication of the delivery process (collection, delivery, and storage) along with other administrative processes.

The discussion on the use of CEPs should be prefaced by stating that, while retailers in other countries such as the USA have reliable postal services as an alternative (although slower and cheaper) delivery option, retailers in South Africa cannot rely on the South African Post Office (SAPO) for parcel deliveries (Nuruzzaman & Weber, 2021:58). The South African Post Office (SAPO) is regularly plagued by labour action and, therefore, customers prefer the speed and reliability of courier services, even more so for product returns. However, courier services are expensive compared to postal services, especially for deliveries to rural areas (Blanken, 2015:45). This unique socio-economic situation in South Africa creates an additional barrier for South African omnichannel retailers in offering efficient but affordable return processes. South African retailers can combat the cost of delivery and delivery restrictions by only offering customers the ability to return an online purchase to the nearest brick-and-mortar store. This form of product delivery is considered next.

### *d) Accept and refund returns in the retailer's retail outlets*

Accept and refund returns in retailers' outlets refers to a situation where bricks-and-mortar retailers leverage their store network (or lockers and other distribution points) as drop-off locations for online returns (DHL Consulting, 2016:16). This model is also commonly referred to in literature as the buy online return in store (BORIS) model (Murfield *et al.,* 2017b; Berman & Thelen, 2018). FitforCommerce (2017:7) found that the BORIS model is the most applied cross-channel functionality for omnichannel retailers as it is the easiest and most cost-effective omnichannel strategy to implement. Schmaus *et al.* (2017:9) added that the BORIS model is typically also the first step in customers' adoption of omnichannel retail. A major advantage of in-store returns over other return models discussed earlier is that, through such models, customers are

steered into the store, which creates opportunities for cross-selling (Wollenburg *et al.,* 2018:562; Zhang *et al.,* 2018:314). On the other hand, Wollenburg *et al.* (2018:562) stated that only a small percentage of retailers incorporate the returned items into store inventory. Most retailers send returned items back to the warehouse and cover the transportation cost.

From the perspective of the DCV, Hosseini *et al.* (2017:4), Yumurtacı *et al.* (2018:1202), and Nagula and Liu (2020:8) classified **cross-channel returns management**[DC19] as a dynamic capability. In particular, Yumurtacı *et al.* (2018:1202) and Hosseini *et al.* (2017:4) debated that the cross-channel returnability signals cross-channel integration, a characteristic that is indicative of a mature omnichannel retailer. Kembro *et al.* (2018:898) added that, in dynamic and rapidly changing environments such as omnichannel retailing, retailers are required to add new services to meet the demands from customers, in particular innovative return points (such as allowing customers to return a product to lockers), which offer retailers a competitive advantage.

In conclusion, although returns do not necessarily form part of all customers' omnichannel shopping experience, the importance of an efficient returns process should not be underestimated. The reasons are that, first, if the return policy and process are not transparent or convenient, customers may choose not to purchase the product (Janakiraman & Syrdal, 2016:227) and, second, omnichannel retailing requires a seamless product return process.

In the above section, several elements of the strategic planning framework for last-mile fulfilment and delivery in omnichannel retailing of Hübner *et al.* (2016:234) were considered. Throughout the discussion above (Section 6.2.1 and Section 6.2.2), mention was made of the use of 3PLs to assist with areas of the omnichannel supply chain process that might not fall within the retailer's area of expertise. Although the management of 3PLs are considered part of the external supply chain (and falls outside the scope of this study), the ability of the omnichannel retailer to identify opportunities to improve supply chain operations through the outsourcing of certain tasks can give an omnichannel retailer a competitive advantage and therefore warrants some discussion. Accordingly, the following section considers the decision

to insource/outsource some of the back-end fulfilment and last-mile distribution elements discussed in Section 6.2.1 and Section 6.2.2.

## 6.3 INSOURCING VERSUS OUTSOURCING DECISIONS

Traditionally, large organisations chose to manufacture and manage all processes, products, and services in-house (insourcing). However, Wisner *et al.* (2019:52) argued that, in recent years, organisations are moving towards outsourcing. Van Weele (2018:190) argued that, while insourcing/outsourcing decisions were traditionally focused on processes or parts of the supply chain, organisations are moving towards reconsidering insourcing/outsourcing decisions for entire organisational functions. Accordingly, functions such as IT, transport, logistics, manufacturing, and customer service are now outsourced instead of managed in-house.

Coyle *et al*. (2017:437) maintained that, in back-end fulfilment and last-mile distribution, retailers need to choose between in-house fulfilment and logistics, using a private fleet (the 'insourcing' option), or using 3PLs for fulfilment and logistics services on behalf of the organisation ('outsourcing' option). Several authors (Hübner *et al.* (2016); Wollenburg *et al.* (2018); Rai *et al*. (2019b)) also discussed a hybrid model which sees retailers utilising the advantages of both insourcing and outsourcing for back-end fulfilment and last-mile distribution. The hybrid model is discussed in Section 6.3.3.

### 6.3.1 Insourcing: In-house delivery

Rai *et al.* (2019b:282) maintained that, during the introduction phase of the omnichannel process, retailers prefer to insource logistics. Although costs may be higher with insourcing (compared to outsourcing), the cost is offset by gains achieved through efficiency, economies of scale, complete control over logistics services provided to customers, and improved performance (Rai *et al.*, 2019b:272). However, some omnichannel retailers do not initially have the capabilities to insource last-mile processes and therefore decide to outsource some of these processes. In these instances, outsourcing has specific advantages, for example flexibility in terms of

investments, infrastructure development, and personnel deployment. When a qualified model for back-end fulfilment and last-mile distribution is developed and online sales increase, retailers may then consider moving back-end fulfilment and last-mile distribution back in-house (Rai, 2019:38).

### 6.3.2 Outsourcing: Third-party logistics providers (3PLs)

With the emergence of online retailing, logistics is considered one of the most significant drivers of sales. Yu *et al.* (2016:182) debated that, when considering factors such as cost and revenue, operational flexibility, investment, and core competency, omnichannel retailers find that outsourcing is often the most effective and practical way to fulfil all customers' logistics service requirements.

Rai *et al.* (2019a:268) stated that most online retailers outsource the entire logistics operation to specialised logistics service providers, allowing them to create a broad and sophisticated service offering they are not able to offer in-house (Szymczak, 2013:107). Third-party logistics providers (3PLs) provide transportation and other services such as warehousing, document preparation, customs clearance, packaging, and labelling for organisations (Wisner *et al.*, 2019:535). In the omnichannel environment where product delivery can be done at several locations (for example home, in-store, or collection points), 3PLs are essential links between retailers and customers (Rai *et al.*, 2018:588).

According to Bernon *et al.* (2016:599), omnichannel retailers' capacity to engage with specialist 3PLs to develop unique last-mile logistics solutions becomes a point of differentiation as 3PLs can play an important role in developing omnichannel competencies and solutions. Chen *et al.* (2018:354) stated that, while retailers might be familiar with bulk orders for delivery, with omnichannel retailing, storing and packing of parcels are smaller, something 3PLs are familiar with. Small parcel deliveries, which are symbolic of omnichannel retailing, place a higher premium on logistics flexibility in procurement, storage, and last-mile services for retailers. Logistics is thus a key enabler for omnichannel retailing and 3PLs need to combine performance, reliability,

agility, and productivity to maintain competitiveness and profit margins (Gibson & LaBruno, 2018:21).

To reap the benefits of both options, organisations are starting to use certain areas of each of these options, which has resulted in the development of a 'hybrid model'. The hybrid model and its specific application within back-end fulfilment and last-mile distribution is discussed next.

### 6.3.3 Hybrid model for last-mile logistics

Because of the complexity of omnichannel retailing, retailers are starting to implement a hybrid model for the back-end fulfilment and last-mile distribution processes. With a hybrid model, retailers combine in-house capabilities with the use of 3PLs (Rai *et al.,* 2019a:272). Rai *et al.* (2019b:276) argued that the rationale for hybrid models is both strategic and operational. Strategically, retailers can have the in-house capabilities to pick, fulfil, and deliver large volumes of inventory for stores but lack in-house expertise and experience in small (individualised) item picking. Operationally, regulations on night labour that generally favour 3PLs (in terms of flexibility and cost) are found to be critical in omnichannel retail, where next-day deliveries are often picked and packed throughout the night (The Consumer Goods Forum, 2015:22). Moreover, 3PLs' information technology is designed to optimise various back-end fulfilment and last-mile distribution processes, making them significantly more efficient than standardised in-house processes.

Examples of hybrid models can be found in picking, fulfilment, and delivery throughout the last mile of the omnichannel supply chain. In picking, retailers often manage distribution centres for store replenishment while outsourcing online fulfilment from decentralised warehouses (or dark stores) to 3PLs (Hübner *et al.,* 2016:236). Also, hybrid omnichannel fulfilment often sees stores only being used to fulfil online orders from remote and sparsely populated areas or in areas where demand for online retail is limited (Wollenburg *et al.,* 2018:428). In these cases, the shorter distance from stores to customers outweighs pure insourcing/outsourcing models when compared to factors of productivity and space requirements (Rai *et al.,* 2019b:275). Similarly, a

hybrid model for last-mile distribution can use 3PLs for home deliveries in areas remote to retailers' central locations or in markets that are not considered key to the retailer. Although the hybrid model offers retailers the advantages of both insourcing and outsourcing, retailers also face the disadvantages of both models. Therefore, the conclusion can be made from the discussion on insourcing/outsourcing and the hybrid models that retailers need to consider various factors in determining what option (model) provides the most flexibility at the lowest cost.

## 6.4 CHAPTER CONCLUSION

The purpose of this chapter was to address, in part, SRO2(b), *which is to define dynamic capabilities that facilitate omnichannel integration.* As stated in Chapter 5 (Section 5.4.1), the generic omnichannel supply chain process encompasses three domains: front-end integration (consumer-facing) capabilities in the form of physical and digital channels and touchpoints; back-end fulfilment, which relates to the order fulfilment process; and last-mile distribution, which is concerned with order delivery and returns. This chapter aimed to specifically consider the last two domains of the generic omnichannel supply chain process: back-end fulfilment and last-mile distribution.

For the most part, this chapter followed the structure of the strategic planning framework for last-mile fulfilment and delivery in omnichannel retailing as presented by Hübner *et al.* (2016:284). Throughout this chapter, a central theme of the need for speed and flexibility (agility) against cost considerations became evident. To stay competitive within the ever-changing environment of omnichannel retailing, flexibility is needed in terms of providing different delivery options/modes (Section 6.2.2.1), delivery times (Section 6.2.2.2), and dealing with returns through the integration of physical and digital channels (Section 6.2.2.4). While agility in omnichannel retailing may lead to a competitive advantage and increased customer satisfaction, agility comes at a cost. Throughout this chapter, the high cost of last-mile logistics in omnichannel retailing was cited. Examples included last-mile cost accounting for 13-75% of total supply chain costs and online orders being 23% more expensive for retailers than purchases through physical channels such as brick-and-mortar stores.

Additionally, the cost implications of different picking locations (Section 6.2.1.1), delivery modes and delivery times (Section 6.2.2.1 and Section 6.2.2.2), the automation of the picking process (Section 6.2.1.2), and product returns (Section 6.2.2.4) were addressed. Novel ways to reduce costs while still offering customers a wide range of products and delivery options were also presented in Section 6.2.2.1(a) (crowdshipping).

This chapter also identified several dynamic capabilities that promote the internal SCI of omnichannel retailers. Table 6.3 summarises and defines the dynamic capabilities identified in this chapter and included in the study's coding frame.

**Table 6.3: Dynamic capabilities contributing to the coding frame of the study**

| | DC CODING | DEFINITION |
|---|---|---|
| **Dynamic Capabilities** | **Back-end fulfilment:** The integration of the retailer's back-end processes which facilitate the picking and packing of orders before final delivery to the customer. Back-end fulfilment includes picking location (in store, separated fulfilment centres, or central warehouses), picking automation (manual, semi-automated, and fully automated), and picking integration (separated, integrated, or capacity optimised and integrated). | |
| | **DC16** | **Inventory harmonising capability:** The ability of a retailer to create innovative and modern inventory management processes (such as integrating inventory across different warehouses and distribution centres) to allow the retailer to react to market shifts agilely. |
| | **Last-mile distribution:** The integration of the final leg of the omnichannel supply chain in which order delivery takes place. Last-mile distribution includes strategic considerations in terms of various delivery modes (home delivery and click-and-collect); delivery times (delivery velocity and time slot planning); delivery area (local, regional, and national), and returns (no returns but money back; check and return at reception, CEP returns, and accept and refund in retail outlets). | |
| | **DC17** | **Innovative last-mile distribution processes:** The ability of a retailer to introduce and integrate new infrastructure and transportation options into existing delivery modes and use innovative last-mile distribution processes such as technologies to track orders in real time. |
| | **DC18** | **Offering flexible delivery times and options:** The ability of a retailer to offer speedy delivery (delivery velocity) and different time slots to create a seamless omnichannel experience for customers. |
| | **DC19** | **Cross-channel returns management capability:** The ability of a retailer to integrate the returns management process to allow for returns processing regardless of the point of purchase. |

**Source: Researcher's own compilation**

Table 6.3 lists and defines the dynamic capabilities which emerged from this chapter based on the literature. The dynamic capabilities listed in Table 6.3 were added to dynamic capabilities already identified in Chapter 2, Chapter 4, and Chapter 5 to contribute to the coding frame used to analyse retailers IARs.

In conclusion, back-end fulfilment and last-mile distribution comprise many different decisions regarding picking location, automation, integration, delivery mode, delivery times, delivery areas, and product returns. Each of these decisions has implications in terms of customer satisfaction and cost. Therefore, last-mile logistics requires retailers to make many strategic decisions. To effectively integrate the last-mile of an omnichannel supply chain, retailers need to consider a trade-off between cost, current resources and capabilities, and target market and specific country's demographic and geographic factors when designing back-end fulfilment and last-mile distribution strategies.

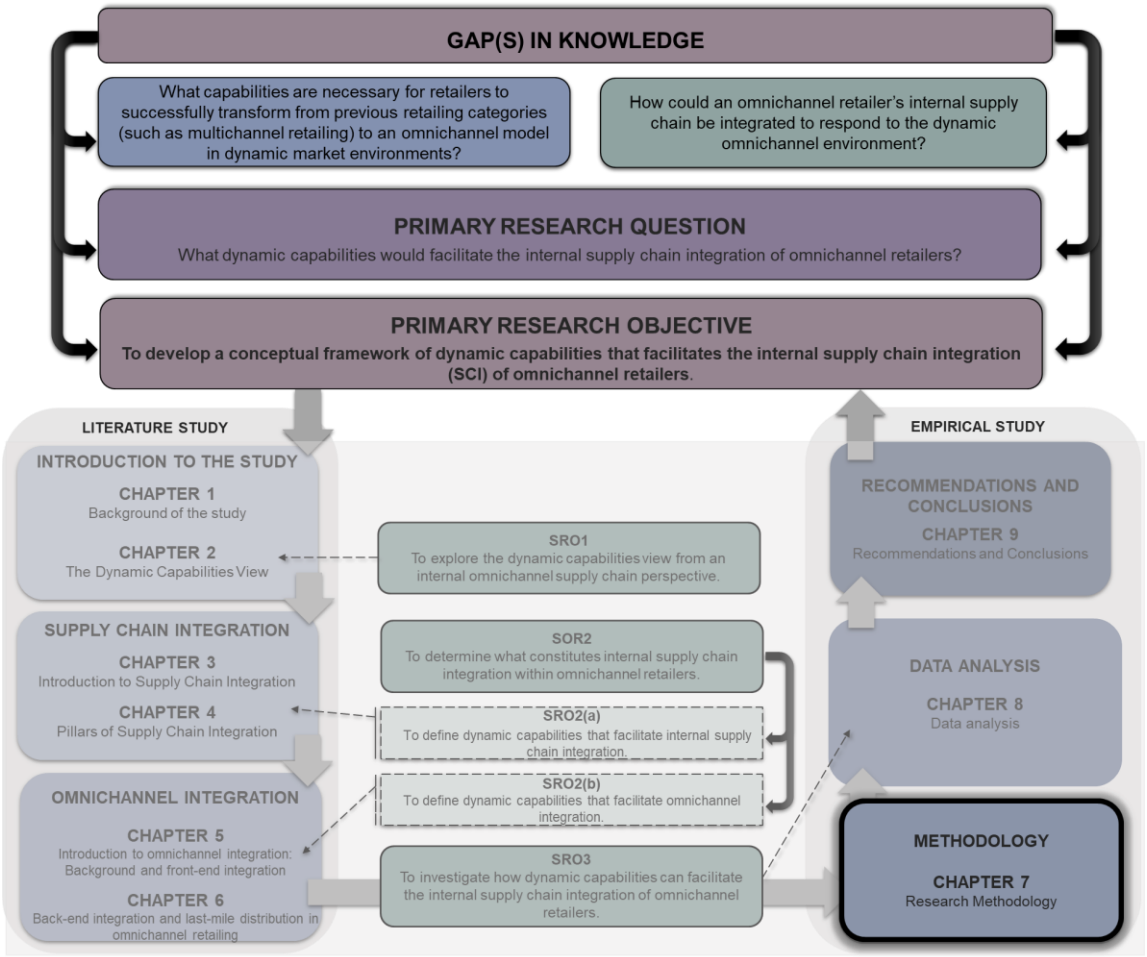
The next chapter aims to provide a detailed discussion on the methodology followed to addressed this study's research questions.

# CHAPTER 7
## RESEARCH METHODOLOGY

### 7.1 CHAPTER INTRODUCTION

Chapters 1 to 6 extensively covered the secondary research questions for this study by reviewing the available literature on the topic. Key concepts and dynamic capabilities relating to omnichannel SCI retailing were discussed. Figure 7.1 depicts where this chapter falls in the process of answering the research question. In addition, Figure 7.1 provides a visual summary of the study and serves to remind the reader of the aim of the study.

**Figure 7.1: Visual representation of the study**




**Source: Researcher's own compilation**

Figure 7.1 illustrates the literature review covered in Chapters 1 to 6. The literature review served as a guideline to determine the data needed for the empirical part of this study. The current chapter focuses on the research methods used to obtain empirical data to answer this study's primary research question: *What dynamic capabilities would facilitate internal supply chain integration in omnichannel retailers?*

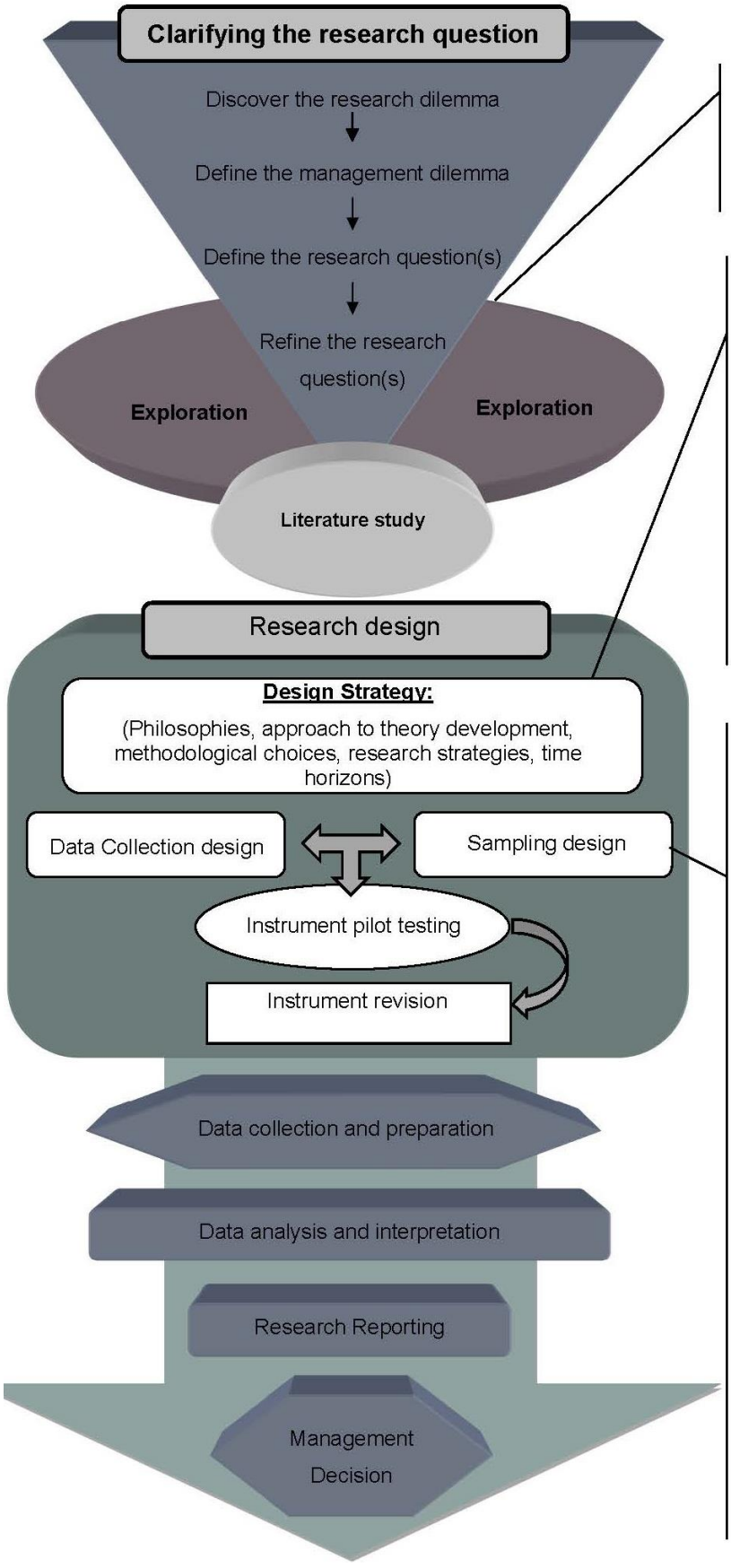
Richards (2015:65) debated that qualitative research requires a 'thick description' from a researcher to improve the study's rigour. Thick descriptions allow other researchers to determine the trustworthiness of the data-collection and -analysis techniques. According to Richards (2015:65), 'thick descriptions' means a researcher describes their research in intricate detail. Throughout the discussions in this chapter, the researcher aimed to follow Richards's (2015:65) guidelines by describing the methods and techniques used in this study in as much detail as necessary.

This chapter begins by discussing the research process and the purpose of the research. Next, research design strategies are considered. As part of this discussion, the researcher outlines the philosophical assumptions related to this study, the researcher's approach to theory development, choices regarding methodologies, the research strategy, and research time horizons. The chapter then details the sampling, data-collection, and data-analysis techniques for the two phases of data collection: document analysis (Phase 1) and semi-structured interviews (Phase 2). Finally, the chapter concludes with a discussion on measures employed to increase the validity and rigour of the data-collection methods while also addressing ways research ethics were upheld.

## 7.2 THE RESEARCH PROCESS

*"The research process provides a systematic, planned approach to a research project and ensures that all aspects of the research are consistent with each other"* (Tustin *et al.,* 2005:75). Figure 7.2 summarises this chapter and provides an overview of the research factors discussed in this chapter.

**Figure 7.2: The research process and methods followed in this study**




**Chapter 7, Section 7.2.1**
**Purpose of the research**
*Exploratory* and *descriptive*

**Chapter 7, Section 7.3**
**Research design**
Research Philosophy: *Pragmatism*
Theory development: *Abduction*
Methodological choice*: Qualitative, multi-method*
Research strategies*: Archival/ 'inspired by' grounded theory*
Time horizons: *Cross-sectional*

**Chapter 7, Section 7.4**
**Phase 1: Document analysis**
Data collection: *40 Integrated annual reports (IARs) of omnichannel retailers*
Sampling: *Purposive, homogeneous*
Data analysis: *Deductive, summative content analysis*

**Chapter 7, Section 7.5**
**Phase 2: Semi-structured interviews**
Data collection: *17 semi-structured interviews*
Sampling: *Expert, theoretical* and *snowball sampling*
Data analysis: *Reflexive Thematic Analysis (TA)*

**Source: Adapted from Cooper and Schindler (2014:76)**

### 7.2.1 The purpose of the research

The first step in any research project is determining the purpose of the research (Saunders, Lewis & Thornhill, 2020:138). Establishing the purpose of a research study begins when a researcher identifies and formulates the research question by pinpointing the management dilemma (as indicated by Figure 7.2) (Cooper & Schindler, 2014:77). A management dilemma can be triggered by a potential opportunity or a threat within the business environment. Several authors (Zikmund *et al.,* 2013:71; Saunders *et al.,* 2020:140) debated that business research studies primarily consist of three overarching research types: exploratory, descriptive, and causal/explanatory. A researcher should understand these research types to determine which one will prove most fruitful for the study at hand. This study employed both exploratory and descriptive research. The section below provides a brief discussion on each type of research.

#### *7.2.1.1 Exploratory research*

Exploratory research is conducted when a researcher explicitly looks for more information regarding the general nature of a problem, the potential decision options, and related variables influencing the problem (Cooper & Schindler, 2014:139). According to Saunders *et al.* (2020:139), exploratory research is valuable as it allows the researcher to determine 'what is happening'. These authors determined that asking this question allows researchers to seek new insights, ask specific (follow-up) questions, or assess phenomena in a new light. Exploratory research, therefore, provides the researcher with a general understanding of a specific topic (Creswell, 2017:243). In most studies, exploration is the first stage of a research project and is used to orient the researcher and the study. Cassell *et al.* (2018:77) explained that exploration is necessary when existing instruments, variables, and measures may not be known or available for the population or context under study. As such, through exploration, a researcher can develop concepts more clearly, establish priorities, develop operational definitions, and improve the final research design. During the exploration phase, a researcher will scrutinise the management dilemma to determine the main questions essential to ask to solve the problem or to make informed recommendations of possible solutions (Cooper & Schindler, 2014:94). Accordingly,

exploratory research is most useful in the preliminary stages of a research project when the level of uncertainty of the problem is at its highest.

The main advantage of exploratory research designs relates to flexibility (Zikmund *et al.,* 2013:65; Cassell *et al.*, 2018:474; Saunders *et al.,* 2020:140). In fact, according to Zikmund *et al.* (2013:65) *"… exploratory research need not always follow a structured design. Because the purpose of exploratory research is to gain insights and discover new ideas, researchers may use considerable creativity and flexibility".* Saunders *et al.* (2020:140) emphasised the advantage of flexibility in exploratory research by arguing that the flexibility does not indicate an absence of direction to the enquiry but rather that an exploratory research study's focus is initially broad and becomes progressively narrower as the research progresses. In line with the above authors' recommendations, the initial phase of this study (Chapters 1 – 6) was exploratory in nature.

#### *7.2.1.2 Descriptive research*

Descriptive research aims to provide an accurate and valid representation of many variables in a research study (Saunders *et al.,* 2020:140). Accordingly, Zikmund *et al.* (2013:55) explained that, as the name 'descriptive research' implies, the primary purpose of descriptive research is to describe characteristics of objects, people, groups, organisations, or environments. While exploratory research aims to answer the question '*what is happening'*, descriptive research tries to '*paint a picture'* of a given situation by addressing *who, what, when, where,* and *how* questions (Cooper & Schindler, 2014:21). Unlike exploratory research, descriptive studies are conducted after the researcher has gained a firm grasp of the studied situation (Zikmund *et al.,* 2013:55). According to Cooper and Schindler (2014:21), the main advantage of descriptive research is its versatility. Descriptive research studies can be employed across many different management disciplines. After conducting the exploratory phase of this study, the researcher commenced with a descriptive phase where primary data was collected in the form of a document analysis and semi-structured interviews. The descriptive phase of this study is outlined in more detail in Section 7.3.

#### *7.2.1.3 Causal/explanatory research*

Causal/explanatory research is employed by researchers interested in examining the relationship between two or more variables, often referred to as cause-and-effect relationships (Zikmund *et al.,* 2013:57). Explanatory or causal research aims to answer *why* and *how* questions. Therefore, experiments are often used as a data-collection method in explanatory research studies (Saunders *et al.,* 2020:142). Explanatory or causal research goes beyond description and attempts to explain the reasons for the phenomenon (Cooper & Schindler, 2014:22). Accordingly, the most significant advantage of an explanatory study is that it provides explanations to questions that descriptive research can only observe. Since there is a lack of information in the literature regarding the topic of this study (Chapter 1, Section 1.6), it would have been premature to conduct a causal/explanatory research study as the literature provides limited commonly accepted subdimensions of supply chain integration (SCI) and how SCI should be employed to facilitate omnichannel integration. Consequently, cause-and-effect relationships could not be studied in depth at the time this study was conducted.

- **Research purpose: exploratory and descriptive**

This study employed both exploratory and descriptive research to answer the research questions. First, *exploratory research* was used to clarify the problem and to create initial research questions. As outlined in Section 7.2.1.1, the researcher aimed to answer the question ‘what is happening’ within the phenomenon under investigation. This was achieved using an extensive review of the available literature on omnichannel SCI (Chapters 1 – 6). Throughout these chapters, the researcher explored the many interrelated concepts relevant to this study’s topic. Accordingly, the exploratory phase of this study furnished the researcher with background information on the research topic used to refine the research question. Additionally, the exploratory phase allowed the researcher to expand her understanding of the management dilemma by exploring ways other researchers have addressed or solved similar problems.

During the *descriptive research* phase, the researcher aimed to 'paint a picture' of what omnichannel SCI in South Africa entails (Chapters 8 – 9). This was achieved through an in-depth analysis of the integrated annual reports (IARs) of omnichannel retailers (Section 7.4) as well as semi-structured interviews with top-level managers of omnichannel retailers in South Africa (Section 7.5). Descriptive research studies have been associated with both document analyses (Rai, 2019b:310) and interviews (Creswell, 2012:124; Saunders *et al.*, 2020:322) as data-collection methods.

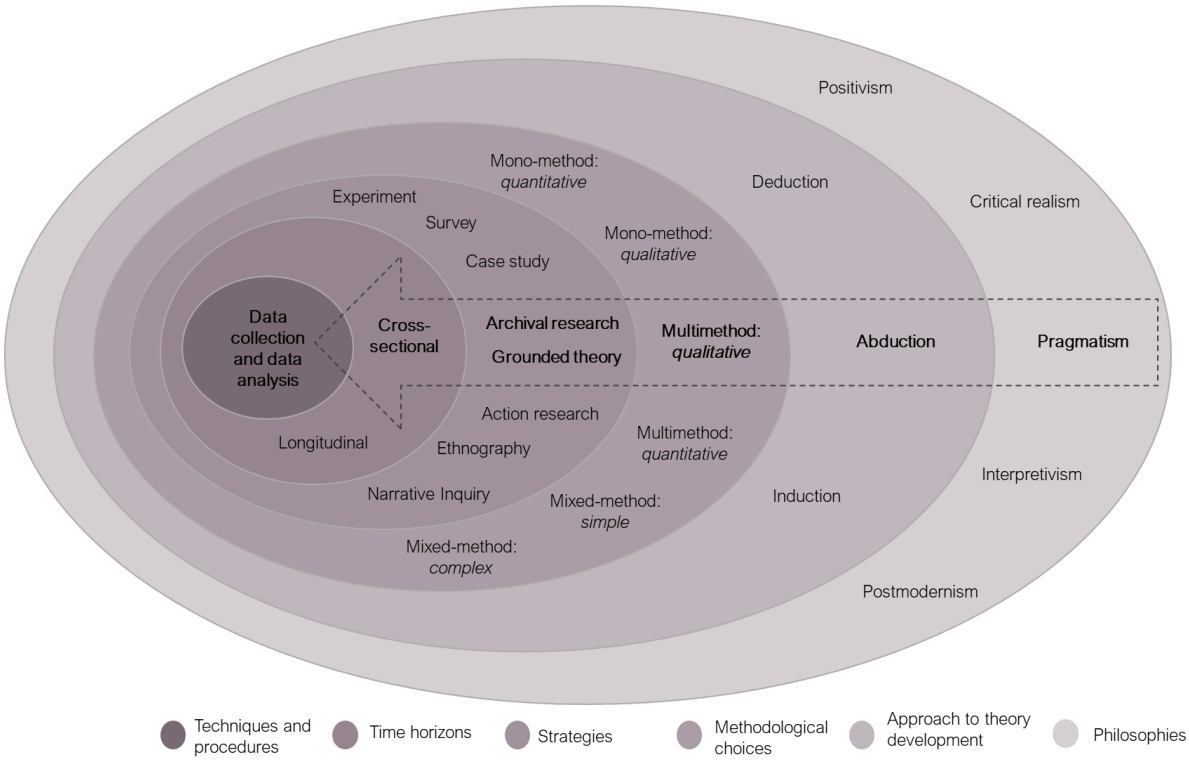
After the research purpose has been established, the research design (research methods) must be articulated. In the following section, the various components of designing a research study are discussed.

## 7.3 RESEARCH DESIGN

Research design relates to the blueprint that specifies the methods and procedures for collecting and analysing data to achieve the study objectives (Zikmund *et al.,* 2013:66). It includes the appropriate strategy to ensure that the primary data are collected in a way that is best suited to solve the management dilemma (Cooper & Schindler, 2014:82). As suggested by Figure 7.2, these strategies may include the researcher's philosophical assumption, the researcher's approach to theory development, choices regarding methodologies, the research strategy, and research time horizons. The research design stage is crucial in any research project as this is where researchers determine what types of data needs to be collected to be able to attain objectives and to make valuable recommendations regarding the managerial dilemma (Saunders *et al.,* 2020:138).

Researchers often use the 'research onion' developed by Saunders *et al.* (2020:130) to guide the research design. Figure 7.3 presents an adapted version of the research onion. Figure 7.3 also indicates (with the use of an arrow) the specific approaches employed in this study. Subsequent to Figure 7.3, the different elements of the research onion are addressed.

**Figure 7.3: The research onion**




**Source: Adapted from Saunders *et al.* (2020:130)**

Saunders *et al.* (2020:106) stated that the purpose of the research onion is to outline the different decisions that a researcher needs to make when developing their methodological approach. These authors debated that, as a researcher 'peels back the layers of the onion', starting from the outside of the onion (philosophies) working inwards to the techniques and procedures, researchers are faced with a range of choices. Since researchers progress from high-level philosophical assumption to tactical and practical data-collection procedures, these choices intrinsically affect the research design. The sections below (Sections 7.3.1 to 7.3.5) present a discussion of the different choices outlined in the research onion.

### 7.3.1 Research philosophies

Creswell (2017:5) maintained that, although philosophical ideas remain largely hidden in research, the importance of identifying a researcher's philosophical stance should not be underestimated since it may influence the ultimate interpretation of a study's results. Paradigms (also known as philosophical assumptions) refer to the nature of reality and are crucial in understanding the overall perspective from which a research

study is designed and carried out (Krauss, 2005:759). Research paradigms are defined as the "*basic belief system or worldview that guides the investigation"* (Cassell *et al.,* 2018:17). Accordingly, Lanka *et al.* (2021:3) explained that paradigms should be thought of as different lenses for viewing the world in different ways. The authors provided an example by stating that *"while you cannot look at a flower at your feet, a bird in the distance, and a wide mountain range all at the same time, you can choose to switch lenses in order to view the world differently and to reveal different aspects of it…".* Therefore, research paradigms determine what lens a researcher uses to 'look at' the research which untimely influence the findings and recommendations of any research study.

In general, philosophical assumptions are grouped into three categories: 1) ontology (the philosophy of existence and reality), 2) epistemology (the philosophy of knowledge), and 3) axiology (the philosophy of value) (Richards, 2015:26; Mir & Jain, 2018:22; Saunders *et al.,* 2020:109; Lanka *et al.*, 2021:3). Within these three philosophical assumptions, numerous research philosophies exist. According to Saunders *et al.* (2020:144), the most dominant philosophies in business research are positivism, critical realism, interpretivism, postmodernism, and pragmatism.

Table 7.1 describes all three philosophical assumptions and how these assumptions affect each of the five research philosophies. Although Table 7.1 details each of the five philosophical assumptions listed by Saunders *et al.* (2020:144), the research paradigm for this study is pragmatism. The rationale for the use of this philosophy is outlined below.

**Table 7.1: Research paradigms**

| Positivism | Critical realism | Interpretivism | Postmodernism | **Pragmatism** |
|---|---|---|---|---|
| Positivism refers to "*a philosophical system or view based on an empiricist understanding of science, particularly those associated with the belief that every cognitively meaningful proposition can be scientifically verified or falsified*" (The Oxford English Dictionary, 2022d). | Critical realism is a "… *theory that the world has a reality that transcends the mind's analytical capacity, and hence that propositions are to be assessed in terms of their truth to reality, rather than in terms of their verifiability*" (The Oxford English Dictionary, 2022e) | Interpretivism refers to a philosophical assumption where *"… the researcher steps into the role of interpreting the social world from their personal perspective. Interpretivism leaves room for own interpretations and assumptions about the social world*" (Sternberg & Bertilsson, 2016:15). | Postmodernism is a theory that "…*emphasises the world-making role of language and power relations. Postmodernists seek to question the accepted ways of thinking and give voice to alternative worldviews that have been marginalised and silenced by dominant perspectives*" (Saunders *et al*., 2020:160). | Pragmatism relates to "…*the doctrine that an idea can be understood in terms of its practical consequences; hence, the assessment of the truth or validity of a concept or hypothesis according to the rightness or usefulness of its practical consequences"* (The Oxford English Dictionary, 2022a). |
| **Ontology**<br>Ontology is concerned with the *nature of reality* and what there is to know about the world (Lanka *et al.,* 2021:3). The main question centres around whether reality exists independently of human conception and how the assumptions researchers have about the world influence their research outcomes (Saunders *et al.,* 2020:110). | | | | |
| Positivists believe that the researcher neither affects nor is affected by the research (Saunders *et al.,* 2020:119). The end product of positivists research is 'law-like' generalisations (Kalelioğlu, 2020:48). Positivists believe that the truth is to be discovered rather than constructed (Mir & Jain, 2018:26). Research findings are derived through deductive logic. | Critical realists believe that a researcher's assumptions of nature and reality are objective and independent of social actors (Saunders *et al.,* 2020:119). Realists believe (and advocate) for the realisticness of scientific theories, that is a theory's ability to depict reality (Patomaki, 2021:251). | Interpretivists believe that the researcher and the reality are inseparable. Therefore, the researcher's view of nature and reality is subjective and socially constructed (Alharahsheh & Pius, 2020:42). Interpretivists believe that a researcher can change their view throughout a research study (Saunders *et al.,* 2020:119). In interpretivist studies, theories are usually formed using inductive logic. | Postmodernists believe that the nature of reality is socially constructed through power relations and interactions. In particular, postmodernists believe that the world appears through language and is situated in discourse (Cassell et al., 2018:41). Postmodernists assume that some meanings, interpretations, and realities are dominated and silenced by others (Saunders et al., 2020:145). | Pragmatists believe that multiple views of reality exist that should be constantly renegotiated, debated, and interpreted considering their usefulness in unpredictable situations. Therefore, 'reality' is the practical consequence of an idea (Saunders *et al.,* 2020:145). Pragmatists makes methodological choices with the highest probability of answering the research question (Cassell *et al.,* 2018:58). |

| Positivism | Critical realism | Interpretivism | Postmodernism | **Pragmatism** |
|---|---|---|---|---|
| **Epistemology** | | | | |
| Epistemology is concerned with what constitutes acceptable knowledge in a field of study (Saunders *et al.,* 2020:110), specifically ways of knowing and learning about the world (Lanka *et al.,* 2021:3). Therefore, epistemology signals how a researcher aims to uncover knowledge (Alharahsheh & Pius, 2020:40). | | | | |
| Positivists believe that objective reality exists beyond the human mind and only observable phenomena can provide credible data and facts (Saunders *et al.,* 2020:119). The researcher reduces phenomena to simple elements to adopt a distant, non-interactive stance towards the research. Positivists reject the notion of researcher bias and automatically exclude biases (and the researcher's influence) on the study's outcomes (Alharahsheh & Pius, 2020:41). | Critical realists believe that observable phenomena provide credible data and facts (Kalelioğlu, 2020:86); therefore, realists often consider non-scientific sources as acceptable sources of knowledge. These researchers limit the value of rightness to being relatively correct rather than being absolutely right. However, critical realists acknowledge the existence of inaccuracies and misinterpretations of knowledge (Saunders *et al.,* 2020:119). | Interpretivists believe that knowledge is intentionally constituted through a person's lived experiences. As such, these researchers believe that the inquirer and inquired are infused into a single entity (Travis, 1999:1042). Interpretivist believe that theories and concepts are too simplistic and not encompassing all worldviews (Alharahsheh & Pius, 2020:42). Interpretivists state their subjectivity and approach their research from a realised bias. | Postmodernists maintain that no one knowledge source is better than another and rejects the notion that what is considered 'truth' and 'knowledge' can be dictated by dominant ideologies (Cassell *et al.,* 2018:87). These researchers maintain that knowledge cannot be universal because meanings cannot be fixed (Kalelioğlu, 2020:86). Therefore, no independent reality exists and there are no facts, only interpretations resulting in multiple ways of 'knowing' (Saunders *et al.,* 2020:145). | Pragmatists believe that the best method solves emerging problems. Consequently, depending on the research question, both observable phenomena and subjective meanings can provide acceptable knowledge. Pragmatists focus on practical applied research, integrating different perspectives and methods to help interpret the data (Saunders *et al.,* 2020:119). |
| **Axiology** | | | | |
| Axiology is a branch of philosophy that studies judgements about value (Saunders *et al.,* 2020:116); in particular, it is concerned with how the values and assumptions of the researcher influence the scientific process as well as what actions the researcher takes with the research produced (Leavy, 2014:83). | | | | |

| Positivism | Critical realism | Interpretivism | Postmodernism | **Pragmatism** |
|---|---|---|---|---|
| In positivist studies, research is undertaken in a value-free way (Alharahsheh & Pius, 2020:41), i.e. the researcher is independent of the data and maintains an objective stance (Saunders *et al.,* 2020:119). An existing theory is used to develop hypotheses. | In critical realist studies, research is value-laden. The critical realist believes that the researcher is biased by world views, cultural experiences, and upbringing (Saunders *et al.,* 2020:119). Nevertheless, the researcher tries to minimise biases and errors by being as objective as possible. | In interpretivist studies, research is value bound; the interpretivist researcher is part of what is being researched (Alharahsheh & Pius, 2020:42). Therefore, the interpretivist researcher cannot be separated from the research but is subjective and reflexive (Saunders et al., 2020:119). | In postmodern studies, research is value constituted, meaning the researcher and the research are embedded in a power relationship. Some research narratives are repressed and silenced at the expense of others. Postmodern researchers are, therefore, radically reflective (Saunders *et al.,* 2020:145). | In pragmatic studies, research is value-driven. Axiological assumptions precede ontological and epistemological propositions, meaning the purpose of research should be placed in higher regard than philosophical assumptions (Mir & Jain, 2018:32). Saunders *et al.* (2020:119) stated that pragmatists consider both objective and subjective points of view. |
| **Typical methods** (as outlined by Saunders *et al.* (2020:144–145)) | | | | |
| ▪ Quantitative research methods are mainly employed (for example, survey and experimental research).<br>▪ Positivist's research is highly structured.<br>▪ Large samples are used.<br>▪ Quantitative statistical measurement and analysis are employed.<br>▪ Findings and conclusions are based on deductive reasoning. | ▪ Critical realist studies do not favour a specific method but mixed methods are encouraged.<br>▪ Choice of method(s) depend(s) on the research question.<br>▪ Findings and conclusions are based on reproductive reasoning. | ▪ Qualitative research methods are mainly employed<br>▪ Small purposive, multipurpose sampling methods are used.<br>▪ An in-depth qualitative investigation.<br>▪ Multimethod analyses are used.<br>▪ Theme identification forms part of the data-analysis process.<br>▪ Findings and conclusions are based on inductive reasoning. | ▪ Qualitative research methods are mainly employed in postmodern studies.<br>▪ In-depth investigations of anomalies, silences, and absences are conducted.<br>▪ Findings and conclusions are based on deconstructive reasoning. | ▪ Mixed/multimethod research is used in pragmatist studies.<br>▪ Numerous combinations of qualitative/quantitative methods are used to design the research methodology.<br>▪ Pragmatists focus on design-based research, meaning the researcher prioritises the development of practical solutions to problems. |

**Source: Researcher's own compilation based on citations listed in the table.**

Table 7.1 outlines the three main philosophical assumptions within the most dominant business research philosophies, positivism, critical realism, interpretivism, postmodernism, and pragmatism. Additionally, Table 7.1 also describes the different research methods employed within each of these philosophies. Preceding Table 7.1, the researcher briefly mentioned that the research paradigm for this study is pragmatism. A rationale for *pragmatism* as the research philosophy is presented below.

- **Research philosophy: pragmatism**

As indicated in Table 7.1, pragmatism is a research approach that evaluates theories 'sensibly' and 'realistically' in terms of their practical applications rather than their theoretical assumptions. According to Melnikovas (2018:36), pragmatists base their philosophical assumption on the stance that, within a research study, it is possible to adapt both positivist and interpretivist positions, whichever works best for the particular research question. Additionally, Mir and Jain (2018:450) debated that pragmatists are problem-oriented, meaning pragmatist researchers place greater value on the open-ended process of refining knowledge than on limiting principles of what is proper, just, or efficient. For pragmatists, problems are never defined neatly and defining the problem is, in itself, an essential part of the problem resolution (Creswell, 2017:11). Therefore, the nature of the research question, research context, and likely research consequences are driving forces determining the most appropriate methodological choice. Pragmatists value both quantitative and qualitative research and the exact choice is contingent on the nature of the research question.

Pragmatism was considered the most appropriate research philosophy for this study. As stated above, pragmatists use the research question of a study as the driving force for determining the most appropriate methodological choices. In this study, the researcher reverted back to the research question and the gap in the literature (see Figure 7.1) throughout the research process to ensure that any methodological choices were to furnish the researcher with the best possibility of answering the research question. Since the body of knowledge concerning omnichannel SCI is scarce, following a pragmatic approach allowed the researcher to employ multiple research methods (Section 7.3.3) to study the problem. Additionally, as highlighted in

Table 7.1, pragmatists use specialist or theoretical knowledge in practical or functional contexts to investigate problems. Therefore, the findings of this study will ultimately provide practical solutions to guide managers in prioritising which dynamic capabilities to build within the omnichannel supply chain to integrate omnichannel processes effectively.

The next layer of Saunders *et al.*'s (2020:144) research onion considers the researcher's approach to the development of theory. The following section discusses the three main approaches: deductive, inductive, and abductive.

### 7.3.2 Approach to theory development

According to the research onion of Saunders *et al.* (2020:130), researchers need to explicitly consider the role of theory and theory development when designing the research process. Saunders *et al.* (2020:130), along with many other authors (Cassell *et al.,* 2018:59; Melnikovas, 2018:34; Mir & Jain, 2018:115), highlighted three approaches to reasoning (or the relationship between theory and the research project), namely deduction, induction, and abduction.

Table 7.2 provides a brief description of each of these approaches. In the section that follows Table 7.2, the researcher's rationale for taking an *abductive* approach to theory development is discussed.

**Table 7.2: Approaches to theory development**

| APPROACH TO THEORY DEVELOPMENT | DESCRIPTION |
|---|---|
| **Deduction** | Deduction refers to the process of deducing or drawing a conclusion from a principle already known or assumed, drawing inferences by reasoning from general to particular (The Oxford English Dictionary, 2022f). With deductive inferences, when a premise is true the conclusion must also be true. In deductive studies, data is collected to evaluate propositions and hypotheses related to an existing theory (Saunders *et al.,* 2020:153) and usually results in specific law-like conclusions (Melnikovas, 2018:38). Deductive studies aim to test theory (Trafford & Leshem, 2008:96). |

| APPROACH TO THEORY DEVELOPMENT | DESCRIPTION |
|---|---|
| **Induction** | Induction relates to the logical process of establishing a general proposition based on observation of particular facts (Zikmund *et al.,* 2013:44). With inductive inferences, known premises are used to generate untested conclusions. In inductive studies, data is collected to explore a phenomenon, identify themes and patterns, and create a conceptual framework (Saunders *et al.,* 2020:153). Inductive studies aim to develop or construct theory (Trafford & Leshem, 2008:96). |
| **Abduction** | In abductive studies, a researcher moves between inductive and deductive approaches to produce new hypotheses and theories to find the most likely explanation for the research findings (Melnikovas, 2018:34). Researchers taking an abductive approach to the research aim to arrive at the best explanation or 'best guess' from the point of view of an epistemic community (Mir & Jain, 2018:115). Consequently, with abductive inferences, testable conclusions are generated from known premises (Melnikovas, 2018:34). In abductive studies, data is used to identify themes and patterns in the development of conceptual frameworks. Subsequently, findings are compared with theory to develop generalisations and a conceptual framework (Saunders *et al.,* 2020:153). |

**Source: Developed by the researcher based on citations provided in the table**

From Table 7.2, it can be concluded that researchers can take three general approaches to theory development. The research question and what is known about the topic under investigation will significantly influence which approach is employed by a researcher. The following section provides a rationale for the use of *abduction* in this study.

- **Approach to theory development: Abduction**

Throughout this study, several references were made to the lack of research on omnichannel SCI and the capabilities retailers need to adapt to the changing omnichannel environment. Considering the modernity of omnichannel retailing, most omnichannel studies have been conducted either inductively or abductively (Höcker *et al.*, 2018:19; Lim *et al.*, 2018:313; Savastano *et al.*, 2019:478; Ishfaq, Davis & Gibson, 2021:4). Since the impact of omnichannel retailing on retail supply chains still presents scant academic research, this study followed an abductive approach, that is building rather than testing theory.

The two phases of data collection employed in this study are discussed in Section 7.4 and Section 7.5. However, to support the discussion of abduction, it should be mentioned that the document analysis was analysed deductively (based on a coding frame developed from literature). In contrast, the semi-structured interviews were analysed inductively (theory emerging from the data). Hence, through the application of abductive reasoning (moving back and forth between inductive and deductive analysis), the researcher was able to identify additional underlying explanations of the research findings.

As per Saunders *et al.*'s (2020:144) research onion, after determining the research philosophy and the approach to theory development, the methodological choices need to be made. The next section considers the methodological choices outlined by Saunders *et al.* (2020:144) and elaborates on the methodological choices pursued in this study.

### 7.3.3 Methodological choices

Methodological choices relate to the numerous data-collection techniques and data-analysis procedures a researcher needs to consider when designing their research process. Saunders *et al.* (2020:144) define methodological choices based on a complex or straightforward blend of qualitative and quantitative methods. Zikmund *et al*. (2013:113) defined qualitative business research as *"research that addresses business objectives through techniques that allow the researcher to provide elaborate interpretations of phenomena without depending on numerical measurement; its focus is on discovering true inner meanings and new insights".* Cooper and Schindler (2014:664) added that qualitative research is associated with a fundamental approach of exploration using interpretive techniques that seek to describe, decode, and translate meaning from the data. Therefore, qualitative research is not concerned with the frequency of occurrence of a particular phenomenon but rather the meaning behind the phenomenon.

Quantitative research, on the other hand, is defined by Sanders, Cogin and Bainbridge (2014:113) as *"… research [that] draws upon numeric data gathered using structured*

*and validated data-collection instruments to test hypotheses about the relationships between variables. Objectivity is prized, and the relationships among measures are reported based on statistical significance*". It is evident from these definitions that qualitative research collects textual data while quantitative research collects numerical data. Basias and Pollalis (2018:92) explained that some business researchers still view quantitative research as a stronger form of research than qualitative studies. However, Cassell *et al.* (2018:5) challenged this view by stating that there is increasing support for qualitative research, specifically owing to the richer interpretations it offers.

As seen from Figure 7.2, Saunders *et al.*'s (2020:144) research onion subdivides qualitative and quantitative methodological choices into three categories, namely mono-, multi-, and mixed-method. Melnikovas (2018:39) explained that *mono-methods* are used when the researcher employs a single quantitative or qualitative data-gathering technique. For example, a mono-quantitative study is a single survey while a mono-qualitative study only collects data via interviews. *Multimethod studies* refer to a research design with more than one data-collection and -analysis technique. Although multiple methods are utilised, multimethod studies are restricted within either a quantitative or qualitative research design. For example, a multimethod quantitative design uses surveys and experiments to analyse the data while a multimethod qualitative design uses interviews and focus group discussions as data-collection methods. The final methodological choice outlined in Saunders *et al.*'s (2020:144) research onion is mixed-method. Saunders *et al*. (2020:152) explained that, in general, the *mixed-method approach* refers to a research design where both quantitative and qualitative data-collection techniques and -analysis procedures are used. Mixed-method studies can either be conducted parallel, meaning the qualitative and quantitative data is collected and analysed at the same time, or sequential, meaning either the qualitative or quantitative data is collected and analysed before moving on to the other data-collection method.

- **Methodological choices: qualitative, multimethod research**

A *qualitative, multimethod research* was employed for this study. The rationale for this decision was not merely based on the scarcity of research within this topic, which complicates the quantitative testing of theory, but was also made in response to a call

from previous authors (Murfield *et al.,* 2017:286; Sorkun *et al.*, 2020:460) suggesting that current quantitative studies lack a comprehensive insight into the phenomenon under investigation. These authors called for in-depth qualitative studies to expand the body of knowledge on factors surrounding omnichannel supply chains. Additionally, since this study aimed to build a conceptual framework, a qualitative design aided the researcher in interpreting data on a topic that is still relatively undefined. According to Gobo (2005:75), one of the most significant advantages of qualitative data is that it allows the researcher the flexibility to adapt or tweak the data-collection instruments to ensure that the data are as inclusive as possible. This is in direct contrast to the rigidity of quantitative research.

The application of a multimethod research approach aided the researcher in balancing the data with literature and other sources (see Section 7.4). In addition, it allowed the researcher to investigate the different sides of the research problem. Siebers (2013:66) claimed that multimethod studies allow for well-grounded interpretations through the triangulation of findings. Techniques used to achieve triangulation between methods are discussed in Section 7.6.1.

### 7.3.4 Research strategies

Qualitative researchers may employ a ‘wide range’ of research strategies (Lanka *et al.,* 2021:2). Saunders *et al.* (2020:144) listed eight strategies often used by business researchers: experiments, surveys, case studies, archival research, action research, grounded theory, ethnography, and narrative inquiry. The list of research strategies provided by Saunders *et al.* (2020:144) should not be interpreted as a ‘complete list’ since there are many different interpretations among the proponents of each strategy. Mir and Jain (2018:31) agreed, adding that ‘research imagination’ has developed many new sub-paradigms within each research strategy which often blurs the lines between different strategies.

On further consideration of the eight research strategies outlined by Saunders *et al.* (2020:144), both experiments and surveys (which follow quantitative methodologies) were excluded from consideration for this qualitative study. The remaining six

strategies are case-study research (researching a particular contemporary phenomenon using multiple sources of evidence), archival research (research based on administrative records and documents as a principal source of data), action research (research is conducted in action rather than about an action), grounded theory (research with the aim of the theory development), ethnography (research about people's culture, habits, and differences), and narrative inquiry (research based on multiple sources of evidence to understand how people create meaning in their lives). This study employed *archival research* in the form of document analysis. In addition, the research *drew inspiration from grounded theory* as part of the semi-structured interviews data-collection process. The section below elaborates on the use of these research strategies in this study.

- **Research strategy: Archival research and taking inspiration from grounded theory**

As stated above, the researcher employed both archival research and elements of grounded theory as strategies in the data-collection process. This is discussed in more detail below.

- *Archival research*

Documentation and archival records are considered secondary resources. Bowen (2009:27) argued that organisational and institutional documents have been a staple in qualitative research for many years and hold several significant advantages. First, analysing documents can provide a researcher with a wealth of information they would not necessarily gather through other qualitative data-collection methods. Second, findings from a document analysis can contradict or confirm information gathered through other data-collection methods, such as interviews. Third, a document analysis allows the researcher to plot developments within a specific organisation/industry.

As briefly addressed above, this study followed two phases of data collection. Phase 1 consisted of a document analysis. During Phase 1, the integrated annual reports (IARs) of eight participating omnichannel retailers were analysed as a secondary data-analysis method. The purpose of an IAR is to provide a comprehensive narrative of an

organisation by putting the performance, business model strategy, and operations in the context of the organisation's financial, social, and environmental factors (Roman *et al.*, 2019:2). An IAR illustrates how the organisation's current operations may affect its long-term profits and explains, through information graphics and statistics, the connections between the organisation's various activities and how the different parts and processes of the organisation contribute to value creation. The document analysis added additional insights to the study's overall findings. For example, these reports allowed the researcher to determine to what extent the retailer is pursuing its omnichannel strategy. The sampling and data-analysis processes followed in Phase 1 (document analysis) is addressed in detail in Section 7.4 of this chapter.

- *Grounded Theory (GT)*

Noble and Mitchell (2016:36) described grounded theory (GT) as *"a research method concerned with the generation of theory, which is 'grounded' in data that has been systematically collected and analysed. It is used to uncover such things as social relationships and behaviours of groups, known as social processes… It is a general methodology for developing theory".* Grounded theory (GT) researchers argue that, in GT's 'purest' form, it is meant to be a flexible methodology for constructing new theory 'grounded' in empirical data (Cho & Lee, 2014:15; Creswell & Creswell, 2017:424; El Hussein, Kennedy & Oliver, 2017:1207). However, Cassell *et al.* (2018:240) stated that, when one studies the 'how to' book of GT, one quickly realises that GT advocates for specific fixed methodological techniques and procedures. As a result, GT scholars often criticise researchers for 'methods slurring', that is where researchers arbitrarily apply GT techniques and procedures to fit within the scope of their specific research (Cassell *et al.,* 2018:240; Saunders *et al.,* 2020:149). Nevertheless, Cassell *et al.* (2018:240) cautioned against the "*rigorous objectification of GT procedures*", arguing that it could lead to the 'paralysis' of a research study. Morse *et al.* (2016:14) added that GT should not be viewed as a 'cookbook' or formulaic method. These authors explained that, whenever GT is applied, it needs to be adapted to suit the research question, situation, and participants in the research.

It should be stated from the outset that the researcher did not subscribe to the purist GT approach. Instead, the researcher followed other researchers' approaches of being 'inspired by notions of GT' (Neergaard et al., 2009; Hübner *et al.,* 2016; Schriber & Löwstedt 2020:379), which means that the research strategy followed in this study did not adhere to the strict list of requirements set out by a specific research strategy (GT in this case). Rather, the researcher 'borrowed' useful theoretical and methodological techniques of specific strategies to use as inspiration for their own research design (Guest, MacQueen & Namey, 2012:15). Although some researchers criticised the decision not to follow a strict research strategy, others commended such research studies for being innovative and creative (Morse *et al.,* 2016:14). This study took the latter approach as the researcher believed that being confined to one strategy and its preconditions was not practically possible (see discussion below) nor did it allow the researcher the highest probability of answering the research question, which is a fundamental focus of a pragmatist's research.

One of the main reasons for not following a 'purist GT approach' is the controversial factor of postponing the literature review until after the primary data had been collected and analysed (El Hussein *et al.,* 2017:1199). Pure grounded theorists posited that, to remain 'open-minded' or 'without theoretical preconceptions', the writing of the literature review should be postponed until after the data had been collected (Morgan, 2020:69). However, several authors refuted this reasoning and offered a string of arguments against the postponement of the literature review (Dunne, 2011:115; El Hussein *et al.,* 2017:1199). One argument that was particularly relevant to this study was the impracticality of such a postponement for PhD students, whose research funding, ethics approval, and progression through the doctoral process are all heavily dependent on producing a detailed literature review. Some authors asserted that it is ludicrous to pretend that researchers can be a 'tabula rasa', arguing that, for researchers who are experienced in a particular field, the idea that they could somehow jettison all their prior knowledge of the field is unfeasible.

In terms of this study, the researcher also found the postponement of the literature review to be unfeasible, not only for the reasons listed above but also since the topic being investigated in this study is nuanced and the researcher needed to understand many complex factors to be able to pose follow-up questions to participants, where

necessary. Therefore, in line with other PhD studies, the researcher of this study conducted an extensive literature review before commencing with primary data collection.

As stated above, this research was inspired by notions of GT. The most noteworthy of these was the notion of *theoretical sampling*. Gentles *et al.* (2015:1779) described theoretical sampling as a process in which the evolving theory guides data gathering to develop categories in terms of properties and dimensions. Compared to other sampling methods, the main characteristic of theoretical sampling is that it involves sampling decisions being made *after* some data have been collected. This study used theoretical sampling to identify participants for Phase 2 of the data collection, which consisted of semi-structured interviews with top-level managers of different omnichannel retailers in South Africa. The theoretical sampling method employed in the study is outlined in detail as part of the discussion of the semi-structured interviews (see Section 7.5.1).

The final 'layer' of Saunders *et al.*'s (2020:144) research onion is time horizons, which is discussed in the next section.

### 7.3.5 Research time horizons

Time horizons or time dimensions in research studies can be subdivided into longitudinal or cross-sectional studies (Cooper & Schindler, 2014:128). Longitudinal studies are defined by Cooper and Schindler (2014:660) as *"...repeated measures over an extended period of time, tracking changes in variables over time; includes panels or cohort groups"*. The main advantage of a longitudinal study is that, by observing people or events over time, a researcher can exercise a measure of control over variables and track how these variables change during interventions (Saunders *et al.,* 2020:155). Cooper and Schindler (2014a:655) defined a cross-sectional study as *"[a] study that is conducted only once and reveals a snapshot of one point in time"*. This study's time dimension is classified as *cross-sectional*.

- **Time dimension: cross-sectional**

Saunders *et al.* (2020:155) argued that, as with most of the decisions outlined in the research onion, a researcher should base time dimension decisions on the research question. This study aimed to answer the question: *What dynamic capabilities promote the internal SCI of omnichannel retailers?* To answer this question, this study implemented a two-phased data-collection process, namely document analysis (Phase 1) and semi-structured interviews (Phase 2).

Although the IARs of omnichannel retailers (Phase 1) were investigated over a five-year period (discussed in more detail in Section 7.4), the investigation did not entail an in-depth analysis of how the reporting on dynamic capabilities has changed over this period. The purpose of the document analysis in this study was to supplement (or triangulate) the empirical data collected in Phase 2 (semi-structured interviews). Additionally, the data for Phase 2 of the study were collected within two months (February and March 2021). Accordingly, the time horizon of this study should instead be classified as cross-sectional and not longitudinal.

The time horizon decision concluded the discussion of Saunders *et al.*'s (2020:144) research onion. Table 7.3 serves to conclude and summarise Section 7.3 of this chapter by listing the different research approaches discussed above.

**Table 7.3: Research approaches followed in this study**

| RESEARCH APPROACH | RESEARCH APPROACH TAKEN IN THIS STUDY |
|---|---|
| Philosophy | Pragmatism |
| Approach to theory development | Abduction |
| Methodological choices | Qualitative, multimethod |
| Research strategies | Archival research, 'inspired by Grounded Theory' |
| Time horizons | Cross-sectional |

**Source: Researcher's own compilation**

In Figure 7.3, it is noticeable that, after a researcher has determined a design strategy (as outlined in Section 7.3), sampling and data-collection procedures should be considered. To facilitate the discussion, Section 7.4 considers the sampling, data

collection, and data-analysis procedures followed in Phase 1 of this study (document analysis). After that, Section 7.5 discusses the data-collection procedures followed in Phase 2 of this study (semi-structured interviews).

## 7.4 PHASE 1: DOCUMENT ANALYSIS

When researchers design data-collection procedures, they need to determine if the findings should be based on empirical or non-empirical research. The significant difference between empirical and non-empirical research is the collection of new data to solve managerial dilemmas as opposed to the use of existing data. Empirical research can be classified into the collection of primary and secondary data. Primary data is defined by Cassell *et al.* (2018:564) as data that are "*obtained directly and actively by the researcher from participants to address a specific problem".* Secondary data can be defined as data generated as a "*result of studies done by others and for different purposes than the one for which the data are being reviewed"* (Cooper & Schindler, 2014:663).

This study relied on both secondary and primary empirical data to address the research question. To facilitate the discussion on sampling and data-collection procedures employed in this study, the sampling and data-collection procedures of Phase 1 are discussed first, followed by Phase 2.

### 7.4.1 Document analysis: sampling

Document analysis is a form of qualitative research that uses a systematic procedure to analyse documentary evidence and answer specific research questions (Gross, 2018:545). Document analysis can be conducted as a standalone study or as a component of a larger qualitative or mixed-method study. Document analyses are often used to triangulate findings gathered from another data source (for example, interview or focus-group transcripts, observation, surveys) (Bowen, 2009:29). Cassell *et al.* (2018:371) posited that, when document analyses are used in triangulation, documents can corroborate or refute, elucidate, or expand on findings across other data sources, which helps to guard against researcher bias.

As stated above, document analysis can provide a researcher with information they are not able to obtain from other data-collection sources. Although the novel coronavirus (COVID-19) pandemic has created an increased demand for online shopping in South Africa, in 2020 e-commerce sales still only accounted for 2% of South African consumers' total retail spend (Daniel, 2020). As a result, the e-commerce landscape in South Africa is exceedingly competitive, with many retailers not willing to openly share e-commerce strategies and processes with anyone outside of the organisation (Businesstech, 2021b). Considering this statement, the researcher was aware that gaining access to some of the information that could add value to this study would be challenging. Nevertheless, large retailers listed on the Johannesburg Stock Exchange (JSE) must annually prepare an integrated report, providing the researcher with access to information she was not able to obtain in another way (Roberts, 2017). The purpose of an IAR, as outlined by The International Integrated Reporting Council (2021:5), is *"to explain to providers of financial capital how an organisation creates, preserves or erodes value over time. An integrated report benefits all stakeholders interested in an organisation's ability to create value over time, including employees, customers, suppliers, business partners, local communities, legislators, regulators and policy-makers".*

Additionally, the International Integrated Reporting Council (2021:5) stated that one of the fundamental principles of an IAR (and a factor that is of particular relevance for this study) is the principle of 'integrated thinking'. Integrated thinking is defined by the International Integrated Reporting Council (2021:53) as *"the active consideration by an organisation of the relationships between its various operating and functional units and the capitals that the organisation uses or affects. Integrated thinking leads to integrated decision-making and actions that consider the creation, preservation or erosion of value over the short, medium and long-term".* Roberts (2017) argued that, by focusing organisations' attention on integrated thinking, those organisations who were already integrated used the process of integrated reporting to develop formalised integrated management models while, for other organisations, integrated reporting led to integrated thinking. Considering the purpose and scope of IARs as outlined above, the researcher believed that an analysis of South African omnichannel retailers' IARs would add value to the research study and findings.

For the purposes of this study, 40 IARs of eight participating omnichannel retailers were content analysed as a secondary data-analysis method. The following section describes the four-step approach followed by the researcher in selecting the documents for inclusion in the analysis.

#### *7.4.1.1 Document selection: a four-step approach*

The first decision the researcher made was determining which documents would be included in the analysis. To aid the researcher with this decision, *purposive homogeneous* sampling was considered necessary. Saunders *et al.* (2020:593) define homogeneous sampling as *"a purposive sampling method which focuses on selecting cases from one particular subgroup in which all the members are similar".* This sampling method allowed the researcher to apply several inclusion and exclusion criteria to identify the documents to be analysed.

Although these reports are publicly available, it should be stated that the researcher does not explicitly name the retailers or the reports that were included in this investigation. Most of the retailers who met the inclusion and exclusion criteria for Phase 1 of data collection agreed to be interviewed as part of Phase 2 of data collection. However, this agreement was based on strict confidentiality conditions. One of these conditions was that the researcher accepted full responsibility to ensure each retailer's and participant's anonymity. Since the document analysis is used to support the findings presented as part of the data analysis for Phase 2 (see Chapter 8), naming retailers as part of the document analysis could potentially expose the identities of interviewed participants. Taking the responsibility of anonymity seriously, the researcher decided against explicitly identifying the retailers included in the document analysis.

The section below details the inclusion and exclusion criteria for this study and provides a step-by-step description of how the researcher selected the documents for Phase 1 of data analysis.

- ***Step 1: Participating omnichannel retailers should be listed on the JSE***

Since the annual issuing of IAR is only compulsory for JSE-registered organisations, only JSE-listed organisations were considered for the document analysis. In determining the IARs to be included in the document analysis, an official list of all registered organisations on the Johannesburg Stock Exchange (JSE) was obtained from the JSE in October 2020. The original list contained 338 registered organisations.

- ***Step 2: Participating omnichannel retailers should be classified as general retailers***

The list of registered organisations on the JSE was subdivided into several categories, for example general retailers, mining companies, bank holding companies, oil and gas companies, among others. Since this study focused on retailers who sell merchandise to customers, only organisations classified as 'general retailers' were suitable for inclusion in the analysis. General retailers refer to retailers who sell a wide range of goods to customers; these retailers are often subdivided into different departments. Of the 338 JSE-registered organisations, only 27 organisations were classified as general retailers and were thus included for further consideration.

- ***Step 3: Participating omnichannel retailers should identify themselves as omnichannel retailers in their latest integrated report (2020)***

Of the 27 retailers who met the two inclusion criteria listed above (JSE-listed organisations classified as general retailers), 13 retailers identified themselves as omnichannel retailers in their most recent IAR (dated 2020). This was determined by downloading all 27 general retailers' most recent IARs and searching for the keyword(s) 'omnichannel', 'omni', and 'omni-channel'. If one of these keywords appeared in the IAR, the researcher examined the context in which the keyword appeared and accepted or rejected the relevance of the keyword within the context of the study. During this phase, the researcher also ensured that all omnichannel retailers had both a brick-and-mortar and online presence to ensure that the retailers included in the analysis shared similar characteristics as required by homogeneous sampling.

- ***Step 4: Participating omnichannel retailers have followed an omnichannel strategy for at least five years***

To determine how many reports would be included in the document analysis, the researcher visited each of the 13 retailers' shareholder websites (where the IARs were located) to ascertain when they first identified themselves as omnichannel retailers. Considering the researcher's timeframe for conducting the analysis, it was not feasible to include all 13 JSE-listed omnichannel retailers' reports as well as all the years they have identified themselves as omnichannel retailers. The researcher decided to apply an exclusion criteria to the document selection, in line with the recommendations of Gross (2018:4). These authors stated that reducing the potentially enormous assortment of documents is a vital step in the document selection process to ensure authenticity and representativeness. The researcher decided that retailers who have followed an omnichannel strategy for **more than five years (2016 – 2020)** would be included as part of the analysis. This offered the researcher the opportunity to include only the most recent documents in the analysis. Eight of the 13 retailers had followed an omnichannel strategy for more than five years and were included in the document analysis. In total, 40 IARs (five reports for each of the eight retailers) amounting to 4 205 pages of document data were included in the analysis.

The following section aims to detail the specific techniques and procedures that were used in analysing the documents.

### 7.4.2 Document analysis: data-analysis technique and procedure

Zikmund *et al.* (2013:70) stated that, in its simplest form, data analysis may involve determining consistent patterns and summarising the relevant details revealed in the investigation. When researchers conduct a documents analysis, many epistemological or ontological approaches can be employed (Gross, 2018:5). To analyse the documents, the researcher relied on qualitative content analysis. The techniques followed to conduct the document analysis are outlined below.

### *7.4.2.1 Content analysis*

Elo and Kyngäs (2008:107) defined content analysis as: "*…a method of analysing written, verbal or visual communication".* Content analysis is considered to be more qualitative in nature as there is no extensive statistical analysis. This method focuses on building an understanding of the meaning of communication and categorising significant processes. According to Cooper and Schindler (2014:654), content analysis is a flexible and widely applicable tool for measuring the semantic content of communication. As with any data-analysis method, there are certain advantages and disadvantages the researcher was mindful of when using content analysis. Table 7.4 lists these advantages and disadvantages.

**Table 7.4: Advantages and disadvantages of content analysis as a data-collection method**

| CONTENT ANALYSIS AS A DATA-COLLECTION METHOD | |
|---|---|
| **ADVANTAGES** | **DISADVANTAGES** |
| ▪ Existing theory is supported and extended (Hsieh & Shannon, 2005:1283). | ▪ Using existing theory, the researcher approaches the data with an informed but strong bias (Leavy, 2014:374). |
| ▪ Content analysis looks openly at communication via texts or transcripts. Therefore, many essential aspects of social interaction can be captured and investigated (Cho & Lee, 2014:17). | ▪ Content analysis is often criticised as a superficial analysis method since it only consists of word counts (Campion & Campion, 2020:295). |
| ▪ Content analysis is considered a highly reliable data-analysis methods since other researchers can follow the same techniques to validate the findings (Williams, 2015). | ▪ Content analysis can be an extremely time-consuming and labour-intensive process when the coding frame becomes complex (Dicle & Dicle, 2018:279). |
| ▪ Content analysis allows the researcher to process large quantities of data (Cho & Lee, 2014:17). | ▪ The flexibility of conducting content analysis often leads to inconsistencies and a lack of coherence in the data (Vaismoradi, Turunen & Bondas, 2013:398). |

**Source: Researcher's own compilation based on cited authors**

Although content analyses pose some challenges, it can be established from Table 7.4 that content analysis as a data-analysis technique offers researchers many advantages. Content analysis can be conducted in three distinct ways: *conventional, summative,* and *directed* (Hsieh & Shannon, 2005:1279; Assarroudi *et al.,* 2018:48). Table 7.5 briefly describes each of these content analysis approaches.

**Table 7.5: Three approaches to content analysis**

| APPROACH TO CONTENT ANALYSIS | DESCRIPTION |
|---|---|
| **Conventional content analysis** | ▪ This approach is applied when little is known about the phenomenon being studied.<br>▪ Researchers avoid using preconceived categories; instead, the categories are recognised from the data.<br>▪ New insights emerge from the data. |
| **Directed content analysis** | ▪ This approach is used when an existing theory or prior research exists about an incomplete phenomenon or would benefit from further research.<br>▪ Directed content analysis aims to authenticate or extend a theoretical framework conceptually.<br>▪ Directed content analysis is guided by a more structured process than conventional content analysis as it uses codes from existing theories or frameworks.<br>▪ The results of directed content analysis offer supportive and non-supportive evidence for a theory. |
| **Summative content analysis** | ▪ The focus is on drawing meaning and understanding from certain words in the data.<br>▪ The frequency count of words is used to determine the importance of each code identified. |

**Source: Adapted from Hsieh and Shannon (2005:1279) and Assarroudi *et al.* (2018:48)**

Considering the three approaches to content analysis outlined in Table 7.5, it can be concluded that this study followed a *summative content analysis*. The dataset size (see Section 7.4.1) largely determined the extent to which data analysis could be performed. It was deemed unfeasible within the timeframe of this study to conduct an in-depth content analysis (conventional or directive) on all 40 IARs. The IARs were analysed based on a coding frame consisting of keywords identified from the literature. Chapter 4 (Table 4.2, Table 4.5 and Table 4.7), Chapter 5 (Table 5.3), and Chapter 6 (Table 6.3) all summarised the dynamic capabilities identified from the literature. Before conducting the content analysis, a quality review process of the coding frame was conducted wherein the coding frame was re-evaluated and, in some cases, recoding was conducted to enhance the quality of the data analysis. This process included removing redundant codes and consolidating closely related codes. Based on these tables, the researcher developed the coding frame to conduct the deductive summative content analysis (deductive approaches were addressed in Table 7.2).

To avoid duplication, all six tables listed above will not be presented here again. The complete coding frame is available for perusal in Annexure A. To facilitate the discussion on how the document analysis was conducted, Table 7.6 represents an extract from the coding frame used to analyse the IARs.

**Table 7.6: Extract of the coding frame used in the content analysis of the documents**

| | | | IN LITERATURE | COLUMN 1: KEYWORDS BASED ON LITERATURE | COLUMN 2: KEYWORDS BASED ON THE DOCUMENT ANALYSIS |
|---|---|---|---|---|---|
| Supply chain integration (SCI) | **Information Integration** | The integration of quality, multidirectional supply chain information through cloud-based information technology (IT) systems facilitates decision-making by linking higher-level strategic planning with lower-level transactional systems in the organisation. Through organisational knowledge management, shared meanings and interpretations of the information are developed to guide organisational decision-makers. | | | |
| | DC1 | **Data-collection and -analysis capability:** Data are collected, integrated, and analysed from various channels and touchpoints within an organisation, using sophisticated technologies such as artificial intelligence (AI) and machine learning (ML). Through an organisation's data-mining capability, actionable insights can be obtained and certain processes such as demand forecasting can be automated. | **Chapter 4 Table 4.2** | Big Data<br>artificial intelligence (AI)<br>machine learning (ML)<br>automation | technical<br>data<br>analytical<br>database<br>intelligence |
| | DC2 | **Highly functional information technology (IT) capability:** A highly integrated back-end IT system powered by cloud-based technologies and ERP systems that allow organisations to collect and analyse large amounts of data. The IT system facilitates data sharing and collaboration across internal organisational functions, leading to strategic planning and better decision-making. | **Chapter 4 Table 4.2** | information technology<br>IT systems<br>information solutions<br>cloud<br>legacy systems | information*<br>systems*<br>legacy*<br>cloud* |

**Source: Developed by the researcher based on literature**

From Table 7.6, it is noticeable that the table contains two columns each containing a list of keywords (Column 1 and Column 2). Column 1 indicates keywords for each dynamic capability (e.g. DC1) identified as part of the literature review. However, since academic and organisational 'jargon' may differ, it was critical to evaluate the primary keywords which appear in the IARs to identify possible synonyms and inflected forms of keywords to be included or excluded in the analysis. The section below outlines the techniques and procedures used by the researcher to obtain the keywords listed in Column 2 of the coding frame. The analysis of the IARs was conducted in two systematic stages.

- ***Stage 1: Text mining through word lists***

Text mining refers to the discovery of new, previously unknown information, by computer, through the automatic extracting of information from different written resources (Hearst, 2003). Dicle and Dicle (2018:279) stated that, although

sophisticated phrase-recognition algorithms can be expensive and need frequent adjustments, these computer programs, operated through the machine automation of the content, have become one of the most reliable and replicable ways to conduct content analysis.

The qualitative data-analysis program ATLAS.ti offers researchers an array of different functions to analyse textual data. Of particular relevance for document analysis is the text-mining functionalities of ATLAS.ti, for example creating detailed word lists or word clouds. According to ATLAS.ti (2021), word lists *"…offer word 'crunching' capabilities for a simple content analysis. This feature creates a list of word frequency counts, and some additional metrics like word length, and percentage of occurrence within or across all selected entities".* Word lists are often used in large datasets as a means to explore the data. Cooper and Schindler (2014:376) suggested that researchers carry out a thorough data familiarisation and data preparation process before analysing the data, as discussed below.

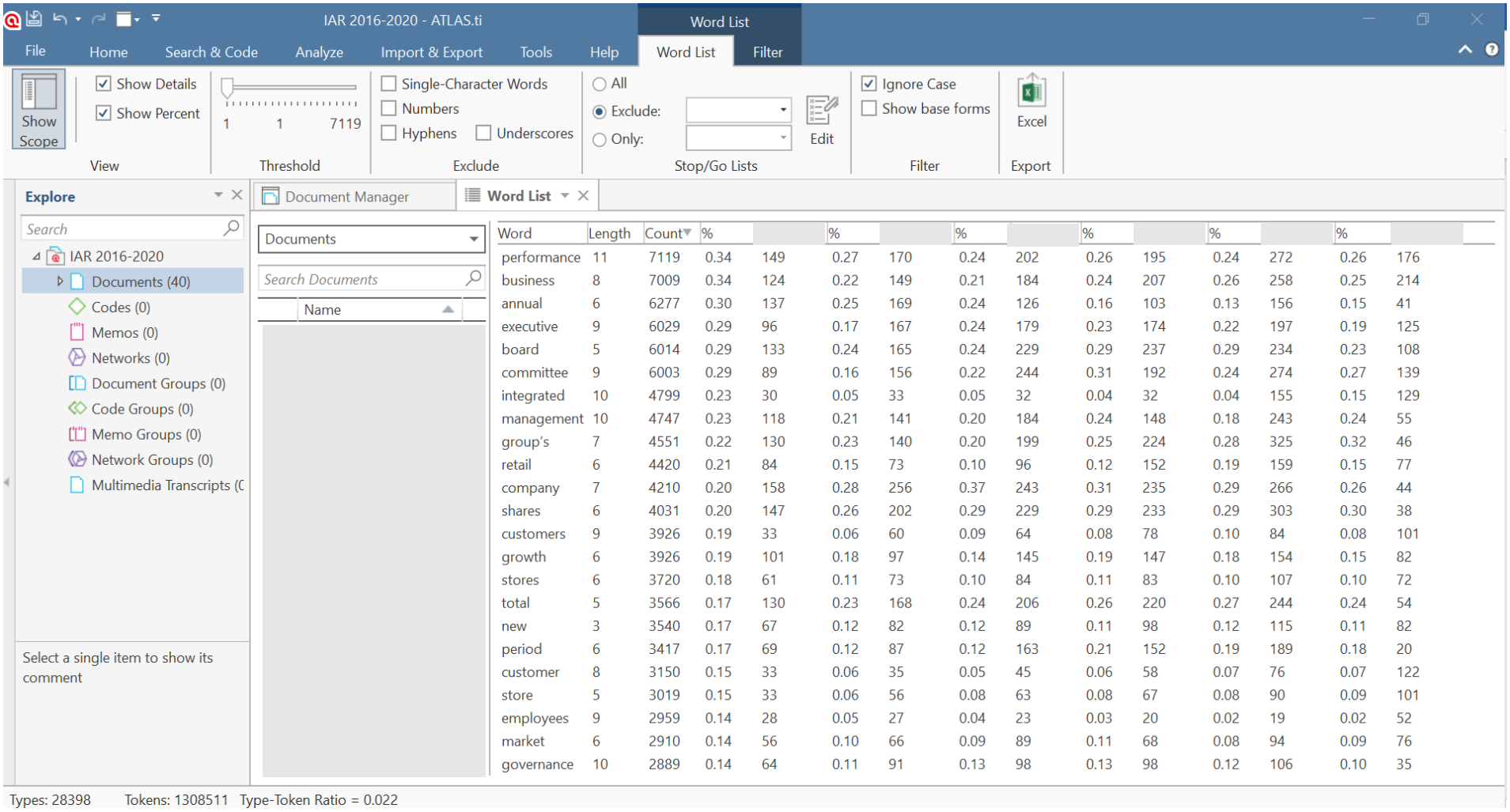
- *Data familiarisation*

Data familiarisation was of particular importance in this study. Reading the IARs gave the researcher access to a wealth of information on many factors concerning omnichannel SCI in South Africa. For example, the researcher developed an understanding of basic fulfilment methods employed by South African retailers and how spending on omnichannel processes has evolved over the 5-year investigation period. Additionally, the reading of each IAR served as a valuable preparation tool during the semi-structured interview phase of this study. This allowed the researcher to conduct more interactive interviews as interviewees did not need to explain some of their most basic operational procedures.

- *Data preparation*

To start with the document analysis, the researcher first had to prepare the data. The researcher started the process by creating a word list on ATLAS.ti based on all 40 IARs. Figure 7.4 serves as a visual representation of the word list created in ATLAS.ti.

**Figure 7.4: Example of word list based on the IARs**




**Source: Generated by the researcher on ATLAS.ti**

Figure 7.4 represents an example of the word list created on ATLAS.ti. To preserve the anonymity of the documents included in the analysis, specific identifiers were removed from the screen capture. The column ‘word’ lists all the words identified by ATLAS.ti from IARs. The column ‘length’ represents the character length of each word. The column ‘count’ indicates the frequency with which each word appeared across all 40 IARs. Tabs to the right of the ‘count’ column indicate the frequency of each word within an individual report. The initial word list contained over 70 000 words. Therefore, extensive refinement of the word list was required. In order to refine the word list, the refinement process outlined by Friedman, Breitzer and Solecki (2019:58) was followed. First, a ‘stop word list’ was applied to reduce redundant words (such as ‘the’, ‘a’) as well as numbers (such as R1.3 mil). Second, the word list was sorted in term of frequency, from largest to smallest, to seek the most frequently used keywords. After the automatic data clean-up processes were concluded, the researcher started the final data preparation process, which involved the tedious task of manually reviewing each keyword to determine its relevance within the study context. Using the ‘search within context’ function on ATLAS.ti, the researcher determined the context of a specific keyword and if it should be added to the coding frame.

After the initial refinement processes (outlined above), a list of 299 keywords was considered relevant for inclusion in the coding frame. However, the 299 keywords still included some synonyms (for example, ‘customers’, ‘clients’, ‘consumers’), some inflated terms (for example, ‘capabilities’, ‘capability’), and some grammar and spelling differences (for example, ‘omni-channel’, ‘omnichannel’). A process of re-coding (merging) some of the keywords was required to create the final word list. Based on this step of the document analysis, a total of 87 keywords were added to the coding frame (see Annexure A, column 2). The completed coding frame can be found in Annexure A.

After the data preparation and coding frame development was completed, the word list was exported to Excel to conduct basic frequency analyses. In Excel, each keyword was assigned to its relevant dynamic capability (for example, DC1) and category (for example, information integration) based on the coding frame. Dicle and Dicle (2018:379) argued that at the core of most content analyses lies the investigation of frequency distributions of individual keywords.

Neale, Miller and West (2014:175) stated that many authors believe that the use of numbers in qualitative studies are inappropriate and tend to detract from the more valuable, detailed, and nuanced data that are collected in qualitative research. However, Hannah and Lautsch (2011:15) disagreed, arguing that the quantification or semi-quantification of data, such as the inclusion of frequency counts, in certain qualitative studies can signal *"that the findings were derived employing a rigorous, objective analysis of the qualitative data".* Accordingly, Hannah and Lautsch (2011:15) debated that, in some qualitative studies, 'counting' or the inclusion of numerical data provides significant advantages. First, quantified data can complement and enhance findings. Second, it can improve the transparency of data analysis. Third, it can provide precision and context to statements and findings. Fourth, quantified data enable patterns in the data to emerge with greater clarity, increasing the meaning and focus of key findings.

In this study, the addition of frequency counts allowed the researcher to identify which dynamic capabilities and categories retailers reported on the most. In turn, this allowed the researcher to focus on particular questions during the semi-structured interview or to pose specific follow-up questions. The document analysis also comprised a second stage of analysis. During the second stage, the researcher used the coding frame developed during Phase 1 of the document analysis to determine what was reported about each keyword in the IARs. Stage two of the document analysis is discussed below.

- ***Stage 2: Automatic (and manual) coding based on the coding frame***

According to ATLAS.ti (2021) *"with the recent advances in deep learning, the ability of algorithms to analyse text has improved considerably. Creative use of advanced artificial intelligence techniques can be an effective tool for doing in-depth research".* ATLAS.ti (2021) added that integrated artificial intelligence tools build an additional layer of depth into data analysis, allowing researchers to identify elements of the data they had not previously considered. During the second phase of the document analysis, the researcher used the 'text search' function on ATLAS.ti to code relevant sections of the data based on the coding frame developed as part of stage one of the document analysis. This is referred to as deductive coding (Eisend & Kuss, 2019:88;

Campion & Campion, 2020:290). Linneberg and Korsgaard (2019:264) debated that deductive coding aids the researcher by focusing the coding process on those factors that are known to be important from the existing literature. In addition, the authors argued that the main advantage of deductive coding is that it ensures structure and theoretical relevance from the start of the coding process. By following a deductive coding process, the researcher used the keywords obtained from both the literature review (Column 1 in Table 7.6/Annexure A) and Stage 1 of the document analysis (Column 2 in Table 7.6/Annexure A) in the 'text search' function of ATLAS.ti. Once a search was completed, the researcher manually reviewed the context wherein each keyword appeared to determine if the keyword should be coded or not. This process was followed for each keyword listed in the coding frame.

The findings of the document analysis were used to support or explain the findings of the semi-structured interviews and are thus presented in Chapter 8 (Data analysis). The following section addresses the second (and primary) data-collection method: semi-structured interviews.

## 7.5 PHASE 2: SEMI-STRUCTURED INTERVIEWS

An interview is a purposeful discussion between two or more people (Saunders *et al.,* 2020:313) and is a popular qualitative data-collection method used by researchers (McGrath, Palmgren & Liljedahl, 2019:1002). According to Picot-Coupey *et al.* (2016:344), relatively unexplored and poorly understood topics require direct access to the phenomenon, and this also served as the rationale for conducting interviews in this study. As previously mentioned, there are limited literature sources investigating omnichannel supply chains. As a result, interviews were selected as the primary data-collection method for the study.

Interview structures vary, based on the research question and the researcher's stance on the proper level of proximity to the participants (Cooper & Schindler, 2014b:153). Accordingly, interview structures are commonly divided into three classifications: *structured*, *unstructured*, *or semi-structured interviews* (Cooper & Schindler, 2014b:153; Cassell *et al.,* 2018:72; Bairagi & Munot, 2019:37). In *structured*

*interviews*, individuals are asked questions based on a detailed, predetermined interview protocol (Bairagi & Munot, 2019:37). Since structured interviews lead to the collection of standardised (and often quantifiable) data, no variation or follow-up questions are allowed in this format (Saunders *et al.,* 2020:320). *Unstructured interviews* begin with no specific questions for a participant. The interviewer customises the interviews to each participant (Cooper & Schindler, 2014b:153). In *semi-structured interviews*, the interview starts with a list of questions to be covered during the interview but questions may vary from interview to interview (Saunders *et al.,* 2020:320). The flexibility of semi-structured interviews allows some questions to be omitted from a particular interview. The researcher can use their own discretion to facilitate flow in the conversation by changing the order of interview questions if required. A researcher might also add questions (or probing questions) to explore the nature of factors within a particular organisation in more depth (Cooper & Schindler, 2014b:153). Bairagi and Munot (2019:37) concluded that semi-structured interviews combine the advantages of structured and unstructured interviews, leading to greater depth in the data collected. Therefore, for the purpose of this study, *semi-structured interviews* were selected for data collection.

Considering that the data collected during the semi-structured interviews formed the primary data-collection method (with the document analysis supporting or explaining its findings), it would be significant to demonstrate why interviews provided the study with reliable primary data. Table 7.7 summarises the advantages and disadvantages of interviews as a data-collection method.

**Table 7.7: Advantages and disadvantages of interviews as a data-collection method**

| **INTERVIEWS AS A DATA-COLLECTION METHOD** | |
|---|---|
| **ADVANTAGES** | **DISADVANTAGES** |
| ▪ **Thick data can be collected –** the detailed data collected from interviews far exceed the quality of data collected by quantitative methods (Tustin *et al.,* 2005:164). | ▪ **Cost** – interviews as a data-collection method are sometimes considered the most costly in terms of time and money (Cooper & Schindler, 2014:225). |
| ▪ **Participants can be probed –** with interviews, the researcher asks additional questions, increasing the | ▪ **The reluctance of participants to participate –** people are reluctant to make time in their schedule to talk to |

| INTERVIEWS AS A DATA-COLLECTION METHOD | |
|---|---|
| **ADVANTAGES** | **DISADVANTAGES** |
| depth of the data collected (Cooper & Schindler, 2014:225). | strangers (Cooper & Schindler, 2014:225). |
| ▪ **Increased control of the researcher –** participants can be pre-screened to ensure they meet the inclusion and exclusion criteria (Cooper & Schindler, 2014:225). | ▪ **Bias –** with interviews, the researcher can potentially affect the outcome of the data collected (Cooper & Schindler, 2014:225). |
| ▪ **Flexibility –** the interviewer can change the interview to suit the participant and gain a better response rate, for example the language of the interview (Cooper & Schindler, 2014:225). | ▪ **Generalisability –** can lead to a decrease in the reliability of the data collected (Cooper & Schindler, 2014:225). |
| ▪ **Individual responses identifiable –** interviews allow the researcher to link responses to a particular individual (Tustin *et al.,* 2005:164). | |
| ▪ **Close relationship –** the researcher can develop a close relationship with the participant, which leads to trust and results in a free flow of information (Tustin *et al.,* 2005:164). | |

**Source: Compiled from Tustin *et al.* (2005) and Cooper and Schindler (2014a)**

The previous section introduced interviews as a qualitative data-collection method, outlining different interview structures and the advantages and disadvantages of using interviews as a data-collection method. With the choice of interviews as a qualitative data-collection method, it was essential to consider how many interviews were needed. Participant selection is addressed in the following section.

### 7.5.1 Semi-structured interviews: sampling

In qualitative research, sample selection profoundly affects the ultimate quality of the research (Coyne, 1997:632). Consequently, sample selection in qualitative research is often a controversial issue, characterised by many inconsistencies and ambiguities (Gentles *et al.,* 2015:1772; Cassell *et al.,* 2018:489). Trotter (2012:398) debated that many quantitative researchers critique qualitative research studies based on sampling frames, wanting to apply 'inappropriate quantitatively-oriented techniques' to

qualitative studies. However, Coyne (1997:623) explained that often qualitative researchers fall into the 'flexibility' trap of qualitative sampling, resulting in sample frames that violate both the quantitative sampling principle of adequate sample size (representativeness) and the qualitative principle of appropriateness, that is a 'good' participant who is articulate, reflective, and willing to share with the interviewer. To avoid the pitfalls associated with qualitative sampling, some authors stated that researchers need to describe sampling strategies in sufficient detail, allowing future researchers to determine the validity of findings and to replicate a study.

The first factor to consider in terms of sampling is the number of interviews researchers need to conduct. As mentioned above, sampling, and sample size, is a controversial issue in qualitative research (Coyne, 1997; Francis *et al.,* 2010; Saunders *et al.,* 2018). As a result, researchers within the research methodology sphere are often hesitant to provide sample size guidelines for qualitative studies. Where such guidance is offered, they tend to be diverse; for example, Saunders *et al.* (2020:344) suggested four to eight interviews while Francis *et al.* (2010:1235) recommended seven to 12 interviews and Cassell *et al.* (2018:489) proposed 15 to 60 interviews for qualitative studies. These vague guidelines have resulted in researchers looking for alternative ways to establish validity in qualitative research studies.

'Saturation' is often presented as a measure for researchers to determine when to discontinue data collection and/or analysis. Saturation is, again, a controversial issue, with authors arguing that saturation is often 'poorly operationalised' (Braun & Clarke, 2021a:205) and is accompanied by a 'lack of clarity' (Francis *et al.,* 2010:1230). Low (2019:136) explained that saturation is 'problematic' because of the many types (or branches) of saturation that have developed over time, namely *theoretical saturation*, *data saturation*, and *thematic saturation.*

Charmaz (2006:186) defined *theoretical saturation* as *"the point when gathering fresh data no longer sparks new theoretical insights, nor reveals new properties of your core theoretical categories".* Saunders *et al.* (2018:1900) debated that the principal focus of theoretical saturation is 'meaning saturation', namely a researcher continues the sampling process until they fully understand conceptual codes or the conceptual dimensions of codes. Trotter (2012:399) stated that *data saturation* refers to the point

where all the researcher's questions have been explored thoroughly and in detail. Data saturation is defined by Saunders *et al.* (2020:590) as "*the stage when any additional data collected provides few, if any, new insights*". Saunders *et al.* (2018:1900) added that, for data saturation, the principal focus is the data-collection point, in other words after how many interviews can a researcher discontinue data collection? Data saturation is often measured in terms of 'repetition of responses' or 'information redundancy' (Braun & Clarke, 2021a:203). Finally, *thematic saturation* is defined by Saunders *et al.* (2020:590) as *"… the emergence of no new codes or themes from the data".* The principal focus of thematic saturation is on data analysis and the 'emergence' of new insights from the data. Thematic saturation is achieved when further observations and analysis reveal no new themes (Guest, Bunce & Johnson, 2006:59). On review of these definitions, it is noticeable that only slight nuances separate them. Accordingly, some authors have moved away from explicitly classifying which 'type' of saturation the study aims to achieve to focus on ways to operationalise saturation. To that end, Braun and Clarke (2021a:213) encouraged researchers to critically comment and provide justification for how and why a researcher may state that saturation has been reached in a qualitative study.

For the purpose of this study, the researcher followed the 'pragmatic definition of saturation' proposed by Low (2019:136). Low (2019:136) explained that, at its core, saturation emphasises 'conceptual rigour', meaning a researcher can accept that saturation is reached once concepts represent highly detailed, accurate, and thorough (The Oxford English Dictionary's (2022g) definition of rigour) descriptions of themes and categories in the data. Conceptual rigour as a measure for saturation is more encompassing than ambiguous statements such as 'sampling was done until no new data or themes emerged'. Low (2019:136) added that such statements are logical fallacies as there are always new insights that can be obtained as long as data continues to be collected. Braun and Clarke (2021a:210) supported this statement and debated that researchers should not assume that coding and deeper analysis will inevitably reach a fixed endpoint. Instead, a researcher makes a situated, interpretative judgement about when to stop sampling and coding, moving towards theme generation and theme mapping.

In the following section, the researcher illustrates how saturation was operationalised in this study through multiple sampling methods. Through the detailed description of three sampling cycles, the researcher aims to illustrate that the data collected as part of the semi-structured interviews reached saturation and that the data analysis should be considered conceptually rigorous.

#### *7.5.1.1 Participant selection: three sampling cycles*

As stated above, sampling is a complex issue in qualitative research (Zikmund *et al.,* 2013:68). To promote conciseness, the researcher will not conduct an in-depth discussion on all qualitative sampling methods but will instead focus on the methods used in this study. All three sampling methods used in this study, *(expert sampling*, *snowball sampling*, and *theoretical sampling)* can be classified as non-probability sampling methods. Non-probability sampling (a range of sampling techniques in which the chance or probability of each case being selected is unknown) are most often used in qualitative research due to the nature of the data being collected as no identifiable population exists (Saunders *et al.,* 2020:596).

Purposive sampling (also called judgment sampling) is described by Etikan, Musa and Alkassim (2016:2) as a sampling technique where a researcher deliberately chooses a participant due to the participant's qualities. In layperson's terms, purposive sampling means the researcher decides what needs to be known and sets out to find people who can and are willing to provide the information (Maison, 2019:115). Purposive sampling is primarily used when a limited number of people have expertise in the area being researched. Since purposive sampling is classified as a non-random sampling technique, no underlying theories or set number of participants are required when using this sampling method (Jabbar, 2017:171). Coyne (1997:624) debated that the power of purposive sampling lies in selecting information-rich cases for in-depth study. Information-rich cases are those from which one can learn a great deal about factors of central importance to the purpose of the research, thus the term 'purposive sampling'.

Purposive sampling can be divided into numerous subgenres (Jabbar, 2017:197), this study employed the subgenre of *expert sampling*. As the name suggests, expert

sampling seeks the opinions of highly skilled or qualified individuals (experts) in a particular field (Etikan *et al.,* 2016:3). Patton (2018:1) remarked that experts can provide valuable insight into the root of problems, successes and failures, and future trends to watch out for. Glen (2015) outlined the two stages of expert sampling: first, to determine what constitutes an 'expert' in a study and, second, selecting people who meet the 'expert' criteria. These stages comprise 'cycle one' of sampling (or participant selection) and are discussed below.

- ***Cycle 1 of participant selection: expert sampling***

In determining what constitutes an expert for this study, the researcher reverted to the literature to determine measures previous researchers have employed in the classification of experts in areas of omnichannel retailing and supply chain management research. It should be stated that, while many previous authors refer to participants as 'experts' (Saghiri *et al.,* 2017; Barwitz & Maas, 2018; Alexander, 2019), only a few explicitly list the criteria used to classify an individual as an expert. For example, Reyes and Giachetti (2010:417) classified experts based on *years of experience*. Their study of supply chain maturity indicators classified an expert as *"an individual with five or more years of experience in supply chain operations or closely related fields such as logistics, procurement, or sales".* Hübner *et al.,* (2016:2690) and Hosseini, Röglinger and Schmied (2017:5), on the other hand, focused on *level of involvement* as a classification for expertise. Their criteria included *"individuals who are or have been directly involved in the planning and execution of forward and backwards omnichannel systems".* Finally, experts in the study of Rai *et al*. (2019:273), who investigated logistics outsourcing for omnichannel retailers, had to be "*decision-makers in the organisation's omnichannel retail strategy*". These criteria provided a good foundation in developing this study's criteria for an expert. The following criteria were applied:

**Table 7.8: Criteria for expert selection of semi-structured interviews**

| EXPERT CRITERIA | DESCRIPTION | SOURCE |
|---|---|---|
| **Years of experience** | ▪ A participant should have at least **ten years of experience** in retail supply chain (or related) operations. | Reyes and Giachetti (2010:417) |
| **Management-level** | ▪ A participant should hold a **top-management position** within the organisation. | Rai *et al*. (2019:273) |
| **Level of involvement** | ▪ A participant should be **directly involved** in managing one or more of the organisation's omnichannel supply chain processes. | Hübner *et al.,* (2016:2690) Hosseini, Röglinger and Schmied (2017:5) |

**Source: Compiled by researcher**

To identify individuals who met the expert criteria outlined in Table 7.8, the researcher needed to determine which retailers would be included in the study. In section 7.4.1, the researcher outlined the process followed to determine the sample for the document analysis. This process resulted in the researcher applying several inclusion and exclusion criteria to the list of JSE-listed organisations and concluded with the identification of eight omnichannel retailers in South Africa. Since the retailers included in the document analysis represented the largest omnichannel retailers in South Africa, the researcher decided to use the list as a starting point to participant selection for the semi-structured interviews. Consequently, individuals who met the expert criteria listed in Table 7.8 *and* were employed at one of the eight omnichannel retailers identified as part of the document analysis would be suitable interviewees for this study.

Initially, the researcher had two means of contacting potential participants. First, the researcher is a registered member of The Professional Body of Supply Chain Managers in South Africa (SAPICS). After consultations with the Chief Operations Officer of SAPICS, the organisation agreed to distribute an invitation to participate to all the managers who met the expert criteria listed above. Second, the researcher identified (and invited) participants on the business-oriented social media platform LinkedIn. Using the eight omnichannel retailers' corporate LinkedIn pages, the

researcher was able to identify suitable participants from all eight omnichannel retailers for participation in the study.

During the first cycle of participant selection, only top managers with titles relating to supply chain management, logistics, or retail/e-commerce were considered appropriate to participate as expert informants. These potential participants were contacted via LinkedIn and invited to participate in the study. An example of the participant information and the informed consent form can be found in Annexure C.

Considering the position held by potential participants in the top structures within the largest retailers in South Africa, the researcher expected a low response rate. However, after the conclusion of cycle one of participant selection, six individuals agreed to participate in the study. As stated above, the researcher also employed theoretical sampling (discussed in more detail as part of cycle two of participant selection). A fundamental principle of theoretical sampling is the concurrent collection and analysis of data until saturation is achieved. After conducting the first six interviews, saturation was not achieved. Accordingly, to expand the list of participants, the researcher adopted a further two cycles of participant selection.

- ***Cycle 2 of participant selection: theoretical sampling***

As per the research strategies in Section 7.3.4, the researcher was 'inspired by notions of grounded theory' and, in particular, by *theoretical sampling*. Theoretical sampling was described by Cooper and Schindler (2014:668) as "*a nonprobability sampling process in which conceptual or theoretical categories of participants develop during the interviewing process; additional participants are sought who will challenge or support emerging patterns".* Cassell *et al.* (2018:238) explained that the researcher makes decisions about what data to collect and where to find those data in theoretical sampling. It should be stated that, although the concept of theoretical sampling originated within grounded theory, it has become more broadly influential as authors increasingly reference it in the general qualitative methods outside of grounded theory (Gentles *et al.,* 2015:1779). Upon reviewing the literature on omnichannel supply chains, it also became apparent that theoretical sampling was a sampling method

preferred by many authors (Hübner *et al.,* 2016; Larke, Kilgour & O'Connor, 2018; Wollenburg *et al.,* 2018).

One of the critical features of theoretical sampling (under the umbrella of grounded theory) is constant comparative analysis (Creswell, 2012:434). Constant comparative analysis entails an iterative process of concurrent data collection and analysis. Cho and Lee (2014:7) debated that theoretical sampling is *"the process of collecting data for comparative analysis*", which means insight from initial data collection and analysis leads to subsequent data collection and analysis. Therefore, the purpose of theoretical sampling is to "*recruit participants with differing experiences of the phenomenon to explore multiple dimensions of the social processes under study*". From the initial interviews, the researcher realised that the management of many of the processes associated with omnichannel retailing was segmented within the organisation. Consequently, while supply chain and logistics managers were competent in answering questions about the integration of back-end and last-mile fulfilment, when asked questions based on front-end integration initiatives many participants were uncomfortable answering such questions. These participants either indicated at the start of the interview that they were unable to answer all the questions (the interview protocol was sent to participants before the interview) or they indicated that they would have to refer the researcher to other colleagues (most often from the operations and/or marketing departments) who would be able to answer the questions.

Based on these responses, as well as the initial phases of the constant comparison analysis, the researcher realised that, to gain a holistic view of omnichannel SCI in South Africa, individuals working within the marketing and/or operations functions of the eight retailers identified as part of the document analysis should also be invited to participate in the study. This realisation was supported by the arguments of Yu *et al.* (2013:346) who found that interviewing employees from different organisational functions and management levels strengthens the data. Furthermore, Brunner and Rudolph (2015:15) added that a diverse sample provides different possibilities for comparison, which allows for rich theoretical conclusions across industries.

Consequently, the researcher repeated the process followed in Cycle 1 and identified (via LinkedIn) top managers with titles relating to marketing or operations and invited

these participants to also participate in the study. In addition, the researcher also asked interviewees, who had already participated in the study, to identify colleagues within their organisation who were able to add insight to the topic discussed. As per the suggestions of Kosmol, Reimann and Kaufmann (2019:7) and Saunders *et al.* (2020:154), the researcher attempted to conduct interviews with more than one participant from an organisation to facilitate triangulation and the corroboration of findings. This process led to cycle three of participant selection.

- ***Cycle 3 of participant selection: snowball sampling***

According to Tustin *et al.* (2005:349), in *multiplicity (snowball) sampling,* participants are first chosen according to judgment sampling, which entails that selected participants identify other members who will also meet the specific requirements of the study. Bairagi and Munot (2019:98) stated that snowball sampling is most beneficial when research is conducted within a population of undocumented participants (for example, no complete list of the population exists).

Using snowball sampling, the researcher asked interviewees to identify other colleagues within the participants' network whom they would consider knowledgeable in the field. This sampling method yielded the best results for the study as an additional 11 participants agreed to participate. In total, the researcher conducted 17 semi-structured interviews. However, it should be noted that two of the retailers who were included in the document analysis declined to participate in Phase 2 (interviews) of this study. Additionally, as part of the snowball sampling phase, some participants referred the researcher to organisations/individuals who did not fall within the eight omnichannel retailers identified during sampling for the document analysis. However, considering the researcher's pragmatic paradigm (Section 7.3.1), which places the highest value on making methodological decisions that will enable the researcher to ultimately answer the research question, the researcher decided to include these participants in the study. Consequently, three retailers and four interviews originated from organisations who were not included in the document analysis. Accordingly, **while the document analysis was conducted among eight omnichannel retailers, the interviews were conducted among nine omnichannel retailers**. Although

some of these retailers were not included in the document analysis, all participants still met the 'expert' inclusion criteria listed in Table 7.8.

The following section provides details on how the interviews were conducted and outlines the participants' profile information.

#### *7.5.1.2 Conducting the interviews*

As stated above, 17 semi-structured interviews were conducted among nine different retailers during February and March 2021. In line with the restrictions implemented by the University of South Africa (UNISA) and COVID-19 regulations, the researcher amended the initial research protocol of conducting face-to-face interviews to virtual interviews. Interview requests were sent via email and LinkedIn (as per the discussion on the different sampling cycles above). Once a participant agreed to an interview, an interview date was scheduled and a virtual meeting link was created via the participants' preferred telecommunication platforms (Skype, Zoom, MS Teams, or Blue Jeans). A day before a scheduled interview, the researcher requested (via email) the participant to read and digitally sign the informed consent form (see Annexure D). The researcher also attached the interview protocol for participants. The researcher found that, while some participants did not review the questions prior to the interview (due to time constraints), those who reviewed the questions had a clearer idea of what the interview entailed. All participants agreed to have the meeting recorded for quality and transcription processes after the researcher reiterated compliance with the anonymity guidelines agreed upon before the interview.

On conclusion of each interview, the researcher conducted an interview debriefing, as recommended by Hawkins and Maurer (2010:1782), Zikmund *et al.* (2013:93) and Leavy (2014:571). As part of the debriefing, the researcher offered participants the option to add any information to the interview by posing the question, *"Is there anything you think I should have asked you on the topic that I might have missed?".* Table 7.9 summarises all 17 participants' replies to this question. The addition of this question was immensely valuable, not only because it served as a measure for the researcher to determine if the interview protocol was thorough and covered the most pertinent topics but also because it guided the researcher when probing participants in later interviews.

**Table 7.9: Quotations from participants on the scope of questions covered during the interviews**

| | PARTICIPANTS' QUOTATIONS |
|---|---|
| **P1** | "No, I think your questions were quite comprehensive. I think mainly because it's a particular interest of mine, I'd maybe just encourage you to include a big enough focus on the people side of it…" |
| **P2** | "I think the topic around cost for retailers, the impact of the cost drivers of omnichannel versus what we're used to bricks-and-mortar, is quite a good question to add." |
| **P3** | "I think the one thing that I have got on my agenda, and I started it last year and I tested it…is sustainable packaging." |
| **P4** | "I don't really think there's anything I would necessarily add." |
| **P5** | "I think it's been quite well-rounded questions in terms of different areas, different aspects. I'm hoping that you've got a good insight or some good understanding, but I think you've asked all the right questions." |
| **P6** | "The one thing that comes to mind is kind of the broader thinking around the gig economy, so crowd sourcing, and the role that that might play, and that kind of touches on a lot of themes that you've spoken about" |
| **P7** | "No, I don't think so… I think your questions have been pretty all-encompassing" |
| **P8** | "Hell no [laughs]. The biggest thing is I don't think any of us know where it's gonna end up." |
| **P9** | "No, 'cause if you didn't ask me I probably told you because I like to talk. But I think I've managed to cover everything." |
| **P10** | "No. I really enjoyed thinking about those questions and answering them." |
| **P11** | "No, you were very thorough. I really enjoyed it. There's nothing else I can think of." |
| **P12** | "That's a good question. What might you have missed? Maybe a bit more about what the customer wants, 'cause if we don't start there, we can't build the supply chain." |
| **P13** | "I don't think so. I think you've been pretty comprehensive." |
| **P14** | "No. I think you've covered everything." |
| **P15** | Participant 15 replied with another question, which led the discussion in another direction: "How many people do you think South Africa's gonna have, that does omnichannel retail? How many players do you think in ten years' time are gonna be doing omnichannel retail?" |
| **P16** | "I think we have covered everything. But, if you've got any questions just drop me a [sic] e-mail…" |
| **P17** | "I think you've covered a lot of the big elements. I think the rest of the stuff is really about going into more detail…so…I think you've covered the big bases. I don't think there's anything else." |

**Source: Researcher's own compilation**

Based on these responses, the researcher concluded that the interview protocol covered most of the essential factors surrounding omnichannel SCI. Since these interviews followed a semi-structured approach, allowing a researcher to omit or add questions (or probing questions), the researcher added questions or emphasised

factors highlighted by participants during the debriefing process. This concluded the interview process. Table 7.10 provides an overview of all the interviewees who participated in the study, detailing job descriptions, years of experience, and each interview's length. Table 7.10 is followed by Table 7.11, which summarises the omnichannel retailers who participated in the study. Table 7.11 outlines each retailer's retail category, annual turnover, store footprint, and number of employees. To comply with the condition of anonymity, each retailer was assigned a letter of the alphabet as its fictitious name. In addition, as the confidentiality agreement stipulated, details concerning participants (interviewees) were omitted from the study. Interviewees were assigned a pseudonym (Participant 1 - 17) to protect their identities.

**Table 7.10: Participant profile information**

| | JOB TITLE | RETAILER | YEARS OF EXPERIENCE | DURATION OF INTERVIEW (MIN:SEC) |
|---|---|---|---|---|
| **P1** | Head of Logistics and Supply Chain | Retailer A | 15 | 69:05 |
| **P2** | Head of Logistics and Facilities Management | Retailer E | 23 | 32:32 |
| **P3** | Head of Logistics and E-fulfilment | Retailer E | 25 | 95:37 |
| **P4** | Head of Logistics | Retailer H | 21 | 48:01 |
| **P5** | Head of Transport and Engineering Logistics | Retailer E | 24 | 36:12 |
| **P6** | VP of Supply Chain & eCommerce Operations | Retailer B | 17 | 58:20 |
| **P7** | Operations Business Development Manager | Retailer D | 23 | 38:01 |
| **P8** | Head of Retail Innovations | Retailer D | 25 | 32:12 |
| **P9** | Brand Manager - Africa | Retailer F | 18 | 39:15 |
| **P10** | Head of Africa Supply Chain | Retailer F | 20 | 46:27 |
| **P11** | Director of Retail Operations | Retailer A | 28 | 45:45 |
| **P12** | Chief Operations Officer | Retailer B | 32 | 43:00 |
| **P13** | Managing Director | Retailer D | 26 | 46:54 |
| **P14** | CEO | Retailer G | 30 | 57:06 |
| **P15** | GM: Retail and Supply Chain Operations | Retailer I | 16 | 48:11 |
| **P16** | Head of Online Operations | Retailer A | 30 | 84:59 |
| **P17** | Head of Supply Chain Optimisation | Retailer C | 13 | 34:24 |
| **Average** | | | **22.7** | **50:21** |

**Source: Researcher's own compilation**

Table 7.10, shows that 17 interviews were conducted among nine different omnichannel retailers. All interviewees had 15 years or more experience in the retail industry, with an average of 22.7 years of experience overall. All participants were employed within the top management structures of the organisations and were directly involved in either the front-end, back-end, or last-mile processes of the omnichannel supply chain. To facilitate triangulation, the researcher attempted to conduct at least two interviews per retailer. This was accomplished with five of the nine retailers participating in the study. The duration of the interviews ranged from 32 minutes 12 seconds to 95 minutes 37 seconds and lasted an average of 50 minutes 21 seconds across the 17 participants. Table 7.11 summarises the retailers who participated in the study.

**Table 7.11: Retailer profile information**

| RETAILER | MAIN RETAIL CATEGORY(S) AND BRANDS | NUMBER OF SUB-BRANDS OWNED BY THE RETAILER | GEOGRAPHIC OPERATIONS (INCLUDING SOUTH AFRICA) | TURNOVER (IN 2020) | STORE FOOTPRINT | NUMBER OF EMPLOYEES | INCLUDED IN DOCUMENT ANALYSIS |
|---|---|---|---|---|---|---|---|
| **Retailer A** | Fashion<br>Homeware<br>Groceries | 8 | 14 | ± R78 bn | ± 1500 | ± 45 000 | Yes |
| **Retailer B** | Groceries<br>Liquor<br>Electrical appliances<br>Building materials | 8 | 13 | ± R94 bn | ± 450 | ± 51 000 | Yes |
| **Retailer C** | Fashion<br>Homeware | 6 | 3 | Not publicly available | ± 300 | ± 3 000 | No |
| **Retailer D** | Fashion<br>Homeware and furniture | 5 | 10 | ± R23 bn | ± 1400 | ± 20 000 | Yes |
| **Retailer E** | Fashion<br>Homeware and furniture | 21 | 32 | ± R38 bn | ± 2700 | ± 23 000 | Yes |
| **Retailer F** | Fashion<br>Stationery | 8 | 20 | Not publicly available | ±170 | ± 22 000 | No |
| **Retailer G** | Building materials and DIY | 8 | 9 | ± R9 bn | ± 200 | ± 2 700 | Yes |
| **Retailer H** | Pharmaceutical<br>Fashion | 5 | 5 | ± R34 bn | ± 900 | ± 15 600 | Yes |
| **Retailer I** | Groceries<br>Liquor<br>Homeware and furniture<br>Pharmaceutical | 13 | 15 | ± R160 bn | ± 2400 | ± 140 000 | No |

**Source: Researcher's own compilation based on each retailer's IAR or website**

The Department of Small Business Development (2019:2) classified large organisations as organisations employing more than 250 full-time employees with a turnover that exceeds R80 million. Therefore, from Table 7.11, it is noticeable that all nine retailers can be classified as large retailers.

In addition, retailers who participated in this study represented all major retail categories as per the classification of the South African retail industry (apart from the consumer electronics and media category, which represents media streaming services such as Netflix) (Who Owns Whom, 2020:7). Participating retailers also owned several brands or stores (between five and 21) that operated under the retailer's umbrella brand. Although the study (and research questions) centred around omnichannel operations in South Africa, the participating retailers were all international conglomerates operating in between three and 32 different countries. Additionally, all participating retailers operated under a large brick-and-mortar store footprint (between 170 and 2700 stores) and employed a large number of employees (between 2 700 and 140 000 employees). The next section discusses the techniques and procedures the researcher employed to analyse the semi-structured interview data.

### 7.5.2 Semi-structured interviews: Data-analysis technique and procedure

Data analysis is the application of reasoning to understand the data that have been gathered. In its simplest form, an analysis may involve determining consistent patterns and summarising the relevant details revealed in the investigation (Zikmund *et al.,* 2013: 70). The appropriate analytical technique for data analysis is determined by management's information requirements, the characteristics of the research design, and the nature of the data gathered. Leavy (2014:622) debated that the ultimate goal of qualitative data analysis is to generalise the themes and patterns identified from the data back into the literature to build meaning.

The following section will discuss, in detail, the process followed for analysing the semi-structured interview data, starting with the audio recording and transcription of the interviews before addressing thematic analysis as the data-analysis technique.

Although data analysis is covered in this chapter, the results from the analysis are presented in Chapter 8.

#### *7.5.2.1 Audio recordings and transcriptions of the interview data*

The accurate capturing of interview data is essential in maintaining reliable access to data and the phenomena they represent (Leavy, 2014:607). According to Saunders *et al.* (2020:487), audio recordings are highly beneficial to the trustworthiness of the data collected as it leaves a distinct audit trail. Audio recordings also allow the interviewer to concentrate on questioning and listening and provides an accurate and unbiased record of an interview (Everitt *et al.,* 2019:54). Considering the advantages of audio recordings, at the start of each interview the researcher requested the permission of the participant to record the interview. Since all 17 interviews were conducted through internet-based videotelephony[53] services (video-calls) with built-in audio-recording functions, the researcher used this function to audio record the interviews. A manual backup recorder was used to ensure the best possible audio was available when transcribing the interviews. Video calls hold both advantages and disadvantages for researchers. Table 7.12 lists the advantages and disadvantages of conducting interviews through video calls.

**Table 7.12: Video calling to conduct interviews**

| VIDEO CALLING TO CONDUCT INTERVIEWS | |
|---|---|
| **ADVANTAGES** | **DISADVANTAGES** |
| ▪ Video calling is more cost- and time-effective than other interview methods. | ▪ Video calling is often plagued by technical factors such as time-lags on the video and disconnected calls. |
| ▪ Geographically hard-to-access participants can be reached. | ▪ Participants are required to have the right (and latest version) of the software. |
| ▪ Video calling is safer for both interviewer and participant as neither has to go to an otherwise unfamiliar location while some people prefer not to have their space imposed upon. | ▪ Video calling may result in many interruptions, be it from family, friends, or work, which may cause distractions. |

**Source: Adapted from Krouwel, Jolly and Greenfield (2019:2)**

[53] Videotelephony is defined as: *"the action or process of communicating in real time using both audio and video signals"* (The Oxford English Dictionary (2021a).

During the video interviews, the researcher remained cognisant of the disadvantages of video calling and mitigated them as far as possible by for example scheduling the interview on the participants' preferred telecommunication platform to ensure they have the right and latest version of the software.

The purpose of recording the video calls was to transcribe the recordings and provide an audit trail. To transcribe the audio would be to *"…reproduce a written account using the actual words [of participants]"* (Saunders *et al.,* 2020:485). The researcher employed the services of a professional touch-typist to transcribe the audio. In total, the 854 minutes (14.2 hours) of interview audio were transcribed to 324 pages of text. The researcher checked and compared the transcripts with the audio to ensure correctness and any transcription errors were corrected. After that, the written data were ready for analysis.

#### *7.5.2.2 Analysing the data: reflexive thematic analysis*

Qualitative data-analysis approaches can be incredibly diverse and complex and a researcher needs to critically evaluate the purpose of their research in determining which qualitative data-analysis technique to employ (Gale *et al.,* 2013:3). Thematic analysis (TA) is one of the most common forms of analysis within qualitative research. Thematic analysis (TA) was employed as the data-analysis method in this study.

Thematic analysis (TA) is defined by Clarke and Braun (2017:297) as a qualitative data-analysis method *"… for identifying, analysing, and interpreting patterns of meaning ('themes') within qualitative data".* These authors argued that TA is distinct from other qualitative analytic approaches because it offers a tool or technique unbounded by theoretical commitments. Therefore, TA can be applied across a range of theoretical frameworks and research paradigms. Vaismoradi *et al.* (2013:398) and Braun and Clarke (2022:41) explained that many researchers confuse TA with the more commonly known qualitative data-analysis method, namely content analysis. The former was chosen as the most appropriate method of analysing the interview data as content analysis tends to focus more on a micro-level, often providing frequency counts which allow for quantitative statistics to be done. Thematic analysis (TA) differs from content analysis as the themes identified should not be quantified –

the value of the analysis is housed in the words of the participants. Therefore, TA provides the researcher with a 'thicker' representation of the data where content analysis, at times, only provides word counts.

Leading TA proponents, psychologists Virginia Braun and Victoria Clarke, distinguished between the following three approaches to TA: coding reliability approaches, reflexive approaches, and codebook approaches (Braun & Clarke, 2022:39). Table 7.13 briefly describes each TA approach.

**Table 7.13: Three approaches to Thematic Analysis (TA)**

| THREE APPROACHES TO THEMATIC ANALYSIS | |
|---|---|
| **Coding reliability approach** | A structured approach to coding centred around a coding frame or codebook and typically requires multiple coders working independently to apply the coding frame to the data. |
| **Reflexive approach** | Involves later theme development, with themes developed *from* codes and conceptualised as patterns of shared meaning underpinned by a central organising concept. Theme development requires considerable analytic and interpretative work to illuminate the implicit or latent meanings captured within the data. The coding process is unstructured and organic. Coding is recognised as an inherently subjective process that requires a reflexive researcher who strives to reflect on their assumptions and how they might shape and delimit their coding. |
| **Codebook approach** | This approach does not rely on a codebook to determine the reliability and accuracy of coding but rather to chart or map the early theme development. |

**Source: Researcher's own compilation based on Braun and Clarke (2022:39)**

This study utilised reflexive TA as its data-analysis method. Although the researcher in this study developed a coding frame as part of the document analysis and consequently had the option of using the coding frame to analyse the interview data (coding reliability and codebook approaches), the researcher did not want to be restricted in analysing the interview data. Reflexive TA requires researchers to go beyond surface meanings to make sense of the data and tell a rich and compelling story (Braun & Clarke, 2006:95). As with most data-analysis methods, reflexive TA

uses specific terminology when referring to the data and the analysis procedures. These terminologies are briefly defined below (Braun & Clarke, 2006:79):

- **Data corpus**: All data collected for the specific research project.
- **Dataset:** All data selected from the corpus to be analysed for the research project.
- **Codes:** A single feature of the data that appears interesting to the coder and refers to "*the most basic segment, or element, of the raw data of information that can be assessed in a meaningful way regarding the phenomenon".*
- **Theme:** A theme captures something significant about the research question and embodies some patterned responses or denotations within the dataset. Themes are developed from codes.
- **Data item:** Each individual piece of data that is collected (for example, one of the transcribed interviews).
- **Data extract:** An individual coded 'chunk' of data that has been extracted from a data item.

Throughout the discussion that follows, the researcher uses these terminologies when describing the different phases of reflexive TA. Reflexive TA follows six recursive phases of analysis, which are described below. The section also describes how each of these steps was applied in the data analysis of the semi-structured interview data.

- ***Phase 1: Familiarisation with data***

Familiarisation with the data requires researchers to immerse themselves in the data. Braun and Clarke (2006:87) provided three criteria for immersion: the transcribing of data, the reading and rereading of data (in an *active* manner, to identify patterns and meanings within the data), and the noting down of initial codes (usually in a reflexive journal). After this stage, the researcher should feel familiar with the content of the data and should be able to start identifying overt patterns or repeating aspects in the data. These patterns should be recorded in a reflexivity journal for use when coding the data. According to Braun and Clarke (2006:87), this phase provides the foundation for the rest of the TA process.

It is important to note that the researcher started with data familiarisation as part of the theoretical sampling process (Section 7.5.1.1). The researcher was of the opinion that concurrently collecting data (conducting the interviews) and familiarising herself with the data allowed for the selection of appropriate participants for consecutive interviews and aided the interview process. As the interviews process progressed, the researcher focused on specific general ideas that developed as part of the data familiarisation process. During Phase 1, the researcher immersed herself in the data as per the criteria outlined by Braun and Clarke (2006:87). (The process followed to transcribe the data was discussed in Section 7.5.2.1). In addition, the researcher read and re-read the transcripts while listening to the audio. During this process, the researcher started to note initial codes in a reflexive journal.

- ***Phase 2: Generating initial codes***

According to Saldaña (2021:39), *"…coding 'well' leads to total immersion in the data corpus with the outcome being exponential and intimate familiarity with its details, subtleties, and nuances".* Therefore, during Phase 2 of TA, the coding process evolves further through the researcher's continued immersion in the data. Braun and Clarke (2006:87) argued that Phases 1 and 2 should not be considered linear processes. Instead, these phases should be considered cyclical processes in which codes are developed and refined as the researcher moves back and forth between the data and the analysis. In Phase 2, coding as inclusively as possible is essential. Braun and Clarke (2006:89) explained that, although individual aspects of the data may seem irrelevant at first, they can be crucial later in the analysis process. Therefore, full and equal attention needs to be paid to each data item during the coding process. Saldaña (2021:8) added that coding usually consists of various cycles of code refinement through combining, splitting, adding, or subtracting potential codes. As such, the coding process is rarely completed during the first coding phase (Linneberg & Korsgaard, 2019:263).

Once the researcher had familiarised herself with the data and generated initial ideas and observations regarding the data (Phase 1), the researcher delved into Phase 2 of data analysis. Within this phase, the researcher generated initial codes in a meaningful and systematic manner, reflecting the research question and objectives. During this

phase, the researcher utilised the qualitative data-analysis software ATLAS.ti to code the data. ATLAS.ti is a valuable tool in qualitative data analysis as it allows researchers to shift quickly back and forth between multiple analytic tasks such as coding, memo writing, and exploring patterns in progress. Consequently, interesting features of the data related to the aims and objectives of this study were coded using ATLAS.ti. After concluding Phase 1 and Phase 2 of TA, the researcher had generated 35 different codes. These codes are discussed in Chapter 8.

- ***Phase 3: Searching for themes***

Phase 3 can only commence once all data are initially coded and collated and the researcher has a long list of the different codes that emerged across the data corpus (Braun & Clarke, 2006:89). Phase 3 re-focuses the data analysis at a broader level to develop themes rather than codes. Therefore, this phase involves sorting different codes into potential themes and collating all the relevant coded data extracts within the identified themes. Saldaña (2021:175) described a theme as *"…an abstract entity that brings meaning and identity to a recurrent [patterned] experience and its variant manifestations. As such, a theme captures and unifies the nature or basis of the experience into a meaningful whole".* The purpose of creating themes is to reduce the number of data items and to develop an overarching understanding of the data corpus (Saldaña, 2021:180).

During Phase 3 of TA, the researcher organised the different codes into initial themes based on the codes. Within Phase 3, the researcher analysed the codes generated in Phases 1 and 2 to determine which codes presented a similarity and sorted these relating codes into potential themes. This process was facilitated through the 'Code Groups' function on ATLAS.ti. Code Groups allows the researcher to organise (and group) codes. Next, the researcher started to consider the relationship between codes and themes.

- ***Phase 4: Reviewing themes***

The primary purpose of Phase 4 is to refine the candidate themes developed in Phase 3 of the analysis. Braun and Clarke (2006:90) maintained that internal homogeneity

and external heterogeneity is essential. This means that the codes within themes should be closely related but one must be able to clearly differentiate between themes. During Phase 4, the researcher may have to recode some of the data. Saldaña (2021:188) stated that recoding is an integral part of qualitative data analysis as it synthesises the variety and number of codes into more unified and meaningful themes.

Braun and Clarke (2006:90) suggested two levels of data analysis as part of Phase 4. These two levels were meticulously applied in analysing the data for this study. First, Braun and Clarke (2006:90) suggested that all the coded data extracts of a specific theme should be reviewed to determine if each code fits within a specific theme. As part of this review, the researcher reshuffled and renamed some codes until the researcher was confident that the codes within a theme formed a cohesive unit. Subsequently, a preliminary conceptual framework was composed. The final version of the conceptual framework is presented in Chapter 8, Figure 8.3.

The second level of assessment required a broader view by considering the relevance of each theme to the entire dataset. During this phase, the researcher reflected on the relevance of the conceptual themes as a representation of the entire dataset. This could only be determined by re-reading the entire dataset to (a) determine whether the themes were an encompassing representation of the dataset and (b) code any additional data items overlooked in the first analysis. While re-coding, the researcher followed Braun and Clarke's (2006:92) guidance, which warned researchers not to get over-enthusiastic when re-coding as it could go on *ad infinitum*.

At this stage the researcher faced one of Mir and Jain's (2018:335) 'surprise encounters with qualitative research', that is the degree of change needed throughout the qualitative data-collection and -analysis process. These authors stated that qualitative research allows for, and often demands, that researchers change course and make key decisions throughout the research process. As such, these authors explained that, in qualitative studies, researchers have the flexibility (and even imperative) to 'pivot' towards the most interesting theoretical story after immersing themselves in the phenomenon of interest.

In line with this statement, it should be highlighted that, although Braun and Clarke's (2006) original conceptualisation and operationalisation of themes was that they should be developed solely from the raw data, these authors' more recent application of theme development departed somewhat from their original stance. In Clarke's latest publication (Hogan *et al.*, 2021), the authors took a novel approach to theme development by thematically 'organising' coded data under 'predeveloped headings'. These authors argued that this might be a more suitable approach to theme development in studies where the researcher explicitly wants to focus on some aspects of the data.

The approach described above was considered more suitable for this study, where the researcher aimed to determine what dynamic capabilities facilitate internal SCI and investigated the data through this lens. On conclusion of the initial coding phases (outlined above), as well as allowing for a period of distancing from the data as required by reflexive TA (Braun & Clarke, 2020:16), the researcher came to the conclusion that the initial themes (as identified in Phase 3 of Braun and Clarke's (2006) reflexive TA process) could be classified under the broad headings of the coding frame developed from the literature (Annexure A). Consequently, as with Hogan *et al*. (2021:938), the dynamic capabilities identified from the interview data were thematically organised under the topic headings from the coding frame.

- ***Phase 5: Defining and naming themes***

Phase 5 focuses on refining the themes, especially the data extracts within each theme. The significance of this phase lies in how each theme is scrutinised to determine what they represent and what they do not represent. In Phase 5, researchers need to complete two tasks. First, themes should be defined. Braun and Clarke (2006:93) warned against simply paraphrasing the content of the data extracts and stated that, in defining a theme, a researcher should identify what is of interest about a theme and why. The definition of each theme should reflect the 'essence' of what the theme is about. Second, the researcher needs to review the name of each theme. Braun and Clarke (2006:93) debated that the name a researcher selects for a theme should reflect its authentic content and meaning. The authors added that theme

names should be "*concise, punchy, and immediately give the reader a sense of what the theme is about".*

Given that the researcher employed the novel approach to theme development as outlined in Phase 4, the approach to defining and naming themes also departed somewhat from Braun and Clarke's (2006:93) original conceptualisation of defining themes. While the theme names were already developed (from the coding frame), the subcategories and code names could be further defined and refined. The researcher therefore aimed to refine the definitions of each subcategory within a theme by reverting to the data and reading the data extracts captured within each subcategory.

- ***Phase 6: Producing the report***

The final phase of TA entails writing the report on the data analysis. Phase 6 can only begin once a researcher has a 'fully worked-out' list of themes, subcategories, and codes. The purpose of this phase is to provide a vivid account of the data and the deeper meanings embedded within the data, or a 'thick description' of the data (Guest *et al.,* 2012:200). Braun and Clarke (2006:93) stated that the report (and the write-up of the findings) needs to do more than just provide data. A researcher should provide vivid examples by including data extracts in the analytical narrative that compellingly illustrates the 'story' the researcher is trying to portray. These authors explained that the analytic narrative provided by a researcher should go beyond the simple description of the data to make an argument related to the study's research question. Chapter 8 presents the discussion of and report on the findings of the TA.

Table 7.14 summarises the ten core assumptions of reflexive TA as outlined by Braun and Clarke (2022).

**Table 7.14: Ten core assumptions of reflexive TA**

| TEN CORE ASSUMPTIONS OF REFLEXIVE TA |
|---|
| 1. *Researcher subjectivity is a 'tool' in the analysis process* and should not be considered a problem that should be 'managed or controlled'. The notion of researcher bias is incompatible with reflexive TA as the researcher is a tool in the analysis process and knowledge generation is therefore inherently subjective. |
| 2. Data analysis and interpretations *cannot be accurate or objective* but can be weaker (underdeveloped) or stronger (compelling). |
| 3. The quality of coding and theme development results from dual processes of *immersion and engagement* with the data as well as through periods of distancing from the data, which allows time and space for reflection and to allow insight and inspiration to develop. |
| 4. The quality of coding *is not dependent on multiple coders*. Coding should rather seek to enhance reflexivity and interpretative depth than consensus among coders. |
| 5. Themes are analytical outputs and are developed *after* coding. |
| 6. *Themes are patterns of meaning* anchored by central organising concepts, not summaries of meaning related to a topic. |
| 7. Themes are not waiting in the data to 'emerge'; they are *conceptualised and produced by the researcher* through systematic analytic engagement with the dataset. |
| 8. Data analysis is *always underpinned by theoretical assumptions* and these assumptions need to be acknowledged and reflected on to indicate how they have affected the data-analysis process. |
| 9. *Reflexivity is vital to the analysis process*. The researcher's insight into, and articulation of, their generative role in research is key to good quality analysis. |
| 10. Data analysis in reflexive TA is conceptualised as an *art not a science*, therefore creativity within a framework of rigour is central to the process. |

**Source: Braun and Clarke (2022)**

In the previous section, the methods used to collect and analyse the semi-structured interview data were unpacked. The researcher first discussed the reasons for taking a semi-structured interview approach. Next, the three cycles of sampling (expert sampling, theoretical sampling, and snowball sampling) were described. After that, the researcher discussed how the semi-structured interviews were conducted and outlined, in Table 7.10 and Table 7.11, the participants and retailers interviewed for this study. Finally, this section concluded with a discussion of reflexive TA as the data-analysis technique used for the semi-structured interview data. Here, the six phases of reflexive TA were presented alongside a discussion of how these phases were implemented in this study.

The following section concludes this chapter with a discussion on measures employed by the researcher to ensure the validity and rigour of the data collection and analysis, as well as addressing ethical considerations.

## 7.6 VALIDITY, RIGOUR, AND RESEARCH ETHICS

Despite gaining popularity, qualitative research continues to struggle to be viewed as a legitimate choice of methodology in the mainstream management literature (Lanka *et al.,* 2021:2). These authors argued that the struggle originates from positivist, empiricist, and quantitative traditions, leading to qualitative research being judged by quantitative standards and paradigms. Mir and Jain (2018:346) debated that, for this reason, assessing the accuracy of qualitative studies is more complicated than quantitative studies. Quantitative studies use validity and reliability measures, which are usually based on standardised instruments that have previously been proven, to deliver accurate results (Mason, 2017:38). Determining validity in qualitative studies is not as clear cut. Accordingly, Creswell and Creswell (2017:201) stated that validity does not signify the same meaning in qualitative research as it does in quantitative research, nor should it be thought of as a companion of reliability or generalisability. Instead, qualitative validity means that the researcher checks the accuracy of the findings by employing specific procedures while qualitative reliability indicates that the researcher's data-collection and -analysis approaches are consistent across different researchers and projects.

Qualitative researchers maintained that, because of the difference in nature and purpose of quantitative and qualitative research, it is flawed to apply the same criteria for validity and rigour that are applied to quantitative studies (Leavy, 2014:118; Gardano, 2020:1). As such, qualitative studies should be measured against their own set of criteria. The next section discusses four principles to ensure rigour in qualitative studies.

### 7.6.1 Four principles to ensure rigour in qualitative studies

As stated above, qualitative researchers often struggle to signal validity and rigour in their research. To address this issue, Lincoln and Guba (1985) provided 'naturalistic axioms' to establish quality (or trustworthiness) in qualitative studies, namely credibility, transferability, dependability, and confirmability. Since the publication of these principles, many qualitative researchers have used them to signal validity in their qualitative research.

The following section discusses these measures and describes how they were employed in this study.

#### *7.6.1.1 Credibility*

Credibility is loosely described as the qualitative parallel to internal validity (Lapan *et al.*, 2012:29) and is related to the confidence that can be placed in the truth of the research findings (Korstjens & Moser, 2018:121). Credibility as a measure for validity and rigour establishes whether the research findings represent plausible information drawn from the participants' original data (Forero *et al.,* 2018:5). Lundberg *et al.* (2019:23) maintained that, in an attempt to signal credibility in qualitative studies, a high emphasis has to be placed on selecting participants who possess knowledge relevant to the study.

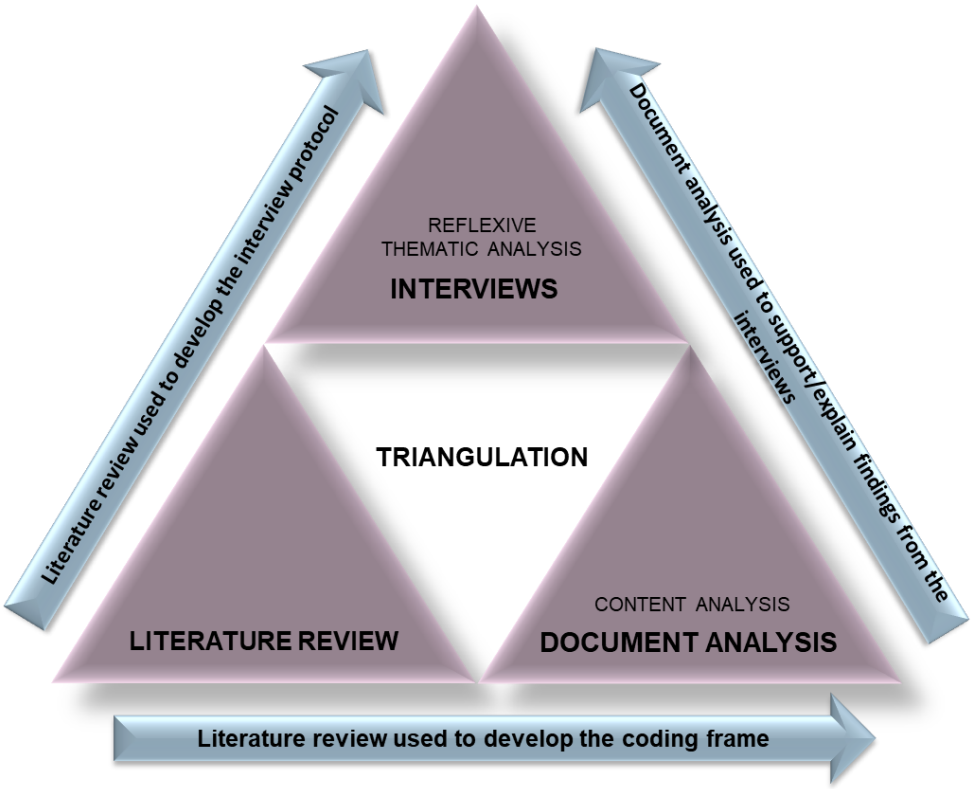
For the purposes of this study, the researcher constructed the 'expert inclusion criteria' to ensure that the participants had in-depth knowledge of the topic of this study. This allowed the researcher to obtain valuable information from the participants, which could increase the credibility of the research. Credibility can also be established in other ways, for example sustained involvement in the research setting through prolonged engagement and persistent observations (Leavy, 2014:660; Creswell & Poth, 2017:202), member checks (Lapan *et al.,* 2012:29; Groat & Wang, 2013:84), and triangulation (Richards, 2015:158; Korstjens & Moser, 2018:121). The researcher chose to establish credibility through triangulation in this study.

### *a) Triangulation*

According to Blumberg, Cooper and Schindler (2011:504), one of the essential methods to ensure the quality of qualitative data is through triangulation. Triangulation is defined as *"a process of verifying information through multiple sources to increase the validity of the description of what is observed".* Mir and Jain (2018:118) stated that the value of triangulation lies in its ability to keep the researcher liable to provide an 'objective account' through plausible patterns of facts that address the research question as a whole. Korstjens and Moser (2018:121) added that triangulation can be obtained in one of three ways, namely data triangulation (the collection of data from multiple sources), investigator triangulation (the use of two or more researchers in the collection or analysis of the data), and method triangulation (using multiple methods for data collection and analysis). In this study, triangulation was achieved using both data and method triangulation.

Figure 7.5 serves as a visual representation of how the different data-collection and -analysis methods were used to increase the validity and rigour of this study.

**Figure 7.5: Application of triangulation in this study**




**Source: Researcher's own compilation**

Figure 7.5 shows that the literature review was triangulated with the document analysis. As discussed in Section 7.4.2, keywords from the literature review were combined with keywords from the documents analysis to develop the coding frame used to conduct the content analysis. Also, the literature review was used to guide the questions included in the interview protocol. This allowed the researcher to address factors from literature in the interview and assisted in creating a comprehensive understanding of dynamic capabilities that promote the internal SCI of omnichannel retailers. Additionally, the findings of the document analysis were used to support or explain specific findings from the interviews.

The researcher also triangulated between data-analysis methods, employing content analysis for the document analysis and thematic analysis for the semi-structured interviews. This amalgamation of data-collection and -analysis methods aided in increasing the credibility of the research.

Other methods to improve the credibility of this study included reframing, repeating, or expanding questions asked during the semi-structured interviews to ensure that the researcher fully comprehended what the interviewees meant. Regarding the data analysis, the audio for the semi-structured interviews was transcribed by a professional transcription company. The transcripts were checked for any mistakes and the mistakes were corrected.

#### *7.6.1.2 Transferability*

Transferability refers to the extent to which the conclusions of one study can be applied to another setting or circumstance (Groat & Wang, 2013:85). The literature, in general, agreed that, to improve the transferability of qualitative research, a researcher needs to provide a 'rich, thick description' of the phenomena under investigation and the methods employed in the study (Lapan *et al.,* 2012:165; Creswell & Creswell, 2017:270; Cassell *et al.,* 2018:20). Creswell and Poth (2017:209) argued that, with rich descriptions, the researcher enables other readers to determine whether the findings can be transferred to other contexts "*because of shared characteristics".* Krefting (1991:221), however, felt that it is not the responsibility of the researcher to ensure the transferability of the study but rather to provide an accurate representation

of the data-collection and -analysis methods to allow other researchers to judge its transferability.

To increase the transferability of this study, the researcher ensured that a detailed account of the data-collection and -analysis processes followed in the study was provided. In addition, transferability was also increased by recording and transcribing the interview data to create an accurate audit trail.

#### *7.6.1.3 Dependability*

In order to establish dependability in qualitative research, a researcher needs to ensure that the findings of a qualitative study are repeatable if the study is repeated within the same cohort of participants and coders and within the same context (Forero *et al.,* 2018:3). Travis (1999:1037) debated that dependability refers to the "*stability of the data*", meaning that the data gathering and analysis process should be traceable.

To increase dependability, some authors suggested that researchers should establish a detailed audit trail and provide a stepwise account of the study's methodological choices (Creswell & Poth, 2017:204; Korstjens & Moser, 2018:121). The dependability of the research was improved by establishing both an audit trail (keeping a stepwise account of the procedures followed) and providing a rich description of the methods used in this study (as explained as part of transferability above).

#### *7.6.1.4 Confirmability*

Forero *et al.* (2018:3) described confirmability as the confidence with which the results of a study can be confirmed or corroborated by other researchers. Lapan *et al.* (2012:29) added that confirmability may be established by providing a chain of evidence, such that the reader can see the source of the conclusion/finding. This can be achieved by incorporating illustrative examples from the data that support the researcher's conclusions. Other authors listed reflexivity, triangulation, and auditing as ways to establish confirmability in a study (Groat & Wang, 2013:81; Creswell & Poth, 2017:204; Korstjens & Moser, 2018:121).

The researcher established reflexivity by keeping a reflexive journal (discussed as part of data familiarisation (Phase 1 of reflexive TA)). Additionally, as already discussed above, both triangulation and auditing (establishing an audit trial) were used to improve this study's validity and rigour. Lapan *et al.* (2012:29) and Leavy (2014:680) added bias as a critical point in confirmability, with Leavy (2014:680) describing confirmability as the "…*self-critical attitude on the part of the researcher about how one's own preconceptions affect the research".* Researcher bias is not compatible with reflexive TA (see Table 7.14), therefore the researcher guarded against obvious biases through the triangulation of document data and interview data and through reflexivity as outlined in the reflexivity/positionality statement at the start of this study. As mentioned previously, the triangulation of multiple data sources can aid researchers to corroborate or refute, elucidate, or expand on findings (Bowen, 2009:28; Gross, 2018:547). In addition, to avoid any bias caused by differences in interviewer behaviour, the same interviewer conducted all 17 semi-structured interviews.

The discussion above aimed to illustrate the steps taken by the researcher to ensure validity and rigour in this study. The next (and final) section of this chapter aims to address measures employed by the researcher to conduct this study, following the highest level of research ethics.

### 7.6.2 Research ethics

In addition to adhering to quality criteria set out by UNISA, this research study also conformed to generally accepted norms and values when conducting research. Research ethics covers not only criteria about the privacy and anonymity of the participants but also includes a researcher's responsibilities towards the practice of scientific research. Eisend and Kuss (2019:216) listed the following seven ethical principles researchers should adhere to when conducting research:

- **Honesty**: practising honesty in all research and publication efforts;
- **Carefulness**: taking caution to avoid errors, in particular when presenting results;

- **Objectivity**: not feeling pressured to obtain specific results but remaining objective at all times;
- **Openness**: sharing their knowledge and results openly;
- **Freedom**: conducting research without intimidation;
- **Fair credit allocation**: giving credit to all sources and avoiding plagiarism; and
- **Respect for human subjects**: respecting the rights of human subjects at all times.

The researcher made definite attempts during this research to ensure that these criteria were met. Most of the factors discussed as part of the previous section on rigour and validity also covered the principles to ensure research ethics.

In addition to the discussion on rigour and validity, it might be beneficial to discuss how the researcher approached her responsibilities towards the participants in this study. Participants were recruited voluntarily without any offer of an incentive and had the right to withdraw from the research at any time. In addition, the complete anonymity of participants was assured. The researcher believes that, through the steps taken in this chapter and the steps taken while reporting on the findings (Chapter 8), participants' identities were protected. The researcher also obtained informed consent from all participants. A copy of the ethical clearance obtained by UNISA can be found in Annexure E.

## 7.7 CHAPTER CONCLUSION

This chapter aimed to provide the reader with a 'rich, thick' description of the methods followed in collecting and analysing the data for this study. At the start of this chapter, the researcher provided a rationale for why this study was classified as exploratory and descriptive. Next, the researcher addressed the five layers of Saunders *et al.*'s (2020:130) research onion. It was concluded that the researcher took a pragmatic approach to answering the research question, in other words methodological choices were made that provided the highest probability of answering the research question. Accordingly, the researcher also adopted an abductive approach to theory development as abduction allowed the researcher to integrate findings from previous

studies with the findings of this study to develop the conceptual framework. It was also explained as part of this discussion that the researcher employed a qualitative, multimethod approach to data collection. The section on the research onion concluded with a discussion on research strategies and time horizons where the researcher indicated that archival records (in the form of the IARs of omnichannel retailers) were used in the document analysis and that the researcher was inspired by notions of GT in the development of the research process. It was also established that the study's time horizon was cross-sectional.

Next, this chapter independently addressed the two phases of data collection and analysis. Phase 1, the documents-analysis phase, was discussed first. This discussion outlined the four-step approach followed by the researcher to select the documents as part of the purposive, homogeneous sampling process. Next, the researcher detailed the deductive-directed content-analysis process followed in analysing the 40 IARs. The document analysis comprised two stages of content analysis, namely text-mining through word lists and an auto and manual coding process.

The next part of this chapter deliberated on Phase 2 of data collection and analysis, namely the semi-structured interviews. In describing the process of participant selection, the researcher outlined the three sampling processes that were followed: expert sampling, theoretical sampling, and snowball sampling. Seventeen semi-structured interviews were conducted until the research reached saturation. Reflexive TA was presented in Section 7.5.2.2 as the data-analysis method. As part of this discussion, the researcher outlined the six phases of reflexive TA.

This chapter concluded with the steps employed by the researcher to improve the rigour and validity of the study. The researcher highlighted the four principles to improve trustworthiness in qualitative data, namely credibility, transferability, dependability, and confirmability. In Section 7.6.1, the researcher outlined how these principles were applied to improve validity and rigour in this study. Research ethics were addressed, and the researcher listed the seven ethical principles scholars should adhere to when conducting research. This section concluded with a discussion of how anonymity was ensured and informed consent was obtained from interviewed participants. The next chapter (Chapter 8) presents the results of the data analysis.

# CHAPTER 8
# DATA ANALYSIS

## 8.1 CHAPTER INTRODUCTION

In the preceding chapters of this study, the research question and objectives were introduced (Chapter 1). An extensive literature study was conducted to determine what dynamic capabilities had been identified in literature regarding internal omnichannel supply chain integration (SCI) (Chapters 2 – 6). Additionally, the research methodology was discussed in the previous chapter (Chapter 7). This chapter aims to report on the findings of this study.

This chapter starts by revisiting the secondary objectives stated in Chapter 1. In doing so, the reader can see which objectives have already been achieved and which should be addressed in this chapter. After revisiting the study objectives, a brief discussion on the researcher's process in developing the conceptual framework is presented. Thereafter, the conceptual framework is presented by discussing each theme, its subcategories, and their codes. Each subcategory and its specific codes are discussed individually to allow the reader to gain a comprehensive understanding of the findings.

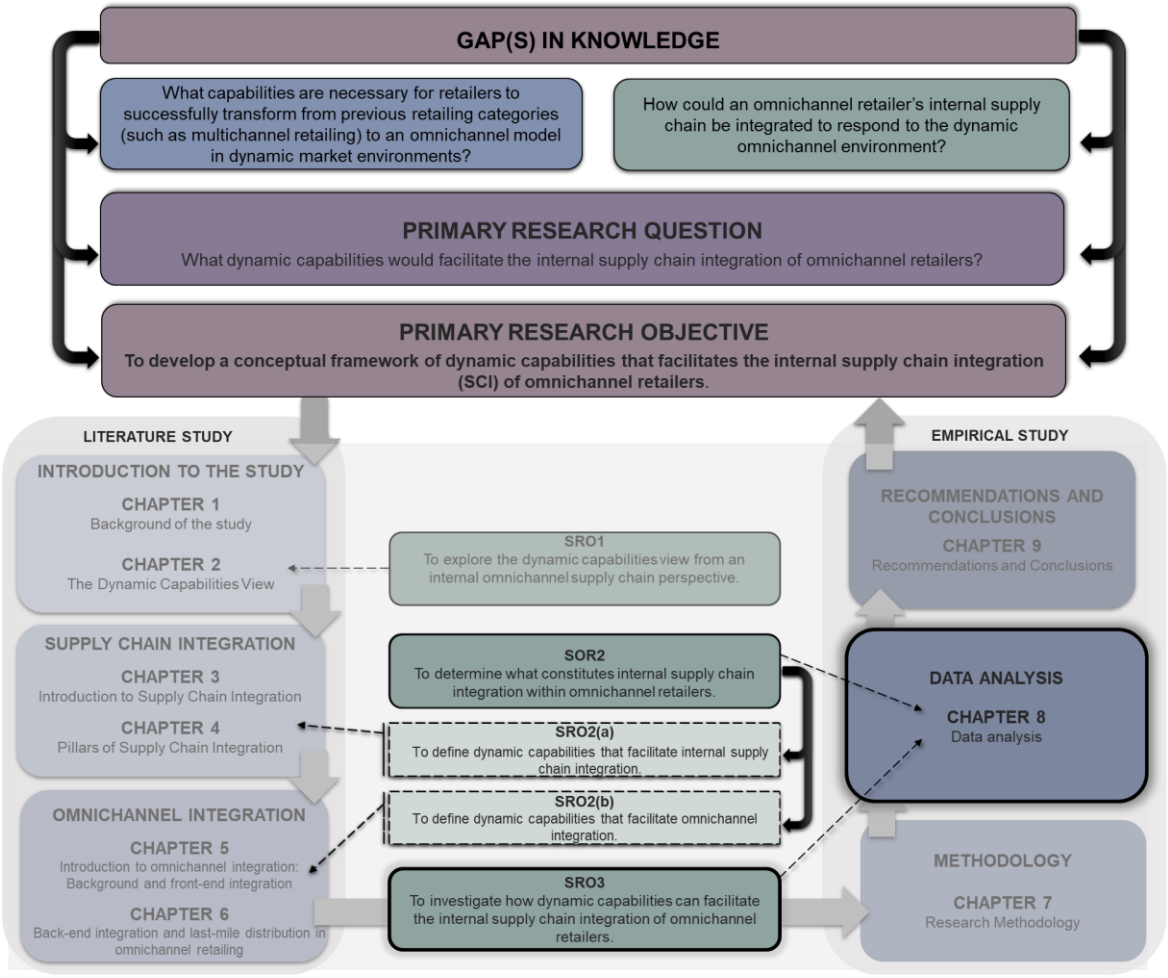
As part of the problem statement outlined in Chapter 1, two gaps in knowledge were identified. First, what capabilities are necessary for retailers to successfully transform from previous types of retailing to an omnichannel model in dynamic market environments? Second, how can an omnichannel retailer's internal supply chain be integrated to respond to the dynamic omnichannel environment? By developing the conceptual framework of dynamic capabilities that promote the internal SCI of omnichannel retailers, this chapter makes two contributions to the extant body of knowledge on omnichannel supply chain management. First, unlike previous studies that demarcate the research to only focus on specific parts of omnichannel SCI (last-mile or front-end), this study takes a broader view by conducting an in-depth analysis of all aspects of the integration of the internal supply chain (information, process, and

social capital) and omnichannel operations (front-end, back-end, and last-mile distribution). In doing so, this chapter *identifies* and *defines* a list of dynamic capabilities that facilitate internal SCI. Second, while retailers who participated in the study form part of international conglomerates, participants provided unique perspectives on the capabilities required for omnichannel retailing within the South African market.

## 8.2 REVISITING THE RESEARCH PURPOSE, QUESTIONS, AND OBJECTIVES

Before discussing the data analysis and findings, it is essential to revisit the primary research question and objectives. Figure 8.1 serves as a visual summary of this study's research question and objectives and how each chapter contributes to achieving these objectives.

**Figure 8.1: Outline of the study's objectives and chapters**




**Source: Researcher's own compilation**

Based on Figure 8.1, it can be concluded that secondary research objective 1 (SRO1) and SRO2 (including SRO2a and SRO2b) have been partially addressed in the literature (Chapters 1 – 6). In this chapter, SRO2a, SRO2b, and SRO3 need to be considered by analysing the empirical data.

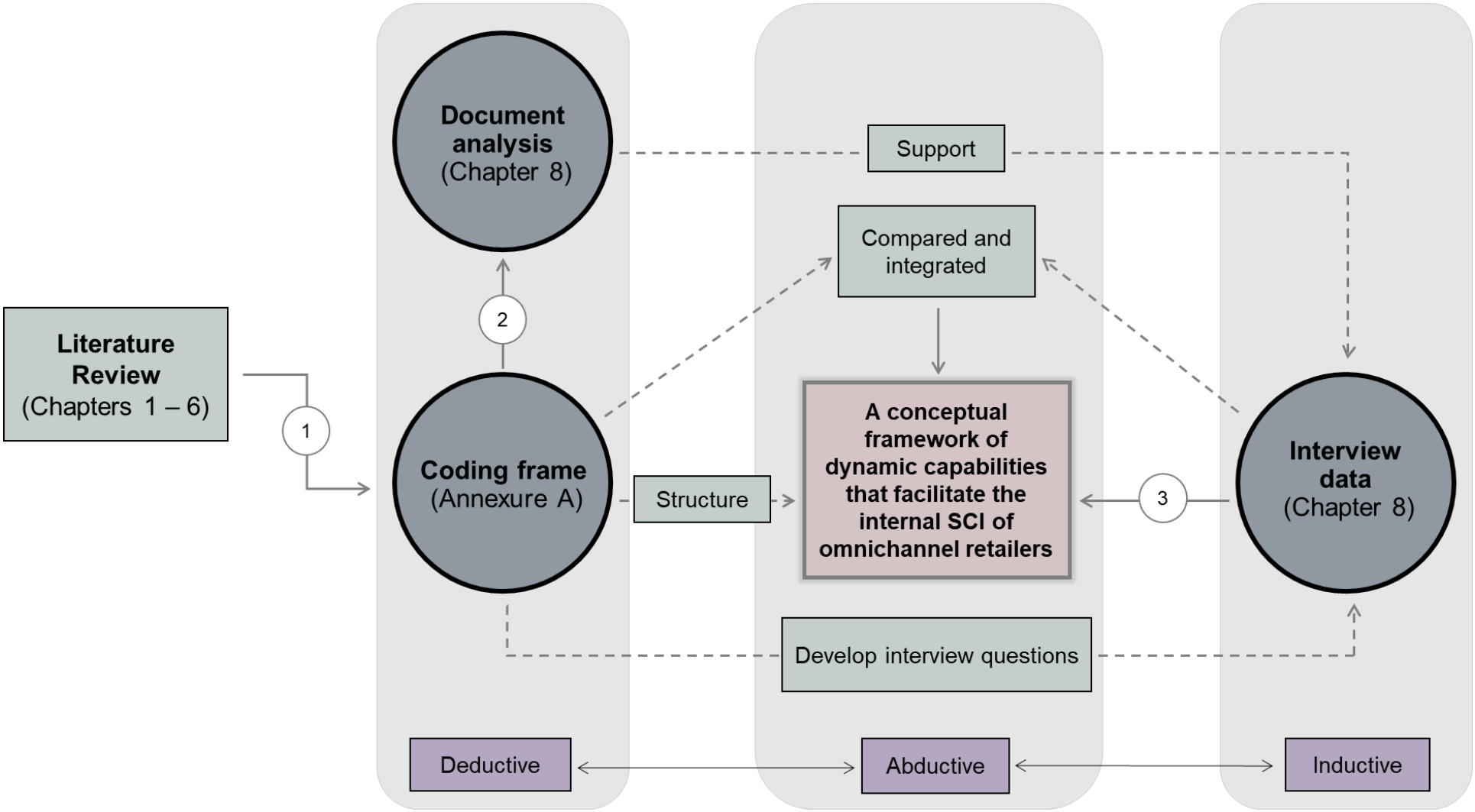
The following section presents the conceptual framework of this study. Section 8.3 also provides a brief overview of the processes followed by the researcher in developing the framework. After that, each of the constructs of the conceptual framework are unpacked and discussed with relevant supporting data.

## 8.3 DEVELOPING THE CONCEPTUAL FRAMEWORK

In building the conceptual framework, the researcher followed a process of integrating and comparing the three datasets of the study through an abductive approach (as explained in Section 7.3.2): the coding frame (developed from literature Chapters 1 - 6), the document analysis (consisting of the analysis of 40 integrated annual reports (IARs) of omnichannel retailers), and the findings from the analysis of 17 semi-structured interviews.

Figure 8.2 visually illustrates the researcher's abductive approach to developing the conceptual framework.

**Figure 8.2: Abductive approach to the development of the conceptual framework**

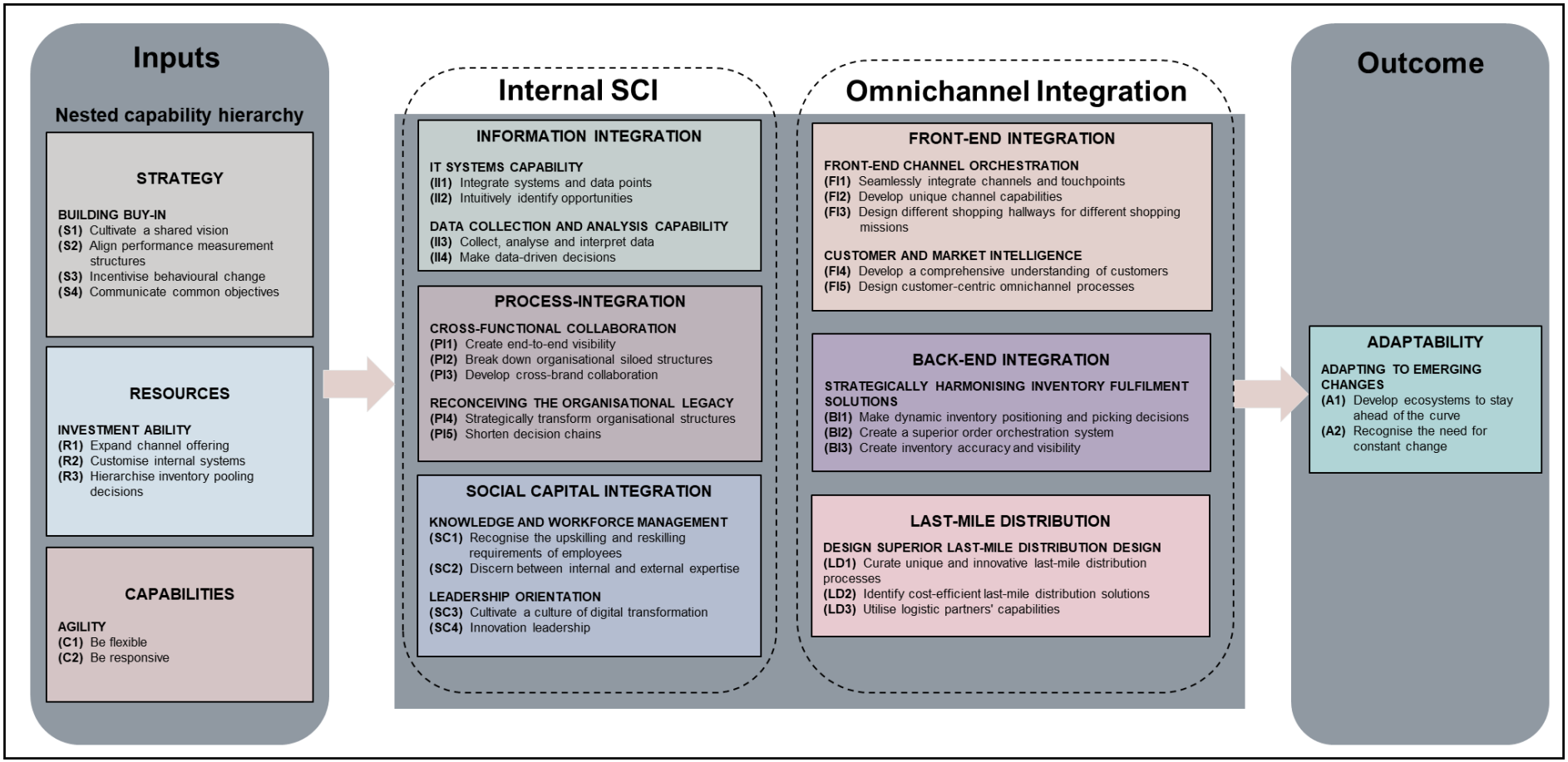



**Source: Researcher's own compilation**

Figure 8.2 shows that, first, the literature review (Chapters 1 - 6) was summarised and synthesised to develop a coding frame of dynamic capabilities (Annexure A). Second, the researcher used the coding frame to conduct a deductive content analysis of 40 IARs (document analysis). Third, the researcher conducted 17 semi-structured interviews with omnichannel retailers, based on an interview guide developed from the coding frame. The researcher inductively analysed the transcribed interview data through reflexive thematic analysis (TA) outlined in Chapter 7, Section 7.5.2.2. Thereafter, the researcher reverted to the coding frame and document analysis to compare and integrate the three datasets. After an extensive comparison process, which included scrutinising the definitions of each theme, subcategory, and code in comparison to the coding frame, the researcher determined that each subcategory (originating from the analysis of the interview data) could be classified under headings developed as part of the coding frame (originating from the literature study). Hence, the coding frame was mainly used to provide structure to the conceptual framework (by providing framework headings), while the document analysis was used to support the findings from the interview data. This process was outlined in detail in Chapter 7, Section 7.5.2.2.

Figure 8.3 represents the conceptual framework of dynamic capabilities that facilitates the internal SCI of omnichannel retailers and, therefore, presents the findings of the primary objective of this study. In the subsequent sections of this chapter, the themes, subcategories, and codes presented in the framework will be discussed in detail.

**Figure 8.3: Conceptual framework**

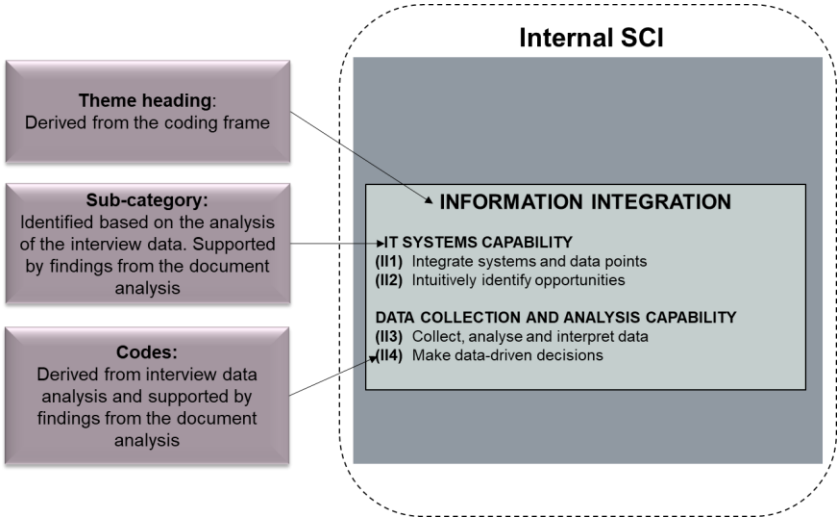



**Source: Researcher's own compilation**

The conceptual framework illustrates that, after the conclusion of the abductive analysis of the entire dataset,[54] the data were classified under the following ten theme-headings: strategy, resources, capabilities, information integration, process integration, social capital integration, front-end integration, back-end integration, last-mile distribution, and adaptability.

Noticeable from Figure 8.3 is that the first three themes (strategy, resources, and capabilities) are considered as the overarching or broad dynamic capabilities that serve as important *inputs* into the development of other, more omnichannel-SCI-specific dynamic capabilities. Also, as explained in Chapter 2, Table 2.1, this study considered the ultimate *outcome* of dynamic capabilities as adaptability. Figure 8.4 clarifies the origin of each of the conceptual framework elements.

**Figure 8.4: Clarifying each element of the conceptual framework**




**Source: Researcher's own compilation**

In constructing the conceptual framework, the researcher wanted to determine the relevant importance of each code within each theme and subcategory as narrated by participants. To do so, the researcher produced a code frequency report. Table 8.1 presents the code frequency report of all codes across all 17 participants and lists the 14 subcategories and 35 codes that emerged from the data.

[54] To avoid repetition, from this point on, when the researcher refers to the 'dataset', it implies the integration and interpretation of all three datasets (the coding frame, the document analysis, and the interview data) that contributed towards the development of the conceptual framework. In instances where data from individual datasets are presented, it is explicitly indicated as such (for example, according to the findings of the interview data).

## Table 8.1: Code frequency table

| | | P1 | P2 | P3 | P4 | P5 | P6 | P7 | P8 | P9 | P10 | P11 | P12 | P13 | P14 | P15 | P16 | P17 | Totals | Average |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| To have the ability to | **STRATEGY** | 1 | 0 | 4 | 4 | 4 | 5 | 1 | 0 | 5 | 3 | 5 | 0 | 5 | 8 | 5 | 7 | 5 | 62 | 4 |
| | BUILDING BUY-IN | 1 | 0 | 4 | 4 | 4 | 5 | 1 | 0 | 5 | 3 | 5 | 0 | 5 | 8 | 5 | 7 | 5 | 62 | 4 |
| | **S1** Cultivate a shared vision | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 0 | 5 | 1 | 2 | 0 | 2 | 3 | 4 | 4 | 2 | 29 | 2 |
| | **S2** Align performance measurement structures | 1 | 0 | 3 | 2 | 1 | 2 | 1 | 0 | 0 | 2 | 1 | 0 | 1 | 0 | 0 | 2 | 0 | 16 | 1 |
| | **S3** Incentivise behavioural change | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 3 | 0 | 0 | 1 | 10 | 1 |
| | **S4** Communicate common objectives | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 1 | 1 | 2 | 7 | 0 |
| | **RESOURCES** | 18 | 3 | 1 | 2 | 6 | 1 | 0 | 2 | 5 | 1 | 2 | 3 | 0 | 3 | 3 | 11 | 1 | 62 | 4 |
| | INVESTMENT ABILITY | 18 | 3 | 1 | 2 | 6 | 1 | 0 | 2 | 5 | 1 | 2 | 3 | 0 | 3 | 3 | 11 | 1 | 61 | 4 |
| | **R1** Expand channel offering | 10 | 1 | 0 | 1 | 4 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 2 | 3 | 10 | 0 | 35 | 2 |
| | **R2** Customise internal systems | 5 | 1 | 0 | 0 | 2 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 13 | 1 |
| | **R3** Hierarchise inventory pooling decisions | 3 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 4 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 13 | 1 |
| | **CAPABILITIES** | 2 | 0 | 7 | 0 | 0 | 4 | 0 | 2 | 0 | 1 | 3 | 0 | 0 | 1 | 0 | 1 | 0 | 21 | 1 |
| | AGILITY | 2 | 0 | 7 | 0 | 0 | 4 | 0 | 2 | 0 | 1 | 3 | 0 | 0 | 1 | 0 | 1 | 0 | 21 | 1 |
| | **C1** Be flexible | 2 | 0 | 7 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 1 |
| | **C2** Be responsive | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 2 | 0 | 1 | 2 | 0 | 0 | 1 | 0 | 1 | 0 | 10 | 1 |
| | **INFORMATION INTEGRATION** | 7 | 4 | 4 | 4 | 4 | 3 | 2 | 7 | 2 | 8 | 1 | 5 | 7 | 6 | 9 | 2 | 7 | 82 | 5 |
| | IT SYSTEMS CAPABILITY | 4 | 3 | 4 | 1 | 2 | 3 | 1 | 3 | 2 | 3 | 1 | 4 | 5 | 2 | 2 | 2 | 2 | 44 | 3 |
| | **II1** Integrate systems and data points | 0 | 3 | 1 | 0 | 1 | 1 | 0 | 1 | 2 | 3 | 1 | 2 | 4 | 0 | 1 | 1 | 2 | 23 | 1 |
| | **II2** Intuitively identify opportunities | 4 | 0 | 3 | 1 | 1 | 2 | 1 | 2 | 0 | 0 | 0 | 2 | 1 | 2 | 1 | 1 | 0 | 21 | 1 |
| | DATA COLLECTION AND ANALYSIS CAPABILITY | 3 | 1 | 0 | 3 | 2 | 0 | 1 | 4 | 0 | 5 | 0 | 1 | 2 | 4 | 7 | 0 | 5 | 37 | 2 |
| | **II3** Collect, analyse and interpret data | 1 | 0 | 0 | 3 | 1 | 0 | 0 | 4 | 0 | 4 | 0 | 1 | 1 | 3 | 5 | 0 | 4 | 27 | 2 |
| | **II4** Make data-driven decisions | 2 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 2 | 0 | 1 | 11 | 1 |
| | **PROCESS-INTEGRATION** | 9 | 11 | 4 | 2 | 11 | 5 | 4 | 6 | 5 | 7 | 2 | 11 | 1 | 8 | 3 | 23 | 3 | 115 | 7 |
| | CROSS-FUNCTIONAL COLLABORATION | 0 | 5 | 4 | 2 | 5 | 1 | 4 | 4 | 5 | 6 | 0 | 5 | 1 | 4 | 3 | 8 | 3 | 60 | 4 |
| | **PI1** Create end-to-end thinking capabilities | 0 | 0 | 3 | 2 | 0 | 1 | 4 | 2 | 3 | 5 | 0 | 1 | 1 | 3 | 1 | 2 | 2 | 30 | 2 |
| | **PI2** Break down organisational siloed structures | 0 | 2 | 1 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 6 | 1 | 16 | 1 |
| | **PI3** Develop cross-brand collaborations | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 2 | 0 | 1 | 0 | 4 | 0 | 1 | 0 | 0 | 0 | 14 | 1 |
| | RECONCEIVING THE ORGANISATIONAL LEGACY | 9 | 6 | 0 | 0 | 6 | 4 | 0 | 2 | 0 | 1 | 2 | 6 | 0 | 4 | 0 | 15 | 0 | 55 | 3 |
| | **PI4** Strategically transform organisational structures | 9 | 3 | 0 | 0 | 3 | 4 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 3 | 0 | 12 | 0 | 37 | 2 |
| | **PI5** Shorten decision chains | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 2 | 0 | 1 | 1 | 4 | 0 | 1 | 0 | 3 | 0 | 18 | 1 |
| | **SOCIAL CAPITAL INTEGRATION** | 36 | 2 | 5 | 2 | 9 | 9 | 1 | 2 | 7 | 2 | 3 | 2 | 4 | 5 | 6 | 14 | 2 | 111 | 7 |
| | KNOWLEDGE AND WORKFORCE MANAGEMENT | 22 | 2 | 4 | 2 | 5 | 1 | 1 | 2 | 4 | 0 | 0 | 2 | 1 | 2 | 2 | 8 | 2 | 60 | 4 |
| | **SC1** Recognise the upskilling and reskilling requirements of employees | 17 | 1 | 3 | 0 | 0 | 1 | 1 | 0 | 3 | 0 | 0 | 1 | 1 | 2 | 1 | 0 | 2 | 33 | 2 |
| | **SC2** Discern between internal and external expertise | 5 | 1 | 1 | 2 | 5 | 0 | 0 | 2 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 8 | 0 | 27 | 2 |
| | LEADERSHIP ORIENTATION | 14 | 0 | 1 | 0 | 4 | 8 | 0 | 0 | 3 | 2 | 3 | 0 | 3 | 3 | 4 | 6 | 0 | 51 | 3 |
| | **SC3** Cultivate a culture of digital transformation | 7 | 0 | 0 | 0 | 3 | 4 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 3 | 2 | 4 | 0 | 26 | 2 |
| | **SC4** Develop leaders who spearhead innovation and change | 7 | 0 | 1 | 0 | 1 | 4 | 0 | 0 | 2 | 2 | 2 | 0 | 2 | 0 | 2 | 2 | 0 | 25 | 1 |
| | **FRONT-END INTEGRATION** | 8 | 4 | 7 | 9 | 9 | 9 | 4 | 13 | 4 | 22 | 6 | 13 | 13 | 10 | 7 | 6 | 5 | 149 | 9 |
| | FRONT-END CHANNEL ORCHESTRATION | 4 | 2 | 3 | 1 | 2 | 6 | 3 | 11 | 3 | 10 | 6 | 9 | 8 | 6 | 3 | 4 | 3 | 64 | 4 |
| | **FI1** Seamlessly integrate channels and touchpoints | 0 | 1 | 2 | 0 | 1 | 3 | 2 | 9 | 3 | 5 | 4 | 3 | 2 | 4 | 1 | 3 | 1 | 35 | 2 |
| | **FI2** Develop unique channel capabilities | 0 | 1 | 1 | 0 | 1 | 2 | 1 | 2 | 0 | 5 | 1 | 4 | 4 | 0 | 2 | 0 | 2 | 15 | 1 |
| | **FI3** Design different shopping hallways for different shopping missions | 4 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 2 | 2 | 2 | 0 | 1 | 0 | 14 | 1 |
| | CUSTOMER AND MARKET INTELLIGENCE | 4 | 2 | 4 | 8 | 7 | 3 | 1 | 2 | 1 | 12 | 0 | 4 | 5 | 4 | 4 | 2 | 2 | 69 | 4 |
| | **FI4** Develop a comprehensive understanding of customers | 0 | 1 | 4 | 7 | 5 | 0 | 1 | 2 | 1 | 10 | 0 | 2 | 4 | 3 | 4 | 0 | 2 | 22 | 1 |
| | **FI5** Design customer-centric omnichannel processes | 4 | 1 | 0 | 1 | 2 | 3 | 0 | 0 | 0 | 2 | 0 | 2 | 1 | 1 | 0 | 2 | 0 | 11 | 1 |
| | **BACK-END INTEGRATION** | 6 | 6 | 8 | 4 | 8 | 8 | 4 | 4 | 8 | 8 | 3 | 6 | 1 | 0 | 1 | 7 | 14 | 96 | 6 |
| | STRATEGICALLY HARMONISING INVENTORY FULFILMENT SOLUTIONS | 6 | 6 | 8 | 4 | 8 | 8 | 4 | 4 | 8 | 8 | 3 | 6 | 1 | 0 | 1 | 7 | 14 | 96 | 6 |
| | **BI1** Make dynamic inventory positioning and picking decisions | 3 | 1 | 5 | 3 | 3 | 2 | 3 | 4 | 2 | 2 | 2 | 3 | 1 | 0 | 1 | 5 | 4 | 44 | 3 |
| | **BI2** Create a superior order orchestration system | 0 | 2 | 2 | 1 | 3 | 5 | 0 | 0 | 4 | 2 | 1 | 1 | 0 | 0 | 0 | 1 | 4 | 26 | 2 |
| | **BI3** Create inventory accuracy and visibility | 3 | 3 | 1 | 0 | 2 | 1 | 1 | 0 | 2 | 4 | 0 | 2 | 0 | 0 | 0 | 1 | 6 | 26 | 2 |
| | **LAST-MILE DISTRIBUTION** | 1 | 4 | 14 | 5 | 4 | 4 | 6 | 3 | 6 | 4 | 8 | 6 | 0 | 1 | 2 | 1 | 6 | 75 | 4 |
| | DESIGN SUPERIOR LAST-MILE DISTRIBUTION PROCESSES | 1 | 4 | 14 | 5 | 4 | 4 | 6 | 3 | 6 | 4 | 8 | 6 | 0 | 1 | 2 | 1 | 6 | 75 | 4 |
| | **LD1** Curate unique and innovative last-mile distribution processes | 1 | 2 | 5 | 2 | 0 | 1 | 4 | 2 | 6 | 3 | 2 | 1 | 0 | 0 | 1 | 0 | 4 | 34 | 2 |
| | **LD2** Identify cost-efficient last-mile distribution solutions | 0 | 1 | 4 | 2 | 2 | 1 | 0 | 1 | 0 | 0 | 5 | 2 | 0 | 0 | 1 | 1 | 1 | 21 | 1 |
| | **LD3** Utilise logistic partners' capabilities | 0 | 1 | 5 | 1 | 2 | 2 | 2 | 0 | 0 | 1 | 1 | 3 | 0 | 1 | 0 | 0 | 1 | 20 | 1 |
| | **ADAPTABILITY** | 5 | 1 | 9 | 4 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 3 | 1 | 6 | 2 | 11 | 4 | 56 | 3 |
| | ADAPTING TO EMERGING CHANGES | 5 | 1 | 9 | 4 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 3 | 1 | 6 | 2 | 11 | 4 | 56 | 3 |
| | **A1** Develop ecosystems to stay ahead of the curve | 3 | 0 | 8 | 3 | 2 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 4 | 0 | 7 | 1 | 35 | 2 |
| | **A2** Recognise the need for constant change | 2 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 2 | 0 | 2 | 2 | 4 | 3 | 21 | 1 |
| | **Totals** | **93** | **35** | **63** | **36** | **57** | **50** | **24** | **40** | **43** | **57** | **34** | **49** | **32** | **48** | **38** | **83** | **47** | **829** | |

Table 8.1 illustrates the number of times each participant mentioned a specific code and the average number of times participants cited each code. At first glance, a code frequency report draws the researcher's attention to interesting aspects of the data, for example trends and patterns that developed from the data (Cassell *et al.,* 2018:227). Additionally, a code frequency report can provide insight into what participants emphasised as the most critical aspects within a theme and subcategory (Dicle & Dicle, 2018:379). The researcher relied on the code frequency report to rank codes within relevant subcategories in order of importance. During the discussion of the different themes, subcategories, and codes, the researcher refers to the code frequency table to contextualise some of the findings. Table 8.1 also lists the abbreviations provided for each code, for example having the ability to cultivate a shared vision (S1).

## 8.4 FINDINGS

In the above section, the conceptual framework was presented and a brief description was provided on how the framework was developed, based on the three datasets. Each of the themes, subcategories, and codes developed from the data is presented below.

### 8.4.1 Theme 1: Strategy

In Chapter 2, Section 2.4, three foundational elements of the dynamic capabilities view (DCV) were presented, namely strategy, resources, and capabilities. As explained in Chapter 7, Section 7.5.2.2, after analysing the dataset, the researcher observed that some of the codes and subcategories developed from the interview data could be classified under these three foundational elements. Subsequently, three themes (Themes 1 – 3) with the same names (strategy, resources, and capabilities) were created as shown in the conceptual framework (Figure 8.3). Theme 1 relates to the first of these foundational elements: strategy.

The literature established that one of the essential building blocks in developing dynamic capabilities is the organisation's ability to deploy its strategy (Kay *et al.,* 2018:629; Teece, 2018:365; Garrido *et al*., 2020:47). In fact, some authors even argued that the ability to develop and pursue an organisation's strategy is a dynamic capability in itself since it is contingent on specific path-dependent processes that are embedded within the organisation (Khan *et al.,* 2020:1481; Talafidaryani, 2021:253).

In Chapter 2, Section 2.4.1, this study contextualised organisational strategy from the DCV and SCI perspectives. The reviewed literature observed that strategy aids an organisation in creating a 'clear mission and vision'. Both the document analysis and the participants' testimonials echoed the importance of strategy when integrating the internal processes of an omnichannel retailer.

The document analysis examined strategy (and its related constructs) to determine how retailers report on strategy and its implementation. In line with the purpose of content analysis, the researcher analysed the retailers' IARs to determine the presence of certain words, themes, or concepts within the documents. Frequency distributions (often resulting from content analysis) allow a researcher to quantify and analyse the presence, meanings, and relationships of words, themes, or concepts within the data. In addition, frequency distributions can provide a researcher with a holistic view of the data and plot the relevant importance of individual data components within the entire dataset. During the document analysis, the researcher relied on the frequency distributions of words to identify meaningful patterns in the retailers' IARs. Table 8.2 represents the words related to strategy, which comprise the coding frame. The process of identifying words included in this analysis was outlined in detail in Chapter 7, Section 7.4. The complete list of words included in the document analysis can be found in Annexure B.

**Table 8.2: Frequency count of document analysis: Word(s) related to Theme 1: Strategy**

| Each word's raking as part of the complete document analysis | Words included in the analysis[55] | 2016 | 2017 | 2018 | 2019 | 2020 | Total | % of the occurrence of each word within Theme 1: Strategy | % within the total document analysis |
|---|---|---|---|---|---|---|---|---|---|
| 4 | strategy | 834 | 954 | 945 | 1190 | 929 | 4852 | 54% | 5.6% |
| 16 | policy | 212 | 311 | 339 | 382 | 348 | 1592 | 18% | 1.8% |
| 27 | plan | 179 | 187 | 190 | 249 | 201 | 1006 | 11% | 1.2% |
| 35 | principles | 108 | 145 | 186 | 187 | 169 | 795 | 9% | 0.9% |
| 39 | values | 139 | 136 | 157 | 134 | 149 | 715 | 8% | 0.8% |
| 78 | routine | 4 | 12 | 4 | 11 | 7 | 38 | 0% | 0.0% |
| **Ranking based on 1-87** | **Total** (words included in the analysis) | | | | | | **8 998** | **100%** | **10.4%** |
| | **Total** (all words included in the document analysis) | | | | | | **86 164** | | |

**Source: Researcher's own compilation**

From Table 8.2, it can be observed that words related to strategy (Theme 1) were mentioned 8 998 times across all 40 IARs and accounted for 10.4% of the total words included in the content analysis. Furthermore, the frequency of the appearance of the word 'strategy' accounted for more than half (54%) of the referrals to words classified under Theme 1 in the retailers' IARs. It can further be deduced that the words 'strategy' and 'policy' were most used in the retailers' IARs when referring to strategy-related aspects. These findings allowed the researcher to revert to the retailers' IARs for contextualisation. Through manual and automatic coding, several quotations were discovered from the IARs, which provided insight into strategy as a way for retailers to adapt to changing market conditions. Within the context of this study, changing market conditions were particularly relevant since it is synonymous with the ever-changing omnichannel environment:

> *"The traditional retail operating model is being fundamentally disrupted at almost every level. This is not only in the area of e-commerce, but is a pervasive change that impacts virtually every part of the retail business model – from design to sourcing, engagement with our people, store operations, models, pricing and promotional activity through to a full omnichannel offering. We recognise the importance of these changes and are committed to investing as required to remain on the forefront of digital transformation. Digital transformation is, therefore, a wraparound that touches each pillar of our strategy."* (Retailer E, IAR 2020).

[55] Final words included in the coding frame after the word refinement process which included the merging and recoding of words. Chapter 7, section 7.4.2.1 provides a detailed outline of this process.

> *"The board confirmed the Group's strategy of aiming to be a world-class omni-channel retailer of fashion clothing, footwear, related merchandise and homeware… The board observed that the successful implementation of this strategy should result in a diversified earnings profile [and] improved returns for shareholders…"* (Retailer XI[56], IAR 2018).

Considering the above discussion, it can be concluded that retailers need to have a strong focus on omnichannel operations within strategy to facilitate SCI. Being omnichannel focused will orient retailers to adapt to the changing market conditions and become 'future-fit'. Becoming 'future-fit' requires the continuous realignment of assets and goals to minimise internal conflict and maximise complementarities and productive exchange within the organisation (Teece, 2007:1336). During the interviews, some participants echoed this statement, highlighting the importance of an aligned organisational strategy in becoming a truly omnichannel-centric retailer:

> *"It's far easier to kind of diffuse conflicting priorities if we're all equally aligned around a common mission. So, I find distilling it down to what we're actually trying to do helps in overcoming internal alignment issues. The role of company executive teams is to get the whole business pulling on the oars that are important to the business, and it's significant to make sure that the mission is understood and important elements in delivering that mission are clearly articulated so there's no misalignment around the fact that this is important to the organisation. So, everybody jumps in the line, everybody gets the same message, everybody has an opportunity to feed into their problems, they celebrate successes, they create this subculture inside the organisation around driving omnichannel excellence and serving customers. So, unifying the team and creating this mission is kind of one of the key elements." (*Participant 6, VP of Supply Chain & eCommerce Operation).

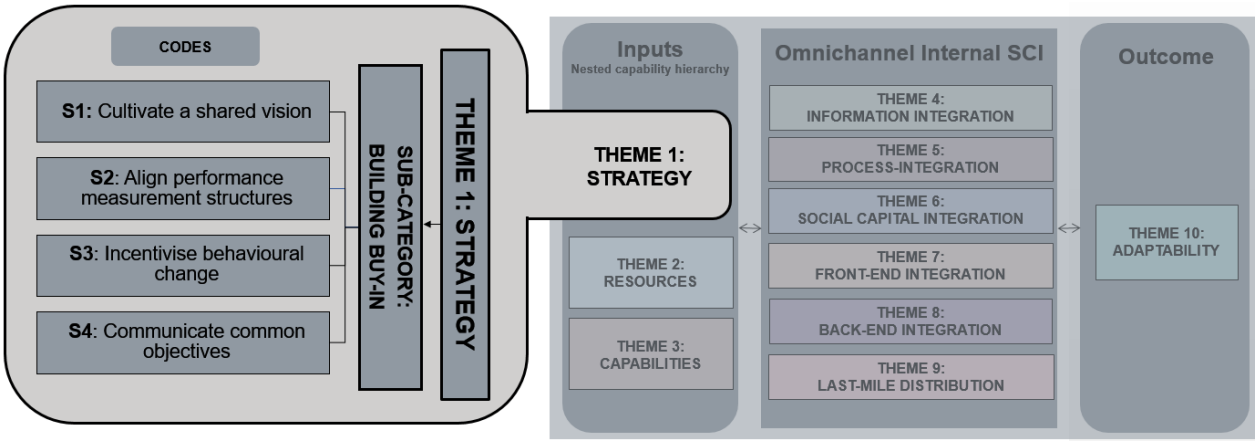
From the preceding discussion, it is evident that, as a starting point, omnichannel retailers need to have a future-focused strategy that allows them to adapt to changing market conditions by championing digital transformation initiatives. However, as a concept, strategy is astronomical, comprising of countless veins that run through every part of the organisation. After conducting the reflexive TA, it was found that, while the many nuances of strategy and its application are essential in facilitating omnichannel SCI, within the context of this study (focusing on *internal SCI*) the most critical function of strategy is to *build buy-in* for omnichannel SCI initiatives. Findings from the analysis of the interview data elucidated that, to build buy-in, retailers need to have several

[56] A Roman numeral was assigned to the two retailers who did not participate in the interviews but were included in the document analysis. Chapter 7, Section 7.5.1.1, outlines participants included in the interviews and document analysis.

capabilities. These capabilities can be classified under the following four headings (codes): having the ability to *cultivate a shared vision* (S1), *align performance measurements structures* (S2), *incentivise behavioural change* (S3), and *communicate common objectives* (S4).

Figure 8.5 represents a detailed excerpt (or subset) of the conceptual framework presented in Figure 8.3 and aims to plot Theme 1 and its subcategory and codes within the broader context of the conceptual framework.

**Figure 8.5: Conceptual framework – Theme 1**




**Source: Researcher's own compilation**

### *8.4.1.1 Building buy-in*

Building buy-in implies that management actively seeks the acceptance and willingness of all the organisation's members to support or participate in a new initiative (Schlak, 2015:395). The ability to build buy-in when an organisation embarks on a period of change is not a novel concept. In fact, most of the established change management models (Kotter's 8 Step change model, Kurt Lewin's 3-step change management model, and McKinsey 7-S model) stressed the importance of building buy-in (or mobilising commitment) when implementing organisational change (Galli, 2018:128). Fawcett *et al.* (2012:47) found that, when an organisation enters a transition phase during which adaptation is pursued, they face both restricting and driving forces. Resisting forces might exist anywhere within an organisation or supply chain (including the people, policies, or processes) and may debilitate strategy

implementation and organisational transformation. Consequently, the ability to obtain commitment and buy-in from employees is essential whenever retailers want to implement change (Furnival *et al.*, 2019:829).

The data analysis revealed that the ability of retailers to gain buy-in from employees was a necessary step in strategy implementation but, more specifically, in their ability to achieve higher levels of omnichannel SCI. Extracts of the document analysis also underscored the importance of building buy-in as a way to obtain support and commitment from employees:

> *"We know that to achieve [our] vision requires the buy-in and commitment of every individual in the business on a daily basis."* (Retailer G, IAR 2019).
>
> *"The ethos of [our] messaging is to create awareness and buy-in from all associates that to effect sustainable change, we have to do this together."* (Retailer D, IAR 218).

The interviewed participants provided insights into several mechanisms to build buy-in. These mechanisms represent the four codes congregating the subcategory building buy-in (see Figure 8.5). The four codes categorised under building buy-in provide retailers with practical guidance on accelerating the acceptance of omnichannel SCI initiatives.

### *a) Cultivate a shared vision (S1)*

The first code (or mechanism) retailers relied on to build buy-in for omnichannel SCI was cultivating a shared vision. Teece (2018:360) argued that dynamically capable managers will have the ability to promulgate a unifying (or shared) strategic vision and utilise this vision as a facilitator for collaboration across internal functions. Research streams within the scope of omnichannel retailing likewise found that antecedents of organisational misalignment are rooted mainly in the inconsistent interpretations of goals and visions (Hajdas *et al.*, 2022:3). Furthermore, Ishfaq *et al.* (2021:9) found that a lack of digital awareness within the organisation resulted in the retailer's long-term vision being incoherent with its short-term actions. Researchers within the field of SCI have also underscored the importance of goal alignment in achieving SCI (Turkulainen *et al.,* 2017:294; Yuen *et al.,* 2019:657). Accordingly, the findings of this

study support the literature in as far as participants also emphasised the importance of cultivating a shared vision and aligning the organisation's corporate strategy to functional objectives to facilitate SCI and support omnichannel initiatives. Accordingly, this study did not aim to provide evidence of the importance of cultivating a shared vision but rather focused on investigating capabilities omnichannel retailers should have (or should build) as a way to cultivate a shared vision.

Referring back to the code frequency table (Table 8.1), it is noticeable that *cultivating a shared vision* was cited most (29 times) by interviewed participants as an essential element to building buy-in. It can therefore be argued that participants considered cultivating a shared vision as the best way to build buy-in for omnichannel SCI initiatives. The analysis of the interview data revealed three tools that retailers can employ to cultivate a shared vision within the organisation, namely *creating a compelling story, leading by example,* and *creating consistency through transparency*.

First, the participants expressed that the foremost step in cultivating a shared vision is creating a compelling story. They explained that, when employees understand organisational drivers and feel that they contribute towards a greater goal, they are more inclined to participate in any organisational change:

> *"I think the first thing is you need to have a compelling story to tell. Why is it important to have omnichannel and why you need to have that to be future fit...you need to have a bedrock of values and a compelling purpose. And then within that framework you can pretty much deal with anything."* (Participant 11, Director of Retail Operations).

> *"… [it] is around just creating a clear vision for everybody, just understand what it is that we want to be. We wanna be a well-integrated omnichannel business, and if we agree on the what then it makes it a lot easier for everybody to buy into the how and the why and so on..."* (Participant 13, Managing Director).

Second, the participants pointed out that cultivating a shared vision is the responsibility of leadership[57]. Leaders need to buy into the concept of omnichannel retailing and then *lead by example* to cultivate a shared drive towards omnichannel retailing:

[57] Leadership orientation comprises a subcategory on its own (see social capital integration (SC4) and SC5). Therefore, leadership's role is only briefly addressed as part of cultivating a shared vision.

> *"So, I think probably the first thing you would need to do is you need to have that aspiration in your business, you need to have the aspiration to want…not everyone does want an omnichannel approach. So, at your leadership level you've got to have a stated intention to have an omnichannel future and to see that as the future of your business."* (Participant 16, Head of Online Operations).

Third, the interviewees acknowledged that a basic requirement for cultivating a shared vision is creating opportunities to improve consistency or uniformity within the organisation. The principal objective of an omnichannel offering is providing customers with fluent and consistent service among channels and touchpoints (Lynch & Barnes, 2020:473; Sun *et al.,* 2020:2). However, demonstrating external uniformity can only materialise when it is mirrored by high levels of internal integration and internal consistency:

> *"It's something that we think about deeply and actually we've spent quite a bit of time with our [international conglomerate][58] team as to how they deliver uniformity, how they keep the team engaged on the mission… you have to kinda create this culture of having one team… So, unifying the team and creating this mission is one of the key elements."* (Participant 6, VP of Supply Chain & eCommerce Operations).

> *"… everybody works across the same milestone and benchmark. So, that's the key point is to have one goal that everybody's working towards."* (Participant 9, Brand Manager - Africa).

Based on the above discussion, it can be concluded that, while previous literature has underscored the importance of cultivating a shared vision to build buy-in for organisational change projects, this is not always an easy task. Dynamically capable retailers should have the ability to create a compelling story of why omnichannel retailing is the way of the future. The story should not only create buy-in for employees, but leaders should also buy into this story and lead by example. In doing so, opportunities are created to utilise the shared vision as a springboard to improve consistency and uniformity when implementing change.

The next code related to building buy-in is the ability of retailers to align performance measurement structures. This code is discussed next.

[58] Name removed as per confidentiality requirements.

### *b) Align performance measurements structures (S2)*

Well-integrated supply chains can serve as a differentiator in highly competitive markets. However, effective performance metrics are central to achieving this (Kotzab *et al*., 2020:286). The alignment of performance metrics serves as the cornerstone to a competitive supply chain and serves as a beacon to track the progress of organisational change initiatives (Khanuja & Jain, 2019:288). Ishfaq *et al.* (2021:15) reported that the digital transformation of supply chains has disrupted established organisational practices. In particular, it has compelled retailers to review long-standing performance measurement systems to better align with metrics that facilitate digital supply chain transformation. In a highly digital and dynamic market such as the omnichannel environment, the ability to continuously adapt performance measurement structures can be considered a dynamic capability (Adivar *et al.,* 2019:259).

The literature review included a discussion on performance measurement and SCI (see Chapter 4, Table 4.5). As part of this discussion, dynamic goal alignment and performance measurement (DC7) was included in the coding frame and defined as follows:

**Dynamic goal alignment and performance measurement capability (DC7):** The ability of an organisation to readjust supply chain goals in pursuit of opportunities and simultaneously adapt performance measures to attain new goals.

In the document analysis, DC7 (and its related constructs) was examined to determine how retailers reported on goal alignment and performance measurement systems. Table 8.3 represents the words related to DC7, which comprise the coding frame.

**Table 8.3: Frequency count of document analysis: Word(s) related to DC7**

| Each word's raking as part of the complete document analysis | Words included in the analysis | 2016 | 2017 | 2018 | 2019 | 2020 | Total | % of the occurrence of each word within DC7 | % within the total document analysis |
|---|---|---|---|---|---|---|---|---|---|
| 2 | aim | 831 | 1013 | 1176 | 1279 | 1061 | 5360 | 78% | 6.2% |
| 30 | team | 153 | 185 | 197 | 225 | 234 | 994 | 15% | 1.2% |
| 52 | outcomes | 23 | 70 | 98 | 110 | 110 | 411 | 6% | 0.5% |
| 71 | performance measurement | 13 | 17 | 12 | 19 | 23 | 84 | 1% | 0.1% |
| **Ranking based on 1-87** | **Total** (words included in the analysis) | | | | | | **6 849** | **100%** | **7.9%** |
| | **Total** (all words included in the document analysis) | | | | | | **86 164** | | |

**Source: Researcher's own compilation**

From Table 8.3, it can be observed that words related to DC7 were mentioned 6 849 times across all 40 IARs and accounted for 7.9% of the total words included in the content analysis of the IARs. Furthermore, the word *aim* was the second-most used word across all 87 words included in the analysis. These findings allowed the researcher to revert to retailers' IARs for contextualisation. Since this code focused explicitly on performance measures, the researcher wanted to determine how retailers reported on performance structures in the IARs. The following quotes provide insights into the role of performance measurement in aligning the organisation's objectives with its strategy:

> *"[Alignment to strategy]… To assist in the measurement of performance against strategy, all strategic imperatives underpinning the strategic pillars are driven by members of our operating board. A balanced scorecard is prepared as part of the annual strategy process. The scorecard includes key metrics quantifying progress on executing operating plans aligned to the strategic focus areas. The Board reviews the scorecard quarterly to monitor performance against strategic focus areas at Group and operating entity level."* (Retailer E, IAR 2017).

> *"In order to focus on the achievement of the Group's or operating entity's strategy, an individual's performance measurement (IPM) includes a combination of objectives aligned with the achievement of the operating entity's strategic focus areas and the employee's behaviour against the Group's values."* (Retailer A, IAR 2020).

From the above discussion can be concluded that retailers use performance measurement structures to align internal operations with the retailer's overarching aim or strategy. During the interviews, the participants echoed this sentiment. However, a key finding of this study was the significance of *alignment* or aligning performance

measures across organisational functions. Most of the participants in this study pointed out that internal SCI can only be achieved when metrics are aligned across all functions of the supply chain:

> *"… you need to make the metrics aligned. You can't have everyone in the supply chain with a different metric. There's gotta be a uniformal [sic] metric across the entire supply chain… if you start standardising in terms of what the objective is and you start putting metrics in place to support the objective, I think you'll get more synergy from the entire supply chain. There becomes a more vested interest in business and in the processes opposed to just worrying about myself in that silo."* (Participant 3, Head of Logistics and E-fulfilment).

To shed new light on the importance of aligning performance measurement to achieve omnichannel SCI, the researcher delved deeper into this construct during the analysis of the interview data to consider how the alignment of performance measures can facilitate omnichannel SCI. Herein, two aspects emerged from the data. First, the *alignment of performance measures creates a culture of accountability*. Second, when performance measurements are aligned, it aids in *breaking down organisational silos while encouraging end-to-end thinking*.

First, the study found that the alignment of performance measurement creates a culture of accountability. The participants revealed that it is difficult to achieve a collective goal unless performance measures (metrics) are aligned. Consequently, performance measures must be mutually agreed upon, carefully and clearly defined, and continuously monitored. Subsequently, performance measures can create buy-in for omnichannel SCI initiatives, increase employee accountability, and provide motivation for exhibiting a commitment towards organisational integration efforts:

> *"So, I think it's kind of very critical that online companies, one, has an agile way of working because the environment changes so quickly and then, secondly, that they've got proper matrix structures so that everybody knows exactly what they're accountable for, who they report to for what, and then, lastly, what are they measured on, what their core KPIs are. So, I think those are the kind of the blocks that you need to align to kind of get to an efficient online capability or omnichannel capability."* (Participant 11, Director of Retail Operations).

> *"… making sure that everybody's clear on their tasks and that they're held accountable for not getting stuff done, and there's this kind of performance culture that's built around, guys, we've agreed to this do, now we need to do this… I think creating the environment for*

*change and then performing in that environment is really important..."* (Participant 6, VP of Supply Chain & eCommerce Operations).

The second reason performance measures build buy-in is that, when performance metrics are aligned across the organisation, they aid in breaking down organisational silos and encourage end-to-end thinking. The ability of different internal supply chain participants to recognise the role they play in creating an omnichannel experience for customers can create buy-in and a sense of affiliation. On the contrary, siloed thinking is often a significant barrier to strategy execution since it results in an unwillingness of employees/functions to exchange knowledge or information, hindering internal collaboration. The participants elaborated on this by stating that, when performance metrics are designed correctly, they will map each internal supply chain participant's role in achieving the organisation's overall objective. This incentivises employees to change behaviours and align day-to-day operations to achieve this objective:

*"…I have an accountability for supporting online growth and online, which I have a vested interested in… so, we've aligned our performance structure to ensuring that we've all aligned to an online objective and, even as we get through developing our own strategies, your strategy is incomplete if there is nothing in there on your agenda around online. So, one of the sort of cultural shifts and change leadership shifts we're having to make is bringing online from niche to central and part of that is making sure that we're clear that from a resource point of view, from a leadership perspective, from an agenda perspective that it's properly integrated."* (Participant 1, Head of Logistics and Supply Chain).

*"We're very scorecard driven. And it's not just in my division, that's across the board. And obviously what that allows you to do is to be able to address things quickly but also then you tend to communication with the affected party a lot quicker as well."* (Participant 4, Head of Logistics).

From the above discussion can be inferred that, while literature has highlighted the importance of developing a performance measurement structure to promote internal SCI, this study added to the discussion by underscoring the importance of aligning performance measures across organisational functions. The alignment of performance metrics can build buy-in for omnichannel SCI initiatives by creating a culture of accountability and breaking down organisational silos, encouraging end-to-end thinking.

Next, the interviewed participants articulated the importance of incentivising behavioural changes as a way to build buy-in for omnichannel SCI initiatives.

### *c) Incentivise behavioural change (S3)*

In the above discussion, the alignment of performance measurement systems was addressed. The incentives provided to employees or teams for meeting performance standards are closely related to performance measurement systems. The purpose of incentives is to motivate employees to reach specific goals and to cultivate specific behaviours within the organisation (Fleischer *et al.,* 2020:5). Tate *et al.* (2015:17) argued that behavioural change and collaboration can be achieved through incentive programmes. These authors found that the reconfiguration of incentive programmes motivates employees to make decisions that align with the organisation's overall objective, encouraging cross-functional collaboration and cultivating a collaborative culture focus on achieving the organisation's overall success.

The participants' testimonials showed that incentive programmes can serve as a mechanism to build buy-in for omnichannel SCI. They acknowledged that incentivising different functions or channels makes employees invested and willing to drive omnichannel initiatives. For example, incentive programmes can result in a behavioural change from employees towards becoming more customer-centric, focusing on providing the best service to the customer irrespective of whether the customer is an in-store or online customer, solely because they get incentivised for doing so:

> *"We need to be the most progressive in the digital and online space. Part of that means proper omnichannel experiences. And if they buy into the how then actually making that happen becomes a whole lot easier. And then there's other ways we can do it, like incentivising them as well. As much as online is maybe a small portion of the business, if I incentivise the entire business for how e-commerce performs, suddenly everybody takes a very big interest in e-commerce as well."* (Participant 13, Managing Director).

> *"We are very heavily incentivised…, so, it's in all of our interests to make sure that these things work… so there is big carrot to make sure these things work."* (Participant 4, Head of Logistics).

Based on the above discussion, it can be concluded that aligning performance metrics with incentive structures is one of the ways retailers can build buy-in for omnichannel SCI initiatives.

The final code that was developed from the data as a possible way to build buy-in for the organisation's omnichannel SCI initiatives was retailers' ability to communicate common objectives. This code is discussed below.

### *d) Communicate common objectives (S4)*

The final mechanism to build buy-in, as expressed by participants, is a retailer's ability to communicate common objectives. The necessity of communicating common objectives might seem obvious; however, often organisations fail to communicate the vision to all members of the organisation effectively. Song and Song (2020:3) found that effectively communicating the organisation's goals leads to higher employee participation in change initiatives. Similarly, Sony and Naik (2020:7) found that effectively communicating common goals facilitates internal SCI and serves as an excellent tool for the unification of employees across organisational functions. Pundziene *et al.* (2021:1052) validated these findings when they proved that two-way communication and the exchange of knowledge and other valuable resources, such as the retailer's strategy and objectives, enriches innovation processes and has an indirect impact on an organisation's performance and relationship building.

The interviewed participants also reverberated these findings by revealing the importance of communicating common objectives across the internal supply chain. They explained that, when employees understand organisational drivers and feel they can be proud of who they are associated with, they are more inclined to participate in the organisation's integration efforts:

> *"… having communication sessions, explaining to them [employees] what you're doing in a way that gets them excited. So, by sharing the stats, by showing them how stuff is working, people wanna be part of something that's successful, people wanna have good brand association… it makes them proud of what they're part of, and they'll buy into supporting you… I think good communication so everyone understands where we are on*

*the roadmap ... not necessarily all the details but just enough to get them excited and buy in."* (Participant 15, GM: Retail and Supply Chain Operations).

*"And I think when it comes to cross-collaboration, I think communication and transparency is the two biggest things."* (Participant 17, Head of Supply Chain Optimisation)

The above discussion shows that, while cultivating a shared vision, aligning performance measures across supply chain functions and incentivising behaviour change all serve as mechanisms for retailers to build buy-in for omnichannel SCI initiatives, it is essential that these objectives be effectively communicated as the final step in building buy-in.

#### *8.4.1.2 Building buy-in: Summary and conclusion*

In the preceding section, building buy-in as a subcategory of Theme 1 was discussed by referring to the findings of the entire dataset. Based on the findings presented above, the researcher developed the following definition to conclude and summarise building buy-in:

*As part of omnichannel retailers' strategy implementation processes, the capability to actively have buy-in for omnichannel SCI initiatives facilitates the acceptance and willingness of employees to support internal SCI initiatives. Retailers can build buy-in and remove internal forces resisting SCI initiatives by cultivating a shared vision, aligning performance measurement structures, incentivising behavioural change, and communicating common objectives. In doing so, retailers have a higher probability of successfully integrating their internal omnichannel supply chain processes.*

Based on the above discussion and definition, this study concluded that having buy-in should be classified as a dynamic capability since it aids omnichannel retailers in promoting internal SCI initiatives. This finding addresses a knowledge gap identified as part of the problem statement for this study (Chapter 1, Section 1.2): *What dynamic capabilities are necessary for a retailer to successfully transform from previous types of retailing to an integrated omnichannel model in dynamic market environments?* In addition, this finding partially addresses secondary research objective 3 (SRO3) by finding that building buy-in can facilitate omnichannel SCI by cultivating a shared

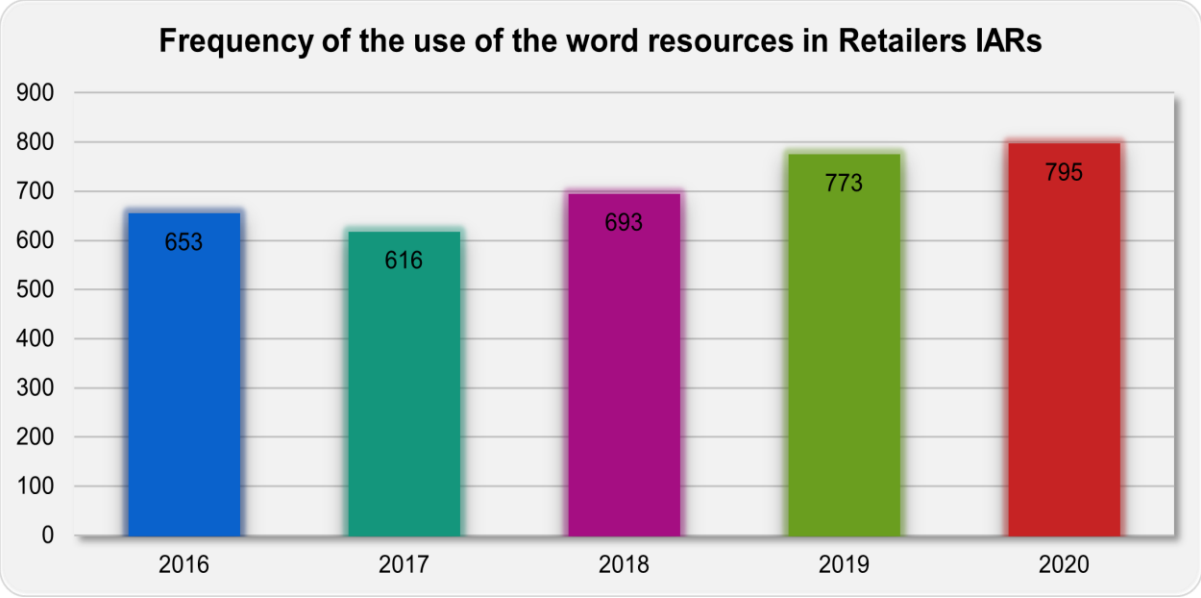
vision, aligning performance measurement structures, incentivising behavioural change, and communicating common objectives.

### 8.4.2 Theme 2: Resources

The second theme of the conceptual framework and the second element of Teece's (2018) DCV is resources. In Chapter 2, Section 2.3.2, resources were discussed as part of the three foundational elements of the DCV. It was stated that resources include both tangible (finances and physical assets) and intangible (organisational culture and brand recognition) resources. Additionally, it was underscored that the most important resource type satisfies the VRIN (valuable, rare, imitable, and non-substitutable) criteria. Within the DCV, resources play a critical role in an organisation's ability to transform identified opportunities into reality (Robertson *et al.*, 2021:1). Therefore, retailers should have the ability to interpret internal resources, that is to identify and assess the resources the organisation has and lacks (De Aro & Perez, 2021:119).

The document analysis examined the word 'resources' to determine how retailers conceive resource utilisation and allocation to stay competitive. Figure 8.6 indicates the frequency of using the word 'resources' across the five-year investigation period.

**Figure 8.6: Frequency of the use of the word 'resources' across retailer's IARs**




**Source: Researcher's own compilation**

Figure 8.6 shows that, as a collective, retailers have gradually increased reporting on resources. This finding could indicate that retailers have started to realise the competitive value of a unique bundle of resources and have looked for (and found) new ways to utilise resources more efficiently. Upon further investigation of the IARs, it was established that retailers do associate competitiveness and adaptability with the deployment of resources:

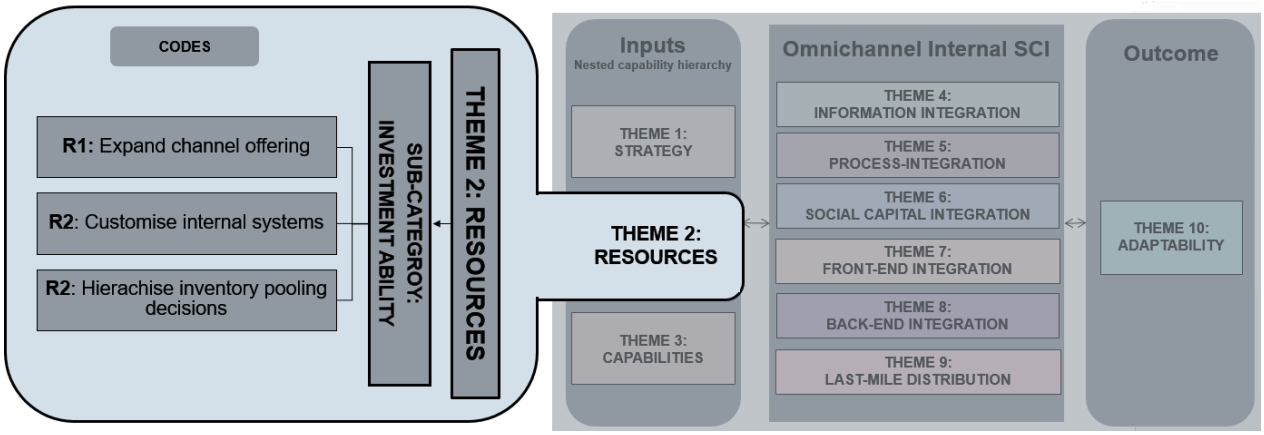
> *"Capital allocation and clear trade-offs to support differentiation will be more important than ever. The group has identified that better organisation of underutilised resources is needed."* (Retailer D, IAR 2019).

> *"[To] drive overall productivity [and] to become more competitive: The Group's ongoing productivity drive was accelerated with the onset of the pandemic. In the low sales environment, we recognised that to ensure long-term sustainability we needed to immediately shift the mindset in the business to 'do more with less', by driving up the output and returns on all our resources and assets."* (Retailer G, IAR 2020).

During the interviews, the participants called particular attention to one vital resource for implementing new omnichannel initiatives: *a retailer's investment ability*. They acknowledged that shifting the traditional retail model to become more omnichannel-focused requires large-scale investment, which some retailers are either unwilling to do or lack the capacity to do. The findings from the analysis of the interview data revealed that a retailer's ability to invest in omnichannel initiatives allows them to *expand channel offerings* (R1), *customise internal systems* (R2), and *hierarchise inventory-pooling decisions* (R3).

Figure 8.7 represents a snapshot (or subset) of the conceptual framework presented in Figure 8.3 and aims to plot Theme 2 and its subcategory and codes within the broader context of the conceptual framework.

**Figure 8.7: Conceptual framework - Theme 2**




**Source: Researcher's own compilation**

### *8.4.2.1 Investment ability*

In modern retail where customers exercise power of choice through smartphones, offering them an assortment of options at their fingertips, retailers face digitally-driven upheavals that leave them constantly having to reinvent themselves (Oka *et al.,* 2017:20). The reinvention of an organisation's standard processes and services often requires large-scale investment. The importance of investment ability as an antecedent to digital transformation and SCI has been underscored by previous authors. Song *et al.* (2021:2) found that the inability of omnichannel retailers to conceive long-term investment opportunities hinder the digital transformation process. Khanuja and Jain (2019:282) found that investment in certain technologies (part of the digital transformation process) increases SCI since these technologies support information sharing, coordination, and synchronisation across the supply chain. Nevertheless, investment in digital transformation still presents retailers with a conundrum. On the one hand, the process of digital transformation almost always starts by detecting a new opportunity that requires investment (De Aro & Perez, 2021:115). On the other hand, top management often has a mindset that demands an immediate return on investment, which is difficult to achieve during the early stages of the digital transformation process (Nagula & Liu, 2020:12).

In line with these findings, this study also found that investment ability is a significant driver of digital transformation towards becoming a more integrated omnichannel

retailer. In the retailers' IARs, many references were made to the centrality of investment in digital transformation:

> *"[Part of our value-creating business model] … is ongoing investment in the Group's stores, distribution capability and e-commerce platforms to promote and sustain growth."* (Retailer XI, IAR 2018).

> *"Our investment in e-commerce platforms and digital transformation initiatives yielded higher than expected benefits during national lockdowns as we were able to trade effectively despite COVID-19 restrictions."* (Retailer E, IAR 2020).

> *"[Part of our response to digital disruption] is to focus on the delivery of a seamless, consistent offering on one integrated ecosystem across online and in store. This requires significant investment in online and digital, including mobile in-app shopping and investment in customer data analytics to inform business decisions and enable personalisation."* (Retailer A, IAR 2020).

The interviewed participants also expressed that the ability to unlock investment allows for better omnichannel process development and increased growth across channels. In fact, when referring to the code frequency table (Table 8.1), only two of the 17 participants (P7 and P13) did not reference investment ability as a core ability for internal SCI. Another observation from Table 8.1 is the significantly higher frequency with which two participants mentioned investment ability as a dynamic capability, Participant 1 (18 mentions) and Participant 16 (11 mentions), compared to the average of four mentions across all 17 participants. These two participants are managers from the same retailer (Retailer A). Therefore, it can be concluded that the redirection of investments towards the growth of omnichannel operations is a strategic imperative at Retailer A, explaining these participants' strong focus on investment ability as a dynamic capability. Accordingly, the analysis of the interview data revealed that the ability of retailers to invest in omnichannel and SCI initiatives does result in competitive advantage:

> *"…don't lose sight of the ability to invest. If the business has got the ability to turn on investment in a particular channel, so if it's got the cash reserves or the cash flow to inject money quickly in a direction, that makes a huge difference… we have a very strong culture of writing a comprehensive business case for investment. Those business cases go with very rigorous financial projections and very, very rigorous implementation costs analysis… And the case has gotta stack up, the investment has gotta stack up to the return, and there are very strict set of hurdles that we've got to get over before we get that level of*

*investment. So, although we do continue to get investment, we get challenged at every turn …"* (Participant 16, Head of Online Operations).

The above discussion established that investment ability facilitates omnichannel SCI. In addition, the findings of the data analysis illustrated that a retailer's ability to invest in omnichannel initiatives creates three capabilities: the ability to *expand channel offerings* (R1), *customise internal systems* (R2), and *hierarchise inventory-pooling decisions* (R3). These capabilities are discussed below.

### *a) Expand channel offerings (R1)*

At the core of a successful omnichannel offering lies a retailer's ability to offer customers a seamless and consistent shopping experience through a variety of digital and physical channels and touchpoints (Gao & Huang, 2021:2; Ürgüplü & Hüseyinoğlu, 2021:1481). However, developing omnichannel processes necessitates appropriate financial investments in human resources, physical and digital channels, mobile applications, social media platforms, advanced information technology, and logistics services (Ürgüplü & Hüseyinoğlu, 2021). Considering the magnitude of the investment involved in developing omnichannel infrastructure, retailers have to plan these investments years in advance (Hajdas *et al.,* 2020:3). To ensure the most lucrative investments are made, retailers must continually sense the environment to identify possible emerging channels or touchpoints to integrate into the omnichannel offering (De Oliveira *et al.,* 2020). From the analysis of the interview data, followed that a retailer's ability to invest is a fundamental capability in the ever-changing omnichannel environments. The participants contextualised investment against the backdrop of two broad topics, namely *the ability of an investment to speed up the expansion process* and *the delicate balance of investing in expansion opportunities without overinvesting*.

First, the interviewed participants noted that a retailer's *investment ability speeds up the channel expansion process*. In particular, the novel coronavirus (COVID-19) pandemic presented a good case for investment ability as a dynamic capability during times of rapid change. Participants recounted how customers' demands for digital channels (online shopping) increased drastically during the pandemic. As such,

investing in new channels or expanding on existing channels allowed retailers to meet the sudden changes in customers' shopping behaviour. They, therefore, conveyed that the ability to invest during times of uncertainty and disruption kept retailers competitive:

> *"So, same-day was essentially born out of customer pressure [during the pandemic]… [it was] born out of the fact that our service levels for home delivery was not meeting customers' demand…"* (Participant 11, Director of Retail Operations).

> *"[The pandemic]… has changed your organisation's view of omnichannel's role in being competitive in South Africa, … so, there will be investment in online sales and structures… things are sped up. Where maybe some of these decisions would have been made during this year [2021] and next year [2022], they've been pulled forward and actioned as needed."* (Participant 2, Head of Logistics and Facilities Management).

Second, the interviewed participants acknowledged that investment is a fundamental building block when pursuing new opportunities. They emphasised that investment in new channels and touchpoints requires a *delicate balance of investing in expansion opportunities without overinvesting.* Additionally, they revealed that, before the pandemic, the growth of online retail in South Africa was slow. However, during the pandemic, the growth of online retail was substantial, with retailers reporting online sales growth between 18% (Retailer G, IAR 2020) and 368% (Retailer I, IAR 2020). The participants added that these drastic demand fluctuations significantly complicate long-term channel expansion decisions since it remains unclear whether the growth in online sales is going to be sustained over the long-term or if the demand spikes will return to pre-pandemic rates. Accordingly, the extent of investment required to expand omnichannels is unclear and overinvestment can have adverse effects on a retailer's long-term profitability:

> *"… our approach has been, for many years, quite tactical, investing in the frontend, investing into some capability in the backend, but everyone's been balancing off the risk of overinvesting… And if you look at our capital investment as a business, by far we've been investing into physical stores, into your experience when you walk into a physical store, and we continue to do so, but picking the point at which you start saying, no, we're seeing a structural shift, let's shift more of our capital into online channels, that's been quite hard to predict. So, I think like most retailers we've been struggling with just picking out when do we see that tipping point where we will be able to go to scaling, and if you get to scaling what are the right investments to make into fulfilment and distribution, and how do we go from sort of a niche little online operation to something far more scalable and sustainable? … South Africa retailers, traditional retailers, definitely have to make proactive investments into their capabilities as defensive strategies because that's coming.*

*And, so, redirecting traditional capital from traditional investments into digital assets, into online assets is a no-brainer."* (Participant 1, Head of Logistics and Supply Chain).

*"… the kind of cautious sort of finance voice is saying don't spend too much on building muscle that you don't need. So, if you're gonna build bigger systems, try and keep it in balance. So, there's always that sort of tension of trying to react and grow big quickly versus the cost involved to do that. So, for the next few months, it's gonna be a bit of a tension point because at one side of the executive we wanna maximise our potential and on the other side of the executive they're don't build it too big that you don't need. So, currently the debate is around our dark store, do we build it for three years or do we build it for five years? The difference is a twenty million rand decision. So, this is exactly where the tension is right now is to be able to right size those decisions and really make the best possible investments without completely overcooking it and building stuff that we don't need…"* (Participant 16, Head of Online Operations).

The importance of balancing investment opportunities was a novel finding and might be an significant finding within the context of South Africa as a developing country. While previous researchers underscored the importance of investment in expanding retailers' channel offerings (Marchet *et al.,* 2018:440 and Eriksson *et al.*, 2019:1240), no research explicitly cautioned against overinvestment. It can be argued that, within the South African omnichannel environment, investment ability as a dynamic capability should be accompanied by an ability to discern between investment opportunities, that is retailers should be able to secure long-term sustainable growth by investing in omnichannel expansions without overinvesting and debilitating operations. The following quotation best supports this argument:

*"I think what makes South Africa a lot different to other counties, so, the Walmarts, they can throw all their money into tech and building the right stack because they just know that's the future, there's no doubting it. I think in South Africa you know that's the future, you just don't know if that's the future for South Africa and Africa. And, so, you've gotta build a lot of capabilities now because you've gotta rationalise all that investment to say it doesn't help we have a bullet train, but nobody can afford to ride it…"* (Participant 15, GM: Retail and Supply Chain Operations).

From the preceding discussion can be concluded that, while previous literature has stressed the importance of a retailer's ability to invest as an antecedent to omnichannel SCI, this study added to the discussion by determining that South African retailers need to strike the proper balance between investing in expansion initiatives while not overinvesting. Furthermore, it was established that, while investment may

allow retailers to speed up the omnichannel expansion process, overinvestment can be detrimental to retailers' long-term sustainability.

### *b) Customise internal systems (R2)*

The importance of internal systems in facilitating SCI was shown numerous times in the literature (Flynn *et al.*, 2010; Montecchi, Plangger & West, 2021; Siagian, Tarigan & Jie 2021; Song *et al.*, 2021). Previous researchers have illustrated that information technology (IT) systems significantly promote process integration in omnichannel retailers as a retailer's ability to innovate and integrate systems can solve emerging problems (Song *et al.,* 2021). Similarly, Montecchi *et al.* (2021:2) illustrated that integrated internal systems lead to transparency in the supply chain, facilitating visibility, traceability, and openness across the organisation. The role integrated systems play in facilitating digital transformation is addressed in Theme 4, Section 8.4.4.1. Therefore, the discussion below takes the perspective of a retailer's ability to invest in *customising* internal systems.

Analysing the interview data showed that a retailer's ability to invest, creates opportunities to customise internal systems. Interviewed participants noted that internal systems often serve as the central nervous system that facilitates SCI and integrates all omnichannel processes. While the ability to invest in these systems is vital for omnichannel SCI, they are expensive. Weighing up the growth of online with the large investment required to update systems is no small feat:

> *"… we need to invest in systems that do integration well, where you have one set of data in the centre that your customers see, that you call centre sees, that the warehouse sees, everybody sees the same data, and that sounds like a simple, logical thing to do but that isn't really in place for big corporates like us. So, I would say the biggest thing is putting an order management system in place… We've developed an in-house little thing that kind of doesn't fully do everything we need it to. But that's a big expense, so we're gonna have to invest in the future for that…"* (Participant 2, Head of Logistics and Facilities Management).

> *"… the service tech is the one that's really difficult for us because we come from a legacy of federated [systems]… really heavy ERP as opposed to light and nimble. So, if I look at people like Yuppiechef[59], all those guys, I get so envious 'cause they've architected their*

[59] Yuppiechef is an online retailer of kitchen and homeware products. Yuppiechef was an online retailer who later opened brick-and-mortar stores.

*tech from being online from the beginning as opposed to trying to convert offline onto online…"* (Participant 12, Chief Operations Office).

*"… the numbers are large, the numbers are scary for people that see it [online retail] as only half a percent of your turnover, even five percent sometimes isn't worth spending the money, but it is building the foundational systems and structures, because if you don't have it you are going to fall short."* (Participant 5, Head of Transport and Engineering Logistics).

In conclusion, the ability to discern between when to seize an opportunity and when to invest in the customisation of internal systems is a dynamic capability. The essence of investing in the customisation of internal systems is that internal systems play a vital part in omnichannel SCI. Delaying crucial investment could be paralysing for a retailer's omnichannel SCI initiatives.

The next and final code of the subcategory investment ability is hierarchising inventory-pooling decisions.

### *c) Hierarchising inventory-pooling decisions (R3)*

Several authors have explained that a way to determine the level of internal omnichannel SCI is through a retailer's inventory management practices (Hosseini *et al.,* 2017:4; Song *et al.,* 2019:547). These authors stated that, when investigating omnichannel retailers' inventory management practices, channels and functions are often segregated and managed as silos. This study shed light on these authors' findings by observing that investment ability may be one of the most significant mechanisms to breaking down organisational silos, particularly those created by separated inventory management practices. The ability to invest allows retailers to integrate or combine inventory from different channels (inventory pooling). Inventory pooling consolidates multiple inventory 'locations' into a single pool (or view) with the aid of inventory management systems. Inventory locations are not only associated with geographical locations but also inventory allocated to separate channels or separate customer groups. Importantly, pooled inventory does not indicate that inventory is kept at a single physical location; inventory can be held at different locations. The essence of inventory pooling is that it creates stock visibility, allowing the retailer to allocate inventory on a first-come, first-served basis.

Many authors have underscored the advantages of inventory pooling in omnichannel retailing (Yang & Zhang, 2020:258; Arslan, Klibi & Montreuil, 2021:1045; Gabor, Van Ommeren & Sleptchenko, 2021:58). Some of these advantages include higher stock availability in the most profitable channels (Hübner *et al.,* 2015:92), the reduction of safety stock (Kembro *et al.*, 2018:904), improved customer service (Wollenburg *et al.,* 2018:426), and reduced operational cost related to the location of the inventory in the supply chain (Melacini *et al.,* 2018:404). During the interviews, the participants added to this debate by indicating that certain investments in inventory management practices can create SCI opportunities and improve customer service (Melacini *et al.,* 2018:404). At this point, it should be stated that the design of various inventory management capabilities constituted a subcategory in itself (See Theme 8, Section 8.4.8.1, strategically harmonising inventory fulfilment solutions). Therefore, the discussion on investment ability only focuses on the effect of *investment* on a retailer's ability to hierarchise inventory-pooling decisions.

The analysis of the interview data revealed that the participants had contradicting opinions on inventory pooling. While some participants indicated that inventory pooling leads to better integration among organisational functions, other participants indicated that separating inventory pools gave them better inventory accuracy and improved overall fulfilment performance:

> *"I think one of the biggest struggles was dealing with increased capacity and also stock availability… we now talk about something in our business called one pool of stock, meaning we need to trade that stock where it's needed the most… so although we have one pool of stock in the DC, we reserve a certain amount of stock, which is almost allocated virtually to our online store, making sure that all of the stock that the customer sees when they're shopping online is actually available to them… So, we absolutely need to talk across the different channels… so there is cross-function, cross-collaboration and we're working more and more towards that."* (Participant 9, Brand Manager – Africa).

> *"So, for many years, our model was to pick the customers' orders in our stores and then we would distribute from the picking stores direct to the customer. It gave us our first sort of wave of customer acceptance and growth in online but very soon as it grew, we quickly realised that we were struggling with getting high enough availability of products and struggling with our levels of fulfilment, so giving the customer exactly the size, the style, and the colour that they wanted. And, so, a few years ago, we shifted to a central fulfilment model where we outsourced what we call a dark store with a partner, and we then effectively create a separate pool of stock, as if online had its own physical store. We invested into a separate pool of stock … it gives us the accuracy we needed whereas in a*

*clothing store the product could be on the hanger, or it could be in the fitting room, or it could be somewhere in a dark store; … it's scanned into a slot and we know for sure that we have so many units in that slot, and so immediate improvement in stock accuracy. …"* (Participant 1, Head of Logistics and Supply Chain).

In conclusion, while significant initial investment might be required to implement a single stock pool concept, the long-term savings can be substantial. Consequently, retailers should evaluate the omnichannel roadmap and look closely at inventory capabilities. From there, technology solutions should be put in place to use organisation-wide visibility to its greatest effect: allocating, distributing, ordering, and replenishing inventory in a manner that gets the right product to the right customer every time, regardless of the channel the purchase originated from.

#### *8.4.2.2 Investment ability: Summary and conclusion*

In the preceding section, investment ability as a subcategory of Theme 2 was discussed. Based on the findings presented above, the researcher developed the following definition to conclude and summarise investment ability:

*As part of omnichannel retailers' resource capabilities, retailers' ability to invest is an essential tangible resource that facilitates omnichannel SCI initiatives. Retailers' ability to invest allows them to accelerate their digital transformation process by expanding channel offerings, customising internal systems, and hierarchising inventory-pooling decisions. Consequently, retailers with superior investment ability will be in a position to respond promptly to the rapidly changing omnichannel environment and create unique competitive advantages. However, retailers should carefully evaluate investment opportunities to avoid overinvesting.*

Based on the above discussion and definition, this study concluded that investment ability should be classified as a dynamic capability since it aids omnichannel retailers to stay competitive in rapidly changing environments. In addition, investment ability also facilitates internal SCI as it allows retailers to implement systems that require higher levels of cross-functional collaboration. This finding addresses a knowledge gap identified in the problem statement for this study (Chapter 1, Section 1.2), namely *What dynamic capabilities are necessary for a retailer to successfully transform from*

*previous types of retailing to an integrated omnichannel model in dynamic market environments?* In addition, this finding partially addresses secondary research objective 3 (SRO3) by finding that investment ability as a dynamic capability facilitates internal omnichannel SCI by allowing retailers to expand channel offerings, customise internal systems, and hierarchise inventory-pooling decisions.

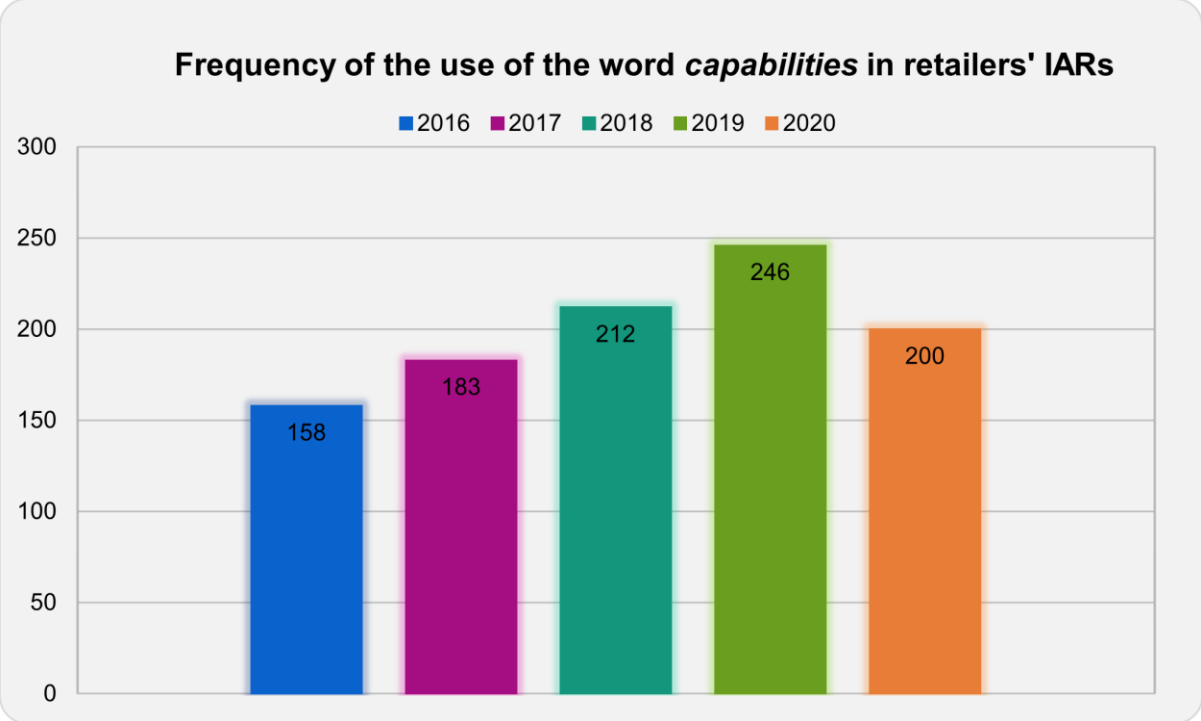
### 8.4.3 Theme 3: Capabilities

Theme 3 of the conceptual framework and the final element of Teece's (2018a) dynamic capabilities framework is *capabilities*. In Chapter 2, Section 2.3.3, capabilities were discussed as part of the three foundational elements of the DCV (strategy, resources, and capabilities). At this stage, it should be stated that, while other subcategories and codes that were developed from the analysis of the interview data can also be classified as capabilities, Theme 3 collates the capabilities that extend across the framework and the themes developed from the interview data (Themes 4 – 10). Theme 3 considers the importance of agility (the ability to be *flexible* and *responsive*) as a dynamic capability.

The reviewed literature on dynamic capabilities observed that capabilities are often considered 'building blocks' or 'the glue' of an organisation's ability to adapt to change (Qaiyum & Wang, 2018:207; Schwarz *et al.*, 2019:2). Teece *et al.*, (1997:518) emphasised that capabilities cannot be bought off a shelf but must be cultivated by the organisation. Consequently, to stay competitive, organisations may need to reshape capabilities for VUCA (volatile (V), uncertain (U), complex (C), and ambiguous (A)) environments characterised by high levels of unpredictable change (Nagula & Liu, 2020:17). These authors debated that incrementally adapting to changes in VUCA environments might not be enough to build a competitive advantage as these environments require greater dynamic capabilities.

The document analysis examined the word 'capabilities' to determine how retailers report on internal capabilities. Figure 8.8 indicates the frequency of using the word 'capabilities' across the five-year investigation period.

**Figure 8.8: Frequency of the use of the word 'capabilities' across retailers' IARs**




**Source: Researcher's own compilation**

Figure 8.8 shows that retailers have gradually increased reporting on the word 'capabilities' throughout the investigation period, although there was some decline in the reporting on capabilities in 2020. This could indicate that retailers have placed a greater significance on the need for internal capabilities. Both the document analysis and the participants' testimonials provided evidence of how retailers deploy and build certain capabilities in order to adapt to change:

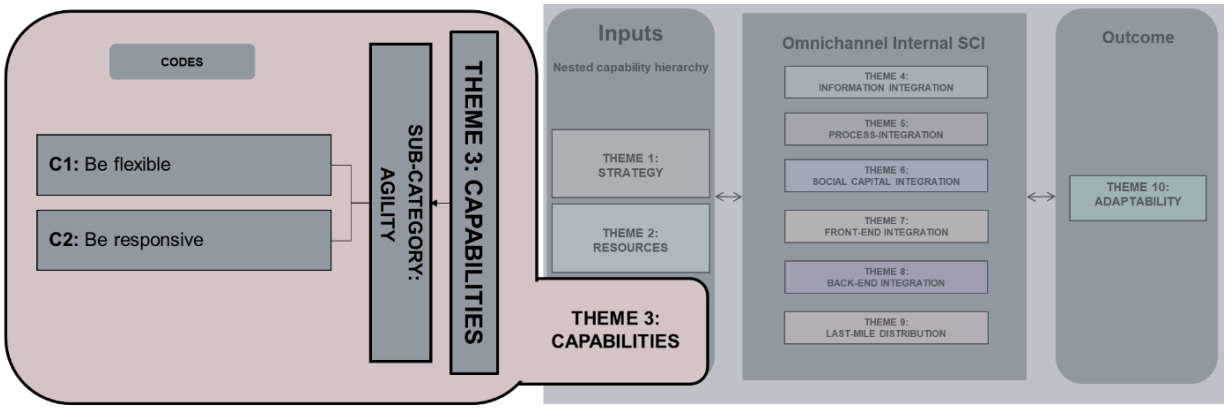
> *"Our strategies will focus on protecting and growing our core businesses whilst, simultaneously, pursuing initiatives targeted at new, profitable growth opportunities and also accelerating our capabilities as a leading omni-channel retailer."* (Retailer A, IAR 2020).

> *"[Future focus areas] … will be driven by quick response as a competitive advantage and core competency. To ensure we remain relevant and deliver an enhanced value offering… we will focus on building our quick response capabilities to produce a broader product and style offering. This will enable us to trade more meaningfully in season and remain highly responsive to customer needs."* (Retailer E, IAR 2019).

Within the context of this study, the participants cited a particular capability as central to an organisation's adaptability: *agility*. They emphasised the importance of agility, mainly supply chain agility, in responding to sudden changes to market conditions and

as a way to fast-track SCI initiatives. The findings from the analysis of the interview data revealed the following two factors concerned with supply chain agility: a retailer's ability to *be flexible* (C1) and *be responsive* (C2). Figure 8.9 represents a snapshot (or subset) of the conceptual framework presented in Figure 8.3 and aims to plot Theme 3 and its subcategory and codes within the broader context of the conceptual framework.

**Figure 8.9: Conceptual framework - Theme 3**




**Source: Researcher's own compilation**

### *8.4.3.1 Agility*

Supply chain agility is synonymous with superior supply chain performance since it allows organisations to deliver products and services in shorter lead times with varying volumes, all whilst saving cost and meeting (or sometimes exceeding) customer expectations (Halan, 2021:1557). Ramos, Patrucco and Chavez (2021) described agility as the capability of an organisation to adapt or respond speedily to marketplace changes, either internally or in conjunction with key suppliers and customers. Previous research has evinced a strong relationship between supply chain agility and SCI (Irfan *et al.*, 2019; Siagian *et al.,* 2021). This relationship is based on the premise that supply chain agility is one of the driving forces for an organisation's SCI efforts and, consequently, supply chain agility is often the outcome of successful SCI practices (Shah *et al.,* 2020:15). In fact, Ramos *et al.* (2021) found that superior supply chain performance is only achieved when an organisation has realised both SCI and supply chain agility.

Many previous studies have marked supply chain agility as a strategic capability that enables an organisation to rapidly sense and react to external and internal uncertainties through effective SCI (Ramos *et al.,* 2021; Shukor *et al.,* 2021; Siagian *et al.,* 2021). The analysis of the IARs revealed that retailers have realised the importance of promoting agility capabilities within the organisation for several reasons. Table 8.4 lists these reasons as found during the interviews.

**Table 8.4: Reasons for promoting agility**

| REASONS FOR PROMOTING AGILITY | SUPPORTIVE QUOTATIONS FROM THIS STUDY'S PARTICIPANTS |
|---|---|
| **Gives a competitive advantage** | *"There is no doubt that many aspects of business will be permanently changed [due to the impact of the COVID-19 pandemic], but strong, agile companies will have a unique opportunity to outperform if they are focused and executed properly."* (Retailer D, IAR 2020). |
| **Serves as a tool for talent management** | *"Our learning and development operating model seeks to accelerate learning and future readiness of our employees. It achieves this by offering customised, integrated, agile, digitally-enabled learning options and journeys, which enable team and business performance, innovation, culture, transformation and sustainability. This integrated approach to talent and learning has ensured that we enable business critical capabilities for strategic advantage; and build competencies to drive innovation, performance, culture, talent."* (Retailer B, IAR 2018). |
| **Is vital to offering customers a seamless shopping experience** | *"While we continue to invest in more agile and innovative technologies and capabilities to provide seamless customer experiences, we will also apply even more focus to cost optimisation across our brands. We will continue to improve planning and stock management principles and optimise our supply chain. This includes operations in our Omni-channel Fulfilment Centre, where we are focused on further driving labour productivity and cost savings."* (Retailer A, IAR 2020). |

**Source: Researcher's own compilation**

Interviewed participants also attested to the significance of agility when operating in volatile and ever-changing environments. The following quotation best narrates their views on the importance of agility:

> *"… flexibility is quite important organisationally, yes, we can all be strategic, and we can plot things out ten years ahead and make big investments. [But], do you have the ability to be agile when it calls for it? Can you change things at the drop of a hat? Can you redesign things on the back of an announcement made [from the government regarding the pandemic]? Can you redesign something overnight and implement something next week? We implemented click-and-collect… it added sixty-odd percent to our online. I think we*

*implemented it sort of five weeks after deciding to do it, which was probably one of the fastest things we've ever done in our business. But certainly, having the flexibility to reconceive of things and go after stuff that's necessary is an important organisational capability, that you're not stuck in the mud."* (Participant 1, Head of Logistics and Supply Chain).

From the preceding analysis follows that agility as a capability is vital when adapting to changing environments, such as those that manifest within the omnichannel environment. Upon deeper investigation of the codes classified under agility, it was determined that the participants emphasised two capabilities that emanate from agile practices, namely the retailer's ability to *be flexible* (C1) and *be responsive* (C2). This finding supported most previous research on supply chain agility, which found flexibility and responsiveness as antecedents to agility (Irfan *et al.,* 2019; Aslam *et al.,* 2020; Negri *et al.,* 2021; Shukor *et al.*, 2021). Some participants' testimonials related to these capabilities (C1 and C2) are considered below.

### *a) Be flexible (C1)*

Highly volatile market conditions require retailers to have flexibility in supply chains (Irfan *et al.,* 2019:523; Siagian *et al.,* 2021:3). Flexibility in an omnichannel supply chain allows retailers to customise delivery times, integrate channel offerings, and offer customers a comprehensive and innovative product catalogue (Sorkun *et al.*, 2020). Ishfaq *et al.* (2021:13) added that, within the context of omnichannel supply chains, being flexible is a particularly salient capability as omnichannel retailers need to be *"incredibly adaptable and flexible to move inventory to where it is needed quickly".* Some participants also expressed the latter argument and revealed that, although they might possess the capabilities required to identify opportunities, often rigid organisational standard operating practices (SOPs) inhibit them from pursuing flexible opportunities:

*"…it's really required for us to understand what agility is within a supply chain, and that is a huge change for a lot of businesses. Because their SOPs are drawn up and the processes that exist are very robust but they don't have any agility… it's also about how do we dissect it that if we have to create a [sic] agile supply chain, do we have to go through supplier warehouse to distribution centre, from distribution centre linehaul to depot, from depot distributed to a store, or can we just go from supplier warehouse straight to a depot, or can we go straight from supplier to the actual store? So, that is really about creating*

*agility. So, it has forced people to relook the supply chain to say how do we first of all create efficiency in the supply chain?"* (Participant 3, Head of Logistics and E-fulfilment).

The participants further expressed the importance of prioritising flexibility in agility. During the interviews, they alluded to the fact that flexibility is required when new market opportunities are recognised, therefore retailers need to be able to pursue these opportunities whilst still meeting pre-determined goals:

*"… if you look at the agile way of working… the easiest way that I kind of describe agile if people ask me is essentially that your resources stay the same. You've got a certain resource amount and that you then [you] go for certain targets … let's say another priority comes in, you will drop that priority in because it's now more important than something else that was in that bucket and you kinda move that forward."* (Participant 11, Director of Retail Operations).

From the above discussion can be concluded that this study's findings on the importance of flexibility in facilitating omnichannel SCI echo the findings of previous studies. However, this study added to the body of knowledge on supply chain flexibility as an antecedent to supply chain agility by highlighting two ways to achieve flexibility in omnichannel supply chains: first, retailers should have the ability to leapfrog organisational SOPs to pursue new opportunities and, second, retailers should prioritise flexibility, creating room for the inclusion of additional projects that might arise due to sudden changes in the market.

### *b) Be responsive (C2)*

Closely related to flexibility (C1) is how responsive a supply chain is to its customers' demands (Pereira & Frazzon, 2021). Shukor *et al.* (2021:1728) broadly described supply chain responsiveness as a capability that determines an organisation's speed to respond to changes in its operating environment. The reviewed literature observed that organisations might take various approaches to build supply chain responsiveness, including time-based competition (Rockson *et al.,* 2017:107), business process re-engineering (Adivar *et al.,* 2019:264), and investing in technologies that increase visibility and transparency across the supply chain (Montecchi *et al.,* 2021:12). Rajaguru and Matanda (2019:313) stated that, through the integration of physical, financial, and information flow activities, retailers can

strengthen supply chain responsiveness, leading to enhanced operational and competitive performance.

Analysing the interview data showed that the speed at which retailers can adapt to change in the omnichannel environment plays an essential role in responsiveness. The interviewees commented that, because of the speed of technological changes in the omnichannel environment, they struggle to keep up with the rate of innovation. Additionally, they stated that agility and responsiveness require high levels of cross-functional SCI as removing barriers and bureaucracy leads to higher levels of responsiveness:

> *"So, what you want is to be as fast and as agile as possible… You learn and you adjust and you deploy and you move, and that should take days and weeks rather than months and years to create an environment where you want that sort of continuous improvement… what you also then need, especially kind of in the modern world, is the willingness to move fast from a technology perspective. So, again, with the best intentions in the world, you're not gonna win the omnichannel retailing game if you're picking and packing off a piece of paper. If you're not optimising your shoppers' pick-paths, if you're not automating your returns processes so that customers don't have to wait in queues to return stock, leveraging data, leveraging technology, to simplify, to speed up, and the absence of those things is really a significant hindrance."* (Participant 6, VP of Supply Chain & eCommerce Operations).

> *"… what holds us back right now is that we cannot evolve fast enough. We know what we need to do but everything goes into a roadmap and before you know it your roadmap's three years long, and the stuff that's at the three-year mark you need tomorrow. So, you end up with this long, stretched-out development plan, and that's all very well but in six months' time half of that backlog is gonna be redundant or deprioritised because things have changed… so it's about removing the barriers to implementation, that's the key thing."* (Participant 16, Head of Online Operations)

Responsiveness is often considered an antecedent of a supply chain's competitive advantage (Sukati *et al.,* 2012:1; Rajaguru & Matanda, 2019:313). This statement was supported by the findings from the document analysis and the interview data. First, the retailers' IARs provided insights as to why they consider 'speed' or responsiveness a competitive advantage or competitive capability:

> *"The implementation of our fit-for-purpose quick response model has been critical... Quick response capabilities increase [Retailer E's] speed to market by reducing lead times. This means [Retailer E] can be more responsive to what customers want and can more*

*accurately order the correct type and quantity of product… To ensure we remain relevant and deliver an enhanced value offering, we focus on building our quick response capabilities to produce a broader product and style offering… This will enable us to trade more meaningfully in season and help our retailers remain highly responsive to customer needs."* (Retailer E, IAR 2019).

*"[Retailer G] adopts an inclusive approach and engages stakeholders on multiple levels and through various mediums, allowing the Group to be effectively responsive to their needs, interests and expectations."* (Retailer G, IAR 2018).

The participants added that the supply chain's ability to be responsive gave them a unique competitive advantage while a lack of responsiveness resulted in missed opportunities:

*"So, something that we're quite proud of is that speed, but we're only as good as our next order that we pick. So, I think our ability to be efficient all the way through the supply chain is something that sets us apart from a lot of the other places at the moment."* (Participant 10, Head of Africa Supply Chain).

*"… we took a really long time to agree on what model we want to put in place for same-day delivery, so we've got [service provider] as a partner now, and we were quite late to the game. [Retailer I] came in in November twenty-nineteen, we [Retailer A] only launched in December twenty-twenty. So, that was quite a long delay and customers were quite negative about the fact that we didn't have that service level there."* (Participant 11, Director of Retail Operations).

From the above discussion could be observed that having a responsive supply chain, characterised by organisational structures with the ability to reconfigure themselves quickly, is an essential capability for omnichannel retailers. The findings suggest that responsiveness not only allows retailers to create a unique competitive advantage (which is an attribute of dynamic capabilities) but responsiveness is also an outcome of effective SCI practices.

#### *8.4.3.2 Agility: Summary and conclusion*

In the preceding section, agility as a subcategory of Theme 3 was discussed by referring to the findings of the entire dataset. Based on the findings presented above, the researcher developed the following definition to conclude and summarise agility:

*As part of omnichannel retailers' capabilities, retailers need to be agile since agility is a fundamental building block to respond to VUCA environments. Agility allows retailers to sense and react to external and internal change through flexibility and responsiveness. Flexibility allows retailers to leapfrog organisational standard operating procedures (SOPs) to pursue new opportunities. When flexibility is prioritised, retailers can include additional supply chain projects that might arise due to sudden changes in the market. Responsiveness is often an outcome of effective SCI practices and can aid omnichannel retailers in swiftly meeting the continuously changing demands of customers. Responsiveness is part of being agile and could serve as a competitive advantage for omnichannel retailers' supply chains.*

Based on the above discussion and the definition of agility, this study concluded that agility should be classified as a dynamic capability since it aids omnichannel retailers to stay competitive in changing environments. In addition, the findings supported the reviewed literature by highlighting the relationship between SCI and supply chain agility. This finding addresses the knowledge gap identified in Chapter 1, Section 1.2, as it can be concluded that retailers need to be agile to successfully transform from previous types of retailing (single-, multi-, or cross-channel) to an integrated omnichannel model. In addition, this finding partially addresses secondary research objective 3 (SRO3) by finding that agility is a dynamic capability that assists retailers to be more flexible and responsive to the changing retail environment.

### 8.4.4 Theme 4: Information integration

In Chapter 4, Section 4.3.1, information integration was discussed and classified as Pillar 1 of the three pillars of internal SCI. A significant literature finding which emerged was that information-sharing capabilities are essential for effective operations and decision-making across all organisational levels (Mello, Hellingrath & Martins, 2019:438; Yuen *et al.,* 2019:656; Shah *et al.,* 2020:4). Additionally, it was found that information sharing increases transparency, enables the building of collaborative relationships, and improves the organisation's competitive position (Wong, Sinnandavar & Soh, 2020:1). However, Kotzab *et al.* (2020:289) stated that it is not always feasible for an organisation to achieve complete end-to-end internal

information integration. Therefore, organisations must establish collaborative internal relationships and invest in technologies that drive SCI initiatives. Data exchange across internal channels, enabled through advanced IT systems, facilitates the dissemination of more information within a shorter time.

The discussions in the literature related to information integration covered different issues, for example the collection, analysis, and interpretation of customer data and how this data/information is shared among different organisational functions. Information integration includes an additional layer of complexity in omnichannel retailing since additional information is collected, such as inventory levels across digital and physical channels and last-mile delivery updates. During the interviews, the participants' statements supported these literature findings as they expressed that information integration is a broad topic with many interrelated issues, which is challenging to master. This finding was best articulated by Participant 7:

> *"… data is quite a broad concept 'cause you're talking about customer feedback, you're talking about sales, you're talking about returns, you're talking about delivery SLAs [service level agreements]… And within all of those concepts, in my opinion, you cannot possibly be a ten out of ten all the time. So, it's a constant evolution on how we can improve on those processes using all the data and the information that is available to us."* (Participant 7, Operations Business Development Manager).

As indicated by Table 8.1, all the participants listed information integration as a capability needed in omnichannel retailing. Items related to information integration were coded 82 times across the interview dataset and were mentioned on average five times per interview. The participants provided several examples of the adverse effects of a lack of information integration in omnichannel retailing. Notably, they remarked how a lack of information integration results in incoherent omnichannel services, creating customer confusion. The following quotation best embodies this finding:

> *"…Let's use you as an example… You are an e-commerce customer 'cause you purchase from Retailer D online but you also have an account with Retailer D. Two different departments, our accounts finance department and our e-commerce team, they don't talk to each other at all. And you are late on some payments… eventually we threaten you with legal action, saying if you don't pay now, we're handing you over to the lawyers and we've removed your credit facility as well so you can't even buy on account… As a result,*

*you can't purchase online anymore because you don't have credit available. On the other side of the office, you've got the e-commerce team and they're saying here's Alicia and she hasn't purchased for six months, let's throw her an incentive to come and purchase with us. Let's give her a hundred-rand voucher to say we've missed you, please come and shop back. Now, in your inbox you've got two e-mails from us, you've got one that's saying legal action and final demand and the other we love you, we miss you, here's a voucher. And this customer must be thinking these okes are crazy. I think that just illustrated the importance of how data across the organisation needs to talk to each other 'cause it can go very wrong very quickly."* (Participant 13, Managing Director).

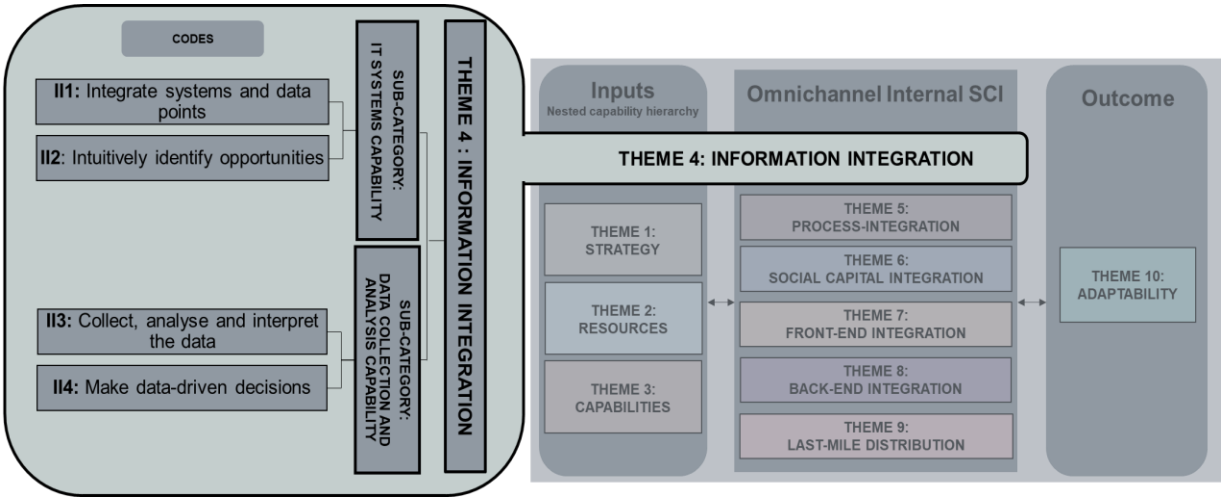
Consequently, this study found, in accordance with previous studies on SCI, that superior information integration capabilities facilitate internal SCI (Song *et al.,* 2019:536; Wong *et al.,* 2020:8). After reviewing the literature on the role of information integration in SCI (see Chapter 4, Section 4.3.1), the following definition of information integration was compiled and included in the coding frame (see Annexure A):

**Information integration*:*** The integration of quality, multidirectional supply chain information through cloud-based information technology (IT) systems to facilitate decision-making by linking higher-level strategic planning with lower-level transactional systems in the organisation. Social information integration mechanisms include organisational knowledge management, which entails the sharing of 'know-how' that facilitates the shared meaning and interpretation of the information to guide organisational decision-makers.

As part of the coding frame (see Annexure A), information integration comprises two dynamic capabilities, namely *data-collection and -analysis capability* (DC1) and *highly functional information technology (IT) capabilities* (DC2). When comparing the coding frame with the codes and subcategories developed from the analysis of the interview data, the synergies among these datasets emerged. Upon analysing the interview data, two subcategories related to information integration were developed: the *capabilities of a retailer's IT systems* and the *ability to collect, analyse, and interpret data*. Bearing in mind that the interview data were analysed inductively (without a predeveloped codebook), a near-perfect alignment between the literature findings and the findings of the interview data could be observed. Throughout the discussion of Theme 4, the researcher reverted to the literature findings to identify similarities and discrepancies between the literature and the interview data.

Figure 8.10 represents a subset of the conceptual framework presented in Figure 8.3 and aims to plot Theme 4 and its subcategories and codes within the broader conceptual framework.

**Figure 8.10: Conceptual framework - Theme 4**




**Source: Researcher's own compilation**

### *8.4.4.1 IT systems capability*

Information technology (IT) systems create a virtual network that aligns all organisational activities and are vital when retailers want to enhance internal data exchange processes (Saghiri *et al.,* 2017:57). Chapter 4, Section 4.3.1.1, considered the structural mechanism of information integration, namely information configuration and IT. The reviewed literature observed that internal information integration revolves around developing an information-sharing infrastructure with electronic linkages to facilitate timely, accurate, and standardised data exchange across the internal organisation. As part of the literature review, it was also established that omnichannel retailing calls for the seamless integration of all channels and touchpoints across the organisation. However, seamlessness requires end-to-end supply chain visibility (Fleischer *et al.,* 2020:9).

Moreover, the literature review determined that a retailer's IT system serves as the organisation's central nervous system that links all organisational functions and channels. Therefore, an IT system should have integration capabilities that create end-

to-end supply chain visibility, allowing retailers to break down data silos and collect all relevant information into a single platform (Song *et al.,* 2021:1). Moving from a siloed IT system (with limited interfaces (links) between channels and touchpoints) to a cross-channel IT system is necessary for omnichannel retailing as separated IT systems result in siloed data, obstructing an organisation's ability to gain a cross-channel overview of inventory, customer purchasing behaviour, and processes in general (Adivar *et al.,* 2019:259). Accordingly, many authors maintained that an integrated IT system builds the foundation for omnichannel retailing (Lorenzo-Romero *et al.,* 2020:9; Shi *et al.,* 2020:329) as well as for SCI (Yu *et al.,* 2017:4198; Song *et al.*, 2021:5).

Following the literature review of the structural mechanisms of information integration, DC2 (highly functional information technology (IT) capabilities) was included in the coding frame of this study. Accordingly, the following definition of DC2 was developed:

**Highly functional information technology (IT) capability (DC2):** A highly integrated back-end IT system powered by cloud-based technologies and ERP system allows organisations to collect and analyse large amounts of data. The IT system facilitates data sharing and collaboration across internal organisational functions, leading to strategic planning and better decision-making.

As part of the document analysis, DC2 (and its related constructs) was examined to determine how retailers report on IT systems. During the document analysis, the researcher relied on the frequency distributions of words to identify interesting patterns in the retailers' IARs. Table 8.5 represents the words related to DC2, which comprise the coding frame.

**Table 8.5: Frequency count of document analysis: Word(s) related to DC2**

| Each word's raking as part of the complete document analysis | Words included in the analysis | 2016 | 2017 | 2018 | 2019 | 2020 | Total | % of the occurrence of each word within DC2 | % within the total document analysis |
|---|---|---|---|---|---|---|---|---|---|
| 14 | information | 240 | 308 | 372 | 529 | 373 | 1822 | 54% | 2.1% |
| 18 | systems | 262 | 285 | 328 | 312 | 236 | 1423 | 43% | 1.7% |
| 75 | legacy | 9 | 14 | 16 | 17 | 11 | 67 | 2% | 0.1% |
| 80 | cloud | | 5 | 7 | 13 | 7 | 32 | 1% | 0.0% |
| **Ranking based on 1-87** | **Total** (words included in the analysis) | | | | | | **6849** | **100%** | **3.9%** |
| | **Total** (All words included in the document analysis) | | | | | | **86 164** | | |

**Source: Researcher's own compilation**

Table 8.5 illustrates that, of the words related to DC2 included in the document analysis, 'information' and 'systems' combined accounted for 97% of the total words included in the content analysis of the retailers' IARs. This was expected, considering that DC2 is concerned with the capabilities of a retailer's information systems. However, when recontextualising these findings to the retailers' IARs, the following finding emerged: while the frequency of reporting on 'legacy' systems and 'cloud' technologies was low, in instances where these words did appear they were used to underscore the perceived importance of decoupling legacy systems towards more cloud-based technologies as a way to digitally transform operations and remain competitive:

> *"[The IT division's retail modernisation programme included] … projects focused on legacy migration, maintenance and innovation initiatives… A complicated legacy environment has made it challenging to capitalise on modern architectures and tool sets available to enhance competitiveness in the modern retail landscape."* (Retailer D, IAR 2020).

> *"… 48% of total capital expenditure [for 2018], was allocated to the investment in information technology systems and infrastructure to support digital transformation and move from legacy to cloud-based systems."* (Retailer X, IAR 2018).

Findings from the interview data also revealed the importance of a retailer's IT systems in facilitating internal omnichannel SCI. The participants alluded to the fact that an organisation's IT systems serve as the backbone of SCI in omnichannel retailing and that specialised skills are required to design and manage these systems. IT systems in omnichannel retailing not only determine the level of integration and collaboration within the internal organisation but also serve as a key capability in servicing omnichannel customers by creating transparency in the omnichannel process. The participants provided several examples of how a lack of information sharing frustrates a customer and high levels of information sharing delight customers. In particular, two codes were developed based on the participants' testimonials regarding IT systems, namely the ability of a retailer's IT system to *integrate systems and datapoints* (II1) and *intuitively identify opportunities* (II2). The findings from these two codes are discussed below.

### *a) Integrate systems and datapoints (II1)*

As stated during the introduction to IT systems, omnichannel retailing requires end-to-end visibility of all critical information sources to ensure that omnichannel processes are managed optimally. From the literature, was established that high levels of information sharing create end-to-end visibility, which leads to more informed decision-making processes and guides an organisation in identifying strategic opportunities (Oka *et al.,* 2017:38). Additionally, the ability of IT systems to integrate datapoints across functions and channels serves as a vehicle for information to move up and down an organisational hierarchy.

During the interviews, the participants repeatedly stressed two factors when discussing the ability of IT systems to integrate systems and datapoints (II1), namely the *difficulties associated with integrating systems and data in omnichannel retailing* and *the importance of creating visibility through integration*.

In terms of the difficulties associated with integrating systems and data in omnichannel retailing, the participants agreed that this is a laborious task. During the interviews, they revealed new insights into omnichannel retailers' struggles when integrating systems across functions and channels. First, they expressed that such integration is an expensive and technically challenging task. For example, the organisation faces difficulties such as creating internal 'business rules' for data capturing to ensure clean, consistent data feeds into the system. Second, they listed the migration of disparate legacy systems, such as moving from systems designed for physical retail to hybrid models that integrate physical and digital channel data, as a significant hurdle to information integration. Third, the participants added that finding suitable software applications that meet their unique operating models was challenging. The following quotations support these findings:

> *"I think the capabilities come within IT, in my opinion. It's not so difficult to just say to a carrier pick up here and deliver there… but it's difficult to take that one element and integrate it into a whole system which gives your customer true visibility and comfort of what's going on as well as the internal divisions and they all know what's going on. So, for example now, and I'll be very critical of our own processes, if you call our call centre and say where's my stuff? They've got the same information you have, which is nothing. They*

*can't answer your question. So, it's very frustrating. So, I think the capabilities are around integrating and having real-time information that the customer has the power to act on and, if they do call the call centre, the call centre has to have that same information plus more. They can't be telling back the customer on this system that your order's placed, and the customer will say I can see that on my app..."* (Participant 2, Head of Logistics and Facilities Management).

*"I think it [information management capabilities] would boil down to adherence to one set of rules, so whether that's the format of the PO [Purchase order] the format of how you range in styles to be inputted into your management system anyway along the supply chain, it's just that consistency of data, would probably be my key capability. [Because]… if I'm putting horrible data or 'dirty' data into the best, smartest system in the world that tracks every SKU moving around the world, that's pointless because then you're just getting 'dirty' data."* (Participant 10, Head of Africa Supply Chain).

*"We've gone through four systems that doesn't integrate with our business over the last four years, so it's hard to get a system that works…"* (Participant 3, Head of Logistics and E-fulfilment).

*"… we've come from a base of large ERP-based systems, SAP in our case, which is a nightmare because they think of things in linear fashion, like a production line, they don't put things in a many-to-many relationship, and we battle with that because everything's architected in that way, it's slow, it's cumbersome, and you change one little thing here and it messes something else up there. So, we're looking to switch, and have switched, quite a lot of frontend technology out of the ERP space and creating a translation layer between the backend ERP and the frontend."* (Participant 12, Chief Operations Officer).

Although the participants highlighted difficulties associated with integrating different systems and datapoints, they also revealed the capabilities they have built or believed should be built to overcome these obstacles. Their listed capabilities included investing in systems with integrated functionalities and cloud-based platforms. Additionally, these participants underscored that the most significant advantage of having an IT system with the ability to integrate is that it creates visibility and transparency for the internal organisation, external partners, and customers:

*"… we need to invest in systems that do that integration as well, where you have one set of data in the centre that your customers see, that you call centre sees, that the warehouse sees, everybody sees the same data, and that sounds like a simple, logical thing to do but that isn't really in place for big corporates like us. We've developed an in-house little thing that kind of doesn't fully do everything we need it to. But that's a big expense, so we're gonna have to invest in the future for that ..."* (Participant 2, Head of Logistics and Facilities Management).

*"… the answer lies actually in a proper system, an IT system, to run it [omnichannel processes], with proper rules. So, I'll give you an example. You might be an account*

*customer, you might be an e-commerce customer, you might have also signed up for a competition through us, and you might have done a lay-by with us. We've got four different sets of information for you through those four different channels but you're one customer and, so, it's important that this information is stored and managed in a database that recognises that all four of those records is only for you… [and] It's gotta be managed by a system that has defined business rules in terms of how we interact with that customer."* (Participant 13, Managing Director).

*"To me, the right answer is put everything in the cloud and let the stores work off that online facility, so you're all working off the same assortment…"* (Participant 8, Head of Retail Innovations).

In conclusion, an IT system that can integrate different systems and datapoints is difficult to come by. Nevertheless, the participants provided insights into building better IT system capabilities. They explained that retailers who invest in and develop an IT system that meets organisational needs whilst integrating different customer and operational data have a competitive advantage.

The next code relates to the ability of IT systems to facilitate retailers to intuitively identify opportunities (II2).

### *b) Intuitively identify opportunities (II2)*

The advent of IT systems has improved the effectiveness and efficiency of organisational operations (Ganbold *et al.,* 2020:949). However, for an IT system to be beneficial, its appropriate and effective use is more critical than merely its features. Reviewed literature observed that deploying appropriate IT competencies facilitates SCI, which in turn induces superior organisational performance (Novais *et al.*, 2019; Majhi *et al.,* 2021). Yu, Huo and Zhang (2021:462) added that, because of its boundary-spanning ability, an IT system assists organisations in building SCI capability by creating information-sharing opportunities along the internal supply chain. Additionally, Chapter 4, Figure 4.2, outlined the features and functionalities of IT systems, arguing that IT systems should meet a range of hierarchical functions, from facilitating lower-level transactional operations (order management) to promoting higher-level strategic planning such as identifying opportunities that could lead to a competitive advantage. During the interviews, the participants emphasised the

importance of IT systems affording them the ability to gain higher-level strategic information to aid them to intuitively identify opportunities.

The participants referenced several ways in which IT systems and the ability to capture and analyse data aid them in identifying opportunities and making data-driven decisions. The following quotation best supports this statement:

> *"IT is definitely the tool you need to do the job. That is the restriction in any business. You can only do what the system can allow you to do. Even if you look in terms of the way in which a [sic] IT platform is designed in terms of what are the capabilities that it can do, whenever we design something, we design with future intent, but we never quite know what the future is. You try your best to get it where you need to go. You're still gonna need the people, you're still gonna need all the rest that comes with it, but it's like a mechanic. He can tell you what's wrong with your car but if he doesn't have the tool he can't fix it, and IT's the tool for us, and especially when it comes to e-comm."* (Participant 3, Head of Logistics and E-fulfilment).

Notably, when the participants were asked what they believed to be essential capabilities omnichannel retailers should have in future, most of them listed some technologies that they were either looking to implement or had started to implement. They listed several advanced technologies that collect valuable customer data or help them analyse and use the data to inform opportunity identification and decision-making. These technologies included radio frequency identification (RFID), data and predictive analytics, machine learning (ML), and artificial intelligence (AI):

> *"So, digital transformation, is probably one of the biggest challenges for all retailers today, it includes online but it's not only about online, it's about analytics, customer data, and how we use customer data to our benefit, and it's about how we make better decisions in our business… using clever tools of machine learning and AI to inform our buying decisions is critically important. And, so, yes, today a buyer 's quite important because of their intuitive knowledge, their experiential knowledge, because of their understanding of trends. In the future, we'd like to combine all of that sort of intuitive and experiential knowledge with the benefits of machine learning and AI to inform better buying decisions. Similarly, can we use machine learning and AI in forecasting and our planning decisions, and can we truly leverage our data assets across how we move product, how we sell product in order to make better decisions in our business? So, I think retail is at the point where it will be transforming itself to being far more modern digital organisations… And certainly, I think online is an opportunity for it to be the proxy for us to make that organisational shift it's probably the best example of us making these transformations in that channel and then using the lessons we learn there to transform the rest of the organisation."* (Participant 1, Head of Logistics and Supply Chain).

> *"… another technology that I would look into is deploying RFID, maybe not onto our entire clothing catalogue but certainly into parts of our clothing catalogue where KPIs are showing us that we've got poor stock accuracy, poor fulfilment in those areas, we could easily deploy RFID to improve that, and I think we should be flexible enough to start deploying RFID."* (Participant 1, Head of Logistics and Supply Chain).

From the above discussion follows that an IT system can aid retailers to identify opportunities to stay competitive. Furthermore, advanced technologies offers retailers more opportunities to scan and sense the market environment to offer better services to customers. However, the interview data showed that South African retailers are still in the early stages of implementing these technologies, which leaves room for them to invest in these technologies to obtain a competitive advantage.

#### *8.4.4.2 IT systems capability: Summary and conclusion*

In the preceding section, IT systems capabilities as a subcategory of Theme 4 were discussed by referring to the findings of both the document analysis and evidence from the analysis of the interview data. Based on the findings presented above, the researcher developed the following definition to conclude and summarise IT systems capability:

*As part of omnichannel retailers' information integration capabilities, retailers need to invest in highly sophisticated IT systems with boundary-spanning abilities to create visibility across functions and channels. IT systems allow retailers to integrate large amounts of data from various physical and digital channels across the various internal systems of an organisation. This is essential as it allows a retailer to build a complete picture of the organisation's inventory, customer purchasing behaviour, and organisational process. Additionally, by deploying advanced technologies such as data and predictive analytics, IT systems can aid retailers to intuitively identify opportunities leading to strategic planning and better decision-making.*

Based on the above discussion and the definition, this study concluded that superior IT system capabilities should be classified as a dynamic capability since they facilitate the integration of channels and datapoints across the internal supply chain, which ultimately facilitates SCI in omnichannel retailers. This finding addressed a knowledge

gap identified as part of the problem statement of this study by finding that superior IT systems are necessary for retailers to successfully transform from previous types of retailing to an integrated omnichannel model. In addition, this finding partially addressed secondary research objective 3 (SRO3) by finding that IT systems facilitate omnichannel SCI to integrate systems and datapoints and to intuitively identify opportunities.

As briefly addressed above, the data that feeds into an organisation's IT systems significantly impacts the functionality of the system. Subsequently, based on the participants' testimonials, a second subcategory was created under Theme 4, a retailer's data-collection and -analysis capability. This subcategory is discussed below.

#### *8.4.4.3 Data-collection and -analysis capability*

The popularity of data analytics has amplified in the last decade with terms such as 'data is the new oil' which should be 'refined' to extract unprecedented value becoming popular within the retail industry (Conboy *et al.,* 2020:656). One participant confirmed this statement:

> *"So, they call data the new oil… data is really valuable. While we do an okay job at data, we are found wanting there. I don't think we are on our A-game there. We've got a lot of work to do…"* (Participant 13, Managing Director).

Although data analytics have been claimed to revolutionise the way organisations operate, Mikalef, Van de Wetering and Krogstie (2021:1) debated that there is still a noticeable lack of knowledge about how organisations should adopt and routinise the collection of data to support data-analytics capabilities. Data analytics in omnichannel retailing is even more complex than for traditional retailers. As explained in Chapter 4, Section 4.3.1, omnichannel retailing creates new (or additional) data sources, such as social and mobile interactions with customers, and these new data sources should also be integrated into the retailer's database for analysis. Pundziene *et al.* (2021:10) added that, especially in markets earmarked by fast-moving technologies (such as omnichannel retailing), collaboration with customers to acquire robust market-related information that can be analysed and internalise into the retailer's innovation processes significantly contributes to the competitive performance of a retailer.

As reported in the literature, the collection of customer data is considered forward information flows and leads to customer 'trace activities', enabling a retailer to create promotions (or other marketing activities) that are congruent with an individual customer's shopping needs. Nevertheless, retailers must know how to integrate consumer data from all channels to benefit from these additional opportunities (Blom, Lange & Hess, 2021:181). Ye, Lau, Hung and Teo (2018:658) found database isolation to be a significant obstacle to SCI. These authors stated that achieving SCI requires an integrated database. However, integrated fulfilment processes must be established before database integration can commence. Therefore, Hajdas *et al.* (2020:3) concluded that extensive financial investment in integrative technologies such as cloud computing is a prerequisite for internal SCI.

The introduction to Theme 4 stated that many parallels can be drawn based on the literature findings (coding frame) and the analysis of the interview data. When referring to the coding frame (see Annexure A), one such parallel can be noticed in the identical naming of two constructs, i.e. DC1: Data-collection and -analysis capability (coding frame) and Theme 4, subcategory 2: Data-collection and -analysis capability (Figure 8.3). The coding frame defined DC1 as follows:

**Data-collection and -analysis capability (DC1):** Data are collected, integrated, and analysed from various channels and touchpoints within an organisation, using sophisticated technologies such as artificial intelligence (AI) and machine learning (ML). Through an organisation's data-mining capability, actionable insights can be obtained and certain processes such as demand forecasting can be automated.

In the document analysis, keywords related to DC1 (as seen in Annexure A) were examined to identify patterns in the IARs and to facilitate the automatic and manual coding process of retailers' IARs. Table 8.6 represents the words related to DC1, which comprise the coding frame.

**Table 8.6: Frequency count of document analysis: Word(s) related to DC1**

| Each word's raking inf the complete document analysis | Words included in the analysis | 2016 | 2017 | 2018 | 2019 | 2020 | Total | % of the occurrence of each word within DC1 | % within the total document analysis |
|---|---|---|---|---|---|---|---|---|---|
| 29 | technical | 134 | 180 | 252 | 261 | 172 | 999 | 52% | 1.2% |
| 41 | data | 99 | 134 | 175 | 176 | 104 | 688 | 36% | 0.8% |
| 67 | analytical | 21 | 31 | 24 | 24 | 17 | 117 | 6% | 0.1% |
| 72 | database | 10 | 25 | 16 | 13 | 7 | 71 | 4% | 0.1% |
| 77 | intelligence | 17 | 12 | 8 | 12 | 8 | 57 | 3% | 0.1% |
| **Ranking based on 1-87** | **Total** (words included in the analysis) | | | | | | **1 932** | **100%** | **2.2%** |
| | **Total** (all words included in the document analysis) | | | | | | **86 164** | | |

**Source: Researcher's own compilation**

From Table 8.6, it can be observed that words related to the data-collection and -analysis capabilities of retailers (DC1) were mentioned only 1 932 times across all 40 IARs and only accounted for 2.2% of the total words included in the content analysis of the retailers' IARs. The word 'technical' accounted for more than half (52%) of the referrals to words classified under DC1 in the retailers' IARs. When recontextualising the word 'technical', it became apparent that the frequency relates to the 'technical skills' retailers need to develop in order to successfully collect and mine customer data:

> *"[The increasing role of technology] - Businesses are becoming increasingly reliant on technology to increase efficiency, differentiate and provide insights… Our ability to outperform is highly dependent on the experience, technical skills, leadership abilities and attitude of our associates …"* (Retailer D, IAR 2020).

However, when considering the other words included in the analysis of DC1, as indicated in Table 8.6, more insight can be obtained as to the value retailers assign to data-collection and -analysis capabilities. Herein, it becomes apparent that, through advanced technologies, for example predictive analytics and ML, retailers use data to personalise customers' shopping experiences and to make data-driven decisions.

> *"… [we obtain big data through] the collection of data from many sources used by companies to provide valuable insights. Using machine learning tools, predictive modelling and other analytics programmes the accumulated data can be mined relatively quickly to provide useful insights for the group. This big data, used efficiently and effectively, can deliver a competitive edge as companies are able to make faster and more informed decisions. Companies become more customer-centric by understanding the changing*

*preferences of customers and using their data to predict future requirements. Technology, tools and data science teams and analysists, are critical resources to leverage the vast databases to deliver valuable insight to create value for the future."* (Retailer X, IAR 2019).

*"We focus on scientific retailing to turn data into actionable insights. This includes predictive analytics in how we engage with customers, how we invest in price, and how we plan the catalogues and space utilisation in our stores. Through all of this, our customers must remain at the centre of everything we do. To this end, our rich customer databases afford us a significant advantage. Through our focus on step-changing the development of our data analytics capability, it is our intention to significantly improve the way in which we leverage this information."* (Retailer A, IAR 2019).

Although these quotes might create the impression that, in general, retailers place data-collection and data-analytic skills in high regard, when considering the content analysis of retailers' IARs the results reveal a low reporting frequency on these capabilities as only 2.2% of the total document analysis was based on data and data-analysis capabilities (as seen in Table 8.6). However, the lack of reporting might not indicate retailers' ignorance towards the issue but, rather, that retailers do not publicise their data-analysis capabilities due to the strategic and proprietary nature of such information. This narrative is supported by previous authors, Vermeulen *et al.* (2016:4), Phadnis and Fine (2017:2309) and Cui *et al.* (2021:108), who also found that organisations' fears of losing proprietary information such as data-analysis algorithms often inhibit their willingness to share such information publicly or with other supply chain partners.

As stated during the introduction on this theme, this theme comprises two subcategories: IT systems capability (discussed in Section 8.4.4.2) and data-collection and -analysis capability. The following section will discuss the codes that comprise this subcategory: *a retailer's ability to collect, analyse, and interpret data* (II3), and *make data-driven decisions* (II4).

### *a) Collect, analyse, and interpret data (II3)*

Data analytics refers to tools and processes applied to large and complex datasets to obtain actionable insights, often called 'Big Data analytics' (Mikalef *et al.,* 2021:1). Previous authors have emphasised the importance of omnichannel retailers collecting, analysing, and interpreting data (Von Briel, 2018; Ishfaq *et al.,* 2021; Watanabe *et al.,*

2021). During the literature review, was established that organisations who fail to develop capabilities to manage and analyse data struggle to survive (Chapter 4, Section 4.3.1.1). Therefore, Ardito *et al.* (2019:2005) debated that a growing number of organisations are accelerating the development of Big Data analytics capabilities to develop critical insight that can ultimately provide a sustained competitive advantage. However, becoming data-driven is complex and multifaceted, necessitating changes to multiple organisational resources and calls for the involvement of several managerial levels (Kristoffersen *et al.*, 2021:3).

During the introduction of this theme (Theme 4), it was determined that the concept of data collection and analytics is broad. Consequently, within omnichannel SCM literature, a distinction is made between the following two data sources: customer data (for example, purchasing history of customers) and internal operational data (for example, inventory availability). Ishfaq *et al*. (2021:12) found that retailers should collect and analyse data from both these sources through Big Data analytics applications such as AI and ML algorithms. In doing so, retailers can determine where demand will occur and plan distribution processes accordingly. Therefore, data analytics plays a critical role in helping retailers assess customers' short-term needs to muster a rapid response to any changes in shopping behaviours.

Testimonials from the interviewed participants revealed that the ability to collect, analyse, and interpret data concerns two factors. First, they outlined many obstacles that inhibit their ability to collect, analyse, and interpret data. They also provided insight into overcoming these obstacles. Second, they indicated that collecting, analysing, and interpreting data improves the retailers' understanding of customers, allowing them to create more personalised shopping experiences.

Regarding difficulties experienced with collecting, analysing, and interpreting data, some participants indicated that they first focus on getting the basics right, concentrating on implementing processes to collect valuable data in the proper format for analysis. However, this means they had not started integrating additional data sources such as social media into data-analysis processes. These data sources can offer a wealth of information on customer behaviour and possible future purchasing behaviours:

*"So, we are now starting to work on the planning tools to help manage the combination of online and bricks-and-mortar planning based on customer sales to a large degree initially. But, yes, the future for planning is to look at predictive planning and predictive understanding of social media customer behaviour because there you can start planning ahead of the game as to what is eventually going to be trading well. But that's further down the road. And AI, machine learning, social media scraping of information, and all of that, that's all in the toolbox of possible ways of getting cleverer, but I think we need to do the basics first properly… sometimes you try and run before you crawl and that's where you trip up…"* (Participant 5, Head of Transport and Engineering Logistics).

The participants' statements supported the findings presented in Chapter 4, Table 4.1, where six characteristics of information (data) quality were listed (accuracy, usability, reliability, timeliness, transferability, and value) and it was argued that, without these characteristics, data analysis will not reach its full potential. During the interviews, the participants also suggested that poor quality data has a negative influence on the retailers' data-analysis and -integration capabilities. Several participants narrated how the format, quality, and accessibility of data inhibited them from fully integrating data sources and ultimately prevented them from taking full advantage of the value that can be derived from data analytics:

*"So, there's quite a crass way of talking about data in the DC [Distribution Centre], and it's shit in, shit out. So, if I'm putting horrible data or dirty data into the best, smartest system in the world that tracks every SKU moving around the world, that's pointless because then you're just getting dirty data. So, I can promise you that someone who's got the most expensive, best-in-class, PO [Purchase Order] management system will also struggle because the quality of the data is the important part."* (Participant 10, Head of Africa Supply Chain).

*"The biggest negatives have been what we term master data. So, a Valpre bottle of water is coded differently in every single business. So, that's issue one. Issue two then is what I would term metadata, information about the information. So, how do you manage and describe the information? The third would be the selling data. So, when you're on the website, do we have the right dimensions? Is it up to date? Can you actually see it? And the third issue that we're battling with at the moment which relates to that is search. There's some really good search algorithms out there but they're only as good as the data which you put in them. So, the search algorithm, it can do all sorts of really interesting stuff but if you don't have the underlying data constructed in the right way the search becomes ineffective."* (Participant 12, Chief Operations Officer).

*"… sometimes data's in the system but it's not easily accessible. So, you might want data but you can't actually get hold of it. It might be a third-party providing you data and they give you some sort of data dump or data read or whatever, but it might not necessarily be*

*all the information you need. So, I think that's quite important, is the ability to access that data in the backend."* (Participant 17, Head of Supply Chain Optimisation).

The participants also listed some obstacles they experienced with analysing and interpreting collected data. Specifically, they often struggle to conceive of ways to use data within the organisation. They suggested that, because of the lack of 'data miners' whose purpose is to decipher hidden information in large datasets, retailers are ill-equipped to use the vast amounts of data they collect. Some participants expressed that these obstacles severely affected their ability to integrate data and ultimately improve customers' experiences:

*"So, I think everybody's talking CRM [Customer Relationship Management], you want to know about your customer. I personally don't think there's enough miners in the world to mine all the data that we have… So, I don't think anybody has mastered the use of the data. They want it but they don't quite know how to use it…"* (Participant 8, Head of Retail Innovations).

*"You need a lot more insights and capabilities to build up the teams to understand the data and how do you access the data? Without a proper e-commerce channel you can't really utilise a lot of that [customer] information."* (Participant 15, GM: Retail and Supply Chain Operations).

The participants agreed that, while most retailers can collect data, many lack the interpretive skills that convert data into information that the organisation can ultimately use in decision-making. They advised that large-scale reskilling of the organisations' personnel is required to address these obstacles since retailing is moving towards digital transformation and that all employees should have some data-analysis skills:

*"I think a big part of our transformations that we require in traditional retail in South Africa is redesigning what retail looks like in South Africa towards more digitally-enabled organisations, and I think that calls for quite big reskilling of people... I think who we employ as retailers will look very different in ten years' time than we do today, and I think that's quite important is we'll have a lot more data scientists, a lot more analysts, a lot more data interpretation people… our profile of people are gonna change, and how to reskill a buyer to work with machine learning in order to get the best out of the buyer is a big capability we need…"* (Participant 1, Head of Logistics and Supply Chain).

*"It's so crucial to have the right reports, the right information, not get overwhelmed by too much. Not just producing a lot of reports because then it's still, in my mind, data, it's not information. You can provide as many reports as you like but unless there's a clear understanding [it does not hold value]… So, we will give you [employees] all of these tools,*

*all of this information, but then we'll go back and say, by the way, can you calculate stock turn? Do you understand the essence of stock turn? And we go back, and we train them… They need to understand the logic, they need to understand basic retail. The report is just helping you to make better decisions… And I guess the better you become at something then you can drill into the next level of detail."* (Participant 14, CEO).

As stated at the start of this discussion, the participants listed a second factor regarding retailers' abilities to collect, analyse, and interpret data, namely data analytics leads to an improved understanding of customers, allowing retailers to create more personalised customer experiences. Previous authors have found customer loyalty programmes (driven by customer data collection) vital for successful omnichannel operations (Oka *et al.,* 2017:52; Rai *et al.*, 2019:47). Daugherty, Bolumole and Grawe (2019:25) stated that a successful omnichannel loyalty programme seamlessly connects customers to brands across all its touchpoints. It goes beyond one-dimensional discounts to offer deeply personal and authentic customer experiences, ultimately yielding more robust engagement and higher spending among customers. The participants of this study shared this sentiment. Whilst some verbalised that they had not mastered the art of loyalty programmes yet, they emphasised that satisfying individual customer needs while collecting valuable information on customers lifecycles and shopping behaviour is a critical omnichannel capability:

*"… unless you do loyalty right, you're still gonna have that experience of customers shopping [switching] across brands in South Africa… So, most of the programmes run loyalty to understand the customer but they end up just giving away a lot of margin for nothing 'cause they don't change the customer behaviour. And I think that comes to not really having a good omnichannel strategy where you're locking them in or understanding them perfectly."* (Participant 15, GM: Retail and Supply Chain Operations).

*"… the one thing that we're starting to do now, and it's been a journey for us from a systems point of view, to start building better information. And being a cash retailer, we didn't have much customer information… we've been investing quite a lot in the last couple of years on our own CRM [Customer Relationship Management] system to start understanding some of the behaviours of our customers… we've got a very good database now of our customers with very good information."* (Participant 14, CEO).

The conclusion from the above discussion is that, while both literature and the findings of this study agreed on the importance of having a data collection, analysis, and interpretation ability, retailers still face many obstacles in developing this capability.

This study revealed that, while most omnichannel retailers who participated in the study can collect data, the main hurdles lie in collecting data in the correct format and developing data-analysis and interpretive skills. To overcome these hurdles, retailers need to invest in the large-scale reskilling of personnel to develop internal capabilities that allow retailers to interpret the data into meaningful information as well as to guide organisational decision-making and optimise organisational performance. This finding closely tied in with the final code of Theme 4, namely a retailer's ability to make data-driven decisions.

### *b) Make data-driven decisions (II4)*

With data-driven decision-making processes, organisations utilise digital technologies to generate facts and metrics to guide strategic decisions that align with the organisation's goals and objectives (Agrawal *et al.,* 2021). Brand, Höcker and Waldkirch (2020:50) found that, when organisations make data-driven decisions, they create agility, allowing them to respond quicker to identified opportunities. Pereira and Frazzon (2021:11) supported this finding by stating that an organisation's "*performance and competitive advantage will be purely dependent on their data-driven decision-making capability*". From an omnichannel perspective, Ye *et al.* (2018:681) found that data can be the key to convincing conservative members of the organisation that change towards digital transformation is required as data can be used as a basis for omnichannel managers to support debates on changing customer behaviours and the need for investments in omnichannel capacity development. Additionally, Yu *et al.* (2021:461) debated that data-driven decision-making is an essential characteristic of SCI. These authors stated that the integration of physical and digital channel data and processes is inevitable for omnichannel retailers and allows managers to make better decisions based on complete information.

During the interviews, the participants' accounts confirmed the importance of data-driven decision-making in omnichannel retailing as a way to facilitate SCI. They indicated that, when information is integrated across the organisation, it creates visibility, resulting in better decision-making. Additionally, some participants explained that making data-driven decisions is a capability they have not developed to its fullest capacity:

*"But for us to become really modern organisations that are capable of satisfying a customer across various channels, we're talking about far larger transformations which are actually transforming to digitally-enabled businesses, businesses that can make more effective decisions based on data… "* (Participant 1, Head of Logistics and Supply Chain).

*"… the big risk that we face is we run a lot of things and we make a lot of decisions based on gut, and gut is okay… Eventually it's gonna catch up with you. Unless you can make informed decisions on good datapoints, you're gonna make the wrong calls eventually."* (Participant 14, CEO).

*"So, that access to information across the business units [is vital] not because I'm tryna [to] interrogate what your process is but just to have that visibility that's so key to plan our supply chain and plan how that stock gets into store… is really, really important to the success of our business."* (Participant 10, Head of Africa Supply Chain).

In conclusion, from the above discussion can be deduced that modern retailers should be equipped to make data-driven decisions since it leads to more digitally transformed organisations and is essential in the effective management of the supply chain. However, from the above quotations can be assumed that retailers are not fully proficient in this capability but have realised the importance of data-driven decision-making and have initiated steps to become more data driven.

#### *8.4.4.4 Data-collection and -analysis capability: Summary and conclusion*

In the preceding section, the second subcategory of Theme 4, Data-collection and -analysis capability, was discussed. Two codes comprised this subcategory, namely the ability of retailers to *collect, analyse, and interpret data* (II3) and *make data-driven decisions* (II4). As part of the discussion, literature sources were used to contextualise the findings of the entire dataset. Based on the findings, the researcher developed the following definition to conclude and summarise data-collection and -analysis capability:

*As part of omnichannel retailers' information integration capabilities, retailers' ability to collect and analyse data is a dynamic capability. Data is often called the 'new oil', which should be 'refined' to tap unprecedented value in the form of customer and market intelligence. Therefore, the ability to collect and analyse data from various channels and touchpoints within the organisation through sophisticated technologies*

*significantly contributes to the competitive performance of a retailer. However, becoming data-driven is complex and multifaceted, necessitating changes to multiple organisational resources, which calls for the involvement of several managerial levels and the large-scale reskilling of personnel to develop technical data analysis and interpretive skills to facilitate data-driven decision-making.*

Based on the above discussion and definition, this study concluded that data-collection and -analysis capabilities should be considered a dynamic capability since it serves as a prerequisite for modern omnichannel supply chains. Rooted in the evidence presented above, this study found that cross-channel collaboration and integration are required to collect data across the retailers' physical and digital channels to facilitate data-driven decision-making.

This finding addresses a knowledge gap identified as part of the problem statement of this study by finding that retailers need to develop data-collection and -analysis capabilities as part of the transformation journey towards becoming a fully integrated omnichannel retailer. In addition, this finding partially addresses secondary research objective 3 (SRO3) by classifying a retailer's ability to collect and analyse data as a capability that facilitates internal SCI and allows retailers to make better data-driven decisions.

### 8.4.5 Theme 5: Process integration

A prerequisite of the successful management of modern supply chains is moving from managing functions and processes independently towards integrating activities into relevant supply chain processes (Irfan *et al.,* 2019:523). Organisational operations consist of many activities, and all activities correspond to one or more supply chain processes (Rajaguru & Matanda, 2019:303). Katunzi (2011:2) debated that SCI usually happens incrementally. As a result, priorities are often assigned based on what would yield the highest potential return on investment. As outlined in Chapter 4, Section 4.3.2, process integration calls for an effort from organisations to identify key functional activities and their interrelationships to reconceive the design of supply chain processes, moving away from managing processes independently (per function) to fully integrate processes across the entire organisation (Peinkofer *et al.,*

2019:3599). Song *et al.* (2019:532) found that viewing the supply chain as a set of integrated process capabilities, rather than separate functions, can provide significant insights for organisations, which can be used to improve performance and flexibility.

From an omnichannel perspective, process integration is particularly relevant. Chapter 5, Section 5.3, outlined the retailer's journey when transitioning from single to omnichannel retailing. It was found that the integration of processes across functions as well as physical and digital channels and touchpoints are central to this journey. This entails, for example, having one marketing team looking after both physical and digital channels. Ishfaq *et al*. (2021:2) found that omnichannel supply chains should replace the traditional sequential interactions with a more integrative and collaborative process, which is the hallmark of successful omnichannel operations. Song *et al.* (2019:531) added that omnichannel retailers should improve the organisations' management capability and consider organisational integration as the primary task to promote process integration.

In Chapter 4, Section 4.3.2, the reviewed literature observed that one of the significant challenges with process integration is that each organisational function has its own independent way of managing different processes. Independent structures and processes create complications when integrating because disparate (or unique) functional processes are often incompatible with larger organisational processes. Chapter 4 considered the many interrelated aspects of process integration. Stemming from this discussion, the following definition of process integration was included in the coding frame:

**Process integration:** Process integration is a holistic approach to SCI, which emphasises the joint management of supply chain processes across functional units. Process integration is achieved through organisational governance in terms of leadership support, the cross-functional team approach, and the alignment of supply chain goals with organisational objectives and process-oriented performance measures. Process integration requires organisational change and personnel support.

Additionally, a separate code for supply chain process integration capability (DC3) was also developed and included in the coding frame. The definition of supply chain process integration as seen in Annexure A is cited below:

> **Supply chain process integration capability (DC3):** The ability of an organisation to restructure supply chain processes to share strategic resources and capabilities effectively and efficiently across the organisation's supply chain.

As part of the document analysis, supply chain process integration capability (DC3) and the words related to this DC were examined to determine how retailers report on their process integration efforts. Table 8.7 represents the words related to DC3, which comprise the coding frame.

**Table 8.7: Frequency count of document analysis: Word(s) related to DC3**

| Each word's raking in the complete document analysis | Words included in the analysis | 2016 | 2017 | 2018 | 2019 | 2020 | Total | % of the occurrence of each word within DC3 | % within the total document analysis |
|---|---|---|---|---|---|---|---|---|---|
| 3 | operations | 1083 | 932 | 977 | 1085 | 967 | 5044 | 40% | 5.9% |
| 7 | supply chain | 381 | 545 | 612 | 635 | 691 | 2864 | 22% | 3.3% |
| 10 | process | 310 | 382 | 446 | 492 | 437 | 2067 | 16% | 2.4% |
| 19 | internal | 241 | 261 | 254 | 289 | 361 | 1406 | 11% | 1.6% |
| 34 | alignment | 84 | 178 | 179 | 214 | 172 | 827 | 6% | 1.0% |
| 55 | integrate | 82 | 69 | 58 | 62 | 44 | 315 | 2% | 0.4% |
| 61 | collaborate | 22 | 47 | 48 | 62 | 45 | 224 | 2% | 0.3% |
| **Ranking based on 1-87** | **Total** (words included in the analysis) | | | | | | **12 747** | **100%** | **14.8%** |
| | **Total** (all words included in the document analysis) | | | | | | **86 164** | | |

**Source: Researcher's own compilation**

From Table 8.7, can be observed that words related to DC3 accounted for 14.8% of the total document analysis. This finding established DC3 (and its related constructs) as constituting the most significant part of the document analysis (the complete document analysis can be found in Annexure B). Additionally, the words 'operations', 'supply chain' and 'process' accounted for 11.6% out of the 14.8%. This was a significant finding as it indicated the high reporting frequency in terms of retailers' operations and supply chain processes. The word 'operations' was also the third most used word within the complete document analysis. This finding was unsurprising,

considering that the purpose of an IAR is to provide a comprehensive narrative of an organisation by putting the organisation's performance, business model, strategy, and operations in the context of its financial, social, and environmental factors (as explained in Chapter 7, Section 7.3.4). A pattern can be observed in Table 8.7 when considering the frequency of reporting on 'supply chain', which has gradually increased over the five-year reporting period. This can signal that retailers have assigned a higher strategic value to supply chain operations over the five years included in the analysis. This finding aligns with the findings of previous authors, who stated that the growing importance of SCM has led to increasing recognition of the strategic role that the supply chain can play in defining the long-term success of an organisation (Frederico, 2021:96; Ketchen & Craighead, 2021:50; Srinivasan, Hamdani & Ma, 2021:249). Quotations from the retailers' IARs also support this finding:

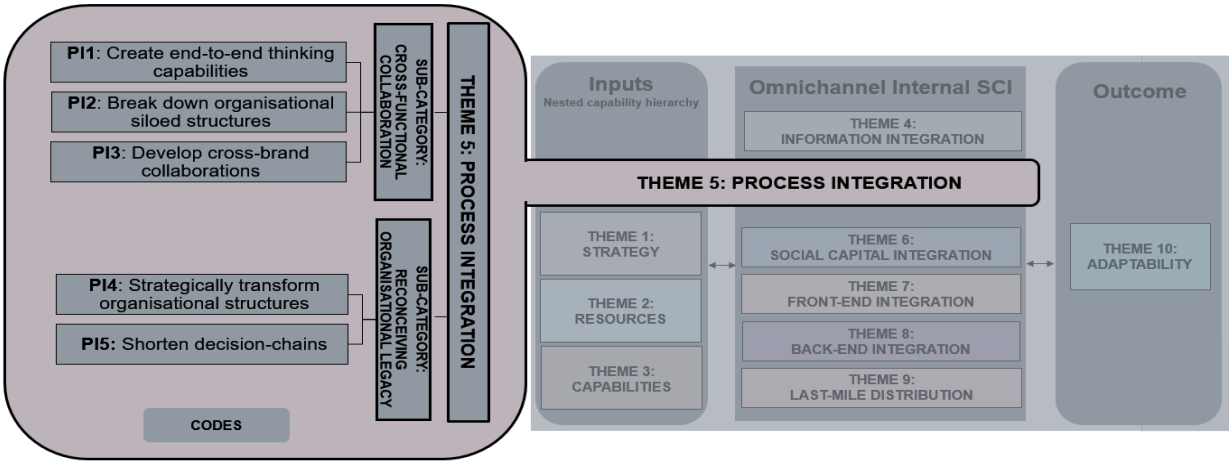
> *"In South Africa, value continues to be created through our quick response supply chain which remains a strategic objective."* (Retailer E, IAR 2020).

> *"The supply chain's strategic focus is to provide assurance on key processes that enable the achievement of the strategic imperative to deliver the right product, to the right store, at the right time."* (Retailer D, IAR 2020).

During the interviews, the participants underscored the importance of process integration in achieving omnichannel SCI. In fact, when referring back to Table 8.1, it can be noticed that, of the 10 themes developed based on the interview data, process integration constituted the third biggest theme with 111 coded data extracts across all 17 interviews. After analysing the interview data, two subcategories and five codes were categorised under Theme 5. First, the participants noted the importance of cross-functional collaboration. Three codes were developed from the data: a retailer's ability to *create end-to-end thinking capabilities* (PI1), *break down organisational siloed structures* (PI2), and *develop cross-brand collaborations* (PI3). Second, participants stated that organisations need to reconceive legacy structures. Two codes were classified within this subcategory: a retailer's ability to *strategically transform organisational structures* (PI4) and *shorten decision-chains* (PI5).

Figure 8.11 presents a detailed excerpt (or subset) of the conceptual framework presented in Figure 8.3 and aims to plot Theme 5 and its subcategories and codes within the broader context of the conceptual framework.

**Figure 8.11: Conceptual framework - Theme 5**




**Source: Researcher's own compilation**

### *8.4.5.1 Cross-functional collaboration*

Process integration often requires input from all functions of an internal organisation. Therefore, top management must be adept at coordinating cross-functional collaboration and communication within organisations to gain fresh perspectives, drive innovation plans, and keep departments aligned towards a common goal (Mikalef *et al.,* 2021:86). Some authors (Turkulainen *et al.,* 2017:302; Ganbold *et al.,* 2020:952; Pham, Pham & Pomponi, 2021:935) suggested that cross-functional integration is critically important in facilitating internal SCI and thereby gaining a competitive advantage.

From an omnichannel perspective, Ye *et al.* (2018:681) found that failing to break the cross-functionality of organisational silos can prevent an organisation from fully transforming into an omnichannel retailer. In Chapter 4, Section 4.3.2.2, was found that, when cross-functional collaboration is present, functions within the organisation start to communicate, coordinate, and collaborate, which allow customer orders to flow efficiently throughout the supply chain and reduce delays (Bernon *et al.*, 2016:600). Consequently, cross-functional collaboration is considered a vital capability in dynamic

environments (Liu *et al.*, 2021:63). Ishfaq *et al.* (2021:12) similarly maintained that while many existing supply chain capabilities remain relevant, cross-functional collaboration creates the perfect scenario to blend 'old' capabilities with 'new' ones, such as those found within the realm of the DCV. The true value of cross-functional collaboration is only realised when retailers create teams that mix people with more 'disruptive' capabilities with those more aligned to the existing (or legacy) retail model.

Table 4.4 outlined the most important benefits and drawbacks of cross-functional teams in process integration and concluded by discussing three dimensions of cross-functional team integration, namely cross-functional collaboration (all functions working towards a common goal), cross-functional coordination (the process of (re)ordering the supply chain based on a system-wide approach), and cross-functional communication (the process of transferring knowledge across functional units of the organisation). Following the literature review on the structural mechanisms of process integration, DC5 was included in the coding frame:

**Cross-functional integration capability (DC5):** The ability of an organisation to eliminate internal boundaries and build strong boundary-spanning relationships (for example, relationships across functions and hierarchies within the internal supply chain of the organisation).

DC5 (and its related constructs) was examined in the document analysis to determine how retailers report on cross-functional integration in their IARs. Table 8.8 represents the words related to DC5, which comprise the coding frame.

**Table 8.8: Frequency count of document analysis: Word(s) related to DC5**

| Each word's raking as part of the complete document analysis | Words related to DC5 | 2016 | 2017 | 2018 | 2019 | 2020 | Total | % of the occurrence of each word within DC5 | % within the total document analysis |
|---|---|---|---|---|---|---|---|---|---|
| 24 | relationships | 183 | 189 | 204 | 275 | 229 | 1080 | 100% | 1.3% |
| 87 | cross-functional | - | - | - | 2 | - | 2 | 0% | 0.0% |
| **Ranking based on 1-87** | **Total** (words related to DC5) | | | | | | **1 082** | | |
| | **Total** (all words included in the document analysis) | | | | | | **86 164** | **100%** | **1.3%** |

**Source: Researcher's own compilation**

Although literature accentuated the importance of cross-functional collaboration in omnichannel retailing, the word 'cross-functional' only appeared twice among the 86 164 words included in the document analysis. Both instances originated from the 2017 report of one retailer (Retailer X). In both instances, the word 'cross-functional' was used within the context of improving processes that enhance customer experiences:

> *"Each step in the customer's digital journey generates data which is tracked, reported and analysed. Cross-functional teams work together to streamline and optimise her[60] experience."* (Retailer X, IAR 2017).

> *"[Strategic, operational goals for 2018]…structure teams to optimise cross-functional collaboration on customer journeys."* (Retailer X, IAR 2017).

During the interviews, the participants pointed out that multidisciplinary (cross-functional) collaboration is key in achieving internal SCI. They explained their understanding of cross-functional collaboration as the ability of an organisation to work collaboratively across functions to achieve a common goal. Additionally, they emphasised that cross-functional collaboration often requires traditional (legacy) organisational structures to be broken down. The findings of this study align with the literature findings presented in Chapter 4, Table 4.4, in as far as the participants also highlighted the development of cross-functional teams to create a holistic view of a retailer's omnichannel processes. In this subcategory of Theme 5, the following three codes were developed based on the participants' testimonials: a retailer's ability to *create end-to-end thinking capabilities* (PI1), *break down organisational siloed structures* (PI2), and *develop cross-brand collaborations* (PI3). These codes are discussed individually below.

### *a) Create end-to-end thinking capabilities (PI1)*

Up to this point in the study, some of the previous themes, subcategories, and codes had briefly mentioned the importance of having an end-to-end perspective of the omnichannel supply chain. For example, S2 (a retailer's ability to align performance measurement structures) emphasised the necessity of creating performance

[60] Retailer X refers to customers in the female form 'her'.

measures that measure omnichannel processes 'end-to-end' while the capabilities of IT systems as a subcategory of Theme 4 highlighted the role that IT systems can play in creating end-to-end visibility in the supply chain. The current code (PI1) builds on these discussions by addressing the participants' perceptions of the paradigm shift required in an organisation to establish 'end-to-end' supply chain thinking. Hairston (2018) best described this paradigm shift as having both end-to-end 'thinking' as well as end-to-end 'working' capabilities. The author added that the most impactful organisations employ end-to-end thinking and working capabilities to accelerate the digital transformation journey. In omnichannel retailing, creating end-to-end thinking capabilities can be complex as it requires the alignment of functions across digital and physical channels. Channel alignment is a complex, multifaceted task, since innovations in shoppable formats keep changing, therefore facilitating the continuous realignment of these channels which require end-to-end collaboration across the entire internal supply chain (Hajdas *et al*., 2020:3). Nevertheless, retailers with the ability to master this complexity are able to seize opportunities better than competitors (Irfan *et al.*, 2019:522).

During the interviews, participants' testimonials revealed two factors that encompass the ability of retailers to create end-to-end thinking capabilities. First, the participants expressed their understanding of what it means to create end-to-end thinking capabilities. Second, they described the evolution of developing end-to-end thinking across internal supply chain processes. During the interviews, Participant 3 provided an example of the value of creating capabilities that support end-to-end thinking:

> *"I'm constantly pushing my buyers to take ownership for packaging because they're the ones that buy the product but they're also the ones that tell what the pack size is as well as what the packaging needs to be, and that cost is worked on a package good, not a [sic] item on its own… if we can get it right at the source, then we don't become reactive to dealing with the risk and the write-offs at the end of the supply chain, we can become proactive by dealing with it in the right pocket of the supply chain. … 'cause for me it's about business in totality, not just supply chain. It's about how do we play within the supply chain to create efficiencies. Because it doesn't sit only in the last mile. It really does sit in all the decisions that's made up, and how do you get the stakeholders aligned, and how do you get that responsibility and accountability at each one of the touchpoints within that supply chain? And that it's synergised and it's not working in silos, because that's a problem with supply chain. Everyone works in silos 'cause everyone has a different responsibility and once they've done theirs they don't care. They don't think of the*

*consequences and the ripple effect through the supply chain."* (Participant 3, Head of Logistics and E-fulfilment).

The first aspect that was pointed out regarding creating end-to-end thinking capabilities was the understanding that every part of the omnichannel supply chain contributes towards the service offered to customers. This finding was one of the most significant findings to come from the analysis of the interview data as several participants provided detailed accounts or examples of how end-to-end thinking, or in some cases a lack thereof, impacted the omnichannel SCI. Below are several excerpts from the interviews of how end-to-end thinking can truly change the efficiency of the supply chain:

*"… a lot of people make decisions based on their KPI, and in the supply chain you'll find that KPIs aren't aligned. So, a good example is a buyer. So, they get measured on their gross profit that they actually make, which excludes breakages, excludes carriage. It excludes all the important things which is risk to the business to get your nett. Now, they need to be measured on nett because they should care about breakages, because they should be the ones that is [sic] mitigating that risk when they buy and get it packaged. They should care about carriage because they should care how much space in terms of air that they're shipping. And how well are they utilising the efficiency from our distribution centre? So, if you bring in, let's say, one vase in one box and you bring in a thousand, how many boxes will you bring in if you had to make it a pack size of six? All of a sudden you're dealing with one sixth of the number of cartons in our distribution centre than you would have dealt with."* (Participant 3, Head of Logistics and E-fulfilment).

*"… a lot of the people don't really think it through, so they're still working in an old way of how it worked. So, that knowledge of a full end-to-end supply chain is not necessarily resident in a lot of people's skillset. They might be a merchandise planner or a buyer or a truck guy or a store guy but very few people understand the whole thing."* (Participant 12, Chief Operations Officer).

*"In a retail business, you've got buyers and you've got planners who basically buy the assortment and plan the assortment into stores, and when they buy a, let's call it, this shirt that I'm wearing… they plan what's called attributes on it, so they say it's a blue shirt, it's got seven buttons, it's made of this kind of fabric, eighty percent cotton, twenty percent polyester etcetera… Then they will go and put a description, and that description can just be kind of an amalgamation of all those words, but it's not a customer-friendly sort of description 'cause it was always for internal. But we use that same description now on the online site that's gotta sell it. If you're coming onto Retailer D's website that you wanna see that description and know exactly what it is. And right back in the day when e-commerce was a lot smaller portion of our sales, it became very difficult for us to go and say to the merchant you've gotta do all this work to actually go and create a nice little story about what your merchandise is that sells it to the customer as opposed to how you used to*

*things where you just kinda put a couple of keywords together and that would suffice."* (Participant 13, Managing Director).

From the above quotations can be concluded that changes to organisational governance structures (such as performance measurement structures) are needed to facilitate the process of creating end-to-end thinking in the omnichannel supply chain. Additionally, it can be concluded that 'end-to-end' is a term used by participants to describe processes and tasks that previously existed within a single silo of the supply chain but, due to the nature of omnichannel retailing, has cross-pollinated to span multiple functions. Consequently, to become truly internally integrated, omnichannel retailers need to build buy-in from every member of the internal supply chain (as discussed in Theme 1).

The second aspect that the participants narrated in creating end-to-end thinking was the evolutionary process that an organisation must undergo to develop these capabilities. As stated during the introduction of this code (PI1), creating end-to-end thinking capabilities can be complex, particularly for omnichannel retailers who need to integrate different organisational functions across different physical and digital channels. Therefore, to create end-to-end thinking capabilities, they explained that retailers need to realise that (a) every role in the omnichannel supply chain is vital, (b) cross-functional interactions/communication is a driving force when creating end-to-end thinking capabilities, and (c) end-to-end thinking only truly creates value when complete transparency and visibility exists in the supply chain. The following quotes support these findings:

*"… the ability for our business leaders to unlock the right data across the whole business because it's relevant from everyone from the start to the end is critical to have that openness and that clarity… You won't try and take a shortcut, you knew how critical your particular role was in that process…"* (Participant 10, Head of Africa Supply Chain).

*"We have quite a close relationship across the different departments, especially where omnichannel is concerned… So, there must be that synergy and that collaboration to make sure that if we are saying we are going to be offering this that we have the stock to back that up, and if we have a special offer, in order to get that customer reaction, we need to be able to market that… So, you've gotta have everyone in the same room singing off the same hymn sheet."* (Participant 7, Operations Business Development Manager).

> *[On the importance of integration] "… it's also your end-to-end visibility and control. So, anywhere in a process through an order lifecycle, you wanna be able to know where it [the order] is, what's happening, is it on time? Is it falling behind? Are we gonna hit the customer promise? So, this kind of end-to-end visibility."* (Participant 6, VP of Supply Chain & eCommerce Operations).

Based on participants' testimonials, for retailers to be efficient in future, they will seemingly need to embrace a philosophy that eliminates as many internal barriers as possible. End-to-end thinking requires a change in the organisation's perspective on the design and management of processes. To truly integrate omnichannel supply chains, retailers must consider the totality of the change that will be required. What emanated from the participants' accounts of end-to-end thinking is that it requires decisions to merge and transition from the old silo mentality to a new integrated approach to process management.

The next code developed from the interview data is related to a retailer's ability to break down organisational siloed structures.

### *b) Breaking down organisational siloed structures (PI2)*

Throughout Chapter 3 (Introduction to SCI) and Chapter 4 (Pillars to SCI), a prominent theme emerged: to become fully internally integrated, organisations must break down functional barriers and avoid the silo mentality. Chapter 5, Section 5.3.3, also found that, for retailers to move from multichannel retailing to omnichannel retailing requires siloed channels (both physical and digital) to be integrated. The silo mentality refers to a situation where an organisation fails to see the bigger picture and only acts in regard to a single department within an organisation or supply chain (Wisner *et al.*, 2016:473). Consequently, the silo mentality creates internal operational barriers, restricting the organisation from operating efficiently (Ziaullah *et al.,* 2015:90).

From an omnichannel perspective, Hossain *et al.* (2020:226) argued that a siloed channel management approach is no longer appropriate as customers frequently use more than one channel when shopping. Hajdas *et al.* (2020) found a gap in the mindsets of different functional units contributing to a single organisation's omnichannel offering. These authors' findings indicated that, to avoid the silo

mentality, organisations need to break down functional silos, reconfigure the organisational culture, and reconceptualise internal structures and processes to establish an omnichannel mindset within the internal organisation. This study's findings support the findings of both Hossain *et al.* (2020:226) and Hajdas *et al.* (2020) in that functional silos still existed in some omnichannel retailers who participated in this study.

During the interviews, some participants' testimonials pointed to the fact that functional silos still existed within organisations and supply chains. However, several participants revealed some of the steps they had taken or had planned to take in the future to break down siloed structures to find new ways of working. In particular, the participants underscored the importance of communication and collaboration in breaking down silos:

> *"I think a big, big part of the omnichannel strategy for future success is to make sure that you're not building it in siloes, so you're not building separate business within the business, you're making it part of everyone's responsibility. So, it's not a separate supply chain doing omnichannel. It is the supply chain's responsibility, it is the store's responsibility… So, I think that's a key way of doing it or approach is to make sure that you're not appointing new people into senior roles to take responsibility for delivering this, you're making it part of the existing senior management responsibilities to get it done."* (Participant 15, GM: Retail and Supply Chain Operations).

> *"It isn't always perfect and the silos are a real thing in corporate, but to a large degree I think there is a lot of collaboration within the retail division. Their connectivity to all aspects of the business and overlapping with IT and logistics and finance is pretty good."* (Participant 2, Head of Logistics and Facilities Management).

> *"…businesses tend to work in their own space they tend to end up being siloed, so we must break that… that's an omnichannel requirement. [Two years ago] … there was definitely a more siloed approach to a degree that it was still forced to be two streams of businesses, the online and bricks-and-mortar. Two years down the road we are at a much better place where cross-functional and cross-divisional understanding is taking place, and collaboration."* (Participant 5, Head of Transport and Engineering Logistics).

In particular, one participant (Participant 16) provided a detailed account of the new multidisciplinary team approach they were following to break down functional silos and to facilitate a high degree of collaboration. The 'pod' approach is facilitated by an international outsourced change management consultancy with expertise in using technology to facilitate change. The purpose of the pod is to create opportunities for

high levels of cross-functional collaboration on specific impact projects within an organisation. The pod consists of functional 'subject matter experts' who are tasked to solve the most strategic problems faced by the retailer. Although Participant 16's account of the inner workings of the pod structure is too extensive to include in its entirety as a quote below, highlights of this participant's account are presented. This account signals the value that can be derived when functional experts collaborate on an omnichannel initiative:

> *"… the way a pod works is that a pod has a management structure which is non-partisan… The pod members are built up from the various competencies that the pod is tryna focus on. So, we've just concluded a pod which is looking at the dark store. So, the dark store had pod members were built up from supply chain, IT, procurement, real estate development, and HR. And they're all at a similar seniority level and they all have a mandate to drive the pod to its conclusion… it really has changed the way we collaborate quite dramatically. Because I would never have been able to get that much time from that many subject-matter experts independently…. it's worked and how well these pods have delivered really, really comprehensive outcomes."* (Participant 16, Head of Online Operations).

In conclusion, retailers still face many obstacles when trying to break down functional and channel silos. Some participants' testimonials revealed that siloed structures still exists within omnichannel retailers. Nevertheless, these retailers are trying to break down siloes through increased communication and collaboration.

The next code identified from the interview data, which related to cross-functional collaboration, is the retailer's ability to develop cross-brand collaborations.

### *c) Cross-brand collaboration (PI3)*

Typically, pure-online retailers have acted as product resellers (Tian *et al.,* 2018:1595), reselling manufacturers' products to a unique pool of online customers. However, an increasing number of pure brick-and-mortar retailers are changing the way they perceive retail, investing in digital platforms that allow them to sell a variety of products directly to customers instead of through product resellers (Zheng, Yu & Ma, 2022:442). According to Hänninen *et al.* (2019:380), this signals a major transformation in retail

as platform-based multisided marketplaces, such as Amazon.com, have become more popular as customers' preferred method of shopping.

Tian *et al.* (2018:1595) debated that this new format benefits both the retailer and the customer. From the retailer's perspective, marketplace models allow retailers to sell a broader range of products to customers while, from the customer's perspective, they only have to visit one digital platform to purchase anything from food items to electronics. In Chapter 6, Section 6.2.1.3 (d), marketplace models were briefly addressed as a possible new fulfilment channel. Herein, marketplace models were described as 'virtual shopping malls' (Hänninen *et al.,* 2019:380). However, an online marketplace is unlike a retailer's own e-commerce website. With an online marketplace, the website owner (online retailer) allows third-party sellers to sell various products on their website under the name of the website owner (retailer) whereas, with a retailer's e-commerce website, only products procured and sold by the retailer itself are sold to customers (Mantin *et al.*, 2014:1937).

During the analysis of the interview data, a unique and meaningful finding emerged – many participants suggested that they were benchmarking against international standards to investigate the possibility of transforming digital channels (website and mobile application) into a marketplace or similar model. The rationale for this was that a retailer's unique 'bundle of brands' creates differentiation opportunities. They argued that, since they serve as the custodian of several sub-brands (Chapter 7, Table 7.11 lists the number of sub-brands per retailer), the integration of their bundle of brands (or what Participant 2 refers to as 'unit trust of retail') into one digital store allows for cross-brand promotional activities and the ability to create more significant per-customer basket spends. This finding makes a unique contribution as the researcher was unable to find any previous studies within the scope of omnichannel retailing that emphasised the value of unlocking cross-brand opportunities. The following quotations supported this finding:

> *"… we have a very broad spectrum of offerings in the country, so we have all the different brands which are quite well-regarded. We're like a unit trust of retail… so you can go online and you can add into your basket items from any of our divisions. So, you can buy a set of*

*pots and pans from Brand 1[61], and then also add a dress from Brand 2 and a suit from Brand 3, and you can buy a bed, and so you can do this all in one transactions and then we operationally will deliver those things to you. So, that's unique."* (Participant 2, Head of Logistics and Facilities Management).

*"… we've looked at China and we've looked at the super apps[62]. So, why were the super apps so important and why did they win in China? So, we're looking at a super app concept and I think if you can attract the customer into the super app and find a way to keep them there you have more opportunity of moving them across [brands]… So, once you're in the super app and I know what you do and I can profile you, I can then send you marketing messages instantly. So, let's say you go into Brand 1 and you're doing a kitchen and you've got all the cupboards but you can't find the right stove that you're looking for. What I'd like to be able to do is hand you off to Brand 2. So, without you knowing it, you've suddenly got a whole extended range of product. Because what's happening at the moment is you can't find it in Brand 1 so you probably go to [competitor] because they're much better and easier than we are to shop. So, I wanna keep it within our set of brands and then to extend it into a marketplace. So, rather than just one brand of products that we sell is how do we go wider into marketplace?"* (Participant 12, Chief Operations Officer).

From the participants' narratives can be concluded that cross-brand collaboration offers an opportunity to create a unique offering for customers. However, retailers are still trying to navigate the complexities of cross-brand integration and are trying to determine how to implement this model.

#### *8.4.5.2 Cross-functional collaboration: Summary and conclusion*

In the preceding section, cross-functional collaboration as a subcategory of Theme 5 was discussed by referring to the findings of both the document analysis and evidence from the analysis of the interview data. Based on these findings, the researcher developed the following definition to conclude and summarise cross-functional collaboration:

*As part of omnichannel retailers' process integration, retailers need to build cross-functional collaboration initiatives. Cross-functional collaboration relates to the ability of an organisation to eliminate internal functional boundaries to build strong multidisciplinary teams that facilitate the management of boundary-spanning processes within the omnichannel retailer. Cross-functional collaboration requires*

[61] Names removed as per confidentiality requirements.
[62] A super app allows a user to access several services or products by means of a single app.

*end-to-end thinking and recognising the value of each member's role in effectively managing internal omnichannel supply chain processes. Through effective collaboration and high levels of internal communication, retailers can break down organisational silos to formally build collaborative structures within the boundaries of the internal organisation. Additionally, integrating retailers' sub-brands provides unique opportunities for retailers to collaborate across brands, enhancing their ability to offer customers a unique bundle of products to ultimately create an inimitable competitive advantage.*

Elicited from the above discussion and the definition provided is that this study concluded that cross-functional collaboration should be classified as a dynamic capability since it has been identified in both the literature review and empirical analysis as vital in process integration. Consequently, for retailers to successfully transform from previous types of retailing (such as multichannel retailing) to omnichannel retailing and for omnichannel retailers to integrate internal supply chains, they need to develop cross-functional collaboration capabilities. This finding makes two significant contributions. First, it addresses the knowledge gap identified in the problem statement for this study (Chapter 1, Section 1.2) as it can be concluded that cross-functional collaboration is needed for a retailer to successfully transform from previous types of retailing to an integrated omnichannel model. Second, this finding partially addresses secondary research objective 3 (SRO3) as it can be concluded that cross-functional collaboration is a dynamic capability that can facilitate internal SCI to create end-to-end thinking capabilities, to break down organisational silos, and to develop cross-brand collaboration opportunities.

Closely related to cross-functional collaboration is a retailer's ability to reconceive the organisation's legacy structures and processes. Subsequently, based on the participants' testimonials, a second subcategory was created under Theme 5: *reconceiving organisational legacy*.

#### *8.4.5.3 Reconceiving organisational legacy*

Developing a digitally enabled supply chain that fulfils a customer-driven shopping experience necessitates a deep understanding of the organisation's strategic

objectives and longer-term direction. Kammerer *et al.* (2018:9) argued that there is no one-size-fits-all solution. Future-state supply chain design should be defined by the uniqueness of the organisation and the customers it serves. Wei and Li (2020:2) debated that part of the aforementioned changes in supply chain design calls for traditional retailers to update legacy structures and processes. Zhang and Watson (2020:294) found that 'legacy roadblocks' often hamper the success of omnichannel integration. Warner and Wäger (2019:11) explained that managers tend to use prior experience to reduce complexity, favouring strategic choices they are familiar with over unfamiliar options that would lead to transformational change. Hence, managers are less likely to adopt a digital business model because of the cognitive path dependencies brought about by legacy systems and processes.

Extant literature observed that omnichannel SCI warrants an extensive redesign of legacy (standard) supply chain processes to facilitate both functional and channel (physical and digital) integration (Chapter 4, Section 4.3.1.1). The findings of this study support the literature in that the participants also emphasised the importance of reconceiving the organisational legacy as part of the omnichannel SCI process. Accordingly, this study did not aim to provide evidence of the need for organisational restructuring to facilitate functional and channel integration but rather focused on investigating capabilities that aid omnichannel retailers with this restructuring process.

Chapter 4, Section 4.3.2.2, outlined the structural mechanism of process integration. Herein, it was observed that structural components refer to the physical organisational structures that facilitate SCI. Therefore, part of adapting and integrating omnichannel supply chain processes is adapting the structures that govern these processes. Following the literature review on the structural mechanisms of process integration, DC4 (progressive organisational governance capability) was included in the coding frame and defined as follows:

**Progressive organisational governance capability (DC4):** The ability of an organisation to adapt to change by dynamically adjusting the organisation's basic (standard) governance processes.

In the document analysis, DC4 (which consisted only of the word 'governance') was analysed to determine how retailers reported on governance structures and how they may have changed over the five-year investigation period.

**Table 8.9: Frequency count of document analysis: Word(s) related to DC4**

| Each word's raking in the complete document analysis | Words related to DC5 | 2016 | 2017 | 2018 | 2019 | 2020 | Total | Percentage of occurrence of each word within DC4 | Percentage within the total document analysis |
|---|---|---|---|---|---|---|---|---|---|
| 8 | governance | 418 | 554 | 579 | 601 | 500 | 2652 | 100% | 3.1% |
| **Ranking based on 1-87** | **Total** (words related to DC4) | | | | | | **1 082** | **100%** | **3.1%** |
| | **Total** (all words included in the document analysis) | | | | | | **86 164** | | |

**Source: Researcher's own compilation**

From Table 8.9 follows that no significant patterns relating to the use of the word 'governance' could be noted from the frequency distribution of the document analysis. Nevertheless, the researcher reverted to the IARs to determine how retailers reported on governance structures, particularly how retailers were changing governance structures to align with changes in the retail environment:

> *"The group understands good governance is aspirational and practices must be continuously monitored, adapted and improved. Critically, governance practices must be aligned to and enable value creation through the achievement of group strategy, formulated in the context of the group's guiding principles."* (Retailer D, IAR 2019).

> *"Governance processes and group policies are regularly reviewed to ensure alignment with regulatory changes, reflect best practice, seek out opportunities to incrementally improve the group's governance and ascertain whether the policies and processes are still fit for purpose as the group's businesses change over time."* (Retailer H, IAR 2019).

These quotations reveal that retailers recognise the importance of continual (re)evaluation of governance structures to align with the changing operating environment. During the interviews, several participants also expressed the need to find synergies and integration opportunities within the legacy structures of the organisation. They pointed out that omnichannel retailing, in essence, requires a step-change from long-standing operational strategies and structures. Furthermore, based on the participants' accounts of the changes needed to reconceive legacy structures, it can be concluded that, while minor modifications to existing tools or policies will aid with the integration process, it will not suffice to meet the drastic changes required for

omnichannel retailing. The importance of reconceiving the organisational legacy to be a successful omnichannel retailer was best articulated by Participant 16:

> *"So, I think the departure from multichannel to omnichannel was more about seeing the online channels as completely embedded in the business whereas in multichannel they were seen as sort of parallel business streams. I think omnichannel sees them far more as deep integration and the customer's ability then to swap between channels quite seamlessly. And this is actually probably the biggest challenge of the omnichannel vision is that it sounds quite straightforward but actually it's very difficult to do, because it's not that easy to adapt multiple channels and to be able to switch between them … I think a part of the challenge is that you never start this from zero. You've been on the journey for a while, so you're always having to deal with the effects of what's in the legacy. If you had the freedom to start from scratch with an omnichannel strategy it might be relatively simple, but coming from a place where you've already got other channels embedded and to try and then embed those into the business as a whole is much, much more challenging. So, I think that's where we've probably got our biggest challenge going forward is even finding the synergies between our existing channels is going to be difficult, never mind embedding them into the business as a whole."* (Participant 16, Head of Online Operations).

During the analysis of the interview data, two codes were grouped under the subcategory reconceiving the organisational legacy. First, the participants explained that omnichannel retailing necessitates the *strategic transformation of organisational structures* (PI4). Retailers need to identify and develop the primary goal of omnichannel operations to design supply chain processes accordingly. Second, they explained that a truly omnichannel-focused retailer will have *shortened decision-chains* (PI5), allowing them to be agile in a competitive omnichannel environment.

### *a) Strategically transform organisational structures (PI4)*

Under the rapidly changing retail landscape, traditional brick-and-mortar organisations often encounter more disruptive challenges during the digital transformation process due to technical limitations, business structure rigidness, and lack of incentive for restructuring (Ye *et al.,* 2018:658). As the digital world has evolved, omnichannel retailing has become a game-changer for the retail industry (Hilken *et al.,* 2018:517). Melacini *et al.* (2018:392) stated that some retailers may keep channel (physical and digital) management separate to reduce complexity. However, these authors found that, while a separation strategy meets the specific requirements of each channel,

when integrating channels as required for true omnichannel retailing, advantages such as economies of scale and opportunity identification can be realised.

During the interviews, participants' statements supported these literature findings as they commented on the difficulties retailers experience in determining the best way to restructure operations towards more omnichannel-suited operations. From the code frequency table (Figure 8.1), is noticeable that, based on frequencies, this code (PI4) was the second most coded code across all 17 participants. This finding revealed that, across the board, the participants viewed the ability of retailers to strategically transform legacy structures as a critical capability in retailers' ability to become omnichannel retailers. Also, while the literature presented in Chapter 4, Section 4.3.2.2, briefly highlighted the importance of adapting legacy information systems and processes, the results of this study revealed that a more wide-reaching organisational transformation will be required to transform an organisation into a mature omnichannel retailer. To provide context for the discussion to follow, it should be stated that all nine retailers who participated in the study were prominent brick-and-mortar retailers before becoming multichannel and now omnichannel retailers. The participants mentioned that, although digital channels have become more lucrative over the years, organisational structures still largely reflected the brick-and-mortar structures as opposed to the omnichannel strategy they were pursuing:

> *"I think the challenges for traditional retailers compared to pure-play online retailers is very different. Pure-play online retailers or start-up businesses, they get to design their proposition to the customer fresh, it's a blank sheet of paper… The challenges for traditional retailers is first and foremost the way traditional retailers are structured, the way they're organised, the skills that we have are obviously quite aligned to the traditional channel and how we service that channel. So, like all retailers, we're typically organised in functional expertise around sort of buying and planning and supply chain and so forth. And I think when we talk about the switchover to far bigger online channels one of the biggest challenges we have in fact is reorganising ourselves and reframing who we are and how we function and how we should function in the future… so the structural choices about do you set this [omnichannel retailing] up structurally in order to make us all comfortable, sort of set it up as an entity by itself and sort of structurally keep the complexity off to one side and then leave the rest of us to do all the traditional things? There are pros and cons to that and maybe in the beginning what it does is you can sort of ringfence the resources, ringfence the investment, and keep sort of the complexity aside, but what it does then it inhibits your ability to scale … so, some of what we've done is start to make that organisational shift from this niche little unit that was running off to the side, we've started to integrate it into our broader organisation, and its priorities live alongside all of the rest of*

*the other priorities, it has a voice at EXCO, it has a voice at the Board. All of us, the rest of the leaders, have an online objective or goal in our accountabilities."* (Participant 1, Head of Logistics and Supply Chain).

*"It's kinda one of the hardest challenges really…the reality is organisations kinda build processes often that are not customer-centric. The processes are built around providing governance and control as opposed to serving customers. And there's kind of a need to break down the legacy inside the organisation around that. And often, by the way, once you get into it, often serving customers leads to simplification and once you get into the detail you're gonna take a ten-step process and you're gonna make it a three-step process in the interest of serving the customer… And there you get kind of a massive conflict between omnichannel communities and the rest of the business. The rest of the business is trying to protect… the e-commerce business is trying to serve and biases always towards moving faster and serving the customer…."* (Participant 6, VP of Supply Chain & eCommerce Operations).

During the interviews, many participants revealed that one of the ways in which retailers can restructure themselves to be more suited for omnichannel retailing is by flattening hierarchical structures. Most participants agreed that, for omnichannel processes to be managed best, organisations must move away from highly hierarchised organisational structures, such as the matrix structure, towards flatter management structures. The following quotations served to support this finding:

*"… we're looking at that structure now and we're probably going to be moving to a more dedicated team looking after omnichannel. So, the people that do fulfilment to stores, the bulk, is working but because it's such a cross-collaborative team to get omnichannel up and running, there's a view that we bring those people together and they sit together, they work together. So, there's a logistics person, an IT person, a marketing person. They sit together to make it work 'cause it's so dynamic. And, so, we currently have it probably a bit too distributed in our organisation, the matrix structure, but there it's an effort to make it all come together. So, we probably will work towards a more consolidated environment."* (Participant 2, Head of Logistics and Facilities Management).

*"So, I think it's more a philosophy than anything else, and it is working for us, and it's making a massive difference in productivity… So, it's flatter structures, less people involved, quicker decision-making…"* (Participant 14, CEO).

*"… the kinda key shift for us is going away from this very narrow silo that looked after itself, flattening it, and moving the pieces into the different business units where they belong. Quite a big evolution and quite a big challenge for the leadership of those areas because now they've got this extra thing to consider as part of the mix of the business that they run."* (Participant 16, Head of Online Operations).

In conclusion, based on the participants' accounts regarding the strategic transformation of omnichannel structures described above, follows that the retailers who participated in this study were still grappling with reorganising structures to facilitate omnichannel process management. The participants highlighted that conflicting objectives between physical and digital channels often hindered their ability to make the structural changes needed for omnichannel retailing.

### *b) Shorten decision-chains (PI5)*

Closely related to the preceding discussion on a retailer's ability to strategically transform organisational structures is their ability to shorten decision-chains. Mosca *et al.* (2021:5) pointed out that organisational decline often occurs because of an overemphasis on bureaucracy, rules, and procedures. Consequently, the inflexibility of bureaucratic approval processes reduces an organisation's ability to quickly adapt and respond to market changes (Wood, Watson & Teller, 2021:1238). Wang *et al.* (2016:429) stated that shortening decision-making processes significantly impacts internal integration since it facilitates group decision-making and shortens the time between decision-making and decision implementation.

Shortening decision-chains emerged as a dynamic capability from the participants' statements. They indicated that shortening the decision-chain enables them to be responsive to customers' changing needs. Additionally, they indicated that shortened decision-chains signifies internal integration and collaboration as siloes and barriers need to be broken down in order to shorten decision-chains. However, they stressed that, while shortening decision-chains will improve agility, all decisions must be made at the appropriate level within the organisation. For example, top management and the Board should make decisions involving significant investments that will impact the organisation's profitability over the longer term. Participant 16 provided an example of how, during the COVID-19 pandemic, Retailer A shortened its decision-chains to expedite decision-making and speed up its response strategies. In doing so, Participant 16 recounted how they were able to build a small working group to collaboratively address the drastic changes in consumer behaviour due to the pandemic:

*"It takes a very clear decision-making process, a very clear mandate, removing the barriers to implementation, that's the key thing. And the way to do it is to shorten the decision chain… break down that hierarchy so that the distance between the decision-maker and the execution is as narrow as possible. And it's very hard for big business to do that. And I don't know if we would ever be able to do it again… that external pressure of COVID is what allowed it to happen. But it served us a very good lesson because we keep going back and saying that's the gold standard of how to do things. How do we do that more consistently? So, it's having a very clear decision-making process, a shallow structure if possible…"* (Participant 16, Head of Online Operations).

*"So, we still work in very much a [sic] upfront planning kind of a two-year horizon maybe. And we're currently trying to kind of put together a way of working on what should be deemed as agile and what should be deemed as waterfall. So, we're also replacing our point of sales system right now, and that's a kind of four-hundred-and-fifty-million-rand investment. You don't wanna do that in a [sic] agile way. That's very much a waterfall project. But not everything needs to be waterfall."* (Participant 11, Director of Retail Operations).

From the above quotations can be concluded that the ability of a retailer to shorten decision-chains can serve as a dynamic capability since it facilitates integration and collaboration and allows retailers to be more agile. This will require a critical (re)evaluation of the current decision-making structures to identify and remove any unnecessary bureaucracies.

#### *8.4.5.4 Reconceiving organisational legacy: Summary and conclusion*

In the previous section, reconceiving the organisational legacy as one of two subcategories of Theme 5 was discussed by reviewing the literature findings and presenting the findings of the entire dataset. Based on the findings presented above, the researcher developed the following definition to conclude and summarise reconceiving organisational legacy:

*As part of omnichannel retailers' process integration, retailers should have the ability to reconceive their organisational legacy by strategically transforming basic (standard) governance processes. This entails moving away from the traditional hierarchised organisational designs towards flatter management structures and reduced bureaucratical approval processes towards shorter decision-chains that facilitate responsiveness and integration.*

Elicited from the above discussion and definition is that the ability of organisations to reconceive legacy structures should be classified as a dynamic capability, the reason being that omnichannel retailing requires a large-scale transformation of an organisation's traditional operating models. Therefore, retailers with the ability to let go of the organisation's historical legacy systems and structures and pursue more omnichannel-focused strategies will be more competitive in the long-term. Additionally, based on participants' testimonials, it can also be argued that the ability of a retailer to reconceive of their legacy leads to better SCI and more adaptable omnichannel solutions. Retailers need to re-examine the organisational structure and decision-making processes as part of process integration.

This finding makes two contributions. First, it addresses a knowledge gap identified in the problem statement of this study by finding that a retailer's ability to reconceive the organisation's legacy is a dynamic capability that allows retailers to transform from previous types of retailing to omnichannel retailing. Second, this finding partially addresses secondary research objective 3 (SRO3) by classifying a retailer's ability to reconceive the organisational legacy, including their ability to strategically transform organisational structures and to shorten decision-chains, as a capability that facilitates internal SCI.

### 8.4.6 Theme 6: Social capital integration

Since the development of SCM, management and academic researchers have emphasised the importance of social contacts, networks, and relationships in the effective management of the supply chain (Kotzab *et al.,* 2021). Organisations often invest in developing internal and external relationships to increase the organisation's social capital (Gelderman, Semeijn & Mertschuweit, 2016:229). An excellent example of investment in the development of internal social capital was described in section 8.4.5.1, which outlined the example of the pod. It was described how Retailer A obtained the expertise of an external consultancy to help them with cross-functional collaboration and build internal social capital (relationships) among employees from different functions of the internal omnichannel supply chain.

In Chapter 4, Section 4.3.3, social capital was presented as the third of three pillars of SCI (information integration, process integration, and social capital integration). The reviewed literature observed that social capital encompasses more than just the value of relationships but also considers the value created when different 'actors' work together and 'the processes (or value) that are derived from those relationships'. Additionally, it was found that organisations will most likely always be organised around functional areas to complete specific tasks; therefore, only when an organisation is fully automated will the importance of social relationships between employees be reduced. Even if an organisation successfully manages all the components concerned with information integration (Theme 4) and process integration (Theme 5), these integration efforts are fruitless without the necessary internal relationships to manage and drive the SCI initiatives. Based on the reviewed literature, the following definition of social capital was included in the coding frame:

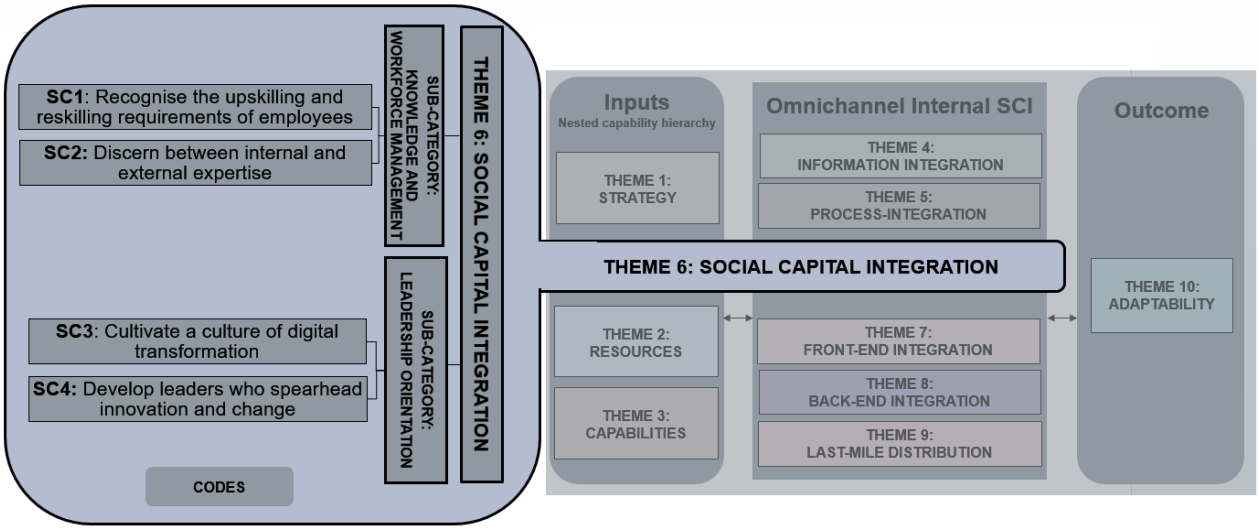
**Social capital integration:** A set of social resources embedded in the boundary-spanning relationships of an internal supply chain, including not only relationships but also a cooperative organisational culture characterised by trust and mutuality, which serve as the relational glue for process and information integration.

On conclusion of the analysis of the interview data, two subcategories and four codes were categorised under Theme 6 (social capital integration). First, in subcategory one, the participants emphasised the importance of knowledge and workforce management. Herein, two codes were developed from the data: the retailer's ability to recognise the *upskilling and reskilling requirements of employees* (SC1) and its ability to *discern between internal and external expertise* (SC2). The second subcategory relates to the role leaders play in facilitating omnichannel SCI. Leadership orientation comprises two codes, namely the ability of retailers *to cultivate a culture of digital transformation* (SC3) and *develop leaders who can spearhead innovation and change initiatives* (SC4). The following quotation from Participant 1 accurately summarised the essence of Theme 6:

> *"I think in this realm of online and innovation and digital, I think we often underestimate the people component, and I speak from our side, from our experience… the people capability, can we reconceive of what the right skills are but also do we have the skills to transform ourselves?"* (Participant 1, Head of Logistics and Supply Chain).

Figure 8.12 provides an excerpt of the conceptual framework presented in Figure 8.3 and aims to plot Theme 6 and its subcategories and codes within the broader context of the conceptual framework.

**Figure 8.12: Conceptual framework - Theme 6**




**Source: Researcher's own compilation**

### *8.4.6.1 Knowledge and workforce management*

The phrase 'knowledge is power' is often used in corporate environments to underscore the importance of capturing and transferring knowledge (Handoko & Bresnen, 2018:92). Other authors have argued that, in modern supply chains, personnel should have complete visibility of the supply chain and should no longer be specialists in only one particular area but rather possess end-to-end knowledge of the entire supply chain (Cui e*t al.,* 2021:108). This can only be achieved through an organisational culture that cultivates knowledge transfer (Autry & Moon, 2016:69). However, a lack of understanding of knowledge-sharing or how to break down the barriers inhibiting knowledge-sharing is a common problem for modern organisations. As Bowersox *et al.* (2013:348) argue, by enforcing functional specialisation, which cultivates functional 'experts', the organisation essentially dooms SCI as such experts are habitually reluctant to share their knowledge with other organisational functions.

In Chapter 4, Section 4.3.1.2, knowledge management was classified as one of the social mechanisms of Pillar 1 (information integration) in line with the classification of

Autry and Moon (2016:69). However, following the analysis of the interview data, the researcher instead agreed with Handoko and Bresnen's (2018:91) classification of knowledge management as part of the organisation's social capital. These authors maintained that a social capital perspective can highlight how organisations manage relationship-specific assets and knowledge-exchange processes. As such, creating opportunities for knowledge-sharing better aligns with the social capital component of internal SCI than information integration, as per the classification of Autry and Moon (2016:69).

Nevertheless, the reviewed literature on knowledge management (presented in Chapter 4, Section 4.3.1.2) made valuable contributions to the interpretation of the interview data. First, the reviewed literature differentiated between knowledge capture (collecting knowledge across organisational personnel, technologies, and processes) and knowledge transfer (creating, sharing, and applying knowledge to foster continued organisational learning). Second, the literature revealed that knowledge management facilitates the development of 'soft or intangible assets' such as tacit knowledge (which resides within the 'heads' of the experts) and explicit knowledge (which can easily be communicated through words and numbers). Based on the literature review, the following definition of knowledge management and organisational learning capability (DC9) was included in the coding frame:

**Knowledge management and organisational learning capability (DC9):** The ability of an organisation to capture and transfer knowledge and the level of organisational learning that facilitates knowledge ('know-how') transfer between personnel from different functions and hierarchical levels in the organisation.

As part of the document analysis, DC9 (and its related constructs) was examined to determine how retailers reported on knowledge management within organisations. Table 8.10 represents the words related to DC9, which comprise the coding frame.

**Table 8.10: Frequency count of document analysis: Word(s) related to DC9**

| Each word's raking in the complete document analysis | Words included in the analysis | 2016 | 2017 | 2018 | 2019 | 2020 | Total | % of the occurrence of each word within DC9 | % within the total document analysis |
|---|---|---|---|---|---|---|---|---|---|
| 9 | knowledge | 373 | 508 | 590 | 654 | 460 | 2585 | 40% | 3.0% |
| 21 | skills | 183 | 242 | 258 | 308 | 246 | 1237 | 19% | 1.4% |
| 26 | training | 186 | 199 | 238 | 222 | 182 | 1027 | 16% | 1.2% |
| 37 | talent | 115 | 166 | 162 | 167 | 121 | 731 | 11% | 0.8% |
| 47 | retention | 85 | 106 | 120 | 141 | 97 | 549 | 9% | 0.6% |
| 56 | learning | 36 | 62 | 74 | 78 | 60 | 310 | 5% | 0.4% |
| **Ranking based on 1-87** | **Total** (words included in the analysis) | | | | | | **6 439** | **100%** | **7.5%** |
| | **Total** (all words included in the document analysis) | | | | | | **86 164** | | |

**Source: Researcher's own compilation**

Table 8.10 shows that the word 'knowledge' was used 2 585 times and accounted for 40% of the total words included in the analysis of DC9. The word 'knowledge' was also the 9th most used word (refer to Annexure A) within the larger document analysis. The words 'knowledge', 'skills', and 'training' combined accounted for 5.6% of the total document analysis. When recontextualising the frequency distributions of these words, it became apparent that they were often used together. From the analysis of the retailers' IARs, it can be concluded that, in general, retailers' IARs outlined the steps they were taking to develop human capital through training and learning initiatives:

> *"[How the Group creates value]… Commitment to training and development, through skills development spend per employee [and] encouraging learning and sharing of knowledge to develop staff who exceed customer expectations."* (Retailer XI, IAR 2019).

> *"Driven by our ambitions to grow locally and internationally, we continuously invest in the development of human capacity. While we strive to grow, develop and retain our own talent, we are also constantly searching for people who enjoy working in a fast-paced, progressive and changing environment and thrive on high performance. We continue to give full attention to executive succession plans and the growth of our leaders. Focused instructor-led, e-learning and on-the-job training is provided and encouraged for all associates. With improvements in processes, systems and technologies, extensive training is conducted on new ways of working."* (Retailer D, IAR 2018).

> *"Without the right skills, we cannot grow in a meaningful way, especially now that we are living in a knowledge-based economy in which both business and the public sector is increasingly more dependent on knowledge, information and high skill levels."* (Retailer B, IAR 2020).

These excerpts from retailers' IARs supported the findings of the interview data in underscoring the importance of skills development in remaining competitive and adapting to ever-changing operating environments. Based on the analysis of the interview data, this subcategory comprised of the following two codes: retailer's ability to recognise the *upskilling and reskilling requirements of employees* (SC1) and its ability to *discern between internal and external expertise* (SC2), as discussed below.

### *a) Recognise the upskilling and reskilling requirements of employees (SC1)*

As digital technologies transform supply chains, employee expertise in mastering and using these technologies is more crucial than ever (Foroughi, 2020:687). Randhawa, Wilden and Gudergan (2021:628) argued that technological advancements in supply chain management have occasioned the need for a large-scale upskilling of personnel. Foroughi (2020:687) debated that, in modern supply chains, the personnel's ability and willingness to upskill themselves, along with digital dexterity, are valued more than experience. Additionally, the author stated that "*the illiterate of the 21st century will not be those who cannot read and write, but those who cannot learn, unlearn and relearn*". The importance of training and skills development had not gone unnoticed by retailers as many retailers addressed the need for upskilling in their IARs:

> *"We constantly invest in our people by providing them with learning and knowledge sharing opportunities. In 2018 we made great strides in providing most of our learning and development initiatives through a digital platform. This allowed our staff to upskill themselves at a time and place convenient to them."* (Retailer B, IAR 2018).

> *"[Strategic initiatives include]… [to] employ, train and upskill staff to ensure optimal engagement and shopping experience for customers."* (Retailer G, IAR 2020).

During the interviews, the participants pointed out that omnichannel retailers struggle to find the skills needed to design and manage the supply chain. This lack of skills is not just among lower-level employees but also among top management. Participant 1 explained that the drive for digital transformation, which truly facilitates omnichannel retailing, should come from top management, some of whom have not started their own 'change journeys' and may lack the skills to design a digital transformation strategy. The participants also explained that the lack of supply chain management

skills serves as a significant hurdle to the effective management of the omnichannel supply chain:

> *"So, can the same bunch of people that have been guarding our business for the last thirty/forty/fifty years, that's responsible for all of its success… can they rethink and can we find new markets, new channels, new growth opportunities? That's a big challenge from a people-capability perspective. And, if not, can we see that it's a problem and can we get people to help us to rethink it? That in itself is also I think a challenge for everybody… So, people, skills, culture, our ability to rethink and see the complexity and have the ability to navigate the complexity is quite important…"* (Participant 1, Head of Logistics and Supply Chain).

> *"The reality sits in that the people that's within that supply chain…so, if you look at all the stakeholders, just put it as a linear, people are not equipped. People are young, people are not experienced, people don't have skill, people lack confidence, and that is where the downfall comes from… that's the biggest frustration because the people that are seniors making decisions are not equipped and they don't understand the supply chain…"* (Participant 3, Head of Logistics and E-fulfilment).

> *"I think one thing that I can assure you there's not enough supply chain skills in this country. There's a massive shortage. Massive."* (Participant 14, CEO).

In particular, the participants pointed out that managing an omnichannel supply chain requires a new set of skills as extensive training and development is required to build internal end-to-end supply chain capabilities. Additionally, they underscored the importance of attracting a talented workforce. Participant 1 explained that they often attracted the right people but then they corporatised them, inhibiting them from using the skills they were hired for:

> *"So, I think what's quite important is really trying to do the sort of bottoms-up in an organisation doesn't work, you have to make sure that we've got a bottoms-up skills, yes, that we've got the right expertise in the right people, that we've got the right abilities in place… employing the right people is obviously quite an important point. And, so, many years ago, looking out into the market and recognising that we need people who are passionate and experts on online and digital… But it's very easy to bring them in and kind of corporatise them and make them as boring as the rest of us and kinda making them comply with all the rest of our processes… [we have to] understand it's [omnichannel retailing] unique, there's unique specific requirements, unique set of skills..."* (Participant 1, Head of Logistics and Supply Chain).

> *"… knowledge of a full end-to-end supply chain is not necessarily resident in a lot of people's skillset. They might be a merchandise planner or a buyer or a truck guy or a store*

*guy but very few people understand the whole thing…"* (Participant 12, Chief Operations Officer).

*"And I think it was Steve Jobs who said you don't hire people and then tell them how to do a job. You hire smart people and you just let them be creative and do their job. So, I think to a large extent management within our group have aligned themselves to that concept."* (Participant 7, Operations Business Development Manager).

Furthermore, several participants indicated that it is essential to provide tools for personnel to succeed; these tools might be through training or providing the necessary support to be successful. Participant 14 commented that, in general, personnel's skillsets still lacked a basic understanding of the processes that encompass the omnichannel supply chain:

*"So, we will give you all of these tools, all of this information, but then we'll go back and say, by the way, can you calculate stock turn? Do you understand the essence of stock turn? And we go back and we train them… You need to understand logic, you need to understand basic retail. The report is just helping you to make better decisions…and unfortunately we're struggling."* (Participant 14, CEO).

*"The problem lies in that you're always reliant on people and the success of anything is how well you train the people, what calibre of people you have in your business… So, for me the key thing is the learning, is make sure you have a good training material, make sure that it's practical… If you're gonna use the store for a direct delivery, be in the store, have your systems person there, have your area manager there so that the support to the store manager if there's a problem, give them the tools to succeed…"* (Participant 3, Head of Logistics and E-fulfilment).

In conclusion, omnichannel retailing requires a new set of skills and retailers are struggling to overcome different challenges in developing these skills. Nevertheless, considering the emphasis that participants placed on the development or acquisition of these skills, it can be argued that retailers who can successfully attract or develop the required end-to-end supply chain skills will have a competitive advantage in the omnichannel environment.

### *b) Discern between internal and external expertise (SC2)*

The second code classified under the subcategory knowledge management is the ability of retailers to discern between internal and external expertise (SC2). The reviewed literature observed (Chapter 6, Section 6.3) that deciding whether to

insource or outsource services affects an organisation's competitiveness. Accordingly, the ability to discern if a retailer has the necessary in-house capabilities to manage omnichannel supply chain processes efficiently or if they should confer the development to external suppliers or consultants can affect the retailer's competitiveness. For example, once a new opportunity for omnichannel expansion is identified, such as implementing a same-day delivery option, retailers need to determine how to organise the design and development of the expansion, for example would it be in their best interest to develop capabilities in-house or to outsource to experts?

During the interviews, it became evident that participants had opposing views on whether certain functions of the omnichannel supply chain should be managed in-house or if the said process should be outsourced to external experts. The argument for developing capabilities in-house was centred on participants' perceptions that retailers have to become more digitally enabled and move away from external consultants in order to develop the skills internally. This view was also reported on by previous authors, such as Ye *et al.* (2018:668) and Muhic and Bengtsson (2021:41), who debated that developing strategic capabilities in-house strengthens an organisation's competitive advantage and gives them more control over processes. Some participants of this study agreed that insourcing creates collaboration opportunities and speeds up development processes. This finding correlated with the findings of Kamasak (2017:258) who showed that, when processes are managed in-house, organisations can make fast and effective decisions:

> *"And I think the biggest problem is that organisations rely on external expertise. I'm very opposed to external expertise. I think they have a place and I think they can definitely add value to projects, but when they start making the decisions for your business I think that is where things go pear-shaped. No-one knows your business, everyone is totally unique."* (Participant 3, Head of Logistics and E-fulfilment).

> *"We're quite big on owning confidence. So, first off, everything is in-house, we do it, we don't outsource."* (Participant 4, Head of Logistics).

> *"… we got an in-house development team, so all of that stuff we had to do we didn't have to wait for version releases, we quickly did it inside, ourself."* (Participant 8, Head of Retail Innovations).

However, some participants indicated that they favoured outsourcing certain services to experts. These participants listed a lack of in-house skills and the laborious process of developing these skills internally as reasons for outsourcing. Additionally, these participants indicated that outsourcing allows them to expand and pursue opportunities quicker as external subject experts are often better equipped to design and manage specific processes. This finding aligns with the findings of Rai *et al.* (2019:268) who pointed out that strategically outsourcing certain omnichannel processes offers retailers the ability to expand the distribution network:

> *"So, I think it's important to bring in the best skills if you wanna do it properly, so you've gotta bring in outside help on board."* (Participant 15, GM: Retail and Supply Chain Operations).

> *"…. [outsourcing] gives us the ability to expand capacity quickly, easily. It does have its pros and cons I suppose to own it, like [competitor], you can shape and manage the experience, but you also need to carry a lot of assets, which is heavy on your books, but you've gotta have the volume."* (Participant 5, Head of Transport and Engineering Logistics).

From the above discussion, was established that retailers had opposing views on whether to develop certain omnichannel capabilities internally or to outsource to external parties. Based on the participants' quotations, it can be argued that retailers need to discern between core capabilities and non-core capabilities. In doing so, retailers are more equipped to determine which capabilities they can (and should) develop internally and which processes can be outsourced to external parties.

#### *8.4.6.2 Knowledge and workforce management: Summary and conclusion*

In the preceding section, knowledge and workforce management as a subcategory of Theme 6 was discussed by referring to the findings of both the document analysis and evidence from the analysis of the interview data. Based on these findings, the researcher developed the following definition to conclude and summarise knowledge and workforce management:

*As part of omnichannel retailers' social capital integration, retailers should have the ability to capture and transfer knowledge through effective training and development*

*initiatives. Omnichannel retailing requires a new set of skills to manage the supply chain. Therefore, knowledge and workforce management necessitate retailers to discern whether they have the basic internal capabilities to facilitate omnichannel processes or if they should outsource certain processes to external experts.*

Based on the discussion and the definition outlined above, this study concluded that the ability of omnichannel retailers to build knowledge and upskill or reskill the workforce to fulfil the constantly changing needs of omnichannel retailers should be classified as a dynamic capability. This finding addresses a knowledge gap identified as part of the problem statement of this study by finding that retailers' ability to develop the workforce by reskilling and upskilling employees is a dynamic capability that allows them to transform from previous types of retailing to omnichannel retailing. In addition, during the discussion above, it was stated that high levels of knowledge-sharing can increase employees' willingness to collaborate and integrate across functions. Accordingly, this finding partially addresses secondary research objective 3 (SRO3) by classifying workforce and knowledge management as a capability that facilitates internal SCI.

The final subcategory of Theme 6 (social capital integration) is leadership orientation and is discussed next.

#### *8.4.6.3 Leadership orientation*

Leadership orientation refers to the degree to which top management shows an active interest in and is actively involved in SCI (Van Weele, 2018:74; Vermeulen *et al.,* 2016:2). As part of the literature discussion (Chapter 4, Section 4.3.2.2(a)), leadership orientation was classified as one of the structural mechanisms of process integration. However, after analysing the empirical data on leadership's role in facilitating omnichannel SCI, this subcategory was reclassified under social capital integration.

Based on the participants' testimonials, it can be concluded that leaders' roles in facilitating omnichannel SCI can have a more significant impact on organisations' social capital when compared to process integration. Therefore, the researcher classified leadership orientation as one of the elements of social capital integration

within the broader context of omnichannel SCI. Nevertheless, the reviewed literature contributed to the conceptualisation of leadership orientation. The literature observed that top management should not view SCI as a straightforward process consisting of several steps that leaders simply need to oversee. Since personnel follow the signals they receive from decision-makers, an organisation's leadership should send clear, consistent signals that integration is an organisational imperative and that everyone must behave accordingly (Srinivasan *et al.*, 2021:255). To achieve this, transformational and flexible leaders are required to promote effective communication and offer support and leadership during times of change (Liu, Yu & Wu, 2019:3).

Transformational leadership is described as a leadership style in which the leader moves the follower beyond immediate self-interest through inspiration, intellectual stimulation, or individualised consideration (Gosling *et al.,* 2017:245). Transformational leaders can encourage personnel to reach high-performance standards and inspire innovative ideas, which is integral to developing new strategies and new operating models (Warner & Wäger, 2019:25). Therefore, Matarazzo *et al.* (2021:645) argued that the digital transformation journey of omnichannel retailers hinges on transformational leadership.

Teece (2018a:359) stated that dynamic capabilities include an explicit role for the management/leadership that allows systemic change to start from within. Kurtmollaiev (2020:7) argued that specific dynamic capabilities may be based on the skills and knowledge of one or more managers within the organisation. Consequently, leaders play a vital role in developing and deploying dynamic capabilities within the organisation. DC6 (leadership orientation) was included in the coding frame following the literature review:

**Leadership orientation capability (DC6):** The ability of a leader to make strategic decisions on resource reallocation and organisational infrastructure mobilisation to advance the organisation's internal SCI efforts.

During the document analysis, DC6 (which consisted only of the word 'leadership') was analysed to determine how retailers reported on leadership. Table 8.11 provides the frequency distribution of the word 'leadership' used in the retailers' IARs.

**Table 8.11: Frequency count of document analysis: Word(s) related to DC6**

| Words related to DC6 | 2016 | 2017 | 2018 | 2019 | 2020 | Total | Percentage of occurrence of each word within DC6 | Percentage within the total document analysis |
|---|---|---|---|---|---|---|---|---|
| leadership | 128 | 167 | 222 | 231 | 195 | 943 | 100% | 1.1% |
| **Total** (words related to DC6) | | | | | | **943** | **100%** | **1.1%** |
| **Total** (All words included in the document analysis) | | | | | | **86 164** | | |

**Source: Researcher's own compilation**

From Table 8.11, can be concluded that no significant patterns, apart from reporting on leadership increasing over the investigation period, could be noted from the frequency distribution of the document analysis. Nevertheless, the researcher reverted to the IARs to determine how retailers report on leadership. Based on a review of the IARs, it can be concluded that retailers have recognised the critical role that transformational leaders play in facilitating skills development and innovation within the organisation:

> *"The senior leadership development programme aims to equip our leaders with transformational leadership skills. People leadership skills solutions for all associates are delivered through our leadership essentials programmes."* (Retailer D, IAR 2020).

> *"The group recognises and rewards leadership innovation, and leaders are encouraged to be forward-thinking in their approach while also building high performing teams with positive and constructive attitudes. We encourage an entrepreneurial mindset among managers as the foundation of the group's success as a progressive retailer and employer."* (Retailer B, IAR 2018).

> *"Our ability to outperform is highly dependent on the experience, technical skills, leadership abilities and attitude of our associates, who work together as a high performing team and embrace our unique culture."* (Retailer A, IAR 2020).

During the interviews, the participants also indicated that leaders' abilities and innovation capabilities are vital to omnichannel SCI. They listed several reasons why leadership orientation impacts omnichannel SCI. Some of these reasons included leaders' ability to advocate for investment in new channel developments and leaders' willingness to involve lower-level employees in problem identification and solution development. They further emphasised that what leaders prioritise is what gets focused on within an organisation (from a strategic, manhours, and resource allocation

point of view). Therefore, leaders should have the ability to assign strategic intent to omnichannel SCI processes to lead change initiatives. To facilitate omnichannel SCI, leadership priorities should include scaling omnichannel operations and creating opportunities to improve collaboration among internal organisational functions. The important role that leaders play in promoting omnichannel SCI was best summarised by Participant 1:

> *"…if you look at leadership, the topic of leadership, if we just keep doing what we're doing today then leadership plays a certain role in that culture and there's a lot of sort of top-down decision-making, there's a lot of directing, there's a lot of innovation actually being sourced from the top, priorities being decided from the top, etcetera. If we're wanting to really innovate towards who we must be in the future, then leadership shifts towards facilitating our innovation rather than directing and making our decisions is quite important. Because part of this is recognising that actually to become who we need to be in the future, if our leaders are the source of that innovation then we probably have a bottleneck but if our leaders facilitate our innovation and grow our innovation capability from inside and we have the ability to do both top down and from bottoms up, then we probably don't have a bottleneck in terms of what we can conceive of and how we can change and where we go towards. But that's quite a big leadership and culture change for us."* (Participant 1, Head of Logistics and Supply Chain).

Based on the participants' reports, two mechanisms were identified under subcategory two of Theme 6 detailing how leadership orientation as a dynamic capability facilitates internal omnichannel SCI, that is a leader's ability to *cultivate a culture of digital transformation (SC3)* and a retailer's ability to *develop leaders who can spearhead innovation and change initiatives (SC4).* These two capabilities are discussed below.

### *a) Cultivate a culture of digital transformation (SC3)*

Omnichannel retailing calls for a complete digital transformation of retailers' operations (Öztürk & Okumuş, 2018:247) and the ability to foster a culture of collaboration is a critical enabler for any digital transformation and SCI in the retail environment (Oka *et al.,* 2017:6). As observed during the literature review (Chapter 4, Section 4.3.3.2), there is a popular saying that says 'culture eats strategy for breakfast' (Burchardt & Maisch, 2019:113; Zhang & Watson, 2020:304). This implies that, if an organisation's culture does not align with its operations, the organisation is likely to be ineffective in achieving internal goals. In fact, Srinivasan *et al.* (2021:257) stated that, in integrated

supply chains, the key leadership challenge is to create a culture that fosters collaboration, creativity, risk-taking, and adaptation. Such a collaborative culture requires leaders who are open to receiving information from other functional experts. In the digital age, this is often done by instilling consultative decision-making processes facilitated through digital technologies (Warner & Wäger, 2019:4).

In Chapter 4, Section 4.3.3.2, organisational culture was discussed as part of the structural mechanisms of social capital integration. The reviewed literature observed that a collaborative organisational culture facilitates omnichannel SCI since it represents an organisation's shared values and beliefs that define how an organisation operates. Stemming from the literature review, developing a collaborative and disruptive organisational culture (DC8) was added to the coding frame and defined as follows:

**Developing a collaborative and disruptive organisational culture (DC8):** The ability of an organisation to create a culture that encourages personnel to be innovative and collaborative, with a tolerance for failure, allows organisational resources to be rapidly reallocated in pursuit of SCI opportunities.

In the document analysis, DC8 (and its related constructs) was examined to determine how retailers reported on organisational culture. Table 8.12 represents the words related to DC8, which comprise the coding frame.

**Table 8.12: Frequency count of document analysis: Word(s) related to DC8**

| Each word's ranking in the complete document analysis | Words included in the analysis | 2016 | 2017 | 2018 | 2019 | 2020 | Total | % of the occurrence of each word within DC8 | % within the total document analysis |
|---|---|---|---|---|---|---|---|---|---|
| 25 | trust | 205 | 160 | 195 | 339 | 157 | 1056 | 39% | 1.2% |
| 44 | respect | 148 | 116 | 108 | 142 | 112 | 626 | 23% | 0.7% |
| 46 | culture | 44 | 102 | 120 | 143 | 151 | 560 | 21% | 0.6% |
| 51 | loyalty | 58 | 99 | 107 | 99 | 70 | 433 | 16% | 0.5% |
| **Ranking based on 1-87** | **Total** (words included in the analysis) | | | | | | **2 675** | **100%** | **3.1%** |
| | **Total** (all words included in the document analysis) | | | | | | **86 164** | | |

**Source: Researcher's own compilation**

Table 8.12 listed the frequency of each word (based on DC8) that was included in the document analysis. When considering the percentage of each word's occurrence within DC8, it is noticeable that the frequencies with which these words were used were distributed relatively evenly, with the word 'trust' being the 25th most used word across the entire document analysis. The researcher reverted to the retailers' IARs to contextualise this finding and it was determined that the reason for the close frequency distributions was that these words were often used together, for example:

> *"Mutual respect is integral to the culture of the group. We therefore refer to our co-workers as "associates" and, once they own shares or share options, they are referred to as "partners"."* (Retailer D, IAR 2018).

> *"[How we sustain value]… by maintaining a diverse and inclusive culture [with] strong relationships with our key suppliers and service providers… by building trust from our communities and loyalty from our customers…"* (Retailer B, IAR 2019).

In addition to the findings listed above, the analysis of retailers' IARs also illuminated the interplay between culture, innovation, and leadership. Several of the retailers' IARs included sections on organisational culture. These sections outlined the leaders' contributions to cultivating the organisation's culture. Also, the IARs outlined the significant role leaders play in facilitating innovation and change. The following excerpts best supported these findings:

> *"[About our leaders]… Retail is a people business, which means that in addition to their own technical expertise our leaders are required to be competent in leading teams. Being a leader in [Retailer B] comes with many responsibilities, which our leaders take seriously. Our associates experience the organisation and its culture through their leaders, without whom we would not be able to create a conducive environment in which our associates can operate optimally."* (Retailer B, IAR 2020).

> *"[Retailer XI] fosters a culture of innovation and high performance by encouraging employees to share their ideas, and by recognising and rewarding excellence."* (Retailer XI, IAR 2019).

> *"The dynamic and professional relationship that exists between the various governance structures and the management team forms part of the [Retailer E's] culture and is crucial as the Group readies itself for the next phase of its development in a rapidly changing world."* (Retailer E, IAR 2019).

The interplay between leadership, culture, and innovation was also observed during the interviews. The participants explained that developing a certain culture within the organisation is undoubtedly an essential part of being an adaptable organisation since leaders are the key to unlocking a culture of innovation throughout the organisation. They revealed that leaders need to embody the organisation's culture and conduct themselves accordingly. This finding mirrored the reviewed literature in that extant research identified and described leaders' roles in creating an organisation's culture (Gosling *et al.,* 2017:243; Herzig & Karlsson, 2017:37; Warner & Wäger, 2019:2). Similarly, many previous authors found a positive correlation between the role of leaders and the organisation's culture in enabling an organisation's digital transformation process (Burchardt & Maisch, 2019:113; Warner & Wäger, 2019:5; Song *et al.,* 2021).

During the interviews, the participants emphasised that a leader's role in moving a retailer towards becoming more digitally enabled is to craft a robust digital transformation strategy. They referenced the importance of establishing a long-term digital vision while promoting employees' entrepreneurial and digital mindsets. Furthermore, their accounts revealed several capabilities that leaders can employ to build a culture that facilitates the digital transformation process. Table 8.13 summarises these capabilities.

**Table 8.13: Participants' statements on leader's capabilities in terms of organisational culture**

| LEADERSHIP CAPABILITIES IN TERMS OF CULTURE | SUPPORTIVE QUOTATIONS FROM THIS STUDY'S PARTICIPANTS |
|---|---|
| **Clear allocation of each member's role and responsibility concerning omnichannel retailing** | *"… [leaders should] know where their role starts and ends… we always say leave functional leaders to determine what needs to be done where so that everybody's very clear on where their function starts and stops and clear on where their role starts and stops, and ultimately have one goal that everyone works towards…" (Participant 9, Brand Manager – Africa)* |
| **Cultivate an understanding of why omnichannel retailing is important for the organisation** | *"We try and tell our teams a [sic] online customer and a walk-in customer is the same person or is a person, it's just that one's arrived in physical nature and the other one's arrived in a virtual nature, but you've gotta service them in the same way, be as accurate, be as friendly, and as precise with both. So, that concept, it's a culture. Every order, be it walk-in or online, is important and should be treated the same way." (Participant 5, Head of Transport and Engineering Logistics)* |

| LEADERSHIP CAPABILITIES IN TERMS OF CULTURE | SUPPORTIVE QUOTATIONS FROM THIS STUDY'S PARTICIPANTS |
|---|---|
| **Cultivate a culture of sharing information across organisational functions** | *"I think first of all the team of directors that would report to me, there's somebody who represents e-commerce, somebody who represents operations in stores, finance planning, merchandise trend, and so on, and so it's important that we meet together often so that we're all on the same page so that even if something is happening in the e-commerce world that might not directly impact the operations manager in the store side of things that he's aware of that so he can support it and vice versa. So, it's important that I think as the senior management team or as the team of directors that everybody's aware of each other's business in a sense that they can support it." (Participant 13, Managing Director).* |

**Source: Researcher's own compilation**

In conclusion, based on the above discussion this study concurrence with other authors, that an organisation's leadership plays a significant role in cultivating a culture of digital transformation. More specifically, within the context of omnichannel retailing, this study found that leaders often spearhead the organisation's digital transformation journey. Cultivating a culture of digital transformation requires leaders to clearly articulate each omnichannel supply chain participant's role. Also, leaders need to obtain buy-in from personnel, which can be achieved by creating cross-functional collaboration opportunities. Finally, leaders need to communicate to employees that customers from physical and digital channels are equally important.

Closely related to this code is a retailer's ability to build leaders with capabilities to spearhead innovation and change initiatives. Developing these transformational leaders is discussed in the next code (SC4)

### *b) Develop leaders who can spearhead innovation and change initiatives (SC4)*

Innovation, by definition, is "*the action of innovating, the introduction of novelties, or an alteration of what is established by introducing new elements or forms"* (The Oxford English Dictionary, 2022h). When considering the definition of innovation within the context of omnichannel retailing, the significance of a retailer's ability to be innovative comes to the fore, that is retailers need to continuously reconceive their service offering to include new physical, digital, or distribution channels. As has been established thus far in this study, SCI often requires large-scale redesign of

organisational structures or processes. Sabet *et al.* (2017:38) posited that successful SCI relies on an organisation's collaboration and innovation capabilities. Accordingly, the ability to conceive and implement innovation requires competent managers who can organise and coordinate effective teams that promote innovation and encourage employees to adapt to change (Song & Song, 2020:5).

As already established above, leaders must create a culture that celebrates innovation. The participants' testimonials revealed that what leaders assign strategic intent to is what subordinates in the organisation prioritise, be it collaboration, innovation, or becoming a fully-fledged omnichannel retailer. When leaders earmark the importance of change and spearhead innovation initiatives, lower-level employees follow:

> *"… the tone-at-the-top issue is real. The role of company executive teams is to get the whole business pulling on the oars that are important to the business… It's [omnichannel retailing] small, growing rapidly but still small, and it's difficult to get a disproportionate amount of leadership attention onto the e-commerce mission. And the way that you create kind of engagement with the staff around the e-commerce agenda, how you kind of drive that forward, is you make sure the leaders are talking about it and you make sure the leaders are engaged in it. And there were stories from the [international conglomerate][63] business where the CEO would go and visit the store and by design the first thing he would do is walk into the fulfilment area and say, guys, what's going on? And he would have been fed some information about yesterday's customer review for that store and he would ask the team about what's going on. And just by the leadership physically demonstrating that this is strategically important all of a sudden the business just pivoted to say I know this is small but our leaders are telling this this is important so I'm gonna give it attention."* (Participant 6, VP of Supply Chain & eCommerce Operations).

> *"So, I think the most important is obviously that it comes from the top down, supporting the change. I think if it's driven from the executive it has a lot better success than when a business unit is driving it. So, top-down is important."* (Participant 15, GM: Retail and Supply Chain Operations).

From the above discussion can be concluded that leaders need to spearhead organisational change and create a culture within the organisation that celebrates innovativeness and adaptability. The participants of this study indicated that the

[63] Name removed as per confidentiality requirements.

imperative for change needs to come from the top as top management sets the tone for change.

#### *8.4.6.4 Leadership orientation: Summary and conclusion*

In the preceding section, leadership orientation as a subcategory of Theme 6 was discussed by referring to the findings of both the document analysis and evidence from the analysis of the interview data. The following definition serves to conclude and summarise leadership orientation:

*As part of omnichannel retailers' social capital integration, retailers should have the ability to cultivate a culture of digital transformation by clearly allocating roles, getting buy-in from employees, and creating opportunities for cross-functional collaboration across the internal omnichannel supply chains. Leaders need to spearhead the innovation and change that omnichannel SCI necessitates by setting the tone at the top, i.e. creating a strategic intent for organisational innovation initiatives.*

This finding addresses a knowledge gap identified as part of the problem statement of this study by finding that a retailer's ability to develop innovative leaders who can spearhead internal innovation and change is a dynamic capability that allows retailers to transform from previous types of retailing to omnichannel retailing. In addition, this finding partially addresses secondary research objective 3 (SRO3) by finding that what leaders prioritise is what subordinated will execute; therefore, when leaders prioritise integration, it facilitates internal SCI.

### 8.4.7 Theme 7: Front-end integration

As outlined in Chapter 5, Section 5.4.1.1, front-end integration relates to integrating all of a retailer's physical and digital channels and touchpoints. In Chapter 5, it was also stated that channels relate to any physical or digital channel that allows a customer to *complete an order* (place and pay for the order). On the other hand, touchpoints refer to episodes of direct and/or indirect engagement between the customer and the retailer which does not explicitly result in a purchase. Additionally, the observed literature established that retailers need to create an intent to purchase among

customers at the front-end. This can be achieved by developing a deep understanding of customers to cultivate unique and personalised shopping experiences. Figure 5.4 (Chapter 5) outlined two aspects of designing front-end omnichannel processes: 1) creating consistency between channels and touchpoints and 2) developing processes that allow customers to move across channels and touchpoints seamlessly. After reviewing the literature on the role of front-end integration in SCI, the following definition of front-end integration was included in the coding frame:

**Front-end integration:** The integration of a retailer's physical and digital channels and touchpoints to provide customers with a seamless and consistent shopping experience across the retailer's channel mix.

Both the document analysis and the participants' testimonials echoed the literature findings by underscoring the importance of consistency and seamlessness in the design of front-end omnichannel processes. During the interviews, the participants were asked to provide the researcher with a brief description of how omnichannel retailing is defined within the participant's organisation or what the participant understands of omnichannel retailing. Table 8.14 provides the abbreviated answers of all 17 participants. These quotations serve as a prelude to the discussion on front-end integration, which follows.

**Table 8.14: Participants' individual definitions of omnichannel retailing**

| | PARTICIPANTS' QUOTATIONS |
|---|---|
| **P1** | *"So, whether they're [customers] buying on mobile or desktops or whatever, or on the phone, everyone's using some electronic means to buy some form of product. We have to give customers what they want" [Participant only briefly addressed what omnichannel means to them and rather discussed what processes they have implemented to facilitate omnichannel retailing]* |
| **P2** | *"… omnichannel is sometimes a misunderstood term, but we have different channels of serving our clients. Traditionally it was only through our stores, so customers had to go to our stores and buy stuff there. Then we offered an online channel which customers can then go and buy product online and get it delivered to their house. Omnichannel is a merging of those two things together, where you can buy products from a variety of input devices, whether it's your home PC, your laptop, your mobile device, from anywhere in the world, you can then buy a product…or if you're in a store you can buy a product on your device in the store and have it delivered to a variety of endpoints, or the person helping you in the store can also take a transaction, and have it delivered to anywhere you want… it's just a merging of those two things, just making it seamless between all those options."* |
| **P3** | *"In short, omni is really a case of combining your brick-and-mortar and e-comm together and it enables the customer to go into a store, buy online, and choose whichever channel she would like the order to be delivered in. So, for us when you talk about omni, we see it very much along the lines of giving our customers options in terms of how they buy, how they wanna pay, where they want it delivered… So, how do we as a retailer offer our customers alternatives to making shopping more pleasant, making it easier, making it convenient, making it in terms of the speed and timelines that we've got that we can actually get it to you when you want it… So, it's really about convenience for us and offering options and alternatives to what we used to in the past."* |
| **P4** | *"It's online sales. It's as simple as that. That's exactly how we define it. We define it as the omnichannel and it's online sales"* |
| **P5** | *"So, omnichannel obviously is a concept in our world and I think many people think of it or understand it differently. So, in our world, we started with a single channel, then we went to a multichannel, and now we are trying to converge these two into an omnichannel. So, omnichannel for us, is where customers experience our product and can purchase them through any means possible, and we want to make that experience an omni-experience where the customer can engage with us through multimedia, social media, as well as store, bricks-and-mortar, to view and purchase our product. So, that's really what it means for us. We want a very seamless interaction with customers, customers to see our catalogue, and that integration or that kind of virtual and physical shopfront to be also enhanced all the time to improve that engagement."* |
| **P6** | *"So, it's quite a [sic] interesting question because everybody has a very different opinion about what omnichannel means. But I guess I see omnichannel as a subset of broader e-commerce. Omnichannel specifically refers to the more [sic] broader unification of experiences that a customer might have of us in all channels, in store, online, any kind of digital interaction, and how you deliver that kind of unified experience and brand proposition. So, more specifically, when you get into kind of the e-comm elements of omnichannel, it's about how to leverage the bricks-and-mortar assets that you've got to deliver differentiated experiences within the digital sales* |

| | |
|---|---|
| | *environment. So, take for instance click-and-collect or order-and-reserve or buying an extended range in store that isn't stocked in store for delivery to your house, or any of those types of things that kind of create this web of interactions that are nonlinear in their nature."* |
| **P7** | *"So, for our group, omnichannel really means giving customers a number of avenues in which to process their purchases, so be it online, be it through a store, be it through a mobile app… So, omnichannel is really just providing customers with a multitude of options in terms of how they are able to shop."* |
| **P8** | *"So, I firstly hate the word omnichannel. It doesn't do justification, because retail is retail, and what it is retail's gotta be seamless… 'Cause you're transacting on multiple platforms, how do I make this seamless for you that it actually doesn't cause any extra effort? I always refer to it as how do I reduce the amount of clicks? How many times do you push a button or go to a page or do something? So, if I can reduce that and make it as seamless as anything, so if you're shopping online, shopping in store, shopping on the different options in my store, how do I make it look, feel, and do exactly the same thing…"* |
| **P9** | *"So, for us, omnichannel means every single touchpoint. So, omnichannel for us is our brick stores, it's our e-comm site, it is wholesale, it is social as well, so social such as Instagram and using our influencers. So, omnichannel is any single channel where you can generate revenue through selling your product."* |
| **P10** | *"I didn't like the word omnichannel because it comes off the word omnipotent, I think, which is never pleasant, it is a biblical word, a [sic] illogical word. To us, omnichannel means allowing our customer to shop where she wants to shop, how she wants to shop, and what she wants to shop. So, that might be across platforms, it might be across location, it might…so, it's just being where our customer wants to find us, she'll find us."* |
| **P11** | *"… omnichannel for me really is how do you ensure that the customer experiences your brand on any platform that he or she engages with you, whether it's a brick-and-mortar store or it's a [sic] online shop or it is communication that you send out to them or it's the way that they interact with you on social media. So, it's really just giving them that consistent brand experience."* |
| **P12** | *"… omnichannel basically means to me that the customer has the ability to select at what point they want information about products, then they have the opportunity to then select what product they want to purchase once they've got that information, and then they can choose when and how to pay and when and how to take delivery of the product. So, either shop it in a store, pick it up from a store, pick it up from a depot, have it delivered to home, have it delivered to any place that they want. So, it's a many-to-many relationship between the customer and the retailer."* |
| **P13** | *"So, omnichannel, I guess there's many channels that a customer can engage with the company, in our case it might be to research products, it might be to purchase products or return products, and there's various channels, we've got our online website, we've got stores, we've got mobile, we've got an e-commerce site, we've got the app, and omnichannel is the integration of all of those channels into one experience. So, it is multiple channels, one experience, and in our world it just really means that any permutation that the* |

| | |
|---|---|
| | *customer can conceive that they should be able to do that. And on a practical level they might want to research something on the app, they might want to purchase it on our e-commerce website from their mobile phone, they might want to get it delivered to a physical store to collect, and they might want to pay via EFT through another channel. And, so, it's just allowing the customer the flexibility to just engage with us through any channel."* |
| **P14** | *"… I guess it's just bringing really together a typical store experience, digital experience, online experience, and it's important that whatever you do, from a customer perspective, it needs to be consistent. So, it's no use they experience something very different with regards to a brand in store versus what's on the webstore or what's on social media… So, it's to try get a consistency and leave it up to the customers to decide, specifically the newer generation that will do more research and would like to decide through references of some of their friends… We say it doesn't matter which way a customer want to transact with you, it's important that you cater for all of it… And you need to make sure you invest and understand all of the different dynamics, whether it's the digital side, what's happening in social media, whether it's the webstore, to have something unique on your webstore and then similar in store, and then just to get all of these things to work together."* |
| **P15** | *So, I think omnichannel starts with a single view of the customer, regardless of what platform they sign in on, so if they're on the website or app or even in store, that you've got this single view of the customer, and that whether he's checking in at store, that you're tracking that through, that he understand when he logs into the website that's what he bought or she bought, and then likewise if they had to log off the site and be on the app, the experience would be the same across all the different channels."* |
| **P16** | *"I think the departure from multichannel to omnichannel was more about seeing the online channels as completely embedded in the business whereas in multichannel they were seen as sort of parallel business streams. I think omnichannel sees them far more as deep integration and the customer's ability then to swap between channels quite seamlessly."* |
| **P17** | *"I think omnichannels is just the ability to sell across multiple channels, and I suppose it's all interconnected because it would be either buying online, picking up at store, or buying at store, getting delivered at home, or just purely buying at one of our stores or just purely buying online. But all of those obviously are so intertwined, whether it be customer buying online, receiving online, returning to the store, returning via online. It's kind of all your different channels in terms of connection to customer that's just intertwined now."* |

**Source: Researcher's own compilation**

From Table 8.14, some observations can be made regarding the participants' definitions of omnichannel retailing. First, of the 17 participants, 16 mentioned that omnichannel retailing relates to the integration/merging or unification of various (or a multitude of) different physical and digital channels (including distribution channels) and touchpoints (in particular social media) to allow the customer to shop anywhere and anyhow they prefer. The participant who disagreed with the majority definition of omnichannel retailing simply defined omnichannel retailing as online retailing (P4). Second, several participants noted that the concept of omnichannel retailing is often misunderstood or defined differently by different people (P2, P5, P6, P8, and P10). Some participants (P8 and P9) even stated that they do not like the term omnichannel because it is so misunderstood. Third, the participants' definitions closely aligned with the key terms used throughout literature when describing omnichannel retailing, namely the purpose of omnichannel retailing is to create a differentiated (P6) (Rodríguez-Torrico *et al*., 2017:465), pleasant, and convenient shopping experiences for customers (P3) (Lorenzo-Romero *et al.,* 2020:1).

Similarly, consistency (P8, P11, P14, and P15) and seamlessness (P2, P5, P8, and P16) were cited most by the participants as the purpose of omnichannel retailing. Some also strongly emphasised the role of customer engagement in omnichannel retailing (P5, P11, P13, and P17). These participants stressed that enhanced and increased engagement with the customer can be achieved through the deployment of different physical and digital channels.

As part of the document analysis, front-end integration (and its related constructs) was examined in retailers' IARs. At this stage, it should be stated that literature (and, consequently, the coding frame) addresses the aspects concerned with front-end integration fragmentally. This might be because different authors investigated omnichannel retailing from different perspectives.

Analysing participant's narratives showed that many of the subcodes of front-end integration included in the coding frame (namely *front-end integration capability* (DC10), *advanced payment ecosystem* (DC12), *highly functional and integrated mobile application* (DC13), and *integrating social media platforms into the omnichannel process* (DC14)) are interrelated and, together, play a part in creating

seamless and consistent front-end operations. These codes were grouped to facilitate a more concise discussion. Accordingly, this study adopted the approach that the deployment or utilisation of these subcodes (or capabilities) should be jointly used to create retailers' unique front-end capabilities. The following definitions of these codes were included in the coding scheme:

**Front-end integration capability (DC10):**
The ability of a retailer to create an 'omnichannel environment' to continuously identify and integrate additional physical and digital channels and touchpoints into the omnichannel offering to attract new customers.

**Advanced payment ecosystem (DC12):**
The ability of a retailer to implement an advanced payment ecosystem which allows customers to pay for products through any of the customers' preferred payment solutions.

**Highly functional and integrated mobile application (DC13):**
A retailer with a mobile application can reach customers when it is most convenient for them, can attract new customers, and can collect rich real-time information on customer behaviour.

**Integration of social media platforms into the omnichannel process (DC14):**
The ability of a retailer to integrate various social media platforms into the omnichannel process to collect customer data and create opportunities to attract new customers and to continuously renew the omnichannel process in response to real-time demand changes from customers.

Table 8.15 represents the words related to DC10, DC12, DC13, and DC14 as illustrated in the coding frame.

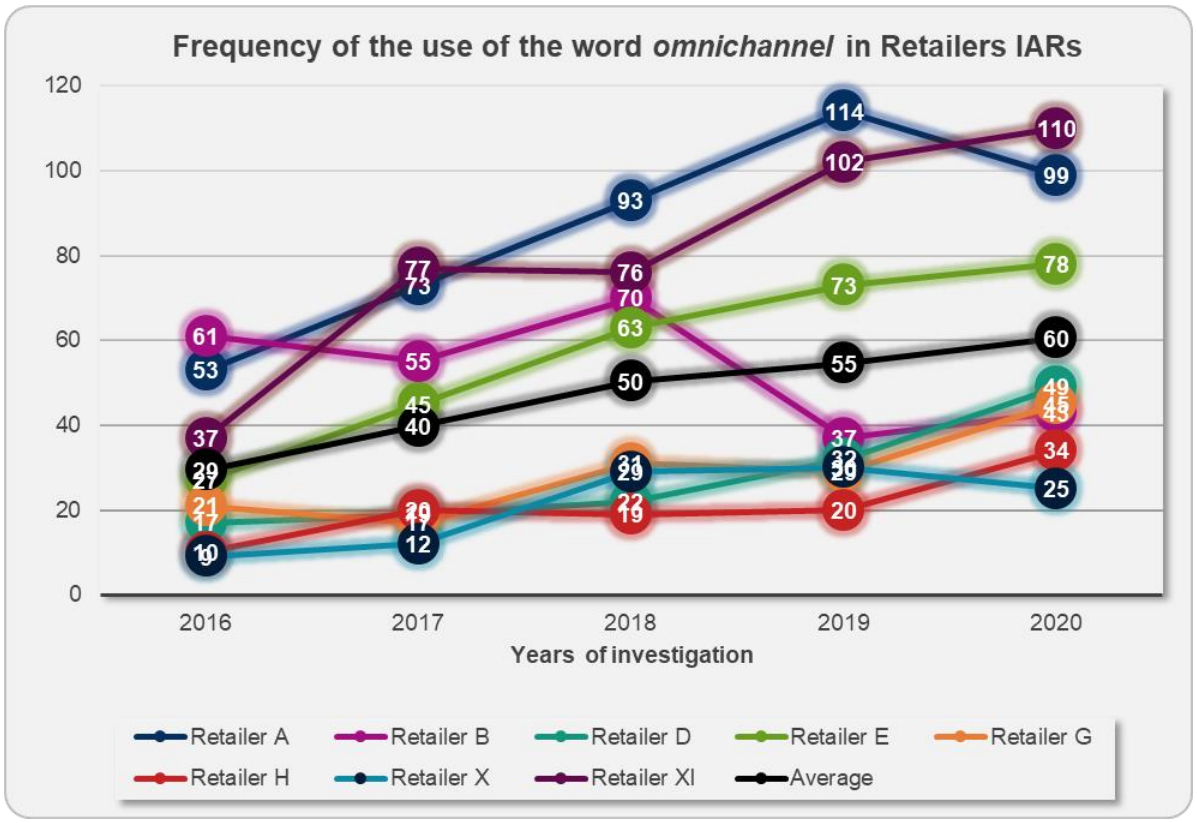
**Table 8.15: Frequency count of document analysis: Word(s) related to DC10, DC12, DC13, and DC14**

| Each word's raking in the complete document analysis | Words included in the analysis | 2016 | 2017 | 2018 | 2019 | 2020 | Total | % of the occurrence of each word within each DC | % within the total document analysis |
|---|---|---|---|---|---|---|---|---|---|
| | | | | **DC10** | | | | | |
| 11 | omnichannel | 234 | 254 | 427 | 456 | 505 | 1876 | 35% | 2.2% |
| 20 | channels | 140 | 254 | 301 | 293 | 282 | 1270 | 24% | 1.5% |
| 32 | digital | 39 | 71 | 288 | 356 | 173 | 927 | 17% | 1.1% |
| 48 | website | 77 | 97 | 100 | 125 | 115 | 514 | 10% | 0.6% |
| 49 | e-commerce | 54 | 101 | 124 | 97 | 127 | 503 | 9% | 0.6% |
| 62 | bricks-and-mortar | 26 | 53 | 59 | 70 | 9 | 217 | 4% | 0.3% |
| | | | | **DC12** | | | | | |
| 38 | payment | 125 | 126 | 129 | 141 | 197 | 718 | 100% | 0.83% |
| | | | | **DC13** | | | | | |
| 54 | mobile | 66 | 78 | 97 | 99 | 66 | 406 | 100% | 0.47% |
| | | | | **DC14** | | | | | |
| 14 | social media | 284 | 262 | 405 | 451 | 431 | 1833 | 100% | 2.13% |
| **Ranking based on 1-87** | **Total** (words included in the analysis) | | | | | | **8 264** | **100%** | **9.6%** |
| | **Total** (all words included in the document analysis) | | | | | | **86 164** | | |

**Source: Researcher's own compilation**

From Table 8.15, can be observed that words related to DC10, DC12, DC13, and DC14 were mentioned 8 264 times across all 40 IARs and accounted for 9.6% of the total words included in the content analysis of the IARs. When considering DC10, it is noticeable how the frequency of the word 'omnichannel' increased over the five-year investigation period. This could signal that all eight retailers whose IARs were included in the document analysis had placed a stronger emphasis on omnichannel retailing and therefore reported more on aspects surrounding omnichannel initiatives over the period of investigation. This trend was also observed when considering the frequency of the use of the word 'omnichannel' across each individual retailer's IARs per year, illustrated by Figure 8.13.

**Figure 8.13: Frequency of the use of the word 'omnichannel' in retailers' IARs**




**Source: Researcher's own compilation**

Figure 8.13 shows that, in general, across the eight retailers' IARs, the frequency of reporting on omnichannel initiatives had gradually increased, this can be observed in the trendline (black line), indicating the average number of times the word 'omnichannel' appeared in retailers reports per year. Since part of the purpose of an IAR is to illustrate to providers of financial capital how an organisation creates value, this finding illustrated that retailers had increased the strategic emphasis on omnichannel retailing over the five-year investigation period. Therefore, it can be assumed that omnichannel retailing had not only become increasingly important to retailers but, should this trajectory continue, it is going to become even more critical in the future.

Through the process of manual and automatic coding (outlined in Chapter 7, Section 7.4.2.1), the words listed in Table 8.15 can be recontextualised. The most revealing quotations are presented below:

*"The board reviews and approves the strategy on an annual basis. It manages the allocation of capital and focus for each of the strategic focus areas to maximise returns. Two changes were made to the strategy during the year (2016): (1) The focus of "Drive digital engagement and sales" has been changed to specifically focus on the "mobile" component, given that the penetration of mobile phones far outweigh the internet usage, particularly in the group's target customer market (2) Managing and enhancing a customer's journey is an increasing trend in both local and overseas digital and omni-channel retailing. The board agreed to add another strategic focus, "Enhance the customer experience" and to present it at the centre of the focus areas to emphasise the importance of this as a key component in the future strategic direction of the group."* (Retailer X, IAR 2016).

*"Our strategies will focus on protecting and growing our core businesses whilst, simultaneously, pursuing initiatives targeted at new, profitable growth opportunities and also accelerating our capabilities as a leading omni-channel retailer."* (Retailer A, IAR 2020).

*"[Targets met over the reporting period] E-commerce and physical stores introduced new omni-channel payment gateway to seamlessly identify customers across both e-commerce and physical store platforms and to reduce payment friction. New international currencies implemented and ways to pay (Google Pay and Apple Pay) explored for roll-out in the future."* (Retailer XI, IAR 2019).

Based on the above summary of the literature findings, the frequency distributions of words related to front-end integration and the quotations derived from the retailers' IARs, many mechanisms contribute to a retailer's front-end operations. Apart from integrating physical and digital channels, retailers should also consider different payment options and the use of social media platforms to increase customer engagement.

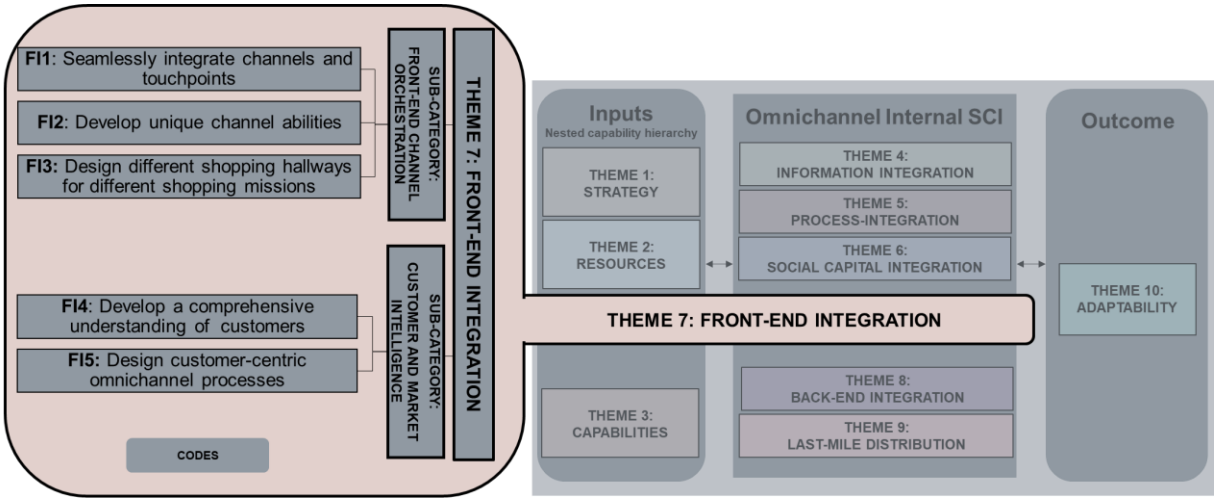
Referring back to the code frequency table (Table 8.1), this theme (Theme 7) and the several codes that populate this theme were cited most by the participants during the interviews (149 coded data excerpts across the 17 interviews). Based on the analysis of the interview data, two subcategories and five codes were developed from the data.

First, the subcategory *front-end channel orchestration* was developed based on three codes, namely a retailer's ability to *seamlessly integrate channels and touchpoints* (FI1), *develop unique channel abilities* (FI2), *and design different shopping hallways for different shopping missions* (FI3). Second, the subcategory *customer and market intelligence* was developed and included two codes, namely the retailer's ability to

*develop a comprehensive understanding of customers* (FI4) and *design customer-centric omnichannel processes* (FI5).

Figure 8.14 represents a snapshot (or subset) of the conceptual framework presented in Figure 8.3 and aims to plot Theme 7 and its subcategories and codes within the broader context of the conceptual framework.

**Figure 8.14: Conceptual framework – Theme 7**




**Source: Researcher's own compilation**

### *8.4.7.1 Front-end channel orchestration*

Channel orchestration is concerned with creating a customer experience that effectively integrates multiple channels and touchpoints to balance customer expectations. Picot-Coupey *et al.* (2016:357) found that retailers often use terms such as 'to orchestrate' or 'to synchronise' in describing the design of their front-end channels and touchpoints. These authors debated that using these words evokes certain imagery, that is the parallels that retailers draw between the coordination of an orchestra and the synchronisation required in front-end channel design. Like a conductor conducts an orchestra by interpreting the score, setting the tempo, ensuring the correct entries are played by assembling members, and adjusting certain performance elements to relay the conductor's vision, so should retailers conduct front-end channel orchestration. Decision-makers must address front-end channel orchestration in a synchronised manner to ensure that all channels and touchpoints simultaneously collect (or deliver) consumer information to provide a seamless and

personalised experience regardless of the channel the customer engages with. This metaphor can be supported by the following quotation from the 2019 IAR of Retailer A:

> *"[Our journey towards connected retail]… includes personalising our customers' experience with tailored cross-channel content and communication, including personalised assisted styling and self-service. We will further improve and streamline our customers' journeys and elevate the brand experience by digitally enabling our stores, optimising click-and-collect, implementing effortless and quicker payment and checkout options, redesigning the front-end website, and investing in imagery. We continually explore new digital channels and digital store formats, invest in innovative digital technologies, and optimise our websites' performance and functionality to lead the market and provide a truly connected retail experience*." (Retailer A, IAR 2019).

It can be a complicated endeavour to create tailored offerings in harmony with the retailers' overarching brands since customers frequently want the ease of digital channels and the tangible experience of physical channels (Magistretti, Pham & Dell'Era, 2021:64). During the interviews, the participants outlined that front-end channels serve as the focal point for the seamless integration of retailers' omnichannel operations (FI1). Therefore, retailers should develop unique channel abilities (FI2) to design different hallways for different shopping missions (FI3).

### *a) Seamlessly integrate channels and touchpoints (FI1)*

Modern customers expect to view products online, download exclusive offers to their phones while browsing in store, and then share their purchases on social media pages (Blom *et al.,* 2021). Consequently, omnichannel retailing has become synonymous with seamlessness. Support for this argument was provided several times throughout the literature review and was again established in Table 8.13 through the participants' definitions of omnichannel retailing. Chapter 5, Section 5.4.2, discussed the seamless integration of physical and digital channels and touchpoints as part of the key aspects in designing an omnichannel process. The reviewed literature observed that the level of seamlessness with which customers can move between physical and digital channels signals the level of omnichannel integration a retailer has achieved. Consequently, DC11, namely, the seamless integration of physical and digital channels and touchpoints, was included in the coding frame and defined as:

**Seamless and consistent integration of physical and digital channels and touchpoints (DC11):** The ability of a retailer to integrate physical and digital channels and touchpoints to create an easy, consistent, speedy, and pleasant shopping experience for customers.

As stated previously, the coding frame was used to conduct a document analysis of retailers' IARs. Keywords based on DC11 were identified and used to determine the frequency with which these words appeared across the 40 IARs. Table 8.16 presents the findings of the document analysis related to DC11.

**Table 8.16: Frequency count of document analysis: Word(s) related to DC11**

| Each word's raking in the complete document analysis | Words related to DC11 | 2016 | 2017 | 2018 | 2019 | 2020 | Total | % of the occurrence of each word within DC11 | % within the total document analysis |
|---|---|---|---|---|---|---|---|---|---|
| 17 | engagement | 123 | 213 | 395 | 420 | 426 | 1577 | 61% | 1.8% |
| 43 | seamlessly | 73 | 126 | 164 | 163 | 124 | 650 | 25% | 0.8% |
| 57 | convenience | 8 | 58 | 78 | 93 | 62 | 299 | 12% | 0.3% |
| 81 | value-creating | 4 | 5 | 4 | 10 | | 23 | 1% | 0.0% |
| 83 | touchpoints | 2 | 2 | 3 | 6 | 4 | 17 | 1% | 0.0% |
| **Ranking based on 1-87** | **Total** (words related to DC11) | | | | | | **2 566** | **100%** | **3%** |
| | **Total** (all words included in the document analysis) | | | | | | **86 164** | | |

**Source: Researcher's own compilation**

Table 8.16 shows that the words related to DC11 were mentioned 2 566 times across all 40 IARs and accounted for 3% of the total words included in the content analysis of the IARs. The frequency of the word 'engagement' accounted for the majority (61%) of the referrals to words classified under DC11. Therefore, the words 'engagement' and 'seamlessness' were most used (a combined 86%) in retailers' IARs when referring to DC11 and its related aspects. Several quotations were discovered from the IARs which provided insight into these findings and retailers' perceptions of the seamless integration of channels and touchpoints:

> *"To build a high performing brand, our targets include… to convey strong brand personality via multiple touchpoints to target market, ensuring consistent and seamless engagement."* (Retailer D, IAR 2019).

*"…within the Group, brands are leading in the shift from brick and mortar to shopping online. Here we see customers demanding that seamless experience from the store to online and back as part of their total engagement with the brand."* (Retailer A, IAR 2019).

Although Table 8.16 already underscored the participants' emphasis on creating a seamless omnichannel experience, the analysis of this code revealed additional insights into the seamless integration of channels and touchpoints, which are discussed below:

First, the participants expressed that retailers need to create harmony between physical and digital channels and touchpoints. In particular, they underscored that retailers need to identify the overlapping links between channels (and touchpoints). Participants also explained that creating unique points of engagement that set a retailer apart from competitors is paramount. In addition, their testimonials and definitions of omnichannel retailing revealed that the key to creating a seamless omnichannel offering is to ensure consistency and unification across channels:

*"From a structural business model point of view, you're gonna need a [sic] omnichannel approach which is all-encompassing… what we always do is we look at the customer journey and whether the customer journey in store, whether the customer journey on the webstore, or whether the customer journey with regard social media, we're trying to figure out those moments of touchpoints and how do we enhance it? Because otherwise we're just like everybody else. So, I think over and above trying to get the combination of these things right, it's also trying to make each interaction a bit different... Where they're ultimately gonna shop, you don't know, but you're at least in the game. If you don't have that, you just have a physical store, you've got no chance because you need digital marketing, omnichannel, all the different things… And whoever gets it to work the best is the one that will survive."* (Participant 14, CEO).

*"… we will all agree to unify promotions, so promotions need to be across all of our omnichannels. So, it's about delivering an exceptional customer experience across every click point, so whether they're walking into a Division 1 standalone store, whether they're walking into a Division 1 box that's in a Retailer F store, whether it's online, whether it's wholesale, we should be delivering the same customer experience across all of that."* (Participant 9, Brand Manager – Africa).

Second, the participants' testimonials revealed some guidelines on innovative ways to create seamlessness by integrating physical, digital, and distribution channels and

touchpoints. These guidelines included offering customers a variety of different payment solutions.

In Chapter 5, Section 5.5.2, the ability of a retailer to provide an advanced payment ecosystem was classified as a dynamic capability (DC12). The reviewed literature observed that customers want quick, safe, and simple payment solutions and the availability of such payment solutions often decides the customers' purchasing decisions. Based on the literature review findings, DC12 was defined as a retailer's ability to implement an advanced payment ecosystem that allows customers to pay for products through any of the customers' preferred payment solutions.

During the interviews, the participants pointed out that offering customers multiple payment solutions is one of the ways retailers can create seamlessness in the omnichannel offering. From their statements, can be concluded that, while an advanced payment system might be necessary in creating a seamless shopping experience, they classified it as a way to create seamlessness, hence placing seamlessness in higher regard than the ability to offer different payment methods.

Accordingly, the findings of this study contradicted the findings of Hosseini *et al.* (2017:14) presented in Chapter 5, Section 5.5.2, by arguing that advanced payment solutions should not be classified as a dynamic capability in itself. The reason is twofold. First, competitors can easily imitate a retailer's payment solutions. As explained in Chapter 2, Section 2.3.2.1, imitability is one of the prerequisites of VRIN (valuable, rare, inimitable, and non-substitutable) resources, which are considered fundamental to the DCV framework. Second, as mentioned above, the participants described various payment solutions only as a subcomponent of the capabilities required to design a seamless omnichannel offering. Therefore, within the context of this study, advanced payment solutions are classified as one of the ways to create seamlessness in omnichannel retailing:

> "*… if you have an account with us, you can buy online on your account or you can pay with your credit card or debit card… we are tryna open up different options to be able to pay differently. So, we're trying to make it frictionless for customers who want to pay the way that they like to pay...."* (Participant 2, Head of Logistics and Facilities Management).

*"… we pushed the omnichannel narrative and we said if a customer doesn't have a bank account or doesn't want to transact online, because we've done research and we can see that many customers are still scared to transact online, we said let our customers come in store and pay. So, what we did was we said that they can pay when the order is delivered to the store..."* (Participant 13, Managing Director).

Part of creating a seamless shopping experience is increasing the customer's shopping convenience. Digital technologies offer retailers a range of different methods to increase shopper convenience, such as introducing mobile applications that facilitate limitless 'anywhere' shopping. Participants listed innovations such as self-assisted check-outs that increase the seamlessness of customers' omnichannel shopping experiences:

*"So, the app is a huge boon for us because, like I say, it doesn't matter where a customer is, if she's travelling from Jo'burg to Cape Town and she's sitting in a car, she can place an order and within two or three days of her arrival in the destination she can have the item delivered or collect it at the local store."* (Participant 7, Operations Business Development Manager).

*"… we've launched self-assisted checkout. So, you now can go with your own goods and go ring yourself up, pack your own packet, and walk out the door… [and] if you ordered your parcel online and you get it delivered to the store for click-and-collect, we've now institute where you will be able to get your click-and-collect parcel without speaking to a staff member. Once it's arrived in the store you get an e-mail, you walk up to this locker, you scan your e-mail from your phone or from a piece of paper, and your correct cupboard will open and you just take your parcel, close the door and walk out the store without having to do anything"* (Participant 8, Head of Retail Innovations).

As stated above, one of the benefits of omnichannel retailing is that retailers can use the advantages of both physical and digital channels in tandem. The participants underscored that one capability that is particularly valuable in omnichannel retailing is the retailer's ability to upsell (generate more sales based on customer's purchasing history). They explained that the essence of omnichannel retailing allowed them to sell a 'complete solution' to a customer. For example, when a consumer buys a dress, the retailer can alert her to shoes and accessories that go with the dress. Similarly, some participants revealed that when customers select the 'click-and-collect' option, customers often buy more items while in store. Therefore, digital channels can serve as a link to drive customer traffic to physical channels, resulting in additional sales for the retailer. Some participants indicated that digital channels served as a merging

point for all their brands. While these brands have individual brick-and-mortar stores, the website/mobile application pools brands and creates opportunities for upselling across brands:

> *"…eighty percent of customers that actually enter stores to collect a parcel will buy more stuff. We have so much traffic on the app that customers will research and not buy but then go into the store and buy the item."* (Participant 8, Head of Retail Innovations).

> *"We know that from research we've done when customers are walking out of our brick stores with packets in our hands and we say to them what caused you to be in the store today to purchase that? About thirty-five percent of our customers said it was going online that inspired me to come and buy this red dress. So, we also know not just eighty-five percent of them research but thirty-five percent of the purchases are actually induced by what they've seen online as well."* (Participant 13, Managing Director).

The importance of designing seamless and consistent omnichannel processes across all channels, touchpoints, and brands became clear from this discussion. This discussion determined that retailers need to create harmony between physical and digital channels and find the links between them to exploit cross-channel advantages. To achieve this, the retailer must ensure a high level of consistency across all channels.

The above analysis also highlighted the ways interviewed participants had achieved (or aimed to achieve) seamlessness in front-end omnichannel operations. The following code contains participants' narratives on each channel's unique abilities and how these abilities can be used to the retailer's advantage.

### *b) Develop unique channel abilities (FI2)*

Chapter 5, Section 5.5, stated that omnichannel retailers have created value for customers through their channel 'mix', i.e. the different channels or touchpoints they offer customers to interact with them. It was argued that simply offering a mix of physical and digital channels is not enough to compete in the ever-changing omnichannel environment; retailers also need to create synergies among channels and touchpoints. The Oxford English Dictionary (2022i) defines synergy as "*any interaction or cooperation which is mutually reinforcing; a dynamic, productive, or profitable affinity, association, or link*." Considering this definition, the benefits of

integrating a retailer's channels to create synergy can be observed, that is two or more channels working together are better than having only one. Many previous authors showed this statement to be true (Sorkun *et al.,* 2020:629; Tueanrat, Papagiannidis & Alamanos, 2021:1; Verhoef, 2021:610).

While the focus in FI1 (seamlessly integrating channels and touchpoints) was to illuminate the ways to create seamlessness in omnichannel retailing, FI2 (developing unique channel capabilities) specifically housed participants' references to the individual advantages of physical and digital channels and how retailers can (and have) tapped into these advantages to create cross-channel synergies.

When considering physical channels, the participants indicated that the brick-and-mortar store is an essential link between digital, physical, and distribution channels. From the customers' perspective, the brick-and-mortar store provides 'showrooming' opportunities for more tactile customers to view products they might feel unsure about while shopping online. During the interviews, the participants expressed that, in the minds of customers, a strong store footprint creates brand awareness and trust among digitally 'shy' customers. From the retailers' perspective, brick-and-mortar stores often serve as warehouses and distribution centres. Depending on a retailer's picking strategy (discussed in more detail in Theme 8: Back-end integration), the participants explained how retailers with a large store footprint, situated close to customers, have a competitive advantage, particularly when designing last-mile distribution options:

> *"From an omnichannel perspective, the fact that we've got bricks-and-mortar stores all over the country I think that's put us in a much better position compared to a pure player that's only online. So, that I think is a very big strength of ours…"* (Participant 5, Head of Transport and Engineering Logistics).

> *"… seventy percent of our online orders, our customers ask to have it delivered to our stores. So, it's more than two thirds of online deliveries are sent to our stores for our customers to collect, which shows the importance of the store as a channel. When those customers come in to collect their order, about twenty percent of them make a purchase of something else that they see on the shelf as well and, so, you can start to see how now all of that starts to work out to get it quite nicely to build a customer experience and to build sales."* (Participant 13, Managing Director).

*"…[what is] the asset that we've got that [the competitor][64] doesn't have? That's quite simply two things really. One is we've got real estate…. we've got four hundred [pieces of real estate] around the country. Second is we've got inventory close to where the customer is and [the competitor] do not. So, if I wanna differentiate my propositions, I really wanna be able to be in a position where I can leverage that inventory to serve the customer need… a simple example - I've got a laptop down the road in a store… technically I can pick and pack and deliver on the same day, and I can do that not only in Johannesburg and Cape Town like [the competitor] can, I can do it in Bloemfontein, I can do it in Polokwane, I can do it in Mbombela. Because of the geographic reach of the stores, our coverage to differentiate on a [sic] omnichannel service position is so much better."* (Participant 6, VP of Supply Chain & eCommerce Operations).

Although several participants highlighted their store footprint as a differentiating element of the omnichannel offering, some retailers underscored that omnichannel retailing is changing the function of a retailer's physical channel. In general, the participants who shared this view (P5, P11, and P17) agreed that a retailer's store footprint will decline over time and that the store's primary function will be to serve as showrooms and distribution centres. Support for this argument was not only established during the analysis of the interview data but could also be found in retailers' IARs. Retailer A's 2019 report provided an accurate description of the interplay between digital and physical channels and why this interplay will result in a reduced store footprint:

*"Channel profitability remains a key focus. Our real estate plans take into account the strong and ongoing growth of online sales and, by 2022, we will reduce our retail footprint by 10%. We will achieve this by optimising space and improving store trading densities and profitability by churning our store portfolio and reducing our retail store footprint by closing unprofitable stores. We will further improve store trading densities and profitability by driving footfall and conversion using improved digital and customer data and improving store assortments…"* (Retailer A, IAR 2019).

*"I think a lot more of what you could almost call probably showrooming is gonna happen where people don't need to have such big store spaces and they don't need to be in all the malls… There are products that people wanna touch, feel, see, try on, those kinda things, but I think you're probably not gonna need a three-hundred-/four-hundred-store footprint to service your customer anymore."* (Participant 17, Head of Supply Chain Optimisation).

*"… we're cutting back our footing in fashion. We're cutting about fifteen percent, as least fifteen percent, of our footage because we are over footage in a world where we're gonna be more online. So, I think that's the one thing. It will be smaller, it will be more unique, it*

[64] Name removed as per confidentiality requirements.

*will bespoke, it will be exciting, and it will be an experience when you come to a store, as part of omnichannel."* (Participant 11, Director of Retail Operations).

Some participants indicated that, within the South African context, many shoppers still prefer a tactile (in-store) shopping experience and retailers should be able to cater to all customers' needs:

*"And I think in our culture, when I say our culture I mean of South Africa, the South African shopper for the most part that's a large contingency of people who like to touch and feel, so I don't think you'll ever get away from brick-and-mortar to some extent. So, it's very important to strike that balance to make that experience as seamless as possible for the person who is sitting at home clicking and selecting and then going down to their gates to collect the item to the customer who is still happy to go to a store and collect their item personally."* (Participant 7, Operations Business Development Manager).

When considering digital channels, the participants indicated that simply having a digital channel (or channels) is not enough to be competitive, particularly after the COVID-19 pandemic which saw many new competitors entering the online retail landscape. They stressed that digital channels should be implemented with the necessary features and functionalities to facilitate online shopping. Additionally, a well-designed website or mobile application requires back-end support to ensure that a retailer's omnichannel service meets customer expectations. They also explained that, in modern retail, digital channels and touchpoints serve as a vital marketing tool that facilitates cross-channel communication:

*So, one thing that I know stood us in good stead was that our platform was really easy to shop. So, we knew how to make shopping easy, how to see the variety of styles that we had on offer, and we definitely used that to our advantage in a lot of new customers who might have known who we were but hadn't shopped online."* (Participant 10, Head of Africa Supply Chain).

*"On the website side of things, we know that every customer that comes to our site spends on average about eleven or twelve minutes and they view about seven or eight pages on average. That is way, way more engaged and way much more content that we're able to serve to that customer than what they would get from a TV advert. And, so, it's really just understanding the power of e-commerce as a marketing tool for the broader bricks business is actually what pays more dividends to us than what we actually sell online. Even though we're selling a significant amount online, it's become the primary marketing tool and the nucleus of our marketing arsenal…"* (Participant 13, Managing Director).

From a South African perspective, the participants explained their decision to focus on 'mobile first'. These participants claimed that the South African consumer market is predisposed towards mobile shopping. This statement was confirmed in the recent report by Datareportal (2021), who found that South Africa has one of the highest mobile connection rates in the world, with 168.5% of the population owning a mobile connection (SIM card) (this percentage includes persons who have both a work and personal mobile connection, explaining the reason for exceeding the total population). Furthermore, the report found that, in South Africa, 98.2% of the population aged between 16 and 64 own a mobile phone. This report further compared the different sources of South African web traffic. The report indicated that 79.4% of South African web traffic originates from mobile phones compared to only 18.9% from laptops and desktops. Based on these findings, the participants' arguments that South Africans are 'mobile first' is substantiated and it can be argued that, in South Africa, retailers should first focus on expanding the mobile offering:

> *"So, things that we're trying to change is firstly making sure that the customer is engaged in all parts of the transaction at any time whenever they choose to be, so we're implementing technology for that, we're going mobile first 'cause I believe everybody's on the phone now, not a website…"* (Participant 12, Chief Operations Officer).

> *"I think the app comes from realising that South Africa is mobile first, … I don't think that means that it's mobile only. So, there's still a large component of customers that will prefer a browser type of experience in time. But I think from a [sic] execution point of view to offer the good service and to deliver on that app was good. So, that wasn't really driven by customer insight, but more understanding the environment that we operate in…"* (Participant 15, GM: Retail and Supply Chain Operations).

The above discussion elicited that omnichannel retailers need to develop unique physical and digital channel capabilities. Whilst some participants indicated that the store footprint serves as a competitive advantage for them due to the store's proximity to customers, other participants indicated that the purpose of the physical channel will change over time as customers become more accustomed to online retail. They explained that digital channels can drive traffic to stores and serve as a vital marketing tool for retailers.

The final code of the subcategory front-end channel orchestration is designing different shopping hallways for different shopping missions.

### *c) Design different shopping hallways for different shopping missions (FI3)*

Customers expect retailers to adapt omnichannel strategies to fully meet their needs (Öztürk & Okumuş, 2018:260) yet retailers struggle to design channel and fulfilment options suitable for different product categories, for example food versus clothing (Eriksson *et al.,* 2019:1240). The previous two codes (FI1 and FI2) focused on the ability of retailers to create a seamless omnichannel shopping experience for customers (FI1). The discussion also addressed retailers' ability to develop unique physical and digital channel abilities (FI2) to create a competitive advantage in the omnichannel environment. As part of Theme 5, PI3 (cross-brand collaboration) was discussed, which revealed a unique finding of this study, that is retailers can unlock a competitive advantage when integrating a 'unique bundle of brands'. This code (FI3) builds on these discussions by outlining the participants' testimonials of how retailers operating within the omnichannel environment should design the omnichannel offering with enough flexibility to meet a wide range of customer needs across various product categories.

During the interviews, the participants emphasised that, although cross-brand collaborations provide upselling opportunities, some product categories are entirely disparate and require vastly different omnichannel services. For example, retailers selling both clothing and grocery products need to determine how to fulfil orders containing both these product categories. While groceries might have to be transported in temperature-controlled vehicles, it is expensive to allocate space in temperature-controlled vehicles for clothing and to allocate two deliveries to the same consumer for different products. Therefore, retailers need to navigate these complexities upfront when designing the omnichannel offering. The participants explained that retailers need to design different hallways for different shopping missions to meet the wide range of customer needs. The design of these hallways should consider the supply chain in its entirety and should start from the front-end, for example will disparate products and brands be integrated on the front-end for customers (for example, on a mobile application) or will these products and brands be operated in silos where individual service level agreements (SLAs) can apply? The ultimate design of these hallways should be based on their unique product offering

and by developing a deep understanding of customers' needs and purchasing behaviours:

> *"So, our retail business is also a little unique in that you could buy quite a wide range of products from what you'll need for clothing and general merchandise and then on the food side you could also fill your cupboard with us. So, we have that, I suppose, extra little bit of complexity in that we have these two very different businesses that we service and those products behave differently, the customers behave differently, and we need to service them differently. So I think people will continue with picking different shopping missions for different channels."* (Participant 1, Head of Logistics and Supply Chain).

> *"So, our product base is more attuned to online shopping, and as we go more online for delivery or click-and-collect, we can facilitate that because our stores are big and we're not convenience based like a [Retailer A] or [competitor]. Having said all of that, what we are tryna do is create different hallways for different shopping missions…"* (Participant 12, Chief Operations Officer).

> *"But it's really about kind of creating these collaborative customer communities. It could be recognising a family or a household, it could be you getting a better deal on a product because you've got a bunch of friends that are willing to buy that product with you. I think trying to leverage what the world has learnt over the last twenty years about social media and applying that into the commerce space, creating these multiple communities that people can participate in and actually create some stickiness as a result of that."* (Participant 6, VP of Supply Chain & eCommerce Operations).

In conclusion, retailers need to carefully orchestrate the front-end design to balance disparate product categories with customer needs and supply chain capabilities.

#### *8.4.7.2 Front-end channel orchestration: Summary and conclusion*

In the preceding section, front-end channel orchestration as a subcategory of Theme 7 was discussed by referring to data from the entire dataset. Based on the findings presented above, the researcher developed the following definition to conclude and summarise front-end channel orchestration:

*As part of omnichannel retailers' front-end integration, retailers should have the ability to seamlessly and consistently integrate their physical and digital channels and touchpoints to provide customers with a personalised shopping experience across the retailers' channel mix. This requires retailers to develop unique physical and digital channel abilities by offering various payment options and creating upselling*

*opportunities. Retailers should provide personalised shopping experiences by designing their omnichannel offering in such a way to accommodate different hallways for different shopping missions.*

Based on the above discussion and definition, this study concluded that front-end channel orchestration should be classified as a dynamic capability, since, when done correctly, it creates a level of inimitability for retailers that build a competitive advantage. Front-end channel design plays a crucial role in an omnichannel supply chain as it serves as the point of origin for omnichannel orders and is the customer-facing end of the supply chain. Therefore, the effective orchestration of front-end channels does facilitate omnichannel SCI. This finding addresses a knowledge gap identified as part of the problem statement of this study by finding that a retailer's ability to seamlessly integrate front-end channels and touchpoints is a dynamic capability that allows retailers to transform from previous types of retailing to omnichannel retailing. In addition, this finding partially addresses secondary research objective 3 (SRO3) by finding that front-end channel orchestration facilitates omnichannel SCI by assisting omnichannel retailers to seamlessly integrate channels and touchpoints, develop unique channel abilities, and design different shopping hallways for different shopping missions.

#### *8.4.7.3 Customer and market intelligence*

Market intelligence is information or data about an organisation's customers and competitors that it derives from the market in which it operates. Market intelligence helps determine and predict changes in market segmentation, market penetration, and market opportunities (Falahat *et al.,* 2020:2). As a subset of market intelligence, customer intelligence refers to insights on customers extracted from data mining processes. By integrating, analysing, and interpreting various customer data sources, customer insights give organisations a glimpse into customers' buying decisions (Dam, Dinh & Menvielle, 2021:1). Customer and market intelligence enables organisations to develop specialised and personalised service offerings. Therefore, the primary goal for collecting and analysing market and customer intelligence is to improve decision-making. Investigating the retailers' IARs showed that retailers use customer intelligence to inform decision-making:

*"We have strong customer relationships which are enabled by the insights we derive from our rich customer data, attractive loyalty programmes, and differentiated customer experiences. We connect with our customers seamlessly and conveniently through multiple store formats and digital shopping sites, and through compelling and increasingly personal marketing campaigns and communications."* (Retailer A, IAR 2019).

*"[In the coming year, we will focus on]… a more consistent approach to capturing customer data in store, online and through customer services is enhancing customer profiling and the ability to track customer habits and reward key customers."* (Retailer XI, IAR 2019).

*"Businesses are now transitioning from merely collecting customer data, to leveraging and analysing it for better decision-making, informing organic growth strategies and gaining valuable insights into customers' needs and wants."* (Retailer X, IAR 2018).

What may be assumed from these quotations is that retailers are utilising customer data to guide decision-making. Kruh and Freedman (2016:60) posited that, in omnichannel retailing, game-changing technologies that offer retailers new insights into customer and market behaviour have revolutionised supply chains in its front-end and back-end operations. Burchardt and Maisch (2019:112) argued that a retailer's success in achieving customer-centricity or loyalty is no longer a differentiator but a determinant of its survival.

Theme 4 extensively covered the collection and analysis of data, namely customer, market, and performance data. Therefore, this subcategory of Theme 7 does not consider the analysis of customer and market intelligence but rather how it can inform omnichannel retailers' decision-making processes, more specifically how intelligence is used when designing front-end operations.

The analysis of the interview data revealed two codes that populate this subcategory: a retailer's ability to *develop a comprehensive understanding of the customer* (FI4), which should then inform the *design of customer-centric omnichannel processes* (FI5). These two codes are discussed individually in the sections below.

### *a) Develop a comprehensive understanding of customers (FI4)*

Profiling (or segmenting) customers based on customer service requirements is not a new concept. However, modern approaches to customer segmentation are more sophisticated than years ago (Daugherty *et al.,* 2019:24). Segmenting customers allows retailers to narrow down large target audiences into more carefully defined target groups to find innovative ways to tailor shopping experiences for specific customer groups (Savastano *et al.*, 2019:487). Technology facilitates customer profiling and allows for the collection and analysis of customer intelligence, yielding rich and insightful information about customers to guide service-related decisions and communications with customer (Wang, Zheng & Liu, 2021:163). When retailers effectively mine customer information, they can create comprehensive profiles on each segment, allowing them to understand customers deeply and develop personalised customer experiences that build loyalty (Zhao, 2021:276).

In Chapter 5, Section 5.6, the literature review emphasised that building '360-degree [or complete] customer profiles' is required when designing front-end omnichannel operations. On conclusion of the literature review, DC15 was included in the coding frame:

**Creation of comprehensive customer profiles (DC15):** The ability of a retailer to integrate and share data across channels and touchpoints to create detailed and comprehensive customer profiles to personalise the shopping experience for each customer.

In the document analysis, keywords related to DC15 (as seen in Annexure A) were examined to identify patterns in the IARs and to facilitate the automatic and manual coding process of the retailers' IARs. Table 8.17 represents the words related to DC15, which comprise the coding frame.

**Table 8.17: Frequency count of document analysis: Word(s) related to DC15**

| Each word's raking in the complete document analysis | Words included in the analysis | 2016 | 2017 | 2018 | 2019 | 2020 | Total | % of the occurrence of each word within DC15 | % within the total document analysis |
|---|---|---|---|---|---|---|---|---|---|
| 1 | consumers | 651 | 994 | 1793 | 1833 | 1260 | 6531 | 91% | 7.6% |
| 54 | satisfaction | 51 | 77 | 75 | 76 | 100 | 379 | 5% | 0.4% |
| 65 | customisation | 16 | 27 | 28 | 35 | 20 | 126 | 2% | 0.1% |
| 66 | segmentation | 18 | 16 | 35 | 30 | 20 | 119 | 2% | 0.1% |
| **Ranking based on 1-87** | **Total** (words included in the analysis) | | | | | | **7 155** | **100%** | **8.3%** |
| | **Total** (all words included in the document analysis) | | | | | | **86 164** | | |

**Source: Researcher's own compilation**

Table 8.17 shows that words related to the creation of comprehensive customer profiles (DC15) were mentioned 7 155 times across all 40 IARs and accounted for 8.3% of the total words included in the content analysis of the retailer's IARs. Noticeable from Table 8.17 is that the word 'consumers' was the most frequently used word of the 87 words included in the document analysis and was used 6 531 times across all 40 IARs. This means that, on average, the word 'consumer' was used 163 times in each retailer's IAR. Based on these findings, can be deduced that omnichannel retailers aim to be customer-centric.

> *"[We have achieved the following objectives this year – To make better use of analytics to inform targeted customer marketing and rewards campaigns]… Understanding our customers' behaviour is key to delivering an unrivalled shopping experience. Our strategy to improve our targeted customer marketing is to combine our e-commerce, IT and marketing capabilities in a three-year programme, aimed at gaining in-depth knowledge about our customer; developing targeted tactics and solutions tailored to specific customer profiles; and optimally executing the solutions to meet our goals. We are currently in the first phase and have made good progress in gaining insight into our various customer profiles."* (Retailer G, IAR 2019).

> *"We keep our customers at the heart of everything we do. We will continue to improve the functionality of our Customer Relationship Management programme and optimise and enhance our current loyalty programmes by leveraging our customer insights and using customer segmentation to inform all our business decisions and improve our customer engagement. We will maximise our sales and profitability by driving more personalised, targeted marketing to our loyal customers and reducing generic discounting."* (Retailer A, IAR 2020).

In agreement with the above quotations from retailers' IARs, the participants of this study also underscored the importance of developing comprehensive customer profiles as a core capability in omnichannel retailing. They agreed that, for retailers to succeed, they must understand who their customers are, which requires the large-scale collection and tracking of customer intelligence. The process of understanding customers starts with understanding customers' wants.

> *"I think the critical capabilities [for omnichannel retailing] is really understanding what the customer wants…"* (Participant 12, Chief Operations Officer).

> *"So, I think that it's just so important that you understand who your consumer is, what is it that your consumer wants. Not what you think your consumer wants, what does your consumer want? There's a big difference."* (Participant 4, Head of Logistics).

The participants agreed that a one-size-fits-all approach is no longer acceptable for customers as they expect to receive personalised shopping experiences based on a sound knowledge of their life cycles, wants, and needs. In line with the findings of Oka *et al.* (2017:4), the participants conveyed that they have to build comprehensive customer segments or even 'microsegments' to ensure they meet customers' needs. In addition, they indicated that they also have to track how customer behaviour is changing over time to ensure that supply chain decisions are aligned with these changes. For example, if more customers are moving towards online shopping, stock keeping should be adjusted to increase stock availability across digital channels:

> *"Our customer is a girl in her twenties. We know that. We know that's who we're chasing, and so we've gotta provide the right stock in the right place so that twenty-year-old girl and can shop what she wants to look like, who she is wanting to be, by visiting one of your stores or online store…"* (Participant 10, Head of Africa Supply Chain).

> *"For a good omnichannel it's all about focussing on the customer and understanding the customer, what life stages are they in? What are they interested in? How do you use the customer analytics and insights that you get from their shopping behaviours, and what can you learn from their profiles?* (Participant 15, GM: Retail and Supply Chain Operations).

> *"I think in the total environment, technology is going to play a massive role… I guess the big challenge is to try and figure out how customer behaviours will change because at the end of the day that's what's gonna drive everything. So, yes, we can do as much as we like in the back office but we need to figure out how a new generation is gonna shop, how they prefer to engage with you..."* (Participant 14, CEO).

The participants went on to demonstrate how developing an understanding of customers can facilitate the omnichannel agenda, mainly through the use of digital channels to communicate with customers. As stated earlier, developing comprehensive customer profiles requires collecting large amounts of customer data. They explained that one way to collect data and track customer's shopping behaviour is through loyalty programmes:

> *"[During the COVID-19 pandemic]… an aspect that was really, really positive was our use of our loyalty programme. So, we have driven it quite hard, and that together with our social media presence, had allowed us to communicate with customers a lot more directly. We were able to tell them that we were open, we were able to tell them of the specials we were running, we were able to tell them that there were new styles available, and the ability to speak directly to consumers when they didn't just walk past our store was really an important part of our pandemic response."* (Participant 10, Head of Africa Supply Chain).

> *"So, we launched the Loyalty Programme which was really the start of us understanding the customer better … You need a lot more insights and capabilities to build up the teams to understand the data and how do you access the data? Without a proper e-commerce channel you can't really utilise a lot of that information. If I knew what your life-stage cycle was now and then say you're buying nappies this size, I need to send you something [promotion] and I need to ensure that you act on that quickly or immediately, so that instant sort of action."* (Participant 15, GM: Retail and Supply Chain Operations).

Finally, the interviewed participants pointed out that developing a comprehensive understanding of customers allowed them to curate a more seamless and personalised shopping experience for customers. They equated seamlessness to convenience by listing a wide range of additional services they can offer a customer once they have profiled them. These services included anything from populating a customer's delivery address to using predictive analytics to suggest alternative products the customer may also be interested in. From a customer's perspective, providing consent to retailers to collect data yields a more pleasant shopping experience. From the retailers' perspective, they can use the data they have on customers to stimulate additional purchases and predict buying behaviour, which results in better inventory forecasting, ultimately improving a retailer's bottom line:

> *"You have committed the order, you've told me what you've ordered… Now if I then want to predict what you will buy based on your order cycle, based on when in the month you buy, what you buy, how seasonality affects that, all that data is there. So, if I had to use it in a productive way to make your experience more seamless and you want that, then we*

*can provide that 'cause we've got the data and we've use it smartly…"* (Participant 10, Head of Africa Supply Chain).

*"… if we do know for example Alicia's buying behaviour, we know that you come into our stores every three months, we know that you like to buy our dresses, we know that you like our brand Brand 1 and we know that you've even maybe purchased our Brand 2 range in the past. When we launch a Brand 2 range every six weeks or so, because you have purchased two or three of our Brand 2 ranges in the past, we know that there's a high probability for you to purchase Brand 2 because you like that kind of product… so, it's around the of concept predictive analytics, which just says based on the data that we have on you, Alicia, we think that this kind of product would be suitable for you to stimulate purchase and therefore that's how we're going to market to you."* (Participant 13, Managing Director).

*"They're trying to predict what the customers are buying. You can drive predictions or you can drive sales patterns by knowing how customers buy and then initiating that with good promotions or good marketing. So, you can kind of predict it through that but also you need to predict what customers are going to say or do through social media and what they're saying and talking about. So, all those tools, analytics, big data, all of that, that's all important stuff already but I think we need to get a lot more clever with how we use that data in the future."* (Participant 5, Head of Transport and Engineering Logistics).

In conclusion, retailers must collect and analyse large amounts of customer data to develop a comprehensive understanding of customers. Data can be collected through loyalty programmes whilst predictive analytics can be used to analyse the data to better communicate with customers. This provides customers with a more seamless and personalised shopping experience and allows retailers to track changing customer behaviours to align supply chain planning decisions accordingly.

The final code of Theme 7 is a retailer's ability to design customer-centric omnichannel supply chain processes.

### *b) Design customer-centric omnichannel processes (FI5)*

Up to now, it has been established that omnichannel retailing requires a step-change from traditional forms of retailing and that customers expect to be able to shop whenever and however they prefer. This means retailers are facing a strong imperative to realign or redesign the supply chain to be truly customer-centric (Fleischer *et al.,* 2020:2). Kammerer *et al.* (2018:10) debated that behind the pervasive disruption in retailing is the unsung superhero, the supply chain, which is called upon to fulfil the

wide range of continuously changing customer needs. However, the realignment of a retailer's supply chain processes in an ever-changing (or VUCA) environment is a complex task that requires careful planning and execution (Ishfaq *et al.,* 2016:544). The realignment should be based upon the analysis of customer data and insights (Song *et al.,* 2019: 528; Wei & Li, 2020b:19; Pereira & Frazzon, 2021:5).

During the interviews, the participants indicated that retailers need to refocus the supply chain design on serving customers better. They stated that customer-centricity often leads to simplifying omnichannel processes. Therefore, retailers need to start the design process by determining what the customer wants and designing the omnichannel offering accordingly:

> *"So, I think it's always important just to check in with the customer first and understand what it is that they're looking for and then go and build your omnichannel experience after that."* (Participant 13, Managing Director).

> *"… often serving customers leads to simplification and once you get into the detail you're gonna take a ten-step process and you're gonna make it a three-step process in the interest of serving the customer…"* (Participant 6, VP of Supply Chain & eCommerce Operations).

> *"… if we don't start there [customer] we can't build the supply chain. And I often worry in supply chain discussions is we talk in supply chain speak to get efficiency of the supply chain and we forget the two most important people in the supply chain, which is the customer and the supplier… we're now having to shift more to the customer, and I think that's what omni in the future will be. It will be more about customer experience and engagement… [therefore] I think supply chain design and optimisation is a capability that's not new but it's really back on the table again…"* (Participant 12, Chief Operations Officer).

> *"… for me it's about stepping back and saying let's understand what the consumer wants, let's understand whether the customer would be comfortable with a twenty-four hour maximum delivery period, and then let's focus on being the absolute best at that…"* (Participant 4, Head of Logistics).

To conclude the discussion on FI5, based on the quotations from participants provided above, this study found that the ability of retailers to redesign supply chains towards becoming a more customer-centric organisation serves as a dynamic capability and simplifies the supply chain by offering customers the exact service they expect.

#### *8.4.7.4 Customer and market intelligence: Summary and conclusion*

In the previous section, customer and market intelligence as one of two subcategories of Theme 7 was discussed by presenting data from the entire dataset. Based on the findings presented above, the researcher developed the following definition to conclude and summarise the ability of retailers to use customer and market intelligence:

*As part of omnichannel retailers' front-end integration, retailers should have the ability to utilise customer and market intelligence to develop a comprehensive understanding of customers and to design customer-centric omnichannel supply chain processes. Through customer and market intelligence, retailers should determine who their customers are by profiling them. This allows retailers to develop seamless and personalised omnichannel experiences and to communicate more effectively with their customers. Retailers should use customer insights as a starting point when (re)designing their omnichannel operations.*

Established from the above discussion and definition is that this study concluded that the ability of retailers to collect and utilise customer and market intelligence should be classified as a dynamic capability. Additionally, during the interviews, the participants showed that customer and market intelligence aided them in developing and designing processes that create a more seamless shopping experience for customers. Customer and market intelligence are essential for retailers to move from previous types of retailing (such as multichannel retailing) to omnichannel retailing. This finding addresses a knowledge gap identified as part of the problem statement for this study (Chapter 1, Section 1.2). In addition, this finding partially addresses secondary research objective 3 (SRO3) by observing that retailers with an ability to continuously redesign the supply chain to seek more customer-centric omnichannel processes are more inclined to collaborate across functions to develop customer-centric processes. Accordingly, retailers with superior capabilities in utilising customer and market intelligence can have higher levels of internal SCI.

### 8.4.8 Theme 8: Back-end Integration

In omnichannel retailing, back-end fulfilment entails the process of preparing orders for delivery (Rai, 2019:28). When retailers move from multi- or cross-channel retailing to omnichannel retailing, they need to move away from strict linear fulfilment processes that see product flows moving in one direction only, namely warehouse – store location – end-customer (Kembro *et al.,* 2018:899). Instead, they need to redesign back-end fulfilment processes to be more nimble as inventory management in omnichannel retailing should be built around a circular fulfilment network, allowing retailers to fulfil orders originating from a variety of different channels with a variety of different SLAs (Adivar *et al.,* 2019:259). Accordingly, flexible supply chains are an essential capability in omnichannel design since the speed of order fulfilment and the efficient use of resources can determine an omnichannel retailer's success. Lim *et al.* (2018:328) and Taylor *et al.* (2019:866) debated that omnichannel fulfilment requires retailers to utilise all internal resources to ensure that customers receive orders as quickly as possible.

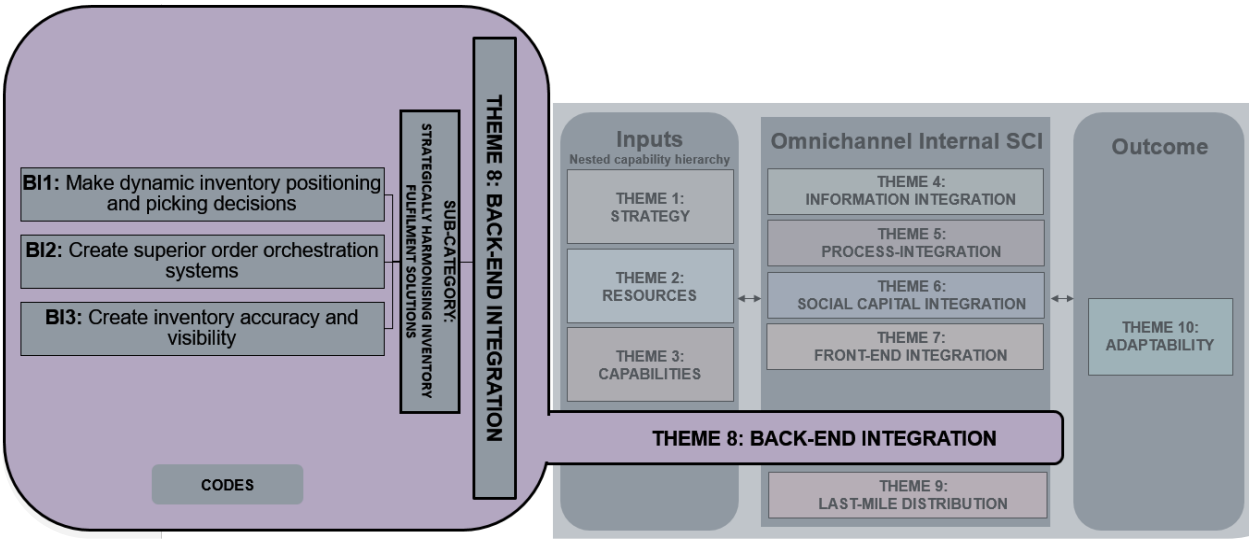
Chapter 6, Section 6.2.1, summarised the literature on back-end fulfilment in omnichannel retailing. Upon conclusion of this discussion, the following definition of back-end fulfilment was included in the coding frame:

**Back-end fulfilment:** The integration of the retailer's back-end processes which facilitate the picking and packing of orders before final delivery to the customer. Back-end fulfilment includes picking location (in store, separated fulfilment centres, or central warehouses), picking automation (manual, semi-automated, or fully automated), and picking integration (separated, integrated, or capacity optimised and integrated).

Upon conclusion of the analysis of the interview data, one subcategory housing three codes was grouped under Theme 8. The subcategory entitled *strategically harmonising inventory fulfilment solutions* encompassed the following three codes: the ability to make *dynamic inventory positioning and picking decisions* (BI1), *create superior order orchestration systems* (BI2), and *create inventory accuracy and visibility* (BI3).

Figure 8.15 represents a snapshot (or subset) of the conceptual framework presented in Figure 8.3 and aims to plot Theme 8 and its subcategories and codes within the broader context of the conceptual framework.

**Figure 8.15: Conceptual framework - Theme 8**




**Source: Researcher's own compilation**

### *8.4.8.1 Strategically harmonising inventory fulfilment solutions*

The Oxford English dictionary (2022j) defines harmonising as "*to bring into agreement (two or more things, or one thing with another) or to reconcile*". From an omnichannel SCI perspective, strategically harmonising inventory relates to a retailer's ability to reconcile and integrate disparate inventory pools and picking locations. This can be difficult for retailers, who often start their omnichannel journeys with separate inventory pools for physical/digital channels managed across different organisational functions (Hübner *et al.,* 2016:278). Other authors have strongly emphasised the significance of inventory management in omnichannel retailing (Gabor *et al.*, 2021:58; Li, 2021:2). These authors stated that a retailer's ability to harmonise their inventory is significant since it has wide-reaching cost and design implications for a supply chain. From a customer's perspective, it determines the product catalogue, the level of stock availability, and the lead time between placing an order and order delivery (Wei & Li, 2020a:2). From a retailer's perspective, the way retailers integrate inventory shapes fulfilment costs and influences the ability to expand and meet customer demands (Wang *et al.,* 2021:162).

As part of Theme 2, R3 (hierarchise inventory-pooling decisions) was discussed within the subcategory 'investment ability'. The current subcategory builds on this discussion by moving beyond the investment considerations for inventory to consider how retailers design inventory positioning and picking decisions. While separate inventory pools aid the management of complex fulfilment operations, the separation reduces supply chain synergy and results in cost pressures from maintaining two separate inventory pools and distribution networks (Ishfaq *et al.,* 2016:553). Adivar *et al.* (2019:263) advised that omnichannel retail supply chains should be designed to have one integrated inventory pool across all channels to ensure customers receive the best omnichannel experience and retailers design the most cost-efficient back-end fulfilment processes.

Chapter 6, Section 6.2.1, discussed the decisions retailers need to consider when designing back-end fulfilment operations, i.e., picking location, automation, and inventory integration. Upon conclusion of the literature discussion, DC16 (inventory harmonising capability) was included in the coding frame and was defined as follows:

**Inventory harmonising capability (DC16):** The ability of a retailer to create innovative and modern inventory management processes (such as integrating inventory across different warehouses and distribution centres) to allow the retailer to react to market shifts agilely.

As part of the document analysis, DC16 (and its related constructs) was examined to determine how retailers reported on inventory management practices, particularly as they became more focused on omnichannel retailing.

Table 8.18 represents the words related to DC16 which comprised the coding frame.

**Table 8.18: Frequency count of document analysis: Word(s) related to DC16**

| Each word's raking as part of the complete document analysis | Words related to DC16 | 2016 | 2017 | 2018 | 2019 | 2020 | Total | % of the occurrence of each word within DC16 | % within the total document analysis |
|---|---|---|---|---|---|---|---|---|---|
| 33 | inventory | 126 | 111 | 191 | 210 | 196 | 834 | 60% | 1.0% |
| 59 | warehouse | 60 | 23 | 64 | 44 | 46 | 237 | 17% | 0.3% |
| 63 | fulfilment | 28 | 32 | 24 | 30 | 31 | 145 | 10% | 0.2% |
| 68 | centralised | 12 | 28 | 12 | 29 | 22 | 103 | 7% | 0.1% |
| 74 | picking | 11 | 20 | 5 | 18 | 14 | 68 | 5% | 0.1% |
| Ranking based on 1-87 | **Total** (words related to DC16) | | | | | | **1 387** | **100%** | **1.6%** |
| | **Total** (all words included in the document analysis) | | | | | | **86 164** | | |

**Source: Researcher's own compilation**

Table 8.18 illustrates that, of the words related to DC16 included in the document analysis, the words 'inventory', 'warehouse', and 'fulfilment' accounted for 87% of the total words included in the content analysis of the retailers' IARs. Overall, words related to DC16 accounted for only 1.6% of the total document analysis. A possible reason for this could be the technical nature of inventory harmonising. While it might be an operational imperative, it is not necessarily an investor imperative (in line with the purpose of a retailer's IAR). Accordingly, retailers only provide brief overviews of inventory management strategies compared to other strategic aspects such as managing personnel. What is evident from the analysis of the IARs is that, when retailers reported on inventory management, it was often within the context of omnichannel operations:

> *"…the DC has been operational for the 2018 year with all divisions' inventory moving through the facility. The DC is able to handle current production as well as to create a lean and agile omni-channel supply chain to support the group's growth plans. We manage our distribution facilities[65] and provide a visible and ideal flow of merchandise through integration with store operations and outbound transportation to ensure optimal efficiency and experience for store associates and both store and e-commerce customers."* (Retailer D, IAR 2018).

> *"We will continue to improve planning and stock management principles and leverage our purpose-built Omni-channel Fulfilment Centre, optimising our fulfilment processes and minimising costs. We will also drive online sales on the [Brand 1] platform by optimising our fulfilment solution and increasing the range available to our customers via this channel."* (Retailer A, IAR 2019).

[65] Distribution facilities were included as a synonym to warehouse as explained in Chapter 7, Section 7.4.2.1.

As briefly mentioned above, Chapter 6, Section 6.2.1, addressed back-end fulfilment on the back of the strategic planning framework for last-mile order fulfilment and delivery proposed by Hübner *et al.* (2016:234). The findings of this study aligned with the reviewed literature in as far as the participants also highlighted the importance of picking locations and inventory integration in back-end operations of omnichannel retailers. In fact, when reverting to the code frequency table (Table 8.1), it is noticeable that the current subcategory was the most cited (96 times) among the participants. Since the study of Hübner *et al.* (2016) was only conducted amongst grocery retailers, the findings of this study added to Hübner *et al.'s* (2016) framework by revealing the additional layer of complexity multiple-product category retailers (for example fashion and groceries) face when designing back-end fulfilment strategies. Heterogeneous product categories mean retailers not only have to make back-end design decisions based on a specific range of products (for example, clothing items) but have to consider the best mix of back-end fulfilment options across multiple product categories and for multiple channels. Participant 12 verbalised this complexity:

> *"… if I look within our businesses, because we've got so many different supply chains, there is no one right answer ever because a six-metre ladder is completely different to a lettuce."* (Participant 12, Chief Operations Officer).

Upon conclusion of the analysis of the interview data, three codes were grouped under the subcategory *strategically harmonising inventory fulfilment solutions*: a retailer's ability to make *dynamic inventory positioning and picking decisions* (BI1), create a *superior order orchestration system* (BI2), and *create inventory accuracy and visibility* (BI3). These codes are discussed in the following sections.

### *a) Make dynamic inventory positioning and picking decisions (BI1)*

The transition to omnichannel retailing means more complex inventory positioning and demand fulfilment issues for retailers (Tan & Gligor, 2019:89). Retailers are challenged by the demand from multiple channels and by customers who can dictate when and where products should be delivered (Pereira & Frazzon, 2021:2). To successfully cope with these challenges, retailers need to manage inventories to meet customers'

expectations while also reducing cost (Hübner *et al.,* 2016:571). This requires strategic planning regarding where inventory is stored and how orders are fulfilled.

Different picking locations were discussed at length as part of the literature review (Chapter 6, Section 6.2.1.1). Table 6.1 in Chapter 6 also summarised the different picking location options in omnichannel retailing whilst outlining each option's key considerations, advantages, and challenges. The findings of this study confirmed the reviewed literature in that all retailers, to some extent, employ the list of inventory positioning and picking decisions outlined in Table 6.1 (in store, decentralised warehouse, and centralised warehouse). Some participants also indicated that they had integrated inventory positioning and picking to use a hybrid model. Hybrid models were discussed in Chapter 6, Section 6.3.3. Although the different inventory positioning and picking decisions are addressed in the below section, to avoid repetition detailed discussions on the picking locations will not be presented again. Instead, the researcher focused on presenting findings from the interview data lacking during the literature review.

One such finding was the complexity of designing strategies across multiple contrasting product ranges and channels. Some participants recounted some struggles with fulfilling customer orders that contained products from separated inventory pools or using one inventory picking location across multiple channels. These participants stated that, although they aimed to provide customers with an integrated shopping experience, the nature of their large product ranges could sometimes serve as a barrier:

> *"… it can be quite tricky putting an online fulfilment model on top of that [in-store picking] because then you have to forecast for the online sales, you have to ensure you balance off having the product available but not taking waste… We've for a long time held onto picking out of stores, servicing the local customer in their local store… we've struggled to keep up with demand…"* (Participant 1, Head of Logistics and Supply Chain).

> *"… let me use a home gym example. So, we sell a lot of home gyms … but you [only] need one in the store for the customer to see it… they're typically gonna want it delivered. So, we would rather keep that upstream in the supply chain because they're difficult and they're heavy and they're expensive to move. So, I don't wanna move it multiple times… But if you now say you wanna buy a home gym and then a sports drink to go with… now I've got the sports drink in the store and I've got the home gym in the DC, how do I bring these two*

*together so that you get one delivery? So, it's high-frequency, low-frequency products, low-margin, high-margin products, and how do you bring it together that the customer gets the right experience but it doesn't cost us too much?"* (Participant 12, Chief Operations Officer).

Participant 12's quotation led to another notable finding: retailers are faced with two trade-off decisions when making dynamic inventory positioning and picking decisions, that is whether to prioritise cost or agility. The cost versus agility consideration is often cited in SCM literature as the cornerstone of supply chain design decisions (Kong *et al.,* 2018:1680; Belvedere, Martinelli & Tunisini, 2021:336). Other authors also stressed the importance of finding the right balance between cost and agility in omnichannel retailing (Weber & Badenhorst-Weiss, 2018:7; Eriksson *et al.,* 2019:1242; Wei & Li, 2020b:19). During the interviews, the participants revealed that cost considerations in inventory positioning and picking included the costs associated with inflated inventory holding, the acquisition of superior order orchestration systems, designing and implementing different processes for in-store versus warehouse fulfilment, and determining at what scale to develop each picking process to meet the organisation's current and future needs without overinvesting. The following quotations best support these findings:

*"You might see some inflated stockholding in certain areas just to make sure you can service the customer and you don't run out on stock, so that's another kind of a big cost factor."* (Participant 17, Head of Supply Chain Optimisation).

*"… one of the things that we've discovered with our clothing and home fulfilment centre which is based in Johannesburg, we've put six hundred thousand units of product into that warehouse and we still have out-of-stock problems, and the reason why we do have out-of-stock problems is because within that six hundred thousand products there are still things that we sell that are not in there. But you can't continue to grow that six hundred thousand to seven hundred thousand and eight hundred thousand, it's just not feasible, it costs too much. So, in your supply chain design, how do you virtualise the stock that you own? How do you find a way of bringing together all of the stock that you own in your channel wherever it is? So, how do we balance the central warehouses with what's in our stores, for example, or even in our suppliers' warehouses. How do we virtualise everything that we can put our hand on and make that available to the customer as an umbrella, as a total basket of goods…"* (Participant 16, Head of Online Operations).

*"So, in terms of cost, I think online does cost you a lot. If you look at the platform, we run on a platform now called Magenta. We now moved over to Magenta 2, and that opens up a whole lot of facilities in terms of speeding up processes and reducing cost, but it's still very expensive. ATG, which is the platform that [Retailer E] uses… we were on that and*

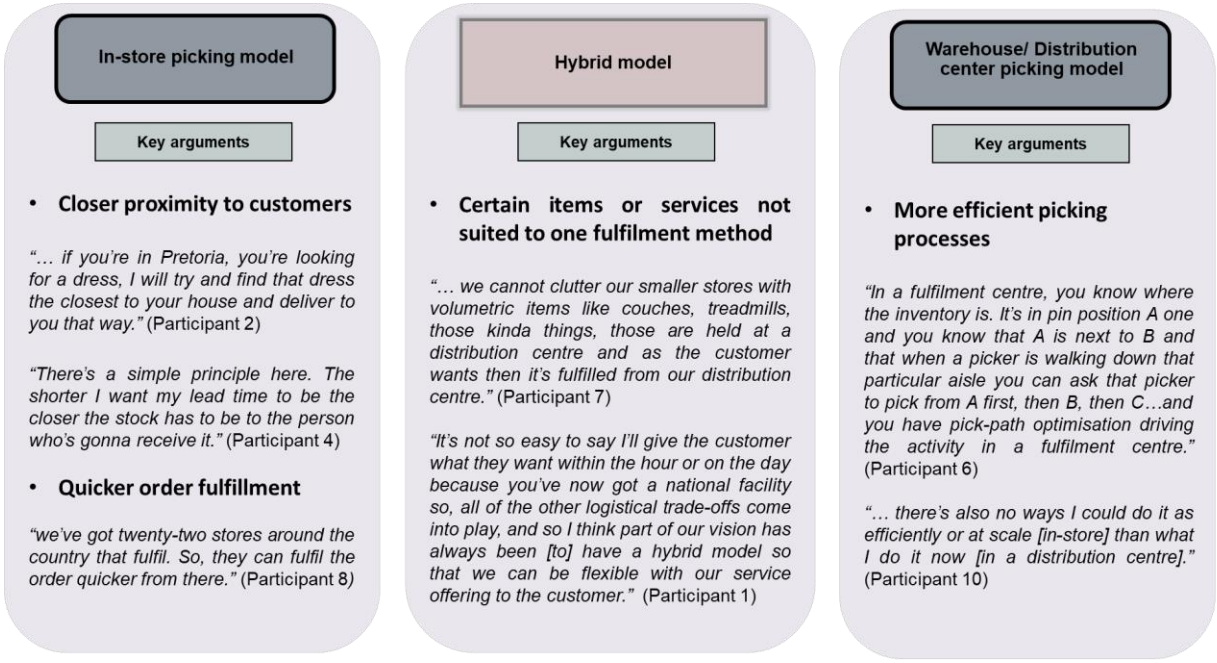
*that, if we had stayed on it, would have cost close to a hundred million rand a year just to run on the platform in licencing fees…"* (Participant 8, Head of Retail Innovations).

In omnichannel retailing, customers have come to expect same-day, or even within-an-hour, delivery services. The analysis of the interview data revealed different viewpoints among participants in terms of agility, inventory positioning, and picking decisions. These opposing views are centred on whether fulfilment from a distribution centre or in-store fulfilment is better in omnichannel retailing. Both sides of these opposing viewpoints were best articulated by Participant 10:

*"… I was chatting with a colleague or someone in the industry this morning saying isn't picking from store better 'cause it's closer to customer, and there's all those arguments, but there's also no ways I could do it as efficiently or at scale than what I do it now. So, there might be businesses that it's easier to pick from store, and there's the big retailers that do it, but if I am able to scale up at peak or in a quiet day the way that I have, there is very little benefit to want to pick that out of a store, especially if half my volume is staying in Jo'burg anyway, why would I want to over-index the requirement or the resources in a Sandton store or a Mall of Africa store to do that? The supermarkets do it really well, I think they're doing an amazing job at the moment enabling that from a store, but they'll have their constraints as to why they can't do it from their DCs, like packs or bundles, they don't want individual pickers walking around the warehouse, whereas I've got individual pickers walking around the warehouse there anyway now, so all it is, is a scale of that resource."* (Participant 10, Head of Africa Supply Chain).

Figure 8.16 juxtaposes the participants' views on in-store versus warehouse fulfilment. Figure 8.16 includes key quotations from participants to support the respective arguments and includes hybrid models as a medial option for retailers with a vast product offering not suited for fulfilment from solely a store-picking model or a warehouse-picking model.

**Figure 8.16: Participants' opposing views on inventory picking and positioning**




**Source: Researcher's own compilation**

Figure 8.16 shows that the participants had valid arguments for why both store and warehouse fulfilment was a better option for them. In contrast, other participants (P7 and P1) made arguments for using a hybrid model. Derived from these arguments was that retailers need to have the capability to discern between inventory fulfilment options to determine what will yield the best outcomes in terms of cost-efficiency for retailers and agility for customers. While these decisions may vary based on each retailer's unique product assortment, retailers with superior and innovative inventory positioning and picking abilities (be it a wide store footprint or a large, centralised warehouse) will have a competitive advantage over other omnichannel retailers who do not have these resources.

Closely aligned to inventory positioning and picking decisions is the retailer's order orchestration system, which forms the backbone of back-end fulfilment.

### *b) Create a superior order orchestration system (BI2)*

In omnichannel retailing, order fulfilment is not the simple, highly repetitive process of the past (Van der Meer *et al.,* 2018:10). A customer may begin an order via a digital channel but may have some questions and decide to complete the order through a

call centre. Then, while the order is being fulfilled, the customer expects to receive updates on the order, even if it comes from a third-party distributor (Xu & Jackson, 2019:437). Customers also expect to return products through any channel of their choosing (Bernon *et al.,* 2016:585). This creates a complex network of interrelated systems and processes that all need to work together to complete a single customer's order. Other authors showed that retailers who efficiently execute order orchestration will substantially improve customer relationships and differentiate their value proposition (Ma, 2017:1100). During the interviews, Participant 6 provided a detailed description of the importance of order orchestration:

> *"… you need a [sic] order orchestration or order sourcing system which does multiple things. It does the enterprise inventory rules, so it's the place where you govern what you're going to promise to the customer and the logic that you wanna apply in passing an order to a fulfilment location. And it's also your end-to-end status visibility and control tower. So, anywhere in a process through an order lifecycle, you wanna be able to know where it [the order] is, what's happening, is it on time? Is it falling behind? Are we gonna hit the customer promise? … not all customer journeys are born equal. So, the grocery proposition for instance is a local proposition. So, the way you manage your enterprise inventory in order orchestration is you say where are you? Tell me that first and then I'll tell you what you can shop, or whether you can shop at all. So, the enterprise inventory and order orchestration kinda sit hand in glove in managing that proposition. And if you're hunting for groceries, I need to know where you are and based on that I'm gonna tether you to a store and that's where I'm gonna pick and pack from and that's the assortment that you can shop. If you're buying a laptop, I actually don't really care where you are, I'm going to search for that inventory all over the country to try and secure it for you, and order orchestration is really the sourcing logic that says the customer wants this laptop, where's the best place for me to source this laptop from? And you'll say show me the closest store to the customer that has inventory, and you try and reconcile it that way and if you fail at that particular store you move to the next store, to the next store, to the next store, until you get to the closest proximity to the customer with inventory to supply."* (Participant 6, VP of Supply Chain & eCommerce Operations).

From Participant 6's account of order orchestration in omnichannel retailing, can be concluded that the orchestration process provides the sequence of fulfilment steps that allows a retailer to fulfil a customer's order. Order orchestration was highlighted by some participants as one of the essential capabilities that facilitate omnichannel retail. Participant 6 even stated that *"the people that win the enterprise inventory game are the people that will win the omnichannel retailing game."*

The participants stressed the challenge to reconcile a perfect online order with an imperfect inventory position. Within this code, participants conveyed that an essential part of the back-end order fulfilment process is determining where inventory is stored and picked (in store or warehouses) and what inventory is made available on what channels. After that, retailers need to determine the actual units 'available to promise'. The quotations below outline some of the challenges of order orchestration highlighted by participants. One of the most significant findings this code revealed was that retailers' order orchestration processes should be able to adjust to changes in demand and supply dynamically:

> *"I think what's the most important thing, or the hardest thing is reconciling a perfect online promise with an imperfect inventory position. So, where it starts is really your ability to manage your enterprise inventory more effectively. And that is the culmination of a lot of things. It starts with being accurate about what the inventory is inside your stores, it talks about intraday updates to that inventory file so that you have the latest version of the truth… and it talks to understanding the complexities of managing inventory in a store environment… I dream of fulfilment centre inventory positions because it's perfect. You know you've got five units, you can only offer five units, and you can deliver five units. In a store, you've got those five units, one of them might be a display item, two of them might be in somebody's trolley, one of them might have gone through point of sale in the last five minutes, and you need to kinda reconcile in your digital proposition to your customer what you can and can't offer with confidence. So, really, it's kind of taking your enterprise inventory, which is saying this store in particular is saying I've got a hundred units but actually I know that I've got a display item, I've got this, I've got that, I've got some risk in the fact that some items might be in customer's trolley, so how do I conservatise the actual inventory position that I'm seeing so that the website promises what I'm confident in executing? And, so, enterprise inventory is really the first foundational point."* (Participant 6, VP of Supply Chain & eCommerce Operations).

> *"So, the concept of available-to-promise rather than the availability, so I think that's a big capability for us [and] network planning, so where do you keep the stock? Why do you keep it there and how do you optimise the flow? Aggregated demand planning is becoming important for us 'cause it's not that obvious anymore what the peaks and valleys are. So, yes, Mother's Day you've got a peak and Christmas you've got a peak and Sunday when the weather's good you've got a braai peak, but the demand planning, and particularly aggregated demand planning across the channel. And related to that is geography because depending where you sell the product and if you've made it available online you've gotta service it. So, I think demand planning is an important capability."* (Participant 12, Chief Operations Officer).

> *"… I think what any retailer needs that wants to have let's say more than ten percent of their turnover online would be a [sic] order management system which kind of orchestrates kind of the demand and understand where the closest point of supply is."* (Participant 11, Director of Retail Operations).

The participants agreed that information systems are a vital part of order orchestration. Although order orchestration encompasses many back-end fulfilment processes, at the heart of these processes are what a retailer's system allows them to do. From an internal supply chain perspective, an order orchestration system allows a retailer to virtually integrate inventory across channels to ensure a customer's order can be fulfilled. As part of the discussion on Theme 4, the many issues concerned with information systems and omnichannel SCI were addressed. Therefore, to avoid repetition, this section only considers information systems from the perspective of order orchestration. In particular, the participants highlighted the importance of systems in creating visibility, allowing retailers to determine more accurately what is 'available to promise'.

When asked what would be the one thing that would dramatically improve the omnichannel offering, the participants replied:

> *"So, right at the top of my shopping list would be order orchestration. So, this is where we are absolutely bleeding to death at the moment because we've got so many moving parts and almost no way of getting a holistic view of what's happening. So, what we're looking for is a layer that will sit above our kind of fulfilment layer, if you like, something that we could use to kind of get a helicopter view of all of the channels at the same time and have a layer that would allow us to drive things like a customer service desk, like push notification to customers, to inbound customer queries."* (Participant 16, Head of Online Operations).

> *"I think as a retailer you need your different systems to talk to each other, and you need really great visibility and transparency in terms of just kind of where your stock is, do you have stock available."* (Participant 17, Head of Supply Chain Optimisation).

> *"Our system, though, will automatically reserve ten percent of our stock for online when it comes into the system. Then there's also manual things. So, if we know that we are going to send out an electronic mailer, we would then go in and say we're going to reserve twenty percent of the stock to make sure if we send an e-mail to our customer that we know that we have sufficient stock."* (Participant 9, Brand Manager – Africa).

Based on the above discussion, it can be concluded that retailers strongly emphasise the importance of order orchestration in facilitating back-end omnichannel SCI. The participants' accounts revealed that retailers need to move inventory across channels, which requires high levels of channel integration and inventory visibility. These findings

lead well into the next code (BI3), which contains all participants' accounts of why inventory accuracy and visibility are essential in omnichannel retailing.

### *c) Create inventory accuracy and visibility (BI3)*

Having complete inventory visibility enables a retailer to quickly respond to unexpected events or changes in demand (Ishfaq *et al.,* 2021:11). It also provides retailers with the data and analytics they need to make better decisions, such as efficiently allocating inventory across the distribution network to reduce shipping costs and speed up transit times (Kembro *et al.,* 2018:901). Several authors earmarked inventory accuracy and visibility as criteria for creating seamless omnichannel customer experiences (Adivar *et al.,* 2019:258; Hajdas *et al.,* 2020a:6). These authors maintained that a retailer's ability to fulfil a customer's order reliably can distinguish between returning customers and lost customers. Accordingly, even the smallest increase in inventory accuracy leads to higher full-basket (or complete) order fulfilments, ultimately leading to better customer satisfaction (In *et al.,* 2019:507).

The findings of this study aligned with the literature as the participants also emphasised inventory accuracy as a major factor in omnichannel retailing. They described inventory accuracy as having a 'real-time' view of available inventory across all retailers' physical and digital channels. They explained that the system that tracks sales and inventory levels was usually updated once at the end of the day. Consequently, significant discrepancies between systems and reality could occur. They explained that the inventory management systems could indicate the availability of a certain product but it could be in the distribution centre, on the store floor, or already in another customer's shopping cart. They pointed out that it is exceedingly difficult to provide an accurate product catalogue to customers or schedule an approximate delivery date without the necessary inventory visibility. The subsequent discussion presents some participants' statements on why inventory visibility and accuracy are vital in an omnichannel supply chain.

First, the participants' testimonials revealed the importance of retailers' ability to create inventory accuracy and visibility to facilitate omnichannel retailing. They revealed that

retailers should strive to achieve clarity in the movement of stock to ensure that what retailers have promised to customers is available:

> *"I think stock's a big one [capability]. So, your ERP or your stock system, the visibility of that and the accuracy of that should be important. If you look generally, if you go at a [sic] SKU level, which is actually this shirt in pink, in a size small, that's SKU level for me, and I think stock accuracy of a lot of retailers is about sixty percent, so now you can imagine if you're trying to fulfil from store, fulfil form DC, or just purely fulfil online if that's incorrect it becomes quite challenging. So, I think that is super important, your stock accuracy and your systems around that."* (Participant 17, Head of Supply Chain Optimisation).

> *"And then in fashion I think visibility's quite important. So, fashion visibility, when you have a wide catalogue, is critically important, making sure you know exactly where the product is..."* (Participant 1, Head of Logistics and Supply Chain).

> *"to have that visibility that's so key to plan our supply chain and plan how that stock gets into store, how they're able to present it and ultimately sell it to our customers is really, really important to the success of our business…"* (Participant 10, Head of Africa Supply Chain).

Second, some participants reported that they equated inventory accuracy to inventory availability. They narrated the difficulties of designing back-end fulfilment networks that increase stock availability across the entire omnichannel supply chain. Participants also acknowledged that the ability of a retailer to fulfil a customer's order is central to the omnichannel experience. Therefore, creating stock accuracy was highlighted as a key capability for omnichannel retailers. In addition, Participant 10 stated that they used stock accuracy as a criterion to measure internal cross-functional collaboration efforts. This participants revealed that high levels of internal collaboration resulted in better stock planning and visibility:

> [When asked what measures they use to track their internal collaboration efforts] *"… the answer is always how successful we are at getting to the right stock."* (Participant 10, Head of Africa Supply Chain).

> *"I think if you want an omni-experience, you definitely need to have to have accuracy of data and accuracy of stock inventory anywhere in your channels because as the customers are purchasing, whether it's in store or online, the availability you show and promise is the availability you need to have…"* (Participant 5, Head of Transport and Engineering Logistics).

*"I think another thing to take into account is stock accuracy I think is quite a [sic] important thing, to be able to service a customer well."* (Participant 17, Head of Supply Chain Optimisation).

*"I think our online shop has evolved tremendously in terms of product availability. Because being a relatively new concept do we need to buy extra stock? Do we need to maybe take from the assortment that we currently have? So, we've found that we've been able to keep our stock buys relatively low in order to cater for both in-store and omnichannel traffic. So, successes have been able to plan that stock assortment effectively, to make sure that when the customer clicks yes, I want this item, for the most part, she is able to get it. So, I think our stock management has been quite successful…"* (Participant 7, Operations Business Development Manager).

Third, the participants' accounts also included suggestions on how retailers can build capabilities that increase visibility across the internal omnichannel supply chain. These capabilities included changing existing picking and packing locations to consider central fulfilment centres or decentralised warehouses. Additionally, participants stressed that retailers should invest in sophisticated systems with design features to create visibility. They further conveyed that, by using technologies such as RFID tags and automation, some manual processes can be automated to achieve higher levels of omnichannel supply chain visibility:

*"… I think visibility's quite important… You can get that in a couple of different ways. One is have a central fulfilment capability where you're receiving, detailed scanning, putting everything into a slot, so you've got high visibility of the product. If you're going to be picking from stores, the other away to do that is to have really great processes and systems in store and not a lot of safety stock in the back of the stores… And the other is to deploy technology, putting RFID into complex parts of your catalogue where you've got high SKU complexity. And I think we've got a case for that in some areas of our business. So, it's another technology that I would look into is deploying RFID, maybe not onto our entire clothing catalogue but certainly into parts of our clothing catalogue where KPIs are showing us that we've got poor stock accuracy, poor fulfilment in those areas, we could easily deploy RFID to improve that, and I think we should be flexible enough to start deploying RFID."* (Participant 1, Head of Logistics and Supply Chain).

*"Inventory accuracy and all the stocking points is very key. So, we have RFID tags on all our products, so that helps with the accuracy when you're fulfilling and you're promising a customer you have the product…"* (Participant 2, Head of Logistics and Facilities Management).

*"And also a strength is that we do have technology and we do have things like for accuracy of stock we have RFID in our stores. So, we're probably one of the first retailers in South Africa, if not Africa, that has rolled out to all our stores, and I think that's a major benefit to our business."* (Participant 5, Head of Transport and Engineering Logistics).

In conclusion, the ability of retailers to create accuracy and visibility in an omnichannel supply chain is vital. The participants that inventory accuracy requires high levels of cross-functional collaboration. They divulged several ways in which retailers can build capabilities that will increase visibility in omnichannel supply chains, such as the deployment of technologies (such as RFID tags) or changing existing picking and packing locations.

#### *8.4.8.2 Summary and conclusion: Strategically harmonising inventory fulfilment solutions*

In the preceding section, the ability of retailers to strategically harmonise inventory fulfilment solutions was discussed as a subcategory of Theme 8. Based on the findings presented above, the researcher developed the following definition to conclude and summarise strategically harmonising inventory fulfilment solutions:

*As part of omnichannel retailers' back-end fulfilment processes, retailers should be able to make innovative and modern inventory positioning and picking decisions that can meet the wide range of fulfilment options demanded by customers. In making these decisions, retailers should balance cost with agility. At the heart of inventory harmonising is a retailer's ability to implement a superior order orchestration system that creates inventory accuracy and visibility along the omnichannel supply chain*.

Based on the discussion and the definition presented above, this study concluded that the ability of retailers to strategically harmonise inventory fulfilment solutions should be classified as a dynamic capability. As stated above, inventory harmonising is key in offering customers a seamless shopping experience. From an SCI perspective, the way in which inventory is managed often serves as a signal for a retailer's level of SCI, the reason being that when inventory positioning and picking is integrated it requires (and facilitates) collaboration across the entire internal supply chain. This finding addresses a knowledge gap identified as part of the problem statement for this study by finding that strategically harmonising inventory fulfilment solutions is a dynamic capability that aids retailers to successfully transform from previous retailing types to an integrated omnichannel model. In addition, this finding partially addresses secondary research objective 3 (SRO3) by revealing that strategically harmonising

inventory fulfilment solutions can facilitate internal SCI by assisting retailers to make dynamic inventory positioning and picking decisions, create superior order orchestration systems, and create inventory accuracy and visibility.

### 8.4.9 Theme 9: Last-mile distribution

As indicated in Chapter 6, Section 6.2.2.1, last-mile distribution (also referred to as last-mile delivery) relates to the movement of goods from the storage facility to the final delivery destination (the end-customer) (Ni *et al.,* 2019:896). The reviewed literature observed that last-mile distribution is one of the supply chain functions that can easily cause customer dissatisfaction. It is also one of the functions that is the most complex and difficult to control within the omnichannel environment. In omnichannel retailing, last-mile delivery is often the only physical touchpoint that the retailer has with a customer and can significantly impact the customer's perception of the retailer and the omnichannel offering (Weber & Badenhorst-Weiss, 2018:6). While the brick-and-mortar store was traditionally the end-point of the transaction between a retailer and a customer, digital channels have placed logistics at the centre of the omnichannel process (Rai *et al.,* 2019b). Accordingly, omnichannel retailing requires integrated logistics processes across all channels to create a unified service experience (Cotarelo, Calderón & Fayos, 2021:1134).

Chapter 6, Section 6.2.2, summarised the literature on last-mile distribution and, in conclusion of this discussion, the following definition of last-mile distribution was included in the coding frame:

**Last-mile distribution:** The integration of the final leg of the omnichannel supply chain in which order delivery takes place. Last-mile distribution includes strategic considerations in terms of various delivery modes (home delivery and click-and-collect), delivery times (delivery velocity and time slot planning), delivery area (local, regional, and national), and returns (no returns but money-back, check and return at reception, CEP returns, and accept and refund in retail outlets).

Additionally, three dynamic capabilities were identified and included in the coding frame. These dynamic capabilities were defined as:

**Innovative last-mile distribution processes (DC17):** The ability of a retailer to introduce and integrate new infrastructure and transportation options into existing delivery modes and use innovative last-mile distribution processes such as technologies to track orders in real time.

**Offering flexible delivery times and options (DC18):** The ability of a retailer to offer speedy delivery (delivery velocity) and different time slots to create a seamless omnichannel experience for customers.

**Cross-channel returns management capability (DC19):** The ability of a retailer to integrate the returns management process to allow for returns processing regardless of the point of purchase.

The above listed dynamic capabilities were used to conduct the document analysis. During the analysis of retailers' IARs, these dynamic capabilities (DC17, DC18, and DC19) and related constructs were examined to determine how retailers report on last-mile distribution processes. As was the case with front-end integration, it should be noted that literature (and, consequently, the coding frame) addresses these issues fragmentally. Again, this might be since different authors investigated last-mile distribution from different perspectives. However, upon analysis of the interviewees' testimonials, it was determined that these three dynamic capabilities are interrelated and should be considered as a whole when retailers design last-mile distribution processes. Subsequently, when the coding frame was compared with the interview data, it became apparent that these three dynamic capabilities can be pooled and discussed as one capability: the retailer's ability to *curate unique and innovative last-mile distribution processes* (LD1). Accordingly, this study assumed that the dynamic capabilities developed from literature and forming part of the coding frame should be integrated into one dynamic capability (LD1). Consequently, the findings from the document analysis related to DC17, DC18, and DC19 are discussed together and are presented in Table 8.19.

**Table 8.19: Frequency count of document analysis: Word(s) related to DC17, DC18, and DC19**

| Each word's raking as part of the complete document analysis | Words included in the analysis | 2016 | 2017 | 2018 | 2019 | 2020 | Total | % of the occurrence of each word within each DC | %within the total document analysis |
|---|---|---|---|---|---|---|---|---|---|
| | | | | DC17 | | | | | |
| 15 | delivery | 193 | 253 | 469 | 479 | 361 | 1755 | 49% | 2.0% |
| 22 | click-and-collect | 7 | 48 | 363 | 374 | 330 | 1122 | 31% | 1.3% |
| 42 | home delivery | 96 | 122 | 133 | 139 | 198 | 688 | 19% | 0.8% |
| 85 | lockers | 5 | 1 | - | - | 2 | 8 | 0% | 0.0% |
| | | | | DC18 | | | | | |
| 73 | outsourced | 14 | 10 | 15 | 15 | 15 | 69 | 81% | 0.1% |
| 84 | same-day | - | - | 5 | 4 | 7 | 16 | 19% | 0.0% |
| | | | | DC19 | | | | | |
| 60 | returns | 30 | 33 | 50 | 64 | 52 | 229 | 100% | 0.3% |
| Ranking based on 1-87 | **Total** (words included in the analysis) | | | | | | 3 887 | 100% | 5% |
| | **Total** (all words included in the document analysis) | | | | | | 86 164 | | |

**Source: Researcher's own compilation**

Table 8.19 shows that words related to DC17, DC18, and DC19 were mentioned 3 887 times across all 40 IARs and accounted for 5% of the total words included in the content analysis. When considering DC17, it is noticeable that unique and innovative delivery options such as 'click-and-collect' and 'lockers' were reported on in the retailers' IARs. Specifically, 'click-and-collect' was mentioned 1 122 times across all 40 IARs. The word 'click-and-collect' was also the 22nd most used word across all retailers' IARs.

The analysis of the words included for DC18 and DC19 did not reveal any significant findings, apart from the low frequency of the use of these words across the retailers' IARs. Nevertheless, these findings allowed the researcher to revert to the retailers' IARs to scrutinise the findings against the backdrop of this study. The following quotations provide context to the words listed in Table 8.19.

> *"[Strategic objective for 2021] … focus on improving delivery options across same day and express 'click & collect'. The same-day delivery service trialled in 2019 was less successful than anticipated and management plans to test an alternative same-day service [in the next financial year]."* (Retailer X, IAR 2020).

> *"[Strategic objective for 2021] … integrating the offline space with digital channels, computer tablets are available in the showroom so that customers can complete their purchase and select the most convenient delivery option for them. Customers then can*

*choose to have their order delivered direct to their homes or use the click-and-collect option available at the showroom."* (Retailer XI, IAR 2020).

*"[Our strategic focus is]… operating omni-channel retail operations with a direct-to-home delivery network. Our customers expect a streamlined ordering process with real-time credit approval. They want delivery times to be shorter, drop-off and pick-up points to be more convenient and product returns processes to be simple and easy."* (Retailer X, IAR 2020).

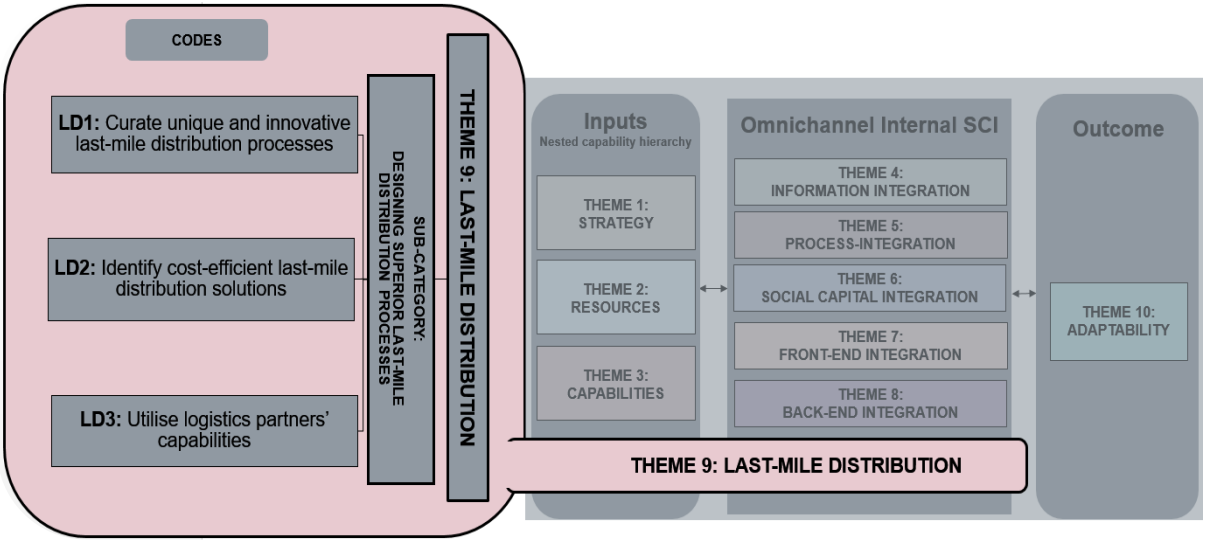
During the interviews, the participants' testimonials supported the literature findings by strongly emphasising the centrality of last-mile distribution in designing and offering customers a seamless and convenient omnichannel shopping experience. In particular, the participants expressed that, while front-end (customer-facing) operations are essential, competitors can easily copy elements of front-end operations, for example unique website design features. However, back-end and last-mile operations are not visible to competitors; therefore, it is within these areas that retailers can truly create a competitive advantage. The participants stressed that high levels of cross-functional SCI are required to reduce delays and identify cost-cutting and scaling opportunities across the last-mile of the omnichannel supply chain. The following quotation from Participant 14 serves as a prelude to the discussion of the interview findings based on last-mile distribution:

*"What they [competitors] don't see is the triangle in the background which talks to your system, logistics, and suppliers. Now, that's where you make the real money. Because if you're more efficient in the back-office triangle, which nobody sees, nobody can copy/paste, that's where value is at. Because the front section they can copy/paste, they can come and copy whatever product you've got in your stores from a range point of view, they can make the store look exactly the same as you or go an open it next to you, they can go and hire your staff, etcetera. So, front office there's a lot customer-facing that you can copy/paste. Back office is what I refer to as the black box, that's your intellectual property. Nobody knows the algorithms that you run to do replenishment or logistics for instance, nobody knows what you do to try and improve your in-stock, nobody knows what you negotiate with your suppliers, whether it's integrated supply or external supply or imported supply, it doesn't matter. So, the real intellectual property sits there. So, I'm saying first you need to understand the retail model and then you need to adjust as circumstances change. So, if suddenly there's a pandemic and your supply chain is affected, what do you do different? Because front end is front end. You then need to figure out something in the back end, find new suppliers… So, how quickly you then adjust, being agile to respond, all of those things is [sic] absolutely critical."* (Participant 14, CEO).

Upon conclusion of the analysis of the interview data, one subcategory housing three codes was grouped under Theme 9. The subcategory entitled *designing superior last-mile distribution processes* encompassed the following three codes: a retailer's ability to *curate unique and innovative last-mile distribution processes* (LD1), *identify cost-efficient last-mile distribution solutions* (LD2), and *utilise logistics partners' capabilities* (LD3).

Figure 8.17 represents a snapshot (or subset) of the conceptual framework presented in Figure 8.3 and aims to plot Theme 9 and its subcategories and codes within the broader context of the conceptual framework.

**Figure 8.17: Conceptual framework - Theme 9**




**Source: Researcher's own compilation**

### *8.4.9.1 Designing superior last-mile distribution processes*

As already established, omnichannel retailing offers customers a wide choice of channels (physical and digital) as well as various distribution channels such as home delivery services and pick-up points. Accordingly, success in omnichannel retailing does not only depend on whether the customer accepts the service but also on whether retailers have an appropriate, scalable, and cost-efficient fulfilment and delivery model (Hübner *et al.,* 2016:242).

Cotarelo *et al.* (2021:1135) stated that omnichannel retailing creates growing last-mile issues for retailers who need to determine how to get products to customers' doors more cost-effectively without compromising customer service. Chapter 6, Section 6.2.2, presented a review of the literature on last-mile distribution. Several key design parameters for last-mile distribution were highlighted, namely reliability and flexibility (Rai *et al.,* 2019a:273), speed (Murfield *et al.,* 2017:285), service quality, cost of the service, and scalability opportunities (Rai *et al.,* 2019b:315). As part of the literature review, an in-depth discussion of last-mile distribution was presented on the back of the strategic planning framework for last-mile order fulfilment and delivery proposed by Hübner *et al.* (2016:234). Four factors concerned with last-mile distribution were discussed, namely delivery mode, delivery time, delivery area, and returns. The reviewed literature provided a thorough description of different last-mile delivery options in omnichannel retailing. Therefore, the following discussion does not aim to provide evidence of these last-mile delivery options again but instead aims to cast light on capabilities that omnichannel retailers should have (or should build) to curate unique and innovative last-mile distribution processes. This subcategory builds on the literature discussion by calling attention to critical elements in last-mile distribution design expressed by participants during the interviews.

### *a) Curate unique and innovative last-mile distribution processes (LD1)*

The adoption of omnichannel retailing requires retailers to create new models for logistics management, last-mile fulfilment, and distribution to the final consumer (Mahadevan *et al.*, 2021:5). Therefore, retailers must have the ability to curate unique and innovative last-mile distribution processes continuously. They should also be able to adapt these processes as new fulfilment and delivery options become available.

During the interviews, the participants listed several ways to improve and reconfigure last-mile distribution operations. As explained in earlier codes above, the research did not attempt to re-examine issues that other authors have exhaustively investigated, such as different last-mile distribution methods. Instead, when reporting on this code, the discussion centres on last-mile distribution aspects that aligned with the purpose of this study. After concluding the interview data analysis, three aspects that impact retailers' ability to curate unique and innovative last-mile distribution processes were

included in this code. First, the participants explained that retailers should create visibility for customers during the last-mile distribution process. Second, retailers need to understand the importance of last-mile fulfilment when curating the omnichannel experience. Third, retailers need to consider the role of returns as the final part of the circular process loop of omnichannel retailing. These three aspects are discussed individually below.

First, the participants supported the findings of Lim and Srai (2018:321) and Saghiri (2021:1660) by strongly emphasising the importance of creating visibility for customers during the last-mile fulfilment process. Visibility, in this instance, refers to the ability of customers to track the order from placement to delivery. Creating visibility requires high levels of systems integration and timely and accurate data (Adivar *et al.,* 2019:258; Saghiri, 2021:1662). Some of the participants of the study praised their competitors' ability to create superior visibility and transparency for the customer by deploying sophisticated technologies such as live tracking of orders which allow customers to track, in real time, the order as it goes through the picking and delivery process. These participants conveyed that, while such additional services cultivate customer confidence, they are luxuries when designing an omnichannel process and will only be considered for implementation once retailers have managed to get the basic last-mile distribution processes right, such as accurately meeting delivery SLAs. What is evident from the participants' testimonials is that creating visibility for customers during the last-mile fulfilment process can lead to a significant competitive advantage:

> *"You might have seen the [competitor's] app, when you buy online from [competitor] and you can see where your product is and it's coming to your house and you can see when it's gonna get picked. That all builds customer confidence. So, those sort of technologies are nice-to-haves but we've gotta get the basics right. We've gotta fulfil a promise, or give a promise that's acceptable to a customer in terms of lead time and then stick to it very effectively, and that's not an easy thing just to do yet."* (Participant 2, Head of Logistics and Facilities Management).

> *"[When asked what the most important capability for omnichannel retailers are]… it would have to be the actual delivery of the product, making sure that there's visibility for the customer as well in terms of being able to track that order. So, it's not just a matter of we're gonna deliver it in three days. Having the customer being able to track it and see I placed the order on Monday, this is where it is. So, that constant communication I think with the customer I think is very key."* (Participant 7, Operations Business Development Manager).

*"I think to service your customer quickly and efficiently, you need visibility just on kind of, for example, where is that transaction sitting for that customer? If they bought something in store, you should be able to easily see kind of where's that transaction? Is it being picked at the DC, is it en route via the service provider, is it at their hub, is it from the hub on their way to the store? So, I think just that visibility and transparency just across all of it is quite important if you wanna fulfil omnichannel."* (Participant 17, Head of Supply Chain Optimisation).

Second, the participants revealed that retailers need to understand the importance of last-mile fulfilment when curating the omnichannel experience. They stated that retailers need to curate a last-mile experience for online customers that mirror the instant gratification customers receive when shopping via a physical channel. Based on the participants' testimonials, this can be achieved in three ways: 1) retailers can offer customers a range of different last-mile delivery options (in terms of lead times and delivery locations); 2) retailers need to develop fast last-mile distribution processes as long waiting periods can deter customers from shopping online; and 3) retailers must keep customers informed on the status of their orders throughout the fulfilment and delivery process. To achieve the latter, retailers need to have excellent information and data management systems (as already discussed in Theme 4, Code II1), the reason being that data from different sources, sometimes even originating from third-party logistics providers, need to be integrated within a retailer's internal systems to relay the information on the status of a customer's order. The following quotations support these arguments:

*"… it's a big goal for us, it's that same-day delivery. So, we can deliver within two to three days, but how do you now capitalise on that customer that's doing the research and saying if you order before ten o'clock today you will get your order today. So, I think really trying to do that instant gratification around order now, get now. That's just for me as a consumer myself, as an online consumer. I still feel sometimes like I have to wait too long and it deters me… I think where a lot of retailers have either not successfully transitioned or delivered has a lot to do with that speed to delivery, so how quickly a customer is getting it. I think that's really, really important. When you're shopping in a mall there's that instant gratification…"* (Participant 9, Brand Manager – Africa).

*"Around the planet, omnichannel or online shopping has become more the norm than the exception. So… you can have a great online experience in terms of ease of shop but if you have to wait seven days outside of your delivery SLA [service level agreement], it becomes an irritation. So, the struggles has been delivering on the SLA in terms of product delivery. So, logistics has been a bit of an issue for us."* (Participant 7, Operations Business Development Manager).

Third, retailers need to consider the role of returns as the final part of the circular loop of omnichannel retailing. Based on the participants' testimonials, it can be determined that, while retailers focus on the integration of physical and digital channels to increase customer convenience, after-sales services such as the management of returns lack the same level of integration imperative. The participants narrated that returning products bought via a digital channel may be inconvenient as some retailers require customers to return products in store. The following quotations serve to illustrate this point:

> *"Returns are a little complicated. From a retailer's perspective it's not but from a customer perspective it is. Smaller or non-volumetric items [bought online] have to be returned at any store [while] volumetric items will require an online initiation of that return. So, a customer will go online and say I wish to initiate a return, put in the order number, say which item from that order they wish to return, and that will trigger a collection from our courier."* (Participant 7, Operations Business Development Manager).

> *"So, what's gonna happen on the app is if you buy [a product] … once you get it, you've got your docket, you say why you want to return it, you walk into the store, scan the code, and then the refund takes place for you. If it's your credit card it will automatically take place… remember, you [the customer] wanna do a return, I've gotta pick it up which I've gotta pay for it, and I've gotta process it which costs us a lot at the end of the day for that product…. So, unfortunately for now you've gotta go to a store to get your refund."* (Participant 8, Head of Retail Innovations).

Some participants did acknowledge the importance of having a seamless return process for digital channels. This argument catered around customers' reluctance to purchase items via digital channels as these channels lack the tactile shopping experience most customers are accustomed to. Therefore, offering customers a flexible return policy can reduce the risk of online shopping in customers' minds:

> *"So, our returns process has been made really seamless to the customer. So, free of charge you can pop anything back into a box, call our customer service team who will arrange a collection and process that refund almost immediately. But we realise that without having that satisfaction or customer knowledge that you can return something because you haven't touched or felt it yourself, and it's really important for the online offering."* (Participant 10, Head of Africa Supply Chain).

Based on the above discussion of a retailer's ability to curate unique and innovative last-mile distribution processes (LD1), it was established that retailers need to create visibility for customers during the last-mile fulfilment process as it builds customer

confidence. Retailers who can imitate the instant gratification of physical shopping on digital channels will create a better omnichannel experience for customers. However, this requires high levels of SCI and information sharing across different functions involved in the last-mile distribution process. It was also illustrated that return policies are particularly important for online shopping, which lacks the tactile element of physical shopping.

While there are many new fulfilment methods available, their implementation can be expensive. Therefore, participants emphasised the importance of finding cost-effective last-mile delivery solutions.

### *b) Identify cost-efficient last-mile distribution solutions (LD2)*

While last-mile distribution has been cited as vital to successful omnichannel operations, it has also been cited as the most expensive step in the entire omnichannel supply chain (Yee, 2015). In retailers' efforts to increase sales and gain market share, they have started to offer customers ever-responsive (and costly) last-mile delivery services. Yet, retailers often fail to cover the costs of these operations, which can have severe consequences for financial viability (Allen *et al.,* 2018:332). Designing cost-efficient last-mile distribution services often serve as a significant hurdle in the retailer's process of morphing from previous types of retailing to omnichannel retailing. Accordingly, those omnichannel retailers with superior capabilities to identify and mitigate cost-drains in the last-mile will have a competitive advantage and are able to adapt and implement new last-mile delivery services more quickly.

During the interviews, participants implied that identifying cost-efficient last-mile distribution solutions was difficult. They explained that omnichannel retailers do not fully comprehend the cost origins of last-mile distribution, which results in them creating an expensive last-mile distribution service. However, they offered some insights into the cost-reducing strategies employed. First, they agreed that the cost drivers of physical and digital channels vary and that they were still grappling to balance the mix of these costs to design an efficient but affordable last-mile distribution service. The following quotations best support this finding:

*"The big problem is it's not cheap to be online. People think it's easy, so as a business they think we have to be online, but they don't think of the cost and the margin impact that online does bring because customers want things for free and they want to return for free. So, a lot of free stuff…and now free seems easy to do but someone and somewhere you need to pick up the cost 'cause there is an actual cost for free… I think there's a financial element that people don't understand that we are also starting to look at…. How profitable is the business? What is the cost? What causes the cost to move around compared to bricks-and-mortar versus online? 'Cause those two models are very different, and people expect it to be the same and they're definitely not. They've got different cost drivers and they've got different cause and effect…."* (Participant 5, Head of Transport and Engineering Logistics).

*"With omnichannel, the worldwide average of that logistics cost is around fifteen [percent], depending on what you're selling. If you're selling low-value items like Division 4 or Division 5, or our competitor's [Retailer D] or [competitor], it's higher than fifteen percent. So, now your margins are under pressure. So, cost efficiency and delivering to customers in an efficient way [is difficult]…and, by the way, we offer you the free delivery if you order more than five hundred bucks, so we're absorbing all that cost … So, how do we as a retailer who make big profit and have high margins, how do we absorb this lower margin type of business?"* (Participant 2, Head of Logistics and Facilities Management).

The participants' accounts of last-mile distribution showed how expensive digital channel fulfilment is compared to fulfilment for in-store customers, the reason being that digital channel fulfilment is concerned with small parcel deliveries, meaning retailers lose the advantage of economies of scale as, often, they cannot plan ahead of time and need to release shipments that do not fully occupy the capacity of the delivery vehicle. Hence, the findings of this study confirmed the findings of Hübner *et al.* (2016:235), Wollenburg *et al.* (2018:433), and Pereira and Frazzon (2021:11) who debated, from different viewpoints within omnichannel retailing, that retailers who can find innovative ways to mitigate the cost of last-mile distribution in omnichannel retailing will have the best chance of survival in the omnichannel landscape. The following quotations supported this argument:

*"So, if you go online, you generally have the same GP [gross profit] even though in IFRS 16 [International Financial Reporting Standards] you now need to express your delivery cost as part of your gross costs. So, your GP is diluted by the amount that you spend on delivering that product to the customer, and that's quite a big cost, as you can imagine. So, you're already running on a lower GP."* (Participant 11, Director of Retail Operations).

*"Your biggest cost driver is your delivery cost 'cause everything's couriered. And because it's small parcels you're not really gonna get away from that. So, that's a massive chunk of your cost."* (Participant 4, Head of Logistics).

*"So, I think that last-mile, obviously everyone's last-mile is the most important, but it's gonna be more important in South Africa because you're gonna have to do it cost-effectively and you're gonna have to do it securely, and you're gonna have to do it a lot better than the first-world just because the customer is going to not have the money to pay for you almost doing it sloppily…"* (Participant 15, GM: Retail and Supply Chain Operations).

In the above section, the participants' descriptions of the high costs associated with last-mile distribution were presented. However, they revealed some guidelines or mechanisms to reduce last-mile costs. Table 8.20 summarises these mechanisms.

**Table 8.20: Participants' statements on possible last-mile cost-saving solutions**

| POSSIBLE LAST-MILE COST-SAVING SOLUTIONS | SUPPORTIVE QUOTATIONS FROM THE STUDY PARTICIPANTS |
|---|---|
| **Driving bigger per-customer-basket spends** | *"… how do you drive your basket to be as big as possible? Because your delivery cost is a fixed fee and the bigger your basket the lower that fee is as a percentage of sales. So, those are the drivers… it is driving up the basket size as high as you can…"* (Participant 11, Director of Retail Operations) |
| **Building a wide network of distribution partners** | *"they [distribution centre] have a [sic] optimisation tool which once it's been packaged [online order] it will then go on a conveyer through a volumiser and the system that they have will look at the postal code and the volumetric weight and select the cheapest option from the five couriers in their system… So, the fact that we've got relations with a couple of big, well-known couriers is also a strength."* (Participant 3, Head of Logistics and E-fulfilment). |
| **Using existing infrastructure and resources to cut costs** | *"So, what we've tried to do with the whole e-comm model is try and utilise infrastructure we already have to keep costs to a minimum…. So, what we do is we actually load e-comm in a separate eight-tonne truck, we send one to two a day to our fulfilment centre…. So, it works out to about six hundred and eighty thousand rand a year saving on logistics costs. But it's more than just the saving. If we can get it quicker there we can get it on site quicker, so that is the real win-win for us."* (Participant 3, Head of Logistics and E-fulfilment). |
| **Developing a sound understanding of where costs are located in the last-mile** | *"last-mile comes at quite a significant extra cost… However, I think as we get more sophisticated on it, we can mitigate some of those costs by understanding the velocity of the product, so how frequently is it sold and how quickly does it move through the supply chain? And [then] moving some of the process further up the supply chain."* (Participant 12, Chief Operations Officer). |
| **Utilising innovative last-mile distribution technologies, such as crowdsourcing** | *"So, crowdsourcing as a function comes with challenges. It has kind of digital challenges to it but it allows you to keep unit costs low, whether it's picking and packing or delivery or whatever it might be …"* (Participant 6, VP of Supply Chain & eCommerce Operations). |

**Source: Researcher's own compilation**

From the above discussion can be concluded that retailers with a superior ability to find cost savings in last-mile will have a competitive advantage. However, retailers need to understand where last-mile costs are coming from to develop alternative delivery solutions. The participants of this study also shed some light on some mechanisms they had employed to reduce last-mile costs in omnichannel supply chains.

The final code categorised under the subcategory *designing superior last-mile distribution processe*s is a retailer's ability to utilise logistics partners' capabilities.

### *c) Utilising logistics partners' capabilities (LD3)*

The core business of omnichannel retailers is designing the correct selection of merchandise for customers (Weber & Badenhorst-Weiss, 2018:9). However, physical distribution is one of the fundamental processes within omnichannel retailing. Since many omnichannel retailers lack the internal capabilities to design and manage large-scale last-mile deliveries, these retailers opt to utilise the expertise of third-party logistics providers (3PLs) to manage the physical distribution of products in the last-mile (Arslan *et al.,* 2021:1044). According to Lim and Srai (2018:315) outsourcing decisions should weigh up the growth in (supply chain) surplus against the increased risk incurred by using 3PLs. While outsourcing holds many advantages, it also holds the disadvantage of condensing profit margins and losing control over customer satisfaction (Rai *et al.,* 2019b:276).

It should be stated that this code (capability) relates to retailers' ability to use a 3PL's resources and capabilities to their own advantage. Since the focus of this study is on internal SCI, 3PLs' capabilities fall outside the scope of this study. However, during the interviews, several participants cited relationships with partners as a competitive advantage. Furthermore, some participants stressed that they would be unable to offer omnichannel shopping experiences for customers without outsourcing some service to 3PLs. Accordingly, since this study aimed to answer the question of what dynamic capabilities are necessary for retailers to successfully transform from previous types of retailing to an integrated omnichannel model, the centrality of 3PLs in retailers' omnichannel services could not be ignored.

During the interviews, participants indicated that they relied heavily on 3PLs' capabilities to scale their own omnichannel operations. While in some cases the ability to offer additional services served as a competitive advantage for retailers, in other cases where partners were capacity-constrained retailers were limited in their ability to expand their own omnichannel operations. Upon analysis of the interview data, it was determined that two aspects encompass this code: first, by utilising logistics partners' capabilities, retailers gained access to capabilities that were not available internally or that could not be offered at the same service level of a 3PL. Second, the participants expressed that, while there are material benefits to utilising logistics partners' capabilities, retailers should ensure that these 3PLs' service offerings are brand-aligned. These two aspects are discussed below.

The first aspect highlighted by participants was that utilising 3PLs gave them access to services and competencies they did not have internally. As stated in the above introduction to this code, retailers traditionally focused on sourcing the best selection of merchandise for a targeted customer group. However, with the emergence of omnichannel retailing, retailers have to become de facto last-mile logistics providers. Therefore, in an attempt to morph into omnichannel retailing, retailers rely heavily on last-mile logistics providers to manage the final stretch of the omnichannel supply chain. The following quotations from some participants indicate that omnichannel retailers mainly outsource last-mile distribution services due to a lack of internal capabilities:

> *"There's no ways I could think of delivering to our thirty thousand lead customers' addresses internally. So, it's generally we will pick a partner who we think, either from a rate card or a service or a value perspective, will be able to deliver the best outcomes for our customers. So, we at the moment are very happy with a company called [delivery company] who have got quite a big presence all around the country that allows us to have a single courier that's able to deliver and continue the service that we've offered our customer, because if I'm picking the order within twelve hours the last thing that I want is for that customer to be let down by the delivery partner who's taking double the amount of time I've taken to pick the order to get to you."* (Participant 10, Head of Africa Supply Chain).

> *"So, for volumetric items, we do outsource to a subcontractor purely because we need a smaller infrastructure to do those multiple quick deliveries."* (Participant 7, Operations Business Development Manager).

The second aspect highlighted by participants regarding outsourcing was ensuring that the 3PL's brand was integrated and aligned with the retailer's brand. They explained that using delivery partners sometimes resulted in a loss of control over last-mile deliveries, which could harm a customer's perception of the retailer's online offering. During the interviews, several participants expressed that they needed to work closely with 3PLs to align the 3PL's image with their brand to ensure the customer experience a brand-aligned last-mile delivery:

> *"… finding the right partner and making sure that when that delivery gets to you it is a brand-aligned delivery, that the person is well-dressed, the bike is in a good shape, and that you kind of get a good Retailer A experience."* (Participant 11, Director of Retail Operations).

> *"So, last-mile to us is really important and what we're looking to do is to create a single pickup brand across all of our brands, so when you see it you'll know that what it means…"* (Participant 12, Chief Operations Officer).

In conclusion, utilising last-mile distribution providers can bridge internal competency gaps, particularly those that retailers lack in last-mile distribution processes. However, retailers should remain cognisant that, when a customer orders from a retailer's digital channel, the last-mile is often the only physical touchpoint between the retailer and the customer. Accordingly, retailers need to ensure they use 3PLs whose brands are aligned to their brands and can offer a delivery service that meets the cross-channel consistency criteria central to omnichannel retailing.

#### *8.4.9.2 Summary and conclusion: Designing superior last-mile distribution processes*

Theme 9 and its subcategory, designing superior last-mile distribution processes, were discussed in the preceding section. As part of the discussion, literature sources were used to contextualise the findings of both the document analysis and the analysis of the interview data. Based on the findings presented above, the researcher developed the following definition to conclude and summarise designing superior last-mile distribution processes:

*As part of omnichannel retailers' last-mile distribution processes, the ability to design superior last-mile distribution processes signals retailer's ability to integrate the final leg of the omnichannel supply chain, including their strategic considerations regarding various delivery modes, delivery times, delivery areas, and returns. Retailers with superior last-mile design capabilities understand the circular loop of the omnichannel supply chain and the important role the last-mile plays in closing this loop. Through innovation, retailers should continuously introduce and integrate new infrastructure and transportation options into their existing delivery modes. Also, retailers should understand where costs are located in the last-mile and use innovative ways to reduce these costs. Retailers can fill internal competency gaps by outsourcing certain parts of the last-mile distribution process to third-party logistics providers.*

Based on the discussion and the definition presented above, this study concluded that the ability of retailers to design superior last-mile distribution processes should be classified as a dynamic capability. This finding addresses a knowledge gap identified as part of the problem statement for this study by finding that the ability to design superior last-mile distribution processes is a dynamic capability which aids retailers to successfully transform from previous types of retailing to an integrated omnichannel model. In addition, this finding partially addresses secondary research objective 3 (SRO3) by revealing that superior last-mile distribution processes can facilitate internal SCI since it allows retailers to curate unique and innovative last-mile distribution processes, identify cost-efficient last-mile distribution processes, and utilise logistics partners' capabilities.

### 8.4.10 Theme 10: Adaptability

Adaptability in supply chain management (SCM) is defined as the capability to "*adjust the supply chain's design to meet structural shifts in markets and to reflect these changes in strategies, technologies, and products"* (Patrucco & Kähkönen, 2021). Adaptability also refers to an organisation's ability to interpret information about its operating environment and analyse the information within the context of its present and future circumstances (Do Nascimento *et al.,* 2021:83). Throughout this study, the theme of adaptability was central to many discussions on dynamic capabilities, SCI,

and retailers' journeys in becoming full-fledged omnichannel retailers. More recently, the issue of adaptability became increasingly critical as the onset of COVID-19 illuminated blind spots within some of the most sophisticated supply chain strategies, exposing weaknesses and instabilities (Magableh, 2021:3; Weber, 2021:2). Accordingly, adaptability became even more dominant in literature, coming to the fore as a vital survival capability for modern retailers during times of unprecedented disruption and change (Hobbs, 2021:6; Ivanov, 2021:3). Wieland and Durach (2021:321) acknowledged that, in a post-pandemic world, supply chains will have to continuously change to remain meaningful, which requires managers to strive for adaptability and transformability.

Although the purpose of this study was not to provide evidence of the impact of COVID-19 on omnichannel retailing in South Africa, collecting data during the pandemic provided case examples of retailers' abilities to adapt to unprecedented change. Therefore, whilst it falls outside the scope of this study to provide a comprehensive account of the impact the COVID-19 pandemic has had on omnichannel retailers, it was challenging to report on adaptability as a dynamic capability without acknowledging the strong emphasis participants placed on adaptability during the pandemic. These accounts also illustrated that many of the dynamic capabilities identified and discussed up to now were capabilities retailers relied on to adapt to the changing environment in which the pandemic was a catalyst. To set the scene for this discussion, the following quotations provide evidence of the importance of having the ability to adapt as a modern retailer:

> *"COVID has pushed us about 3-5 years ahead of the planned trajectory, so that's nice, but it's come with a lot of pain. So, where it's nice that everyone's buying online, the infrastructure in the background… it's all breaking beneath the surface. So, you're like a duck in water. You look great from the top but at the bottom you're scurrying like hell because you're tryna make it work. So, that's really what happened. Not only have we broken our systems but we broke the couriers, we broke the airlines, everything broke. And I think that's taught us a major lesson, I don't think we could have planned it. It's about how we reacted to it."* (Participant 5, Head of Transport and Engineering Logistics).

> *"The past year has possibly been one of the most challenging in the history of our company, and the impact thereof is evident in our financial results. I believe that our ability to demonstrate ongoing strategic traction in these trying circumstances reflects the quality and commitment of our staff, the resilience and adaptability of our systems, and the strength of our brands and products."* (Retailer X, IAR 2020).

Based on these quotations, it can be argued that adaptability is vital not only in creating dynamic omnichannel supply chain capabilities but also as an instrument in response to unanticipated events, such as the COVID-19 pandemic, and the continuous change that is synonymous with omnichannel operations. Chapter 2, Section 2.3.1, stated that this study considered the aim of dynamic capabilities as its ability to provide retailers with a higher level of adaptability. Accordingly, the following description of adaptability was included as part of the coding frame:

**Adaptability:** The ability of a retailer to exploit existing or new opportunities in response to changing environments or changes in the market, such as advances in technology or changing customer needs.

Over the course of the literature chapters, several words were identified that could signal a retailer's ability to adapt. These words were included in the coding frame (see Annexure A). During the document analysis, additional words were added to the coding frame and included in the analysis of the retailers' IARs. Table 8.21 represents the words related to adaptability as illustrated in the coding frame.

**Table 8.21: Frequency count of document analysis: Words related to Adaptability**

| Each word's raking as part of the complete document analysis | Words included in the analysis | 2016 | 2017 | 2018 | 2019 | 2020 | Total | % of the occurrence of each word within Adaptability | % within the total document analysis |
|---|---|---|---|---|---|---|---|---|---|
| 5 | growing | 990 | 612 | 1099 | 1061 | 784 | 4546 | 42% | 5.3% |
| 12 | change | 223 | 278 | 441 | 476 | 427 | 1845 | 17% | 2.1% |
| 23 | future-fit | 197 | 135 | 218 | 285 | 247 | 1082 | 10% | 1.3% |
| 36 | competitive | 70 | 123 | 212 | 200 | 179 | 784 | 7% | 0.9% |
| 40 | expansion | 107 | 145 | 174 | 157 | 124 | 707 | 7% | 0.8% |
| 45 | innovate | 108 | 122 | 137 | 141 | 92 | 600 | 6% | 0.7% |
| 50 | benchmarking | 59 | 102 | 96 | 104 | 91 | 452 | 4% | 0.5% |
| 58 | differentiate | 13 | 50 | 70 | 72 | 58 | 263 | 2% | 0.3% |
| 64 | excellence | 6 | 31 | 29 | 37 | 31 | 134 | 1% | 0.2% |
| 69 | disruption | 3 | 6 | 20 | 23 | 44 | 96 | 1% | 0.1% |
| 70 | adapt | 4 | 13 | 17 | 23 | 24 | 81 | 1% | 0.1% |
| 76 | market-leading | 6 | 14 | 17 | 21 | - | 58 | 1% | 0.1% |
| 78 | dynamic | 4 | 5 | 9 | 13 | 15 | 46 | 0% | 0.1% |
| 82 | fast-growing | 3 | 5 | 5 | 4 | | 17 | 0% | 0.0% |
| 86 | fast-changing | 1 | - | - | 3 | - | 4 | 0% | 0.0% |
| **Ranking based on 1-87** | **Total** (words included in the analysis) | | | | | | **10 715** | **100%** | **12.4%** |
| | **Total** (all words included in the document analysis) | | | | | | **86 164** | | |

**Source: Researcher's own compilation**

From Table 8.21, can be observed that words related to ‘adaptability’ were mentioned 10 715 times across all 40 IARs and accounted for 12.4% of the total words included in the content analysis. Referring to the results of the complete document analysis (Annexure B), this finding indicated that adaptability was the second-largest construct based on the frequency of words included in the document analysis. Additionally, Table 8.21 indicated that the top three words (‘growing’, ‘change’, and ‘future-fit’) accounted for a total of 69% of the words included as part of adaptability.

When contextualising these findings into the document analysis, it became apparent that the words grouped under ‘adaptability’ were often used together in retailers’ IARs. This finding signals the compatibility of these words, meaning that to be future-fit retailers need to change and adapt to be able to provide differentiated services that can offer them a competitive advantage. The following quotations serve to illustrate this point.

> *“The retail environment continues to change rapidly due to technological developments and an increasingly digitally connected customer. Retailers can leverage technology to deliver truly differentiated, customer-first, personalised experiences across all channels… We will need to have increasingly active, transparent and personalised engagements with customers through tailored communication, products, services, rewards, and in-store experiences. The ease of online retail has eroded the competitive advantage of convenience that the department store historically offered. However, the physical store will remain an important channel for engaging and connecting with customers but will need to be re-imagined to deliver unique in-store experiences… We are clear that we need to face these challenges and capitalise upon the opportunities to build future-fit businesses that are very different from the ones of the past.”* (Retailer A, IAR 2019).

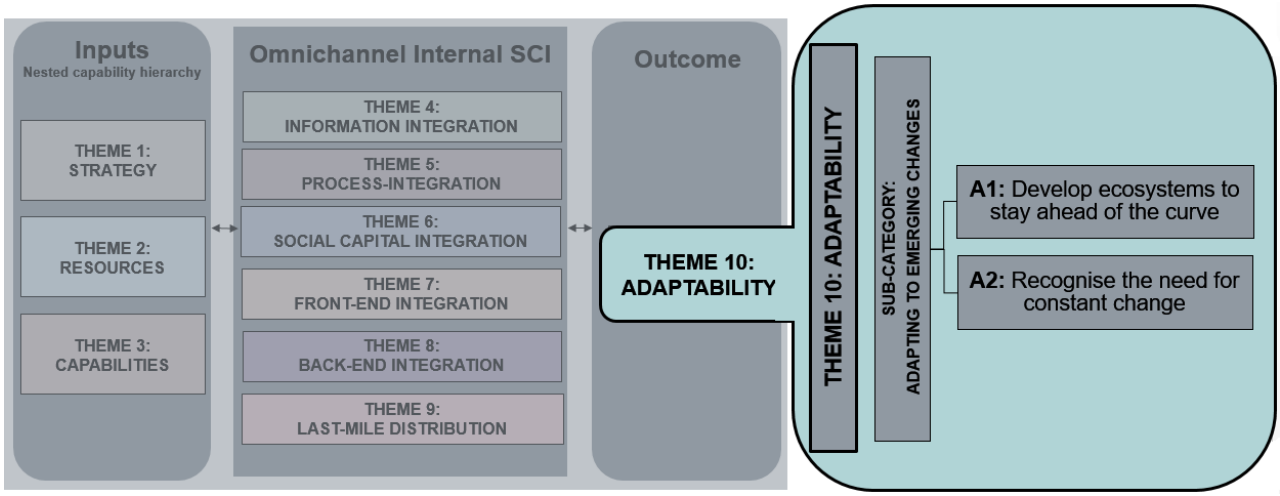
> *“This business philosophy drives the Retailer XI’s business model and ensures that we remain aligned with our strategic direction. While we change tactics to adapt to market conditions, competitive forces, environmental challenges and opportunities, our business philosophy remains intact and has not changed since being introduced more than two decades ago.”* (Retailer XI, IAR 2017).

Based on these quotations, it can be argued that retailers recognise that the retail environment is changing and, to stay competitive, they need to be able to adapt to market changes. This sentiment was shared during the interviews. The following excerpt from the interview with Participant 1 best outlines the nuances retailers face when determining how to adapt to the future:

*"I think the strategic decisions that businesses like ours have to face is when this channel is small how do you structure for it in order for it to be nimble and innovative and flexible? But then as it grows and it scales, how do you change that organisation, the structure choices, and our choices of people and process, in order to scale and what are the pros and cons as you make those different choices? … When it really needs to take big step-changes, it's going to compete with other organisational priorities and the other leaders would not perhaps have started their change journeys themselves and you then bump up against organisational culture, prioritisation, and other things as you need to shift."* (Participant 1, Head of Logistics and Supply Chain).

Upon conclusion of the analysis of the interview data, one subcategory housing two codes were grouped under Theme 10. The subcategory adapting to emerging changes encompassed the retailer's ability to develop ecosystems *to stay ahead of the curve* (A1) and *recognise the need for constant change* (A2). Figure 8.18 represents a snapshot (or subset) of the conceptual framework presented in Figure 8.3 and aims to plot Theme 10 and its subcategories and codes within the broader context of the conceptual framework.

**Figure 8.18: Conceptual framework - Theme 10**




**Source: Researcher's own compilation**

### *8.4.10.1 Adapting to emerging changes*

Organisations thriving in complex environments characterised by uncertainty show continuous innovation and a strong ability to adapt supply chains when the environment changes (Rahnema & Murphy, 2018:1). A retailer's ability to adapt is often referred to as its 'adaptive capability' (Agigi, Niemann & Kotzé, 2016:2; Zhang *et*

*al.,* 2021:5) and is defined by Jain *et al.* (2017:6780) as "*an organisation's ability to accept the inevitability of change and to create a system that is capable of adapting to new conditions and imperatives*". Wang and Ahmed (2007:37) explained that a retailer's adaptive capability is manifested through strategic flexibility, that is how flexible an organisation is at (re)deploying resources when its operating environment shifts. Teece *et al.* (2020:30) added that leaders are responsible for building flexible structures and processes that enable the organisation to innovate and embrace change. An essential aspect of adapting to emerging changes is an organisation's ability to fill capability gaps that arise when they enter a new market or revamp an existing operating model. Therefore, adaptable organisations surrender long-standing beliefs in structure and control and are comfortable to implement an ecosystem that learns from the past and adapts accordingly to help ensure the survival and continued organisational renewal (Rahnema & Murphy, 2018:1).

During the final part of the interviews, the participants were asked, *'what do you think omnichannel retailing looks like ten years from now, and what capabilities should retailers acquire now to be ready for this envisioned future?'*. It should be emphasised that, while the researcher did not follow a deductive coding method for coding the interview data (coding is dictated by predetermined topics, often the interview questions), presenting all participants' responses together provided a good foundation for the discussion on adaptability to follow.

Table 8.22 presents the abbreviated responses from all 17 participants and provides a broad overview of the potential changes participants foresee in the future. The rightmost column of Table 8.22 lists the main topics identified from each participant's account.

**Table 8.22: Participants' individual descriptions of omnichannel retailing in 10 years' time**

| | PARTICIPANTS' QUOTATIONS | IDENTIFIED FUTURE FOCUS AREAS |
|---|---|---|
| **P1** | *"I think we will see quite significant transformations at the traditional retailers [in South Africa]. So, a slower mall growth, slower physical store growth, and certainly far bigger investments into fulfilment centres, online stores, improved catalogues, improved services, more customer service options, so distribution options. I'd be surprised if we don't see more new entrants into our market from a foreign competitor perspective. Generally, we've seen in the past that the Amazons of this world, and other big pure-play entrants, sort of start to become interested when online retailers are roughly around fifteen or twenty percent of retail. So, I think in the next ten years certainly we'll be getting there as a country… And, so, South Africa retailers, traditional retailers, definitely have to make proactive investments into their capabilities as defensive strategies because that's coming. And, so, redirecting traditional capital from traditional investments into digital assets, into online assets is a no-brainer… We've already seen the many start-ups retailing off Instagram and all of the other sort of platforms, so I think you'll see some consolidation there and more traditional retailers interested in those channels."* | ▪ Unique South African landscape<br>▪ More prevalent hybrid (physical/digital) model<br>▪ Change in investment imperatives<br>▪ International competitors<br>▪ Stronger influence of social media |
| **P2** | *"It's gonna be so different from today… it's all about customers and customers should be thrilled and they should have ease of use of engagement with retailers. So, obviously the apps will be developed better, it'll be easier to buy, it'll be more reliable, the percentage of online fulfilment within time and not broken or damaged will increase dramatically. You'll have better service levels in stores, from store associates, which will be able to provide you with much better information, you'll be able to buy anywhere, fulfil anywhere, and have a broader set of options. Retailer E, the offerings will be broader than just our products. We'll be selling other products online that we don't even own, so we'll become like a platform. So, it's gonna be quite a big change…"* | ▪ Greater focus on customer needs<br>▪ Broader set of channel options<br>▪ Substantial increase in reliance on technology<br>▪ Move towards marketplace models<br>▪ More prevalent hybrid (physical/digital) model |
| **P3** | *What I see is a lot more hubs opening up that do e-comm fulfilment. I see a hybrid of what we've currently got and what we as a group are trying to fulfil where we can get systems to actually talk to one another and actually find things. And what I mean by that is how can I utilise the current efficiency that I have… because I've got stores in little towns, dorps, I've got it in main centres, I've got it in the middle of nowhere, how do I utilise that coverage, that network? These are all things for me that is gonna come together in the next five to ten years that is gonna be the absolute capital A for agility… [Also] sustainability has become a huge focal point for so many people, and especially educated people. And we did a quick survey last year and quite a [sic] interesting thing is more than sixty-eight percent of South Africans saying that they actually do care about the environment, they are questioning packaging… So, for me, if you wanna talk about omni, I think one of the key points is sustainability because that is also gonna be a driver in the future…"* | ▪ More prevalent hybrid (physical/digital) model<br>▪ Superior supply chain capabilities (to facilitate agility)<br>▪ Sustainable solutions become a competitive advantaged |

| | PARTICIPANTS' QUOTATIONS | IDENTIFIED FUTURE FOCUS AREAS |
|---|---|---|
| **P4** | *"I think it's gonna be a relatively exclusive market to your middle- and upper-income players, I think it will be bigger, but I think that we will definitely still have a place for brick-and-mortar stores in the country."* | ▪ More prevalent hybrid (physical/digital) model |
| **P5** | *"I think it's going to be about thirty to forty percent of how we purchase anything. So, what you do now, half of it will be done online… I think the retail industry is going to become very much a social-media-driven platform and I think obviously from a [sic] infrastructure, bricks-and-mortar, and supply chain capability there will be a lot of change. I think there's gonna be a lot more couriers, a lot more mopeds around… because a lot of our customers are gonna expect same-day or next-day. It's gonna be a same-day/next-day, maximum three days, waiting time. So, I think we need to adapt and because our company is so big we're gonna have to adapt our networks. I think from a technology [capability perspective] we do have to have a very mature and scalable set of technologies and tools, AI, machine learning, predictive analytics, and those good things will have to come into play."* | ▪ More prevalent hybrid (physical/digital) model<br>▪ Stronger influence of social media<br>▪ Superior supply chain capabilities (to facilitate agility)<br>▪ Substantial increase in reliance on technology |
| **P6** | *"… definitely there's a blended e-commerce and omnichannel universe. So, it's not fulfilment centres alone, it's not stores on its own, it's the people that have both and are leveraging both to the best of their ability. It's gonna be deeply technology empowered and lots of data is going to control all those decisions. From our customer proposition perspective there's gonna be a lot of personalisation, … personalisation is gonna be the key to driving loyalty… And I do think the world in ten years' time is gonna be, from an omnichannel retailing perspective, a sum of hundreds of partnerships and relationships… I think there are very few operations in South Africa, or Africa, in the next years that are gonna reach a scale where they can do everything on their own, and you'd rather partner with some specialists, whether it's in the final-mile space, whether it's in the personalisation space, in anything really… So, we're going to invest in some core things that we don't wanna partner with. But everything else we're gonna be agile, [and] spin out new partnerships… I think this theme of social commerce is gonna be central in the next ten years… it's really about kind of creating these collaborative customer communities… I think trying to leverage what the world has learnt over the last twenty years about social media and applying that into the commerce space, creating these multiple communities that people can participate in and actually create some stickiness as a result of that…"* | ▪ More prevalent hybrid (physical/digital) model<br>▪ Substantial increase in reliance on technology<br>▪ Personalisation (based on customer information)<br>▪ Increased reliance on partnerships<br>▪ Stronger influence of social media<br>▪ Unique South African landscape |
| **P7** | *"… I think from an omnichannel versus brick-and-mortar perspective, I think omnichannel is probably gonna be a seventy/thirty split [favouring online sales]… I can see drones driving up and down the street, delivering parcels. I think it will take us [South Africa] a little longer to get there from a country perspective, but I think that we are going to be led by the countries where we take the technological lead from, places like Japan, to some degree the US."* | ▪ More prevalent hybrid (physical/digital) model<br>▪ Futuristic perspective<br>▪ Unique South African landscape<br>▪ Substantial increase in reliance on technology |

| | PARTICIPANTS' QUOTATIONS | IDENTIFIED FUTURE FOCUS AREAS |
|---|---|---|
| **P8** | *"It's going to be seamless, you're going to be able to shop on your own phone, collect your stuff in store and then pay for it in store with cash… you can physically shop with your own phone in the store and come to the till and scan the QR code and all the items will then be transferred on to the till for payment. I think automation is going to become a lot more…"* | ▪ Increased seamlessness<br>▪ More prevalent hybrid (physical/digital) model<br>▪ Processes driven by automation<br>▪ Substantial increase in reliance on technology |
| **P9** | *"I'm not a trend forecaster, but I I think technology is such a big part of the business... So, I think there's still so much opportunity for us in the kind of developing part of South Africa around how do you get your online service further out there [into rural areas]? … [another] big goal for us, it's that same-day delivery. So, we can deliver within two to three days but how do you now capitalise on that customer that's doing the research and saying if you order before ten o'clock today you will get your order today…I think that's also really important to be able to show around sustainability, firstly, what you're doing and also how do you give back?''* | ▪ Substantial increase in reliance on technology<br>▪ Unique South African landscape<br>▪ Broader set of channel options<br>▪ Sustainable solutions become a competitive advantaged |
| **P10** | *"We've got a theoretical story that we keep on evolving in terms of you get to your store, the store manager then gets an alert on his cell phone that you've walked in, he knows what you've bought in the last three months, he knows that you've got a kid at home, and he's able to sort of curate a shopping experience for you… it creates a personalised shopping experience that I think we're working towards… being able to provide that shopper with a more seamless experience in store is going to be really interesting to see how that evolves."* | ▪ Personalisation (based on customer information)<br>▪ Increased seamlessness |
| **P11** | *So, I can tell you, the bricks-and-mortar store's not gonna go away… [But] we're cutting about fifteen percent, of our footage because we are over footage in a world where we're gonna be more online…. It will be smaller, it will be more unique, it will bespoke, it will be exciting, and it will be an experience when you come to a store, as part of omnichannel. Secondly, you should be able to request any type of service, deliver anywhere anyhow, and order anytime. So, it will need to be a twenty-four-hour capability and not necessarily only to a fixed address but also to where people are, on holiday, on the beach, at an event, etcetera. And I think the big thing is kind of sourcing the stock in your chain where it is at a point where you could get it to the customer at the time that she wants it, at the right fulfilment level, and at the right cost for the retailer."* | ▪ More prevalent hybrid (physical/digital) model<br>▪ Broader set of channel options<br>▪ Superior supply chain capabilities (agility vs costs) |
| **P12** | *"I think convenience will remain an underlying theme in the world of retail for many, many years to come. I think the integration between high research, going into a store to look at the product, will maintain… I think it's going to be absolutely tech enabled, there's no doubt in my mind about that… the large chains like Walmart and Retailer* | ▪ Increased seamlessness |

| | PARTICIPANTS' QUOTATIONS | IDENTIFIED FUTURE FOCUS AREAS |
|---|---|---|
| | *B brought in scale, then we suddenly realised that we could automate a lot of stuff… It will be more about customer experience and engagement, and then obviously you still need scale at the backend, so that's why Amazon wins, that's why Alibaba wins. What will be fascinating is to see what happens in South Africa because we're a small market in global terms and I can't see an Amazon or an Alibaba coming here. We're just too small."* | ▪ More prevalent hybrid (physical/digital) model<br>▪ Substantial increase in reliance on technology<br>▪ Unique South African landscape |
| **P13** | *"… in my own business, online [currently] represents say three percent of sales. In ten years' time, what does it represent? Maybe twenty or thirty or forty or fifty percent of sales, maybe more. So, I think it will be a lot more of the same but a lot more AI and a whole lot more augmented reality, the ability if you're gonna purchase something online to try it on, on an avatar that's the shape of your own body that you can actually see what you look like in that size, once you enter your dimensions…. say for example with technology like digital printing where Alicia goes into her local store, it's a retail digital printing store… she's bought a key from Nike that says here is the design for the Nike Air Force… and it prints out the Nike digital Air Force shoes in the colour that you want, and not in a size three, in size Alicia because it's got the exact measurements of your foot, and it prints your shoes there for you. You saved on factories and you've saved on ships and warehousing and trucks and retail space in a store… And that kind of thing, seems like it's distant future but digital printing exists today and digital avatars, all of the elements of the ecosystem exist together, and so it's quite conceivable that type of thing could happen tomorrow… And I think that's the kind of transformations that we're gonna see in the retail space."* | ▪ More prevalent hybrid (physical/digital) model<br>▪ Personalisation (based on customer information)<br>▪ Substantial increase in reliance on technology<br>▪ Futuristic perspective |
| **P14** | *"… the one thing I do know is technology's gonna change the world and will continue to do so. And I guess the one thing that we're starting to do now, and it's been a journey for us from a systems point of view, to start building better information… we've been investing quite a lot in the last couple of years on our own CRM system to start understanding some of the behaviours of our customers… the journey that we're starting now is more on the analytics part… to start understanding as a [sic] individual customer what is your preferences?… we're in the early phases of running some of this AI … But as a structural thing from a business model point of view, you're gonna need a [sic] omnichannel approach which is all-encompassing. You're gonna need physical stores, you're gonna need distribution points, you're gonna need very unique product that's exclusive to you, you're going to need channels to make people aware, whether it's influential marketing, webstores, social media. You need to try and say all of these touchpoints must work together for me. And whoever gets it to work the best is the one that will survive. So, I don't think there's gonna be one big silver bullet that's gonna change the world."* | ▪ Substantial increase in reliance on technology<br>▪ Personalisation (based on customer information)<br>▪ More prevalent hybrid (physical/digital) model<br>▪ Stronger influence of social media |
| **P15** | *"I think it depends a lot whether people really get the customer data or the customer insights right… what you have to prepare for is that sort of everyone is online, you've got good mobile apps and websites that really drive the customer and do the thinking for them… And then the key for supply chain is how do we do that cost-effectively? So, that's gonna be the biggest challenge in South Africa... So, I think that last-mile, obviously* | ▪ Substantial increase in reliance on technology (data)<br>▪ More prevalent hybrid (physical/digital) model |

| | PARTICIPANTS' QUOTATIONS | IDENTIFIED FUTURE FOCUS AREAS |
|---|---|---|
| | *everyone's last-mile is the most important, but it's gonna be more important in South Africa because you're gonna have to do it cost-effectively and you're gonna have to do it securely, and you're gonna have to do it a lot better than the first-world just because the customer is going to not have the money to pay for you doing it sloppily… So, I think people that aren't building this one single view of the customer across all channels and investing into their last-mile capability, and there I think it's being able to do everything on the last mile. So, a blend of on-demand [same-day delivery], a blend of own resources, third parties… the integration and the collaboration between them it's gonna have to be world-class… once you know that the lower LSM or middle- to lower-class customer has adoption for that, it will accelerate rapidly…. I don't think the adoption's there yet… So, is it just something that a new generation sort of comes with, so do the millennials now expect that because that's what they see on Instagram or Tiktok or whatever… I think in South Africa you know that's the future, you just don't know if that's the future for South Africa and Africa."* | ▪ Greater focus on customer needs<br>▪ Unique South African landscape<br>▪ Stronger influence of social media |
| **P16** | *"So, the customer's gonna lead this answer to your question because the customers are going to demand a very similar service in foods to be available in clothing, and more and more the customer's going to demand this, is going to demand the entire basket available across all of the service channels. So, in a world today which is quite fragmented, the customer's view of the future is I want what I want when I want it, and therefore the supply chain is going to have to cater for those intersections… So, I'm seeing a future where there's a lot of touchpoints between the various channels and potentially a lot of handover between channels. So, you'll have a far deeper matrix of services and the supply chain will have to be able to cope with that. So, more and more you're going to require sort of supply chain organisational structure changes and you're gonna have to have an orchestration layer that allows you to shift customer demand across the various service types. So, it's about finding supply chain solutions that deal with all of that spectrum of requirements because that's how omnichannel is going to evolve…. And we're gonna have to deliver it at the lowest possible carbon emissions because that's gonna be a challenge, using renewable energy… So, that's the difference of the supply chain of the future. It's gonna have to be adaptable but it's also gonna have to start dealing with these big issues of sustainability, environmental impact, renewable energy sources, carbon emissions. All of these things are gonna start counting in a bigger and bigger and bigger way.* | ▪ Greater focus on customer needs<br>▪ Superior supply chain capabilities (agility vs costs)<br>▪ More prevalent hybrid (physical/digital) model<br>▪ Broader set of channel options<br>▪ Substantial increase in reliance on technology (data)<br>▪ Sustainable solutions become a competitive advantaged |
| **P17** | *"So, I think in ten years' time you're probably not gonna see the mall and the four-hundred store/five-hundred-store/two-thousand-store footprint maybe that people used to have. But then again, there's a lot of factors if you take South Africa into account… LSMs probably not the best measure anymore but I think it's just also about access. So, hopefully in ten years' time they also have easy access to internet and cheaper data, and there's other payments methods now than there was a couple of years ago, but I think it's probably just gonna be a bigger shift towards…I don't think pure online but I think definitely omni in some sort of form."* | ▪ More prevalent hybrid (physical/digital) model<br>▪ Unique South African landscape |

Some meaningful findings could be observed on closer analysis of the participants' descriptions of the future of omnichannel retailing. Although the participants listed several issues believed to shape omnichannel retailing in future, three broad motifs could be observed from their accounts.

First, all but one of the participants (P9)[66] agreed that digital channels will become more prevalent in future and that demand for digital and physical channels will become more evenly dispersed (compared to the strong preference for physical shopping that currently exists). Some participants even indicated that demand for digital shopping might surpass demand originating from in store (physical shopping) (P7 and P13). The participants agreed that, to be competitive in future, investment in physical channels (brick-and-mortar stores) should be redirected to develop a broader set of skills and more capacity within digital channels (P1, P11, and P17). This will allow retailers to develop more convenient (P12), seamless (P8 and P10), and personalised (P6 and P10) shopping experiences for customers across product categories (P16) and channels (P8).

Second, the participants stated that omnichannel retailing in the future will offer customers a broader set of fulfilment options. In particular, participants singled out last-mile delivery options, predicting that retailers will need to conceive new ways to fulfil customers' orders in the last-mile, in particular to start offering same-day (or shorter) delivery options (P5 and P15). To achieve this, they indicated that retailers need to better utilise resources and networks (P3 and P6).

The third motif was the importance of technology in facilitating omnichannel retailing in future. The participants listed a broad range of issues regarding the deployment of technology that would be central to omnichannel retailing in the future; these included using AI, ML, predictive analytics, automation, and quick response (QR) code payments (P5, P8, P10, P12, P13, and P14). Some also highlighted the critical role data and systems play in designing and orchestrating omnichannel processes (P6, P14, P15, and P16). Others envisioned the integration of futuristic technologies such

[66] P9 did not disagree with this statement but rather did not express an opinion in this regard.

as digital three-dimensional (3D) printing in product production (P13) and the use of drones for last-mile deliveries (P7).

Other aspects highlighted by participants that are worth mentioning are their view that the influence of social media is going to become more critical in the future (P1, P5, P6, and P14). Also, some explained that they have started to recognise the emerging trend of customers who are becoming more eco-conscious, which necessitates retailers to start focusing more on sustainable omnichannel fulfilment strategies (P3, P9, and P16).

Fourth, the participants provided several perspectives on aspects unique to South Africa, such as how retailers will need to obtain buy-in for online shopping in rural areas (P3 and P7) and from lower Living Standards Measure (LSM) groups (P15 and P17). They also expressed that South Africa lags behind developed countries in terms of omnichannel adoption by customers (P7 and P12), making it unappealing as a potential market expansion for large international competitors. Building on these findings, the interview data analysis revealed the following two codes grouped under the subcategory *adapting to emerging changes*: to *develop ecosystems to stay ahead of the curve* (A1) and *recognise the need for constant change* (A2). Each of these codes is addressed individually below.

### *a) Develop ecosystems to stay ahead of the curve (A1)*

The fast-changing nature of omnichannel retailing creates visible challenges for retailers to design omnichannel processes that are competitive (Gibson & LaBruno, 2018:1). While many organisations have started to see the strategic imperative of omnichannel retailing, some still consider it an add-on or afterthought, which inhibits their ability to get ahead of the curve. Nielsen (2018:14) advised that, for retailers to keep ahead of the curve, they must establish a roadmap for skills acquisition and strategic partnerships as being competitive in future will be prompted by a retailer's ability to leverage the expertise of partners, who might be further along the digital readiness curve than they are.

The ability to design ahead of the curve signals retailers' ability to sense future opportunities in omnichannel retailing (as already illustrated in Table 8.22). However, the participants indicated that this is not an easy task and requires retailers to employ futurists to predict future trends. It also requires long-term planning and the continual renewal and adaptation of the supply chain and relevant processes. The ability to design ahead of the curve was best articulated by Participant 16, who described how they had historically led omnichannel innovations in South Africa but had quickly fallen behind the curve:

> *"…we were so far ahead [in the online landscape], but we're now behind the curve and trying to catch up because in many ways part of it's got away from us. But the good news is that that process of kind of reigniting the future path has happened and we've got a lot of stuff in flight … we're starting to look forward again, twenty-twenty-five horizon, twenty-thirty horizon, which is exciting because we can see now, we can see a clear path to that, whereas ten years ago it wasn't clear how we were going… [and] we have to keep developing, keep looking ahead, keep anticipating the changes in direction, because if you stand still you're going to get ridden over. In fact, you almost need people in your organisation… you need futurists, you need people looking ahead and figuring out what's next, because if you blink it's gone. So, it's about keeping pace and understanding the market shifts… take the example of a real estate strategy… to materially change our footprint, is gonna take at least five years, maybe more, because you can't step away from buildings that you own or lease. It takes years to get out of contracts… So, it's an example of how part of your business have gotta think way out ahead to make sure that you're ready when you get there."* (Participant 16, Head of Online Operations).

Varoutsa and Scapens (2015:72) stated that, historically, competitive advantages were derived through standardised and efficient processes that had been developed over several years. However, Rahnema and Murphy (2018:7) stated that, in unpredictable times, organisational survival requires the understanding that organisations exist within a broader external ecosystem, united by a specific, customer-centric purpose that is constantly evolving, to remain relevant. These ecosystems leverage external communities, collaboration, and partner alliances to better sense shifts in the environment and to remain competitive.

On analysis of the interview data, participants' testimonials revealed that they considered collaboration and the building of ecosystems a vital aspect of the ability to design ahead of the curve. These ecosystems can include third parties or cross-brand and cross-channel collaborations. This finding supported that of several previous

authors who debated that future market leaders are those with the best ecosystem as collaboration and partnerships will define competitiveness and scalability (Ye *et al.,* 2018:680; Qi *et al.,* 2020:1). In particular, Zhang and Watson (2020:294) debated that retailing innovation will be focused "*less on the physical movement of goods and fixed investments in markets, and more on leveraging digital connectivity and ecosystems*".

Digital ecosystems in omnichannel supply chains will see retailers moving from integrating their own channels to integrating with internal and external ecosystem partners whilst placing the customers at the centre of these integration efforts (Kruh & Freedman, 2016:7). However, achieving such high levels of integration requires the building of nonlinear interactions, interdependencies, and structural reconfigurations by all members of the supply chain ecosystem. This will allow retailers the flexibility to switch from one customer service scenario to another (Ishfaq *et al.*, 2021:10). Similarly, this study's participants underscored the importance of creating ecosystems as they align for the future of omnichannel retailing:

> *"It's gonna become more about ecosystems and where your brand and proposition fits in those ecosystems. And I think the winners are gonna be the ones that are gonna stitch those ecosystems together into a meaningful way, better than everybody else. If you take Discovery Vitality[67] as an example, if there was a partnership between Retailer B and Vitality that they've got deep kind of mobile presence, loyalty schemes, we've got products, we've got e-commerce capabilities, they're complementary relationships that exist everywhere. And again I think there's an ecosystem to be created that says as Retailer B we're not that protective over owning everything because if we take the approach to owning everything we'll never get anything done. So, we're gonna find ways of engaging with customers which are unique…"* (Participant 6, VP of Supply Chain & eCommerce Operations).

> *"So, we're looking at a super app[68] concept and I think if you can attract the customer into the super app and find a way to keep them there you have more opportunity of moving them across [channels and partner brands], because the technology is faster than we've*

[67] "Discovery Vitality is built on the Vitality behaviour-change platform which guides and incentivises people towards better health, driving, and financial behaviour. Vitality combines insights from behavioural economics with clinical science, driving, and personal financial management insights. By understanding the correlations between behaviour, cost, and outcomes, the Vitality behaviour-change platform is designed to address those areas with the biggest potential to change risk outcomes over the long-term." (Discovery, 2021)

[68] Super apps are mobile applications that provide a broad range of services to users, including payment and financial transaction processing. These apps effectively become all-encompassing commerce and online communication platforms that embrace many aspects of customers' personal and commercial lives (Anwar, 2021).

*got at the moment. So, once you're in the super app and I know what you do and I can profile you, I can then send you marketing messages instantly… If I know that you're a high-end customer and you're in Shop 1 and you're shopping for a kitchen, I would know that you would be potentially interested in the higher-end stove, so immediately ping you straightaway without you having to think about multiple brands… so, we're gonna create some form of an ecosystem …"* (Participant 12, Chief Operations Office).

The above discussion outlined the participants' statements related to designing ahead of the curve. Closely related to this code is a retailer's ability to recognise the need to change, which is discussed below.

### *b) Recognising the need for constant change (A2)*

Adaptability starts with a retailer's ability to recognise that ongoing change is required (Song & Song, 2020:5). Throughout this chapter, several mentions were made to the change required in retailers' digital transformation journeys (see codes PI1, SC3, FI1, FI3, and BI1). When considering these discussions, it is noticeable that adaptability and the ability of retailers to recognise the need for change was nuanced since it not only related to retailers' ability to adapt to changing market conditions but also the ability to recognise opportunities to scale operations by perusing new markets (for example, obtaining buy-in for omnichannel retailing in rural communities), offering customers new channels and touchpoints, or simply optimising the current operations.

From a supply chain perspective, recognising the need to change means retailers need to replace traditionally-held beliefs about stability and disruption in supply chains. In other words, conventional understanding of supply chain disruption as an external or event-driven action with the ultimate goal of 'returning-to-normal' should be replaced with the acceptance of disruption and, therefore, adaptation as an everyday occurrence in the supply chain (Wieland & Durach, 2021:319). Unlike traditional static supply chain design structures, dynamic supply chains can quickly adapt to external and internal changes (Weber, 2021:2). As such, for omnichannel retailers to be truly successful, adaptability should become ingrained in their supply chains (Ivanov, 2021).

During the interviews, participants' testimonials supported these literature findings. Based on these findings it can be concluded that adaptability requires a willingness to

change and the flexibility to reconceive processes to adapt to emerging changes in the market. Furthermore, the participants indicated that part and parcel of recognising the need for constant change is that retailers have to realise the importance of constant optimisation and adaption to keep aligning strategy with the ever-changing omnichannel approach:

> *"So, I think you need to be quite clear on sort of what are your end goal but it can't be too prescriptive and sort of how you're gonna get there. So, I think that's what we do very well as a group, we understand what we wanna do and achieve… So, as the environment changes or as we start to see nuances, you can adapt to it and you can change your strategy or your approach to making sure that you live up to that sort of model."* (Participant 15, GM: Retail and Supply Chain Operations).

> *"So, optimisation is a critical part of what we do because it makes us more efficient and it makes us more profitable, and the more profitable you are the easier it is to get reinvestment, and reinvestment drives progress, and so on… So, it's about keeping the business as healthy as possible while still growing and finding new ways of making money…I did a piece of work about six months ago, where I rebalanced all of the store fulfilment centres by reshaping the fleet… a hundred and seventy delivery vehicles over thirty sites, just a piece of work to optimise that pattern will give us about a twelve million rand bottom-line impact in this year."* (Participant 16, Head of Online Operations).

During the interviews, the participants listed several competencies retailers can develop to help them recognise the need for change.

Table 8.23 lists these competencies and provides supportive quotes.

**Table 8.23: Participants' statements on recognising the need to change**

| RECOGNISING THE NEED FOR CHANGE | SUPPORTIVE QUOTATIONS FROM THIS STUDY'S PARTICIPANTS |
|---|---|
| **Change initiatives should come from the top** | *"If we're wanting to really innovate towards who we must be in the future, then leadership shifts towards facilitating our innovation rather than directing and making our decisions is quite important. Because part of this is recognising that actually to become who we need to be in the future, if our leaders are the source of that innovation then we probably have a bottleneck, but if our leaders facilitate our innovation and grow our innovation capability from inside and we have the ability to do both top down and from bottoms up, then we probably don't have a bottleneck in terms of what we can conceive of and how we can change and where we go towards."* (Participant 1, Head of Logistics and Supply Chain). |

| RECOGNISING THE NEED FOR CHANGE | SUPPORTIVE QUOTATIONS FROM THIS STUDY'S PARTICIPANTS |
|---|---|
| **Determining when to implement change** | *"You've gotta make sure when you shout you shout at the right time and not just for the sake of being first to market, and I think that's important for us, that if we say we're doing something we do it because we wanna do it, it's something we believe in, and we're doing not because someone else is doing it or we want to be the forerunner to say we're doing it before Retailer A is doing it."* (Participant 3, Head of Logistics and E-fulfilment). |
| **Innovative people are required to spearhead change initiatives** | *"… I think in this realm of online and innovation and digital, I think we often underestimate the people component, and I speak from our experience… employing the right people is obviously quite an important point. And, so, many years ago, looking out into the market and recognising that we need people who are passionate and experts on online and digital and very passionate about sort of customer insights and customer demands, and finding those people is quite important. But it's very easy to bring them in and kind of corporatise them and make them more like us, and then you sort of lose half the benefit of having found them in the first place."* (Participant 1, Head of Logistics and Supply Chain). |
| **Making mistakes in parts of adaptability** | *"Right now, don't be scared to break things. I know it sounds terribly simplistic but you're not gonna learn a thing at the moment if you're not gonna go and try break something."* (Participant 4, Head of Logistics). |
| **Systems and data should guide the change process** | *"And within all of those concepts, in my opinion, you cannot possible be a ten out of ten all the time. So, it's a constant evolution on how we can improve using all the data and the information that is available to us…"* (Participant 7, Operations Business Development Manager). |

**Source: Researcher's own compilation**

In conclusion, based on the above discussion, and the information presented in Table 8.23 retailers need to realise that constant change is required to be adaptable. While this might not be an easy task, the participants from this study outlined several recommendations on ways to ensure that retailers are constantly adapting and evolving.

#### *8.4.10.2 Adapting to emerging changes: Summary and conclusion*

Theme 10 and its subcategory *adapting to emerging trends* were discussed in the preceding section. As part of the discussion, literature sources were used to contextualise the findings of both the document analysis and the analysis of the interview data. Based on the findings presented above, the researcher developed the following definition to conclude and summarise adapting to emerging changes:

*As part of an omnichannel retailers' ability to adapt, adapting to emerging changes signals retailers' ability to exploit existing or new opportunities in response to changing environments or changes in the market. Adapting to emerging changes requires retailers to build ecosystems to stay ahead of the curve. These ecosystems should reflect a united customer-centric purpose and should be characterised by collaboration, interdependencies and structural reconfigurations. Adaptability also requires retailers to develop the ability to recognise the need for constant change and to strive to achieve optimisation in the omnichannel supply chain.*

Based on the discussion and definition outlined above, this study concluded that a retailer's ability to adapt to emerging changes should be classified as a dynamic capability since it aids omnichannel retailers in adapting and aligning supply chains to changing market needs and to keep up with the ever-changing omnichannel environment. This finding addresses a knowledge gap identified as part of the problem statement of this study by finding that adaptability is necessary for retailers to successfully transform from previous types of retailing to an integrated omnichannel model. In addition, this finding partially addresses secondary research objective 3 (SRO3) by concluding that a retailer's ability to adapt to emerging changes facilitates internal SCI as it allows retailers to recognise the need for changes as well as to collaborate on opportunities such as building ecosystems.

## 8.5 CHAPTER CONCLUSION

Chapter 8 reported on the research findings and used verbatim quotes to support these findings. This chapter presented a rich discussion of the 10 Themes, 14 subcategories, and 35 codes based on the findings of the coding frame, document analysis, and interview data analysis. Throughout this chapter, several dynamic capabilities were identified and defined. The findings reported in this chapter provided rich descriptions of each dynamic capability that retailers need to build to move from previous forms of retailing to omnichannel retailing. Additionally, the findings also outlined how each of these capabilities facilitates internal SCI. These findings made a unique contribution to the body of knowledge as managers can use this list of dynamic capabilities to appraise internal competencies in determining which capabilities they

need to build to be competitive and adaptable in an ever-changing omnichannel environment.

Chapter 9 concludes this thesis by summarising the main findings and recontextualising each of the identified dynamic capabilities within the DCV. Each research objective was considered individually to draw conclusions and make recommendations.

# CHAPTER 9
# RECOMMENDATIONS AND CONCLUSIONS

## 9.1 CHAPTER INTRODUCTION

Modern retail is characterised by increasingly complex and digitally-driven supply chains where a competitive advantage can rapidly evaporate and processing a delivery on time can be considered ‘late’. Consequently, academics and practitioners agree that the establishment of an omnichannel retailing model is vital to competing in the fiercely competitive retail environment. Additionally, there is a consensus in literature that a seamless omnichannel retailing model hinges on an integrated supply chain. However, minimal academic work has previously been conducted to assist managers in navigating the complex digital transformation process. Through the application of the dynamic capabilities view (DCV) to this study, this research identified and defined several dynamic capabilities that can aid retailers to reconfigure their resource base to achieve the digital transformation that modern retailing necessitates. Accordingly, this research expanded the body of knowledge by contributing a conceptual framework of dynamic capabilities facilitating internal supply chain integration (SCI) in omnichannel retailers.

The study consisted of nine chapters:

Chapter 1 provided a brief overview of the study, identifying the gap in knowledge from which the research objectives were developed. Additionally, Chapter 1 presented a brief overview of the research context, clarified terminology, presented an introductory discussion on the theoretical lens of the study (DCV), outlined the research methodology, and provided an initial discussion on the study’s unique contribution.

Chapters 2 to 6 comprised the literature review of this study. Chapter 2 presented a detailed discussion on the theoretical lens of this study, the DCV. Chapter 3 and Chapter 4 addressed the literature on SCI. In particular, these chapters unpacked the

three pillars of SCI, namely information integration, process integration, and social capital integration. Chapter 5 and Chapter 6 reviewed literature on omnichannel integration. Chapter 5 considered front-end integration while Chapter 6 discussed back-end fulfilment and last-mile distribution through the strategic planning framework for last-mile order fulfilment and delivery.

Chapter 7 outlined the methodology employed in this study. The primary goal of this chapter was to provide a detailed discussion on the processes followed in participant selection and data analysis.

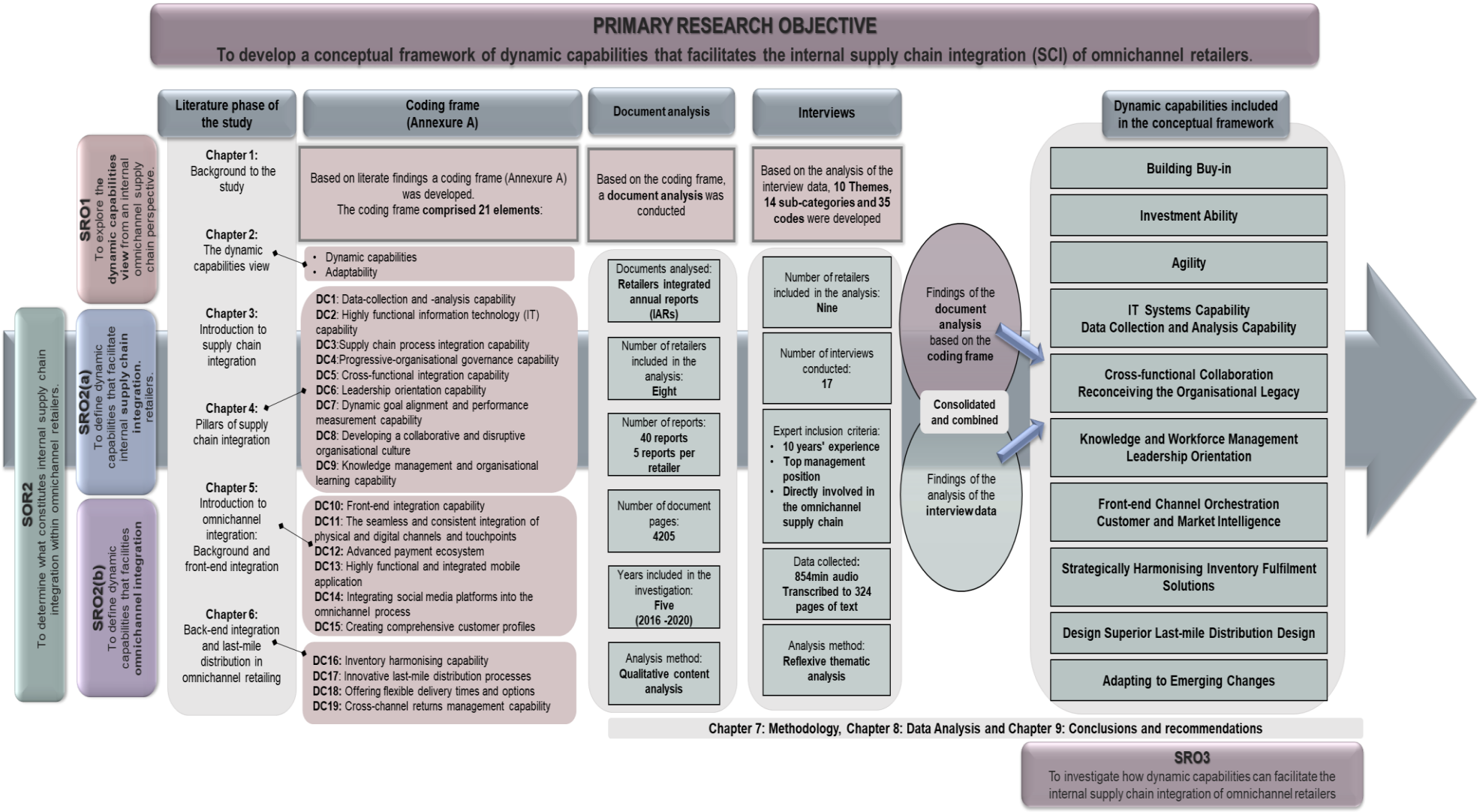
Chapter 8 presented the findings of the empirical data analysis. This chapter identified and provided detailed descriptions of the dynamic capabilities that facilitate internal SCI. These findings were substantiated by verbatim quotes from participants and findings of the content analysis of retailers' integrated annual reports (IARs).

Chapter 9 (this chapter) concludes the study by summarising the findings. This chapter links the literature findings (Chapters 2 to 6) with findings from the empirical analysis (Chapter 8). A discussion is presented on how the primary and secondary research objectives were obtained. This chapter concludes by outlining the limitations of the study and making recommendations for future research.

## 9.2 OVERVIEW OF THE STUDY

Before providing conclusions to this study, it is essential to revisit the knowledge gap and objectives this study set out to achieve. Figure 9.1 provides an overview of the study by illustrating how each phase of the study contributed to building the conceptual framework.

**Figure 9.1: Research outline**




**Source: Researcher's own compilation**

Figure 9.1 serves to provide a visual illustration of the entire study. It starts by listing the primary research objective. Then, moving from left to right (as indicated by the central arrow), it lists the two secondary research objectives (SRO1 and SRO2). Next, the 21 coding frame elements are listed, developed from the literature (Chapters 2 to 6) and which constituted the coding frame (see Annexure A). Subsequently, the main attributes of the document and interview analyses are summarised. Figure 9.1 concludes by listing the dynamic capabilities identified in this study and included in the conceptual framework (Figure 8.2).

The next section revisits each of the SROs. Thereafter, a discussion follows on how the primary research question (PRQ) and primary research objective (PRO) were achieved.

## 9.3 REVISITING THE SECONDARY RESEARCH OBJECTIVES: REFLECTIONS, CONCLUSIONS, AND RECOMMENDATIONS

In this section, each of the SROs are considered before making conclusions and recommendations. Each objective is considered by revisiting the main literature and empirical findings. Finally, overarching conclusions are drawn and recommendations are made.

### 9.3.1 Addressing secondary research objective 1 (SRO1)

Secondary research objective 1 (SRO1) explored the DCV from an internal omnichannel supply chain perspective. While a brief outline of the DCV was offered in Chapter 1, Section 1.5, Chapter 2 exclusively focused on presenting an in-depth discussion on the DCV, accordingly achieving SRO1. Table 9.1 summarises SRO1 by reviewing the main findings presented in Chapter 2 as well as the relevant findings from the empirical phase of the study (Chapter 8). Table 9.1 also presents conclusions and recommendations based on these findings.

**Table 9.1: Addressing secondary research objective 1 (SRO1)**

| **SECONDARY RESEARCH OBJECTIVE 1 (SRO1)** |
|---|
| **SRO1**: To explore the dynamic capabilities view from an internal omnichannel supply chain perspective. |
| **MAIN LITERATURE FINDINGS (SRO1)** |
| **Findings from Chapter 2:**<br>▪ Section 2.3.1 clarified the bifurcation in the DCV literature by investigating and comparing the two leading schools of thought regarding the DCV (i.e., Teece and Eisenhardt). Additionally, Table 2.1 provided a detailed summary of the many inconsistencies in DCV literature and outlined the stance of this study towards the application and interpretations of the DCV.<br>▪ Section 2.4 offered a comprehensive account of the foundational elements of the DCV. Strategy, resources, and capabilities were identified as the most prominent **internal** elements of the DCV.<br>▪ In terms of **strategy**: Section 2.4.1 detailed the role of strategy in developing dynamic capabilities. This discussion established that strategy needs to be aligned across organisational, functional, and supply chain levels (Figure 2.4) to achieve a strategic fit and to develop dynamic capabilities. Two opposing views on developing an organisation's strategy were presented, i.e. the market-based view (MBV) and the resource-based view (RBV). It was found that, within MBV, a competitive advantage is obtained *external* to the organisation whilst, with the RBV, a competitive advantage is obtained *internal* to the organisation. Since this study aimed to determine what dynamic capabilities facilitate the *internal* SCI of omnichannel retailers, the RBV and its extension, the DCV, was considered more appropriate within the context of this study (see Section 2.3.1.1(a)).<br>▪ In terms of **resources**: Figure 2.5 outlined the main characteristics of resources within the DCV. It was established that the development of dynamic capabilities is reliant on both tangible and intangible resources that are immobile (not easily obtained by competitors) and heterogeneous (created through the unique bundling of resources). Additionally, it was found that resources within the DCV need to meet the VRIN (valuable, rare, inimitable, and non-substitutable) attributes to create a competitive advantage for an organisation.<br>▪ In terms of **capabilities**: Teece's (2018) classification of the nested capability hierarchy was discussed in detail by introducing ordinary and dynamic capabilities. *Ordinary* |

**SECONDARY RESEARCH OBJECTIVE 1 (SRO1)**

*capabilities* were described as capabilities required to facilitate the organisation's day-to-day operations. *Dynamic capabilities* were described as the capabilities that organisations use (or need) to alter the resource base, acquire and shed resources, integrate them together, and recombine them to generate new value-creating strategies. Dynamic capabilities were further subdivided into three clusters of higher-order dynamic capabilities (HODCs), i.e. *sensing, seizing,* and *transforming*.

- Chapter 2 concluded with a discussion of the critiques of the DCV. The discussion highlighted two overarching critiques, i.e. a lack of clarity and consistency and a lack of empirical measures and tools.
- **'Dynamic Capabilities'** and **'Adaptability'** were added to the coding frame (Annexure A) and included in the analysis of retailers' IARs.

**MAIN EMPIRICAL FINDINGS (SRO1)**

**Findings from Chapter 8:**

Following the analysis of the empirical data, it was concluded that four conceptual framework elements (or Themes) contributed to addressing SRO1, i.e. **Theme 1: Strategy, Theme 2: Resources, Theme 3: Capabilities,** and **Theme 10: Adaptability**. Themes 1 to 3 were classified as *inputs*, i.e. overarching or broad dynamic capabilities that serve as essential inputs to develop other more omnichannel SCI-specific dynamic capabilities. Theme 10 was classified as the *outcome* of building dynamic capabilities. These findings are summarised as follows:

- **Theme 1: Strategy** – Based on the content analysis of retailers' IARs, it was established that strategy allows retailers to adapt to changing market conditions (such as those required as part of the digital transformation process). Furthermore, based on the interview data, **building buy-in** was identified as a dynamic capability relating to strategy. It was determined that, when an organisation enters a period of organisational transformation during which adaption is pursued, the ability to obtain buy-in is essential to the successful digital transformation process. Additionally, **DC7** from the coding frame corresponded with one of the codes from the interview analysis (aligning performance measurement structures (S2)). The analysis of DC7 revealed a significant finding: retailers use performance measurement structures to *align* internal operations and to build buy-in for SCI initiatives. Section 8.4.1.1 presented a comprehensive discussion of building buy-in as a dynamic capability.

**SECONDARY RESEARCH OBJECTIVE 1 (SRO1)**

- **Theme 2: Resources** – Based on the content analysis of retailers' IARs, it was established that retailers associate competitiveness and adaptability with the deployment of a unique bundle of resources. Additionally, the interview data demonstrated that, in terms of resources, an essential dynamic capability facilitating omnichannel SCI is **investment ability**. Participants indicated that a retailer's ability to 'unlock investments' accelerated digital transformation as retailers can invest in technologies to increase information sharing (essential for internal SCI) as well as in processes to expand physical/digital channel operations (essential for omnichannel retailing). The data from the interview analysis revealed a unique, South African specific finding: South African retailers struggle to balance investment in omnichannel SCI initiatives with overinvesting. Consequently, participants indicated that investment ability as a dynamic capability within the South African context requires the ability to discern between investment opportunities. Section 8.4.2.1 offered a comprehensive discussion of investment ability as a dynamic capability.
- **Theme 3: Capabilities** – The content analysis of retailers' IARs showed that retailers deploy and build certain capabilities to adapt to change. During the interviews, participants cited a particular capability as central to an organisation's adaptability: **agility**. The findings revealed that agility is a strategic capability that enables an organisation to rapidly sense and react to external and internal uncertainties through effective SCI. Section 8.4.3.1 presented a comprehensive definition of agility as a dynamic capability.
- **Theme 10: Adaptability** – The content analysis of retailers' IARs indicated that retailers need to change and adapt to provide differentiated services in response to changes in the retailing landscape. The findings from the interview data analysis illustrated that adaptability has become a vital survival capability for modern retailers, not only because it is necessary to keep up with the continuous change that is synonymous with omnichannel operations but also because it serves as an instrument in response to unanticipated events such as the novel coronavirus (COVID-19) pandemic. Accordingly, retailers' ability to **adapt to emerging changes** was identified as a dynamic capability facilitating omnichannel SCI. The findings also highlighted several factors regarding adaptability from a South African perspective; for example, retailers indicated that they had started to investigate how to obtain adoption for online shopping in rural areas and from lower Living Standards Measure (LSM) groups since the majority of South African shoppers fall within this cohort of customers. Therefore, acceptance of an omnichannel

**SECONDARY RESEARCH OBJECTIVE 1 (SRO1)**

model will determine the potential scale of omnichannel operations in South Africa. Section 8.4.10.1 presented a comprehensive definition of agility as a dynamic capability.

**CONCLUSION AND RECOMMENDATIONS (SRO1)**

In unpredictable environments where new technologies and new markets emerge endlessly, strategies, resources, and capabilities should be ever-evolving in response to these changes. Although the DCV is a relatively new management theory, its application aids researchers and managers to identify the required change to transform (integrate, build, and reconfigure) resources into dynamic capabilities to be able to compete in unpredictable operating environments such as those synonymous with omnichannel retailing. In Chapter 1, Section 1.7, the pleas of prominent authors within purchasing and supply chain management (PSCM) were presented. These authors strongly advised that 'future PSCM research should be better embedded and grounded in management theories'; therefore, by investigating this study through the lens of the DCV, the researcher not only yielded to the call of these researchers but also contributed to the development of the DCV within the PSCM field. Additionally, the purpose of the DCV is to 'help organise and prioritise the endless stream of competing and conflicting information which cascades towards managers as they attempt to build a competitive advantage'. Through the application of the DCV, this research was able to clear up some of this complexity. As part of SRO1, four dynamic capabilities were identified, i.e. **building buy-in**, **investment ability**, **agility**, and **adapting to emerging changes**.

In line with this conclusion, this study makes the following recommendations based on SRO1:

- In agreement with previous authors (as outlined in Chapter 1, Section 1.7), this study recommends that future research within the field of supply chain management (SCM) should be rooted in theoretical frameworks such as the DCV. The application of the DCV to this study allowed the researcher to develop more practical findings that can guide retailers on what and how to build capabilities to accelerate omnichannel SCI initiatives.
- Considering the findings of this study, it can be stated that the need for SCI in omnichannel retailers has been established. Therefore, this study recommends that retailers accept the necessity for significant investments in digital transformation and classify investment in digital transformation as a strategic imperative.
- From a practical perspective, this study identified three dynamic capabilities that serve as essential *inputs* (overarching or broad dynamic capabilities necessary for internal

| SECONDARY RESEARCH OBJECTIVE 1 (SRO1) |
| --- |
| omnichannel SCI), i.e. building buy-in, investment ability, and agility. These capabilities can be considered an excellent starting point in the capability development process as these capabilities are needed to sustain more omnichannel SCI-specific capabilities identified in this study. Additionally, throughout this study it was established that the competitiveness of the omnichannel retailing landscape drives the speed at which retailers need to adapt and develop new capabilities. Therefore, adapting to emerging changes was classified not only as the *outcome* of developing the dynamic capabilities but also as a dynamic capability in itself. This study recommends that omnichannel retailers earmark adaptability as a strategic imperative for the organisation and, therefore, ingrain it in every fibre of its operations. It was the finding of this study that, without a willingness and ability to adapt to emerging changes, SCI initiatives will be futile. |

**Source: Researcher's own compilation**

### 9.3.2 Addressing secondary research objective 2 (SRO2)

This section addresses SRO2 which aimed to determine what constitutes internal supply chain integration within omnichannel retailers. Considering the broad nature of SRO2, SRO2 was divided into two subobjectives (SRO2a and SRO2b). Secondary research objective 2a (SRO2a) focused exclusively on defining the dynamic capabilities that facilitate internal supply chain integration (SCI). Secondary research objective 2a (SRO2a) was addressed in literature Chapter 3 and Chapter 4, as well as in the relevant findings from the empirical phase of the study (Chapter 8). On the other hand, SRO2b aimed to define dynamic capabilities that facilitate omnichannel integration and was addressed in the literature Chapter 5 and Chapter 6 and the relevant empirical findings of Chapter 8. To aid with the discussion on SRO2, Table 9.2 and Table 9.3 address SRO2a and SRO2b respectively.

#### *9.3.2.1 Reflecting on SRO2a*

Table 9.2 summarises the primary literature and empirical findings of SRO2a and offers concluding remarks and recommendations based on the findings.

**Table 9.2: Addressing secondary research objective 2a (SRO2a)**

| **SECONDARY RESEARCH OBJECTIVE 2A (SRO2a)** |
|---|
| **SRO2**: To determine what constitutes internal supply chain integration within omnichannel retailers.<br><br>**SRO2(a):** To define dynamic capabilities that facilitate internal supply chain integration. |
| **MAIN LITERATURE FINDINGS (SRO2a)** |
| **Findings from Chapter 3:**<br>▪ In Section 3.2, the literature showed that the majority of organisations are still structured according to functional silos. Furthermore, the literature revealed that functional silos are ill-suited to the Fourth (current) Industrial Revolution, which warrants organisations to break down siloed structures to work collaboratively towards achieving goals.<br>▪ In Section 3.2.1, the literature demonstrated that, in modern retail, the most valuable employees are those with end-to-end thinking abilities who can evaluate a situation in its entirety and develop reaction plans that can be implemented quickly across the entire supply chain.<br>▪ Section 3.2.1 juxtaposed different types of SCI (i.e., internal and external SCI). Based on the literature, four issues central to achieving internal SCI were discussed, i.e. sharing a common goal, creating an end-to-end planning framework, the expertise of cross-functional teams, and top management's support.<br><br>**Findings from Chapter 4:**<br>In determining what constitutes internal SCI, Section 4.2 metaphorically depicted the four elements of internal SCI as the architectural structure of a '*portico colonnade'.* **Strategy** was depicted as the 'portico' (the entrance of the structure), consisting of organisational and functional (supply chain) strategies on which all internal SCI initiatives should be based. Strategy was already discussed in Chapter 2 and Table 9.1. Therefore, Chapter 4 addressed the remaining elements of the portico colonnade – three pillars to SCI, i.e. **information integration**, **process integration**, and **social capital integration**. |

**SECONDARY RESEARCH OBJECTIVE 2A (SRO2a)**

**Pillar 1: Information integration (Section 4.3.1):**

The reviewed literature observed that information integration increases transparency, enables collaborative relationships, and improves competitive position. The literature revealed three overarching factors concerned with information integration:

- *Information configuration:* Table 4.1 reviewed 11 information configuration characteristics, subdivided into three categories (information quality, multidirectional information flowability, and decision support capability). Additionally, Big Data collection was highlighted as particularly important for omnichannel retailers who need to collect large amounts of customer data to build actionable insights in pursuit of new opportunities. Based on literature presented in Section 4.3.1.1(a), **DC1: Data-collection and -analysis capability** was included in the coding frame (Annexure A).
- *Information technology:* Information technology (IT) systems have been described as the 'central nervous system' or 'backbone' of an organisation's integration abilities. The literature revealed that integrated internal IT systems are essential for SCI as it aligns all organisational activities and serves as the vehicle for information exchange along the internal supply chain. Additionally, it also offers a range of functions, from a simple transactional system to a strategic planning system (Figure 4.4). Based on literature presented in Section 4.3.1.1(b), **DC2: Highly functional information technology (IT) capability** was included in the coding frame.
- *Knowledge management:* Section 4.3.1.2 showed that organisational knowledge management is a key intangible resource and a valuable asset that forms the foundation of constant organisational transformation to create a sustainable competitive advantage. Several factors that facilitate organisational learning were listed, i.e. organisational structure, adequate organisational resources, a culture that promotes change, leadership characteristics, and teamwork. As explained in footnote 31, during the coding frame quality review process, knowledge management was recoded and combined with other literature findings to constitute **DC9: Knowledge management and organisational learning capability.**

**Pillar 2: Process integration (Section 4.3.2):**

The literature revealed that one of the barriers to process integration is that each organisational function has its independent way of managing processes, which can create siloes and incongruences that inhibit integration. Through successful supply chain process integration, organisations can exploit opportunities, acquire new knowledge, and utilise the

knowledge to adapt processes pivotal to capitalising on changing market trends. Accordingly, **DC3: Supply chain process integration capability** was included in the coding frame (Annexure A). The literature revealed two factors concerned with process integration:

- *Organisational governance:* The reviewed literature observed that an organisation's governance structures determine how quickly the internal organisation will respond to opportunities through the mobilisation of resources. Insights from literature indicated that a lack of top management support, poor strategic alignment, and insufficient performance measurement inhibit an organisation's process integration ability. In line with these findings, **DC4: Progressive organisational governance capability** was incorporated into the coding frame. It was found that four mechanisms influence an organisation's governance ability:
  - Cross-functional teams: The literature indicated that, in an attempt to change the traditional siloed way organisations are structured, they start to utilise cross-functional (or multidisciplinary) teams. These cross-functional teams promote communication, collaboration, and coordination across organisational functions. Accordingly, **DC5: Cross-functional integration capability** was added to the coding frame.
  - Leadership orientation: Literature findings suggested that the degree to which top management shows an active interest in and actively participates in SCI initiatives accelerates the SCI agenda. Also, the ways top management lead SCI initiatives should include fostering integrative behaviours through educating, incentivising, and setting policies and strategies that promote the organisation's integration plan. Accordingly, **DC 6: Leadership orientation** was added to the coding frame.
  - Goal alignment: Based on the literature findings, it was concluded that fostering a shared vision across organisational functions is an essential ingredient for internal SCI. Once supply chain goals have been identified, organisations classify key processes linking internal supply chain participants and then set objectives (performance indicators) to ensure that resources are effectively deployed in pursuit of these objectives.
  - Performance measurement: The literature concluded that the process of SCI requires continuous monitoring (through dedicated and formal performance measurement structures) to ensure that SCI efforts are met. Considering the close relationship between dynamic goal alignment and performance measurement, **DC7:**

**Dynamic goal alignment and performance measurement capability** was added to the coding frame.

- *Change management:* The reviewed literature observed that the structural change required for internal SCI will inevitably lead to some change management factors; therefore, a central change management component is *personnel motivation*. During the coding frame quality review process, change management was integrated with **adaptability** (discussed in Table 9.1).

**Pillar 3: Social capital integration (Section 4.3.3):**

The reviewed literature demonstrated that social capital relates to a set of social resources embedded in the relationships of a supply chain network, including relationships and interactions among different actors and the processes (or value) that are derived from those relationships. It was further proven that, even if an organisation is successful in developing the key components of information and process integration, these integration efforts are fruitless without the necessary internal relationships to manage and drive integration. Based on the reviewed literature, two factors were addressed as part of social capital integration:

- *Boundary-spanning relationships:* Literature revealed that a flatter organisational structure with fewer levels and a wider span of control facilitates SCI. The ability to build boundary-spanning relationships was merged with **DC5: Cross-functional integration capability** in the coding frame.
  - Organisational culture: An organisational culture favouring collaboration is an antecedent to developing boundary-spanning relationships. Changes to organisational culture have been offered as one of the most effective solutions to overcome SCI barriers. Literature emphasised that SCI requires a certain level of interdependence between functions and that organisations need to build a culture favouring interdependence and collaboration to facilitate SCI. In line with these findings, **DC8: Developing a collaborative and disruptive organisational culture** was added to the coding frame.
- *Knowledge exchange:* The literature indicated that, for organisations to keep up with technological change, knowledge exchange between functions has become more important. Furthermore, in supply chains, an organisation's ability to leverage the knowledge that resides within the internal network has the potential to improve not only functional performance but also the effectiveness of the supply chain as a whole. Accordingly, **DC9: Knowledge management and organisational learning capability** was added to the coding frame.

**MAIN EMPIRICAL FINDINGS (SRO2a)**

**Findings from Chapter 8:**

Following the analysis of the empirical data, each SCI pillar was classified as a Theme, each Theme consisted of two subcategories (dynamic capabilities), and each subcategory consisted of several codes explaining how these dynamic capabilities facilitate internal SCI.

**Findings related to Pillar 1: Information integration (Theme 4)**

- **Highly functional information technology (IT) capability***:* With this subcategory, the content analysis of retailers' IARs (DC2) showed that retailers realise the need to decouple legacy systems and move towards more cloud-based technologies as an essential part of operating an omnichannel retailing model. In turn, the results of the interview data indicated that superior IT system capabilities might be one of the most critical dynamic capabilities to facilitate internal omnichannel SCI, the reason being that internal information integration creates electronic linkages that facilitate value-adding services such as timely, accurate, and standardised data exchange across the internal organisation. The findings revealed that, when retailers lack this capability, it results in siloed data capturing, obstructing an organisation's ability to gain a cross-channel overview of inventory, customer purchasing behaviours, and processes in general. Additionally, the findings demonstrated that South African retailers are still in the early stages of implementing these technologies, leaving room for them to invest in these technologies to obtain a competitive advantage.
- **Data-collection and -analysis capability:** With this subcategory, the content analysis of retailers' IARs (**DC1**) showed that retailers employ advanced technologies, e.g. predictive analytics and machine learning (ML), to personalise customers' shopping experiences and make data-driven decisions. During the analysis of the interview data, it was determined that data analytics in omnichannel retailing is complex and broad, encompassing several issues, for example customer data, channel data, and shipping data. However, the ability of retailers to collect data to make data-driven decisions based on customers' shopping behaviour improves transparency and allows the entire internal supply chain to work as a single system or entity to align itself towards the big picture, i.e. achieving higher levels of omnichannel SCI.

**Findings related to Pillar 2: Process integration (Theme 5)**

- **Cross-functional integration capability***:* With this subcategory, the content analysis of retailers' IARs (**DC5**) observed that retailers' IARs lacked a focus on cross-functional

collaboration. However, findings from the analysis of the interview data revealed that, for retailers to successfully transform from previous types of retailing (such as multichannel retailing) to omnichannel retailing and to integrate internal supply chains, they need to develop cross-functional collaboration capabilities. A meaningful finding made as part of this subcategory was the opportunity for not only for cross-functional collaboration but also cross-brand collaboration. The findings revealed that, since retailers serve as the custodian of several brands, the integration of a unique bundle of brands into one digital store or marketplace, i.e. the marketplace model, allows for cross-brand promotional activities and the ability to create more significant per-customer-basket spends. This was a significant finding as, to the best of the researcher's knowledge, no previous studies within the scope of omnichannel retailing had emphasised the value of unlocking cross-brand opportunities.

- **Reconceiving organisational legacy:** With this subcategory, the content analysis of retailers' IARs (**DC4**) showed that retailers recognise the importance of the continual (re)evaluation of governance structures to align with the changing operating environment. This dynamic capability is central to a retailer's omnichannel SCI success as large-scale change to standard operating procedures is unavoidable when moving from previous types of retailing to omnichannel retailing. The data revealed that retailers struggled with reorganising structures to facilitate omnichannel process management as conflicting objectives between physical and digital channels hindered the ability to make the structural changes needed for omnichannel retailing.

**Findings related to Pillar 3: Social Capital integration (Theme 6)**

- **Knowledge management and organisational learning capability:** With this subcategory, the content analysis of retailers' IARs (**DC9**) supported the literature findings by revealing the importance of skills development in adapting to ever-changing operating environments. The interview data analysis revealed that omnichannel management requires a new set of skills. However, retailers need to discern between core capabilities and non-core capabilities to determine which skills need to be developed internally and which should be outsourced. Therefore, a retailer's ability to upskill or reskill the workforce and to develop knowledge-sharing opportunities facilitates internal SCI as high levels of knowledge-sharing increases employees' willingness to collaborate and integrate across functions.
- **Leadership orientation capability***:* With this subcategory, the content analysis of retailers' IARs (**DC6**) found that retailers recognised the critical role that transformational leaders play in expediting skills development and innovation within the organisation.

Findings from the interview analysis revealed that a retailer's ability to develop innovative leaders who can spearhead internal innovation and change is a dynamic capability that allows retailers to transform from previous types of retailing to omnichannel retailing. The evidence also showed that what leaders prioritise is what subordinates will execute; therefore, internal SCI initiatives are fortified when leaders prioritise integration.

**CONCLUSIONS AND RECOMMENDATIONS (SRO2a)**

Based on the above discussion, it can be concluded that this study identified six dynamic capabilities that constitute supply integration, i.e. **IT systems capability**, **data-collection and -analysis capability**, **cross-functional collaboration**, **reconceiving the organisational legacy**, **knowledge and workforce management**, and **leadership orientation**. These capabilities were discussed and defined in Chapter 8 and summarised here. The complete list of dynamic capabilities and their definitions are presented as part of the discussion on the PRQ in Section 9.4. In addition to identifying and defining these capabilities, the study makes the following recommendations and conclusions based on SRO2a:

- Based on the results of this study, it can be concluded that information integration serves as the nexus that ties internal SCI together. In omnichannel retailing, vast amounts of data need to be captured, integrated, and distributed across the organisation to promote strategic planning and decision-making. To achieve information integration, retailers need to invest in developing sophisticated IT systems with superior abilities to consolidate data across channels and functions, improve efficiency, and reduce redundancies in the omnichannel supply chain.
- Both literature and the empirical findings revealed that many processes are still managed in functional or (in the case of omnichannel retailers) channel silos mainly because of legacy organisational governance structures. To a large extent, governance structures facilitate or inhibit an organisation's SCI integration efforts. Therefore, this study recommends that retailers reconceive the organisation's legacy structures to align omnichannel processes across organisational functions and foster integrative behaviours. Retailers can achieve this by creating and deploying cross-functional teams and by realigning performance measurement structures to align with omnichannel processes instead of organisational functions.
- Both literature and the empirical findings showed that internal relationships solidify a retailer's internal SCI initiatives. Knowledge management (knowledge sharing) facilitates internal SCI, particularly when a retailer can upskill employees to meet the demands of dynamic industries such as those synonymous with omnichannel retailing. Furthermore,

| |
|---|
| the findings underscored the strategic importance of leadership in supporting and spearheading innovation that facilitates SCI. Therefore, this study recommends that retailers critically evaluate current leadership structures to determine if the locus of innovation stems from top management. If top management lacks innovation skills, large-scale organisational change may be required before any strides in SCI can occur. Therefore, cultivating transformative leaders that can spearhead change, integration, and knowledge-sharing is essential in facilitating internal omnichannel SCI. |

**Source: Researcher's own compilation**

#### *9.3.2.2 Reflecting on SRO2b*

Table 9.3 reflects on the findings relevant to SRO2b. It summarises the main literature and empirical findings and offers concluding remarks and recommendations based on the findings.

**Table 9.3: Addressing secondary research objective 2b (SRO2b)**

| **SECONDARY RESEARCH OBJECTIVE 2B (SRO2b)** |
|---|
| **SRO2**: To determine what constitutes internal supply chain integration within omnichannel retailers.<br><br>**SRO2b:** To define dynamic capabilities that facilitate omnichannel integration. |
| **MAIN LITERATURE FINDINGS** |
| **Findings from Chapter 5:**<br>▪ Section 5.2.4 outlined the impact of the COVID-19 pandemic on retailing in general and specifically in South Africa. The results revealed that the pandemic forged new customer-buying patterns, further solidifying the need to employ an omnichannel retailing model.<br>▪ Section 5.3 outlined the evolution from single to omnichannel retailing by describing the different types of retailing, i.e. single-, multi-, cross- and omnichannel.<br>▪ Figure 5.3 outlined the generic process of omnichannel retailing and presented three broad domains of the omnichannel supply chain, i.e. front-end integration, back-end fulfilment, and last-mile distribution. |

**SECONDARY RESEARCH OBJECTIVE 2B (SRO2b)**

**Front-end integration (Section 5.4.1.1):**

- The literature findings showed that front-end integration relates to a retailer's ability to create an 'omnichannel environment', that is to integrate physical and digital channels and touchpoints and to continuously identify additional channels and touchpoints that could be integrated into the omnichannel offering to attract new customers. **DC10: Front-end integration capability** was added to the coding frame in line with these findings.
- Figure 5.4 outlined two critical factors in designing front-end omnichannel processes, i.e. seamlessness and consistency. It was established that the primary goal of integrating physical and digital channels is to create a more personalised and convenient shopping experience for the customers and for retailers to enjoy the synergetic advantages of operating via multiple channels. Accordingly, **DC11: Seamless and consistent integration of physical and digital channels and touchpoints** was added to the coding frame.
- Section 5.5 outlined the most prominent physical and digital channels and touchpoints employed by retailers:
  - *Physical channels*: Section 5.5.1 discussed the role of brick-and-mortar stores in omnichannel retailing. Literature showed that the immediacy and tangible shopping experience that brick-and-mortar stores offer cannot be matched in digital retailing. The brick-and-mortar store fulfils two essential roles in omnichannel integration, i.e. offering tactile experiences for customers and having online order fulfilment locations situated close to customers.
  - *Digital channels*: Section 5.5.2 revealed that, for many customers, shopping via a digital channel is considered more convenient than shopping via a physical channel. According to the literature, digital channels facilitate omnichannel integration by offering retailers opportunities to expand their geographical footprint and collect valuable information on customers' shopping behaviour. Many factors concerned with digital channels were addressed throughout Section 5.5.2; however, the reviewed literature illustrated that an essential capability in digital shopping is the retailer's ability to offer various payment solutions. Accordingly, **DC12: Advanced payment ecosystems** was included in the coding frame. Literature distinguished between two digital channels:
    - The website: Table 5.1 outlined four elements that need to be considered when designing an online shopping website.

**SECONDARY RESEARCH OBJECTIVE 2B (SRO2b)**

- The mobile application: Table 5.2 listed six design elements that form the foundation of developing a retailer's mobile application. Considering the dominant role that mobile commerce plays in modern customers' shopping behaviours, the importance of having a well-designed and fully functional mobile application was highlighted in the literature. Accordingly, **DC13: Highly functional and integrated mobile application** was added to the coding frame.

- *Physical touchpoints*: Section 5.5.3 described the role physical touchpoints play in omnichannel integration by finding that it allows retailers to temporarily overcome the intangibility of online shopping to offer customers the opportunity to physically engage with the retailer and its products. Sections 5.5.3.1 and 5.5.3.2 discussed pop-up shops and showrooms as two possible physical touchpoints omnichannel retailers could employ.

- *Digital touchpoints:* In Section 5.5.4, it was found that the integration of digital touchpoints into physical and digital channels allows retailers to emphasise the benefits of each channel, offering customers a 'universal' shopping experience. Webrooming and social media platforms were discussed as the most commonly used digital touchpoints. On conclusion of this discussion, **DC14**: **integrating social media platforms into the omnichannel process** was included in the coding frame.

- Section 5.6 discussed the role of data in omnichannel retailing. The reviewed literature observed that data analytics aids retailers in understanding how customers are interacting with retailers' physical and digital channels and touchpoints and consequently allows retailers to tailor the omnichannel process to address customers' specific needs. This can be achieved by building comprehensive and detailed customer profiles. Accordingly, **DC15: Creation of comprehensive customer profiles** was included in the coding frame.

**Chapter 6:**

**Section 6.2** provided an overview of the strategic planning framework for last-mile order fulfilment and delivery proposed by Hübner *et al.* (2016). This framework was used to structure the discussion on back-end fulfilment and last-mile distribution.

**SECONDARY RESEARCH OBJECTIVE 2B (SRO2b)**

**Back-end fulfilment (Section 6.2.1):**

The reviewed literature observed that back-end integration is concerned with order picking and packing in omnichannel integration. Three factors constitute back-end fulfilment:

- *Picking location:* Table 6.1 outlined key considerations as well as advantages and disadvantages of the three most commonly used picking locations, i.e. in store, separated (decentralised) fulfilment centre, and central warehouse. Literature findings indicated that, apart from the advantages and disadvantages of each picking location, retailers need to consider cost and the origin of demand when determining which picking model to employ.
- *Automation:* The reviewed literature revealed that automation influences fulfilment time, operating costs, and ultimately customer satisfaction. However, the level of picking automation is dependent on picking locations.
- *Inventory integration:* Literature observed that, for retailers managing both physical and digital channels, the most critical decision regarding inventory management is whether to separate or integrate inventories across different channels. Three inventory integration strategies were outlined, i.e. separated inventory picking, integrated inventory picking, and capacity-optimised and integrated inventory picking. It was found that the degree to which omnichannel retailers integrate inventories often signals omnichannel maturity. Marketplace models were discussed as a possible future expansion of the omnichannel retailing model.

Based on the reviewed literature on back-end fulfilment, **DC16: Inventory harmonising capability** was identified and defined as a dynamic capability and included in the coding frame.

**Last-mile distribution (Section 6.2.2):**

The reviewed literature observed that last-mile distribution relates to integrating the final leg of the omnichannel supply chain in which order delivery occurs. Section 6.2.2 addressed several strategic considerations regarding last-mile distribution in omnichannel integration:

- *Delivery mode:* Section 6.2.2.1 discussed the two most commonly employed last-mile delivery modes, i.e. home delivery and click-and-collect. Although the researcher used the framework of Hübner *et al.* (2016) to discuss these factors, the discussion was substantiated by including modern last-mile distribution trends such as crowdshipping

**SECONDARY RESEARCH OBJECTIVE 2B (SRO2b)**

and lockers. Based on the discussion presented in Section 6.2.2.1, **DC17: Innovative last-mile distribution processes** was added to the coding frame.

- *Delivery time:* Section 6.2.2.2 revealed that speedy delivery is a high priority for retailers and customers since it serves as a prerequisite for ensuring customer convenience and satisfaction in the last-mile distribution process. The literature revealed that retailers need to consider two design parameters in terms of delivery time, i.e. delivery velocity and time slots. Based on this discussion, **DC18: Offering flexible delivery times and options** was added to the coding frame.
- *Delivery area:* Section 6.2.2.3 observed that determining delivery areas when designing a last-mile distribution process depends on the characteristics of a specific retailer's geographic operating location.
- *Product returns:* Section 6.2.2.4 underscored the importance of returns in closing the shopping 'loop' for customers as part of omnichannel integration. The findings highlighted two main reasons for product returns, i.e. ordering unwanted products or receiving faulty products. Two objectives of product returns were listed, i.e. reducing return rates and developing and ensuring fast and efficient return processes. Four modes of returns were distinguished from the literature, and it was found that retailers should work towards an omnichannel model that allows a customer to return products via any of the retailer's physical or digital channels. Accordingly, **DC19: Cross-channel returns management capability** was included in the coding frame.

**MAIN EMPIRICAL FINDINGS (SRO2b)**

**Findings from Chapter 8:**

Following the analysis of the empirical data, each domain of the omnichannel supply chain was classified as a Theme, each Theme consisted of subcategories (dynamic capabilities), and each subcategory consisted of several codes explaining how these dynamic capabilities facilitate internal omnichannel SCI.

**Findings related to front-end integration (Theme 7)**

- **Front-end channel orchestration**: During the conceptual framework development process, four coding frame items were classified as contributing towards the conceptualisation of front-end order orchestration as a dynamic capability (i.e. **DC10**, **DC12**, **DC13**, and **DC14**). Based on the findings of the content analysis of retailers' IARs, it was established that, over the period of investigation (2016 – 2020), reporting on

omnichannel retailing practices had gradually increased across all IARs, signalling the raising strategic imperative of omnichannel retailing among retailers included in the analysis. Moreover, the interview data analysis concluded that front-end channel design plays a cardinal role in an omnichannel supply chain as it serves as the point of origin for omnichannel orders. The results showed that, when front-end order orchestration is done correctly, it builds a level of inimitability for retailers that creates a competitive advantage. Additionally, the findings revealed that South African customers are still more inclined towards tactile (physical) shopping experiences but, when they shop online, they are 'mobile first', meaning South African online operations need to be designed with this in mind.

- **Customer and market intelligence***:* With this subcategory, the content analysis of retailers' IARs (**DC15**) detected a high level of customer-centricity across all retailers included in the analysis. In turn, the interview data showed that a retailer's ability to utilise customer and market intelligence is vital for strategic planning and decision-making in developing and designing processes that create a more seamless shopping experience for customers.

**Findings related to back-end fulfilment (Theme 8)**

- **Strategically harmonising inventory fulfilment solutions:** With this subcategory, the content analysis of retailers' IARs (**DC16**) found that, because of the technical nature of inventory management, retailers do not extensively report on inventory management practices in their IARs. Therefore, no definitive conclusion can be drawn based on the analysis of the IARs. Findings from the analysis of the interview data demonstrated that inventory harmonising is key in offering customers a seamless shopping experience. Additionally, it was found that the way inventory is managed often serves as a signal for a retailer's level of SCI, the reason being that, when inventory positioning and picking is integrated, it requires (and facilitates) collaboration across the entire internal supply chain. Furthermore, the findings indicated that this capability requires a highly sophisticated order orchestration system to establish accuracy and visibility in the back-end fulfilment processes.

**Findings related to last-mile distribution (Theme 9)**

- **Designing superior last-mile distribution processes:** During the conceptual framework development process, three coding frame items (i.e., **DC17**, **DC18**, and

**SECONDARY RESEARCH OBJECTIVE 2B (SRO2b)**

**DC19**) identified from the literature were consolidated to promote the conceptualisation of designing superior last-mile distribution processes. Based on the content analysis of retailers' IARs, it was concluded that retailers have started to incorporate innovative last-mile delivery options, such as locker and click-and-collect services, into the omnichannel offering. The analysis of the interview data illustrated that, while the brick-and-mortar store was traditionally the end-point of the transaction between a retailer and a customer, digital channels have placed logistics at the centre of the omnichannel process. Accordingly, omnichannel retailing requires integrated logistics processes across all channels to create a unified service experience. The findings also indicated that the cost of last-mile distribution services often results in the slow rollout of omnichannel services.

**CONCLUSIONS AND RECOMMENDATIONS (SRO2b)**

Based on the above discussion, it can be concluded that this study identified four dynamic capabilities that constitute omnichannel integration, i.e. **front-end channel orchestration**, **customer and market intelligence**, **strategically harmonising inventory fulfilment solutions**, and **designing superior last-mile distribution processes**. These capabilities were discussed and defined in Chapter 8 and are summarised here. The complete list of dynamic capabilities and their definitions are presented as part of the discussion on the PRQ in Section 9.4. In addition to identifying and defining these capabilities, the study makes the following recommendations and conclusions based on SRO2b:

- Throughout this study, it was established that integrated supply chains equate to customer-centric supply chains as integration allows retailers to develop supply chain processes based on the requirements of their unique cohort of customers. Therefore, the findings showed that an integrated omnichannel supply chain offers retailers the ability to create higher levels of customer satisfaction. From an omnichannel perspective, the primary purpose of SCI is to promote the design of a seamless and consistent omnichannel shopping experience for customers. This requires high levels of internal innovation to continually identify new channels and touchpoints. Since the front-end of an omnichannel supply chain serves as the nexus between the customer and back-end supply chain operations, it serves the role of collecting valuable customer data (which can be used as parameters in the design of the omnichannel supply chain). Also, it serves as the order collection point in the digital supply chain. It is, therefore, the recommendation of this study that, when retailers design front-end operations, they remain cognisant of the fact that front-end integration serves a dual purpose in the omnichannel supply chain, i.e. to attract customers and collect information to feed back-

| SECONDARY RESEARCH OBJECTIVE 2B (SRO2b) |
| --- |
| end and last-mile operations with the needed information to function properly. Accordingly, the two dynamic capabilities retailers need to develop within front-end integration are front-end order orchestration and customer and market intelligence.<br>▪ Both literature and the empirical findings revealed that inventory management is a tactical tool needed for successfully managing an omnichannel supply chain. However, retailers require highly sophisticated order orchestration systems to achieve back-end integration. Since back-end processes fall beyond competitors' lines of visibility, it is within this domain that retailers can truly create a competitive advantage. Accordingly, this study recommends that retailers create harmony between back-end fulfilment processes by considering their unique bundle of resources, for example having the ability to fulfil orders both in store and from dedicated fulfilment centres, to offer a better experience for customers.<br>▪ Both literature and empirical findings showed that logistics lie at the heart of the digital leg of the omnichannel supply chain. Therefore, to remain competitive, retailers need to cultivate unique and innovative last-mile distribution processes that meet customers' constantly evolving needs. Accordingly, this study recommends that retailers develop a comprehensive understanding of customer needs and determine if they have the in-house capabilities to design the required last-mile distribution processes or if these processes should be outsourced to specialised logistics providers. |

**Source: Researcher's own compilation**

Table 9.2 and Table 9.3 concluded the discussion of SRO2. Secondary research objective 3, the final SRO of this study, is discussed in the next section.

### 9.3.3 Addressing secondary research objective 3 (SRO3)

This section addresses SRO3, which aimed to investigate how dynamic capabilities can facilitate the internal supply chain integration *of omnichannel retailers*.

**Table 9.4: Addressing secondary research objective 3 (SRO3)**

| **SECONDARY RESEARCH OBJECTIVE 3 (SRO3)** | | |
|---|---|---|
| **SRO2:** To investigate <u>how</u> dynamic capabilities can facilitate the internal supply chain integration of omnichannel retailers | | |
| **MAIN EMPIRICAL FINDINGS (SRO3)** | | |
| Chapter 8 outlined 14 dynamic capabilities that facilitate internal omnichannel SCI. As part of this discussion, the reasons why and how these dynamic capabilities will facilitate internal omnichannel SCI were also addressed. Therefore, to avoid repetition, the table below only lists the ways in which each dynamic capability facilitates internal omnichannel SCI while providing cross-references to the detailed discussions presented in Chapter 8. | | |
| **Dynamic capability** | **Ways in which this capability facilitates internal omnichannel SCI** | **Discussed in Chapter 8** |
| Building buy-in | ▪ Cultivating a shared vision within the organisation<br>▪ Aligning performance measurement structures<br>▪ Incentivising behavioural change<br>▪ Communicating common objectives | Section 8.4.1.1 |
| Investment ability | ▪ Expanding channel offering<br>▪ Customising internal systems<br>▪ Hierarchising inventory-pooling decisions | Section 8.4.2.1 |
| Agility | ▪ Being/becoming flexible<br>▪ Being/becoming responsive | Section 8.4.3.1 |
| IT systems capability | ▪ Integrating systems and datapoints<br>▪ Intuitively identifying opportunities | Section 8.4.4.1 |
| Data-collection and -analysis capability | ▪ Collecting, analysing, and interpreting data<br>▪ Making data-driven decisions | Section 8.4.4.3 |
| Cross-functional collaboration | ▪ Creating end-to-end thinking capabilities<br>▪ Breaking down organisational siloed structures<br>▪ Developing cross-brand collaborations | Section 8.4.5.1 |
| Reconceiving the organisational legacy | ▪ Strategically transforming organisational structures<br>▪ Shortening decision-chains | Section 8.4.5.3 |
| Knowledge and workforce management | ▪ Recognising the upskilling and reskilling requirements of employees<br>▪ Discerning between internal and external expertise | Section 8.4.6.1 |
| Leadership orientation | ▪ Cultivating a culture of digital transformation<br>▪ Developing leaders who spearhead innovation and change | Section 8.4.6.3 |

| Dynamic capability | Ways in which this capability facilitates internal omnichannel SCI | Discussed in Chapter 8 |
|---|---|---|
| Front-end channel orchestration | ▪ Seamlessly integrating channels and touchpoints<br>▪ Developing unique channel capabilities<br>▪ Designing different shopping hallways for different shopping missions | Section 8.4.7.1 |
| Customer and market intelligence | ▪ Developing a comprehensive understanding of customers<br>▪ Designing customer-centric omnichannel processes | Section 8.4.7.3 |
| Strategically harmonising inventory fulfilment solutions | ▪ Making dynamic inventory positioning and picking decisions<br>▪ Creating a superior order orchestration system<br>▪ Creating inventory accuracy and visibility | Section 8.4.8.1 |
| Design superior last-mile distribution processes | ▪ Curating unique and innovative last-mile distribution processes<br>▪ Identifying cost-efficient last-mile distribution solutions<br>▪ Utilising logistic partners' capabilities | Section 8.4.9.1 |
| Adapting to emerging changes | ▪ Developing ecosystems to stay ahead of the curve<br>▪ Recognising the need for constant change | Section 8.4.10.1 |

**CONCLUSIONS AND RECOMMENDATIONS**

The table above summarises the findings of SRO3. In addition to the above-listed dynamic capabilities and the ways in which each dynamic capability can facilitate internal omnichannel SCI, the following conclusions and recommendations in terms of SRO3 can be made:

- Throughout this study, it was stated that SCI and omnichannel integration are complex endeavours consisting of numerous aspects. By identifying and defining the above-listed dynamic capabilities and outlining how these capabilities can facilitate internal SCI, this study cleared up some of the complexity by providing practical guidance on not only what capabilities retailers should build to be adaptable in future but how these capabilities can assist retailers in becoming more integrated. Therefore, the list of dynamic capabilities and how these capabilities can facilitate SCI can be used as an appraisal tool to identify expansion opportunities.
- Over the course of this study, it was found that organisations who instil SCI practices are better at meeting performance goals and tend to outperform other organisations. By building and employing these capabilities, retailers should be able to break down

structural barriers hindering the internal SCI process and reap the benefits in terms of improved performance and profitability.

- The purpose of the DCV is to allow organisations to respond rapidly and effectively to opportunities and threats in the market environment. Therefore, by reconfiguring the organisation's resources to build the dynamic capabilities identified in this study, retailers will build more relevant and competitive omnichannel operations.

**Source: Researcher's own compilation**

## 9.4 ADDRESSING THE PRIMARY RESEARCH QUESTION (PRQ)

Chapter 1, Section 1.2, outlined the PRQ developed from the gap in knowledge. In the previous section, Table 9.2, Table 9.3, and Table 9.4 revisited the SROs of this study. This section addresses the PRQ:

| | |
|---|---|
| **PRQ:** | What dynamic capabilities would facilitate the internal supply chain integration of omnichannel retailers? |

To answer the PRQ of this study, the researcher set out first to classify dynamic capabilities that facilitate internal omnichannel SCI as identified by previous research (literature). This phase resulted in the development of a coding frame that comprised 21 coding frame elements (Annexure A). These coding frame elements were then used to conduct a document analysis of retailers IARs. Next, primary data in the form of interviews were collected. During the analysis of the interview data, 14 dynamic capabilities were identified. Chapter 8 consolidated these findings and developed the final list of dynamic capabilities as it appears in the conceptual framework.
Table 9.4 served as a consolidated list of the dynamic capabilities and their definitions as identified and developed from the data analysis.

**Table 9.5: Dynamic capabilities that facilitate internal omnichannel SCI and their definitions**

| DYNAMIC CAPABILITIES | FINAL DEFINITION AS PRESENTED IN CHAPTER 8 |
|---|---|
| **Inputs** | |
| **Building buy-in** | As part of omnichannel retailers' strategy implementation processes, the capability to actively have buy-in for omnichannel SCI initiatives facilitates the acceptance and willingness of employees to support internal SCI initiatives. Retailers can build buy-in and remove internal forces resisting SCI initiatives by cultivating a shared vision, aligning performance measurement structures, incentivising behavioural change, and communicating common objectives. In doing so, retailers have a higher probability of successfully integrating their internal omnichannel supply chain processes. |
| **Investment ability** | As part of omnichannel retailers' resource capabilities, retailers' ability to invest is an essential tangible resource that facilitates omnichannel SCI initiatives. Retailers' ability to invest allows them to accelerate their digital transformation process by expanding channel offerings, customising internal systems, and hierarchising inventory-pooling decisions. Consequently, retailers with superior investment ability will be in a position to respond promptly to the rapidly changing omnichannel environment and create unique competitive advantages. However, retailers should carefully evaluate investment opportunities to avoid overinvesting. |
| **Agility** | As part of omnichannel retailers' capabilities, retailers need to be agile since agility is a fundamental building block to respond to VUCA (volatile, uncertain, complex, and ambiguous) environments. Agility allows retailers to sense and react to external and internal change through flexibility and responsiveness. Flexibility allows retailers to leapfrog organisational standard operating procedures (SOPs) to pursue new opportunities. When flexibility is prioritised, retailers can include additional supply chain projects that might arise due to sudden changes in the market. Responsiveness is often an outcome of effective SCI practices and can aid omnichannel retailers in swiftly meeting the continuously changing demands of customers. Responsiveness is part of being agile and could serve as a competitive advantage for omnichannel retailers' supply chains. |
| **Internal SCI** | |
| **IT system capability** | As part of omnichannel retailers' information integration capabilities, retailers need to invest in highly sophisticated IT systems with boundary-spanning abilities to create visibility across functions and channels. IT systems allow retailers to integrate large amounts of data from various physical and digital channels across the various internal systems of an organisation. This is essential as it allows a retailer to build a complete picture of the organisation's inventory, customer purchasing behaviour, and organisational process. Additionally, by deploying advanced technologies such as data and predictive analytics, IT systems can aid retailers to intuitively identify opportunities leading to strategic planning and better decision-making. |

| | |
|---|---|
| **Data-collection and -analysis capability** | As part of omnichannel retailers' information integration capabilities, retailers' ability to collect and analyse data is a dynamic capability. Data is often called the 'new oil', which should be 'refined' to tap unprecedented value in the form of customer and market intelligence. Therefore, the ability to collect and analyse data from various channels and touchpoints within the organisation through sophisticated technologies significantly contributes to the competitive performance of a retailer. However, becoming data-driven is complex and multifaceted, necessitating changes to multiple organisational resources, which calls for the involvement of several managerial levels and the large-scale reskilling of personnel to develop technical data analysis and interpretive skills to facilitate data-driven decision-making. |
| **Cross-functional collaboration** | As part of omnichannel retailers' process integration, retailers need to build cross-functional collaboration initiatives. Cross-functional collaboration relates to the ability of an organisation to eliminate internal functional boundaries to build strong multidisciplinary teams that facilitate the management of boundary-spanning processes within the omnichannel retailer. Cross-functional collaboration requires end-to-end thinking and recognising the value of each member's role in effectively managing internal omnichannel supply chain processes. Through effective collaboration and high levels of internal communication, retailers can break down organisational silos to formally build collaborative structures within the boundaries of the internal organisation. Additionally, integrating retailers' sub-brands provides unique opportunities for retailers to collaborate across brands, enhancing their ability to offer customers a unique bundle of products to ultimately create an inimitable competitive advantage. |
| **Reconceiving organisational legacy** | As part of omnichannel retailers' process integration, retailers should have the ability to reconceive their organisational legacy by strategically transforming basic (standard) governance processes. This entails moving away from the traditional hierarchised organisational designs towards flatter management structures and reduced bureaucratical approval processes towards shorter decision-chains that facilitate responsiveness and integration. |
| **Knowledge and workforce management** | As part of omnichannel retailers' social capital integration, retailers should have the ability to capture and transfer knowledge through effective training and development initiatives. Omnichannel retailing requires a new set of skills to manage the supply chain. Therefore, knowledge and workforce management necessitate retailers to discern whether they have the basic internal capabilities to facilitate omnichannel processes or if they should outsource certain processes to external experts. |
| **Leadership orientation** | As part of omnichannel retailers' social capital integration, retailers should have the ability to cultivate a culture of digital transformation by clearly allocating roles, getting buy-in from employees, and creating opportunities for cross-functional collaboration across the internal omnichannel supply chains. Leaders need to spearhead the innovation and change that omnichannel SCI necessitates by setting the tone at the top, i.e. creating a strategic intent for organisational innovation initiatives. |

| Omnichannel integration | |
|---|---|
| **Front-end channel orchestration** | As part of omnichannel retailers' front-end integration, retailers should have the ability to seamlessly and consistently integrate their physical and digital channels and touchpoints to provide customers with a personalised shopping experience across the retailers' channel mix. This requires retailers to develop unique physical and digital channel abilities by offering various payment options and creating upselling opportunities. Retailers should provide personalised shopping experiences by designing their omnichannel offering in such a way to accommodate different hallways for different shopping missions. |
| **Customer and market intelligence** | As part of omnichannel retailers' front-end integration, retailers should have the ability to utilise customer and market intelligence to develop a comprehensive understanding of customers and to design customer-centric omnichannel supply chain processes. Through customer and market intelligence, retailers should determine who their customers are by profiling them. This allows retailers to develop seamless and personalised omnichannel experiences and to communicate more effectively with their customers. Retailers should use customer insights as a starting point when (re)designing their omnichannel operations. |
| **Strategically harmonising inventory fulfilment solutions** | As part of omnichannel retailers' back-end fulfilment processes, retailers should be able to make innovative and modern inventory positioning and picking decisions that can meet the wide range of fulfilment options demanded by customers. In making these decisions, retailers should balance cost with agility. At the heart of inventory harmonising is a retailer's ability to implement a superior order orchestration system that creates inventory accuracy and visibility along the omnichannel supply chain. |
| **Designing superior last-mile distribution processes** | As part of omnichannel retailers' last-mile distribution processes, the ability to design superior last-mile distribution processes signals retailer's ability to integrate the final leg of the omnichannel supply chain, including their strategic considerations regarding various delivery modes, delivery times, delivery areas, and returns. Retailers with superior last-mile design capabilities understand the circular loop of the omnichannel supply chain and the important role the last-mile plays in closing this loop. Through innovation, retailers should continuously introduce and integrate new infrastructure and transportation options into their existing delivery modes. Also, retailers should understand where costs are located in the last-mile and use innovative ways to reduce these costs. Retailers can fill internal competency gaps by outsourcing certain parts of the last-mile distribution process to third-party logistics providers. |
| **Outcomes** | |
| **Adapting to emerging changes** | As part of an omnichannel retailers' ability to adapt, adapting to emerging changes signals retailers' ability to exploit existing or new opportunities in response to changing environments or changes in the market. Adapting to emerging changes requires retailers to build ecosystems to stay ahead of the curve. These ecosystems should reflect a united customer-centric purpose and should be characterised by collaboration, interdependencies and structural reconfigurations. Adaptability also requires retailers to develop the ability to recognise the need for constant change and to strive to achieve optimisation in the omnichannel supply chain. |

**Source: Compiled by the researcher**

Table 9.5 indicates that this study identified 14 dynamic capabilities facilitating internal omnichannel SCI. Three of these capabilities were considered broad capabilities that span across the omnichannel supply chain and serve as vital *inputs* in successfully integrating the omnichannel supply chain. Additionally, six internal SCI-specific and four omnichannel-specific dynamic capabilities were developed based on the data. The findings revealed that these capabilities allow omnichannel retailers to create seamless shopping experiences for customers to stay competitive in ever-changing omnichannel environments. Finally, one dynamic capability constituted the *outcome* of the successful deployment of dynamic capabilities, outlining why high levels of adaptability are needed to achieve internal omnichannel SCI.

Although it falls beyond the scope of this study to rank the identified capabilities in order of importance, the researcher would be remiss not to point out that, in terms of the findings of SCI and omnichannel integration, data and information management systems have been emphasised as one of the most critical dynamic capabilities facilitating internal omnichannel SCI. From an SCI perspective, a strong emphasis was placed on IT systems capabilities and data collection and analysis (as seen in Theme 4 of the interview analysis and DC1 and DC2 in the coding frame). From an omnichannel integration perspective, the importance of using data for the creation of comprehensive customer profiles was also underscored by both literature (DC15 in the coding frame) and the empirical data analysis (Theme 7, FI4 and FI5). Based on these findings, it can be concluded that, without data and information management capabilities, internal omnichannel SCI efforts will be in vain.

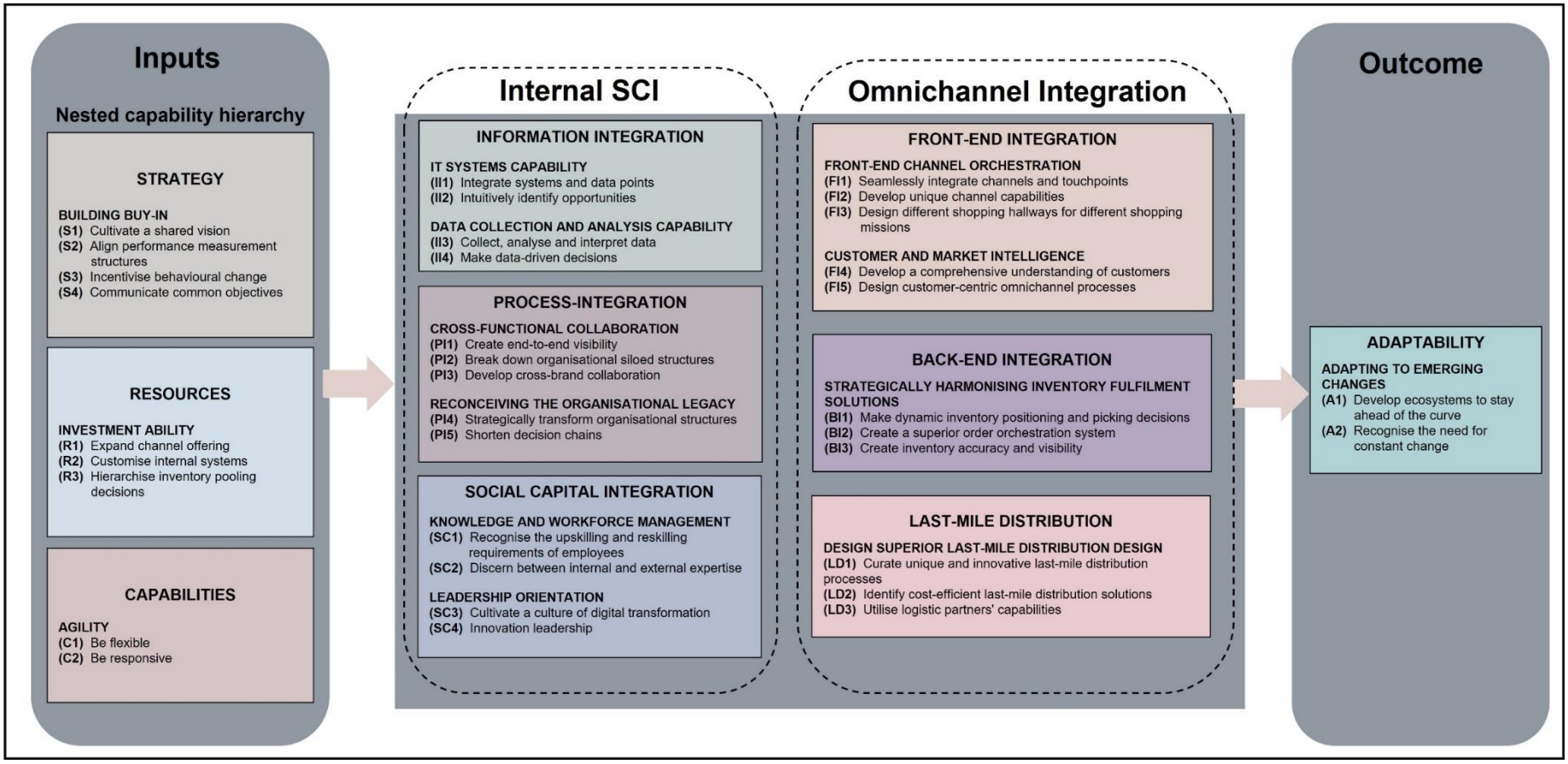
## 9.5 ADDRESSING THE PRIMARY RESEARCH OBJECTIVE (PRO)

The purpose of this study was encapsulated in the PRO. Chapter 1, Section 1.3, listed the PRO as:

| | |
|---|---|
| **PRO:** | To develop a conceptual framework of dynamic capabilities that facilitates the internal supply chain integration (SCI) of omnichannel retailers. |

Figure 9.2 reintroduces the conceptual framework of dynamic capabilities that facilitates the internal SCI of omnichannel retailers to promote the completeness of this discussion.

**Figure 9.2: Conceptual framework**




**Source: Researcher's own compilation**

As stated several times, this study aimed to take an end-to-end view of the omnichannel supply chain to identify the dynamic capabilities that will facilitate internal omnichannel SCI. By developing the conceptual framework, this study yielded the call of other scholars for future research to take a broader perspective on this topic (as explained in Chapter 1, Section 1.10). Also, to the best of this researcher's knowledge, the current framework fills a gap in knowledge as no such framework currently exists that takes an end-to-end view of the dynamic capabilities that facilitate internal omnichannel SCI.

The above discussion concluded the synopsis of the PRO and SROs and the PRQ. Before addressing the limitations of this study and future research suggestions, a brief discussion is provided, outlining how the unique research contribution of this study addressed the gap in knowledge identified in Chapter 1.

## 9.6 REVISITING THE GAP IN KNOWLEDGE AND OUTLINING THE UNIQUE RESEARCH CONTRIBUTION

As part of the problem statement for this study, Chapter 1, Section 1.2, identified a gap in knowledge, which this study aimed to address. This gap can be summarised as follows:

*The retail industry is currently going through a digital revolution that requires a rapid shift towards a mix of physical and digital channels. Therefore, research is needed to determine what capabilities are necessary for retailers to successfully transform from previous types of retailing (such as multichannel retailing) to an omnichannel model. Initial research points out that the successful transition from previous types of retailing to omnichannel retailing depends on a retailer's ability to integrate supply chain operations between channels. The development of dynamic capabilities that facilitates internal SCI can provide insights into how retailers can adapt to the rapidly changing omnichannel environment and remain competitive.*

Throughout this study, the researcher was guided by this gap in knowledge to make decisions with the highest probability of contributing to closing this gap in the discourse. Chapter 1, Section 1.10, outlined the contribution of this study by describing how it answers the call of several authors for specific theoretical, methodological, and practical research to

be conducted. The unique and original contributions of this study, as outlined in Chapter 1, Section 1.10, can be summarised as follows:

### 9.6.1 Theoretical contribution

As stated in Chapter 1, research within the fields of omnichannel retailing and the DCV is still in its infancy and is therefore considered of 'critical academic relevance'. As such, this research contributes towards creating a greater understanding of these contemporary subjects. The following theoretical contributions can be singled out:

- This study created a new understanding of some of the well-established components of omnichannel retailing and SCI. For example, in Chapter 6, Section 6.2.2.1, it was argued that, while Hübner *et al.*'s (2016) strategic framework for last-mile fulfilment and delivery was comprehensive, it lacked perspectives on contemporary factors in omnichannel retailing. These factors include, for example, crowdshipping, on-demand (within-an-hour delivery), marketplace models, and lockers as a click-and-collect fulfilment option. During the discussion of Hübner *et al.*'s (2016) framework in this study (refer to Chapter 6), these contemporary factors were included. It can therefore be argued that this study extended the framework of Hübner *et al.* (2016).
- Chapter 1, Section 1.10, outlined other researchers' calls for the topics included in this study to be investigated from a developing country perspective, which the present study has done. During the discussion of the dynamic capabilities presented in Chapter 8, well-regarded topics within the field of omnichannel SCI were recontextualised from a developing country perspective. For example, while investment ability was found to be vital in facilitating omnichannel SCI, it was found that South African retailers should balance investment and overinvestment as it could debilitate their ability to further develop omnichannel processes.
- Chapter 1, Section 1.4, found that grounding management research in strategic management theories contributes to higher visibility and recognition for PSCM research, both academically and in the practitioner fields. It also signals a researcher's ability to illustrate contemporary and strategic thinking. The purpose of the DCV is to aid organisations in understanding how to generate and sustain a competitive advantage in anticipation of, and in response to, an ever-changing business environment. The

importance of omnichannel retailers' supply chains as a way to respond to the fiercely competitive environment was underscored throughout this study. Underpinned by literature and empirical findings, this research identified 14 dynamic capabilities that retailers can build and strategically prioritise to assist them in the journey towards full omnichannel development. Accordingly, these findings contributed towards both the SCM and omnichannel retailing discourse.

- Although the purpose of this study was not to research the impact of the COVID-19 pandemic on the topic under investigation, during the interviews participants' strong emphasis on this factor allowed the researcher to write and publish an article on the impact of the COVID-19 pandemic on omnichannel supply chains in South Africa (Weber, 2021). Therefore, a portion of the findings of this study have already been peer-reviewed and have contributed to the body of knowledge in the scholarly field of supply chain management.

### 9.6.2 Methodological contribution

Previous research within the field of SCI was characterised by 'a strong empirical-quantitative research base' and studies employing 'grand theories' often took a quantitative approach. This study contributed by providing a qualitative perspective on omnichannel retailing, SCI, and DCV. The following methodological contributions can be highlighted:

- As explained in Chapter 1, Section 1.7.2, other researchers called for new data sources to be employed in omnichannel research; this study employed a multimethod qualitative methodology, integrating the findings of a qualitative content analysis with the finding of a qualitative reflexive thematic analysis (TA). To the best of this researcher's knowledge, this methodological approach was novel within the fields of omnichannel, SCI, and DCV research.
- Two new field instruments were developed over the course of this study that can be applied within other contexts in future research. First, a coding frame of dynamic capabilities was developed based on the literature review. This coding frame represented a comprehensive synopsis of literature on internal omnichannel SCI and dynamic capabilities identified by other researchers. This coding frame provides a springboard for future researchers to be validated through its application or replication

within a quantitative setting. Second, the conceptual framework was underpinned by both literature and empirical findings. Therefore, it consolidated the dynamic capabilities identified in this study into one comprehensive omnichannel SCI framework. Again, the framework and its sub-elements can be quantified into individual statements and tested within a quantitative setting.

### 9.6.3 Practical contribution

In addition to the theoretical and methodological contributions outlined in Section 9.6.1 and Section 9.6.2, this study made the following practical contributions:

- Dynamic capabilities that can aid managers in determining where to redirect investments and where their current skill set is lacking were identified and defined.
- Since the study was conducted among participants in top management positions at the largest omnichannel retailers in South Africa, the practical experience of these participants are captured in the findings of this research. Therefore, this study makes a practical contribution by providing omnichannel retailers with a roadmap of capabilities that could be build to be competitive in future.
- Researching the interplay between SCI, omnichannel retailing, and DCV can be considered a novel contribution. While Chapter 1 explained that, currently, only one such study could be found in the literature (Song & Song, 2020), the study of Song and Song (2020) only considered the concepts of omnichannel SCI from a human resource perspective while this current study took an end-to-end perspective on omnichannel SCI, offering practical insights into the capabilities that will facilitate the end-to-end integration of the omnichannel supply chain.

Based on the above discussion, it can be concluded that this study made a contribution to theory, method, and practice by putting forward the conceptual framework of dynamic capabilities that facilitate internal omnichannel SCI.

## 9.7 LIMITATIONS OF THE STUDY

Although this study contributed to both academia and practice, and despite the careful design of the research approach, the findings are subject to some limitations. Some of the limitations recognised by the researcher are discussed in the section below.

### 9.7.1 The impact of the pandemic on the study

At the time this study was submitted, the COVID-19 pandemic was still evolving, changing how retailers operate and customers shop. Therefore, the pandemic did create several challenges and limitations for the study:

- **Staying relevant:** Undoubtedly, the COVID-19 pandemic had a large-scale impact on the main topics included in this study, namely the supply chain and omnichannel retailing. For example, supply chains had to adapt to the sudden and drastic changes in customers' shopping behaviours while omnichannel retailers were faced with the drastic migration of customers to online shopping during lockdown periods. This changed how the supply chain traditionally operated and the channels that omnichannel retailers offered customers. Although the researcher continuously reverted to literature and media articles (practice) to stay abreast of the drastic changes which took place, the rate of change that was (and still is) taking place in the e-commerce market was substantial. This limited the study in that, at the time of submission, some of the factors may have changed again.
- **The impact on data collection:** The interview data was collected amid the pandemic (March 2020); as a result, during the interviews, participants placed a strong focus on the impact of the pandemic on operations, for example the capabilities they relied on to respond to the pandemic and examples of factors caused by the pandemic. Although the researcher was cognisant of this and continually refocused the interview back to the interview questions, participants kept reverting to the impact COVID-19 had on supply chains. Therefore, should the study be repeated in a post-COVID-19 context, the findings might differ from the findings of this study.

### 9.7.2 Miscellaneous

Other limitations which affected the study could be identified as:

- **Data collected within the context of a developing country**: Data were only collected among South African omnichannel retailers representing specific socio-demographic contexts; as such, the findings may not be valid when applied to developed economies.
- **Imperfect sample between document analysis and interviewed participants**: Chapter 7, Section 7.5.1.1, stated that, of the eight omnichannel retailers identified and included in Phase 1 of the empirical study (document analysis), only six of these retailers agreed to participated in Phase 2 (interviews), with the additional retailers being identified as part of the snowball sampling of Phase 2. Had all eight retailers agreed to participate in the interview phase of this study, the researcher would have been able to better triangulate between interviewees' testimonials and the formal reporting in retailers' IARs. Therefore, it would have been ideal for the samples of Phase 1 and Phase 2 to be identical.
- **Researcher influence**: As stated in Chapter 7, Table 7.14, the notion of researcher bias is incompatible with reflexive TA. However, the decisions made by a researcher influence the outcome of the research. For example, in qualitative research design, some debate still exists on when to conduct the literature review to avoid bias (before or after data collection). As explained in Chapter 7, Section 7.3.4, it was considered unfeasible for the researcher to postpose the literature review for this study until after data collection. Although the researcher followed an inductive approach to the analysis of the interview data, it should be acknowledged that the researcher's extensive engagement with the literature may have impacted the inductive data-analysis process. The researcher also acknowledged other potential influences as part of the reflexivity/positionality statement presented at the start of this study.
- **Scope of the study**: From the outset, the researcher focused the study on identifying dynamic capabilities that facilitate internal omnichannel SCI. This necessitated excluding an investigation on external SCI and the classification of dynamic capabilities based on the three clusters of HODCs (sensing, seizing, and transforming). However, the three remaining constructs (supply chain integration, omnichannel retailing, and the dynamic capabilities view) were still exceptionally broad, each consisting of many

interrelated subcomponents which needed to be addressed in depth. Additionally, these concepts were investigated from a qualitative methodology, which requires researchers to provide ‘thick’ and ‘rich’ descriptions of a phenomenon. This resulted in the final study being quite sizeable, which might discourage a reader.

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## 9.8 FUTURE RESEARCH RECOMMENDATIONS

The researcher identified the following possible research focus areas during this study. These focus areas within the broader topic of the omnichannel supply chain can provide more insight into the topic under investigation.

- **Applying the findings to developed countries:** The dynamic capabilities identified in this study can be applied to developed countries to compare the differences between dynamic capabilities that facilitate omnichannel SCI in developed versus developing countries.
- **Reconceptualising the study for a quantitative methodology:** Although the information collected from qualitative data is much ‘thicker’ than quantitative data, the sample size for qualitative studies are significantly smaller. This creates difficulty with relation to the generalisability of qualitative research. Future research can draw on the qualitative findings of this research to develop a quantitative questionnaire of the dynamic capabilities, which can be used during a survey among a larger participant sample, increasing the generalisability of the research findings.
- **Refining the findings per retailing category**: This study considered the dynamic capabilities that facilitate omnichannel SCI across all retail categories, such as fashion, groceries, homeware, building materials, and pharmaceuticals. Future researchers can investigate if the significance of the dynamic capabilities identified in this study differs across retail categories.
- **Hierarchising dynamic capabilities based on managerial level:** This study only conducted interviews with the top management of the respective omnichannel retailers. Future research can replicate the methodology used in this study among lower-level employees to determine differences and similarities among the perceptions of different organisational hierarchies.

- **Contextualising findings to elements excluded from this study:** Considering the scope of this study, factors such as external SCI and the three clusters of HODCs (sensing, seizing, and transforming) were excluded from this investigation. Future researchers can, as a starting point, use the dynamic capabilities identified in this study to investigate how these dynamic capabilities will (a) translate to external SCI and (b) be classified across the three clusters of HODCs.
- **Determining the feasibility of omnichannel retailing in rural communities:** Throughout this researcher's engagement with participants, they indicated their aspirations to extend the omnichannel services to rural communities but struggled to find feasible operational models. Future research can investigate the feasibility of omnichannel retailing in rural communities by determining if (a) a need for such a service exists and (b) how omnichannel operations should be adapted to service rural communities.

## 9.9 SUMMARY AND CONCLUSIONS

Throughout the study, it was emphasised that the profound changes taking place in retail due to the COVID-19 pandemic have occasioned one of the most significant challenges retailers have had to face to date: how to meet customers' needs for a seamless, consistent shopping experience regardless of how or where a purchase takes place. The imperative to create seamless shopping experiences have rippled through the entire retail supply chain. Forward-thinking retailers have realised that they need a new mindset and a clear plan of action on prioritising strategic investment, and how to realign traditional legacy structures and strategies to be competitive in the dynamic omnichannel environment. The supply chain was proposed as the key to unlocking competitive advantages in response to the changing retail landscape, particularly the ability of supply chain to be integrated to tie together the vast network of channels and functions that need to collaborate to offer customers a truly differentiated shopping experience.

This study aimed to provide a holistic overview of omnichannel retailers' dynamic capabilities to integrate internal supply chains. The development of a conceptual framework (Figure 8.2) aided managers in identifying and prioritising capabilities that will improve retailers' chances of creating the seamless and consistent omnichannel shopping experience that modern

customers demand. While this framework may only represent a starting point for organisations, it provided a comprehensive overview of the task at hand, which is the range of dynamic capabilities that retailers need to build to deal with the complex omnichannel environment.

The study's findings make a unique contribution to the body of knowledge as managers can use this list of dynamic capabilities to appraise internal competencies in determining which capabilities they need to build to be competitive and adaptable in an ever-changing omnichannel environment. Furthermore, these findings make a unique contribution to academia by providing additional insights within the field of the emerging literature on omnichannel management, SCI, and DCV.

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# ANNEXURE A

# CODING FRAME

| | | | IN LITERATURE | KEY IDENTIFIERS WHICH IMMERGED FROM LITERATURE | KEY IDENTIFIERS WHICH IMMERGED FROM PHASE ONE OF THE DOCUMENT ANALYSIS | CORRESPONDING THEME/SUBCATEGORY OR CODE FROM THE INTERVIEW ANALYSIS |
|---|---|---|---|---|---|---|
| **Dynamic Capabilities** | Dynamic capabilities are the antecedent organisational and strategic routines (or processes) by which managers alter their resource base, acquire and shed resources, integrate them together, and recombine them to generate new value-creating strategies. As such, dynamic capabilities are the drivers behind the creation, evolution, and recombination of other resources into new sources of competitive advantage. Dynamic capabilities are geared towards effecting and driving organisational change and are essentially strategic in nature. | | Chapter 2, Section 2.6.1.2 | Strategy | strategy*<br>policy<br>plan<br>principles<br>values<br>routine | **Theme 1:**<br>Strategy |
| | | | | Resource | resources* | **Theme 2:**<br>Resources |
| | | | | Capabilities | capabilities* | **Theme 3:**<br>Capabilities |
| **Supply chain Integration (SCI)** | **Information Integration**<br>The integration of quality, multidirectional supply chain information through cloud-based information technology (IT) systems to facilitate decision-making by linking higher-level strategic planning with lower-level transactional systems in the organisation. Through organisational knowledge management, shared meanings and interpretations of the information are developed to guide organisational decision-makers. | | | | | |
| | **DC1** | **Data-collection and -analysis capability:**<br>Data are collected, integrated, and analysed from various channels and touchpoints within an organisation, using sophisticated technologies such as artificial intelligence (AI) and machine learning (ML). Through an organisation's data-mining capability, actionable insights can be obtained and certain processes such as demand forecasting can be automated. | Chapter 4, Table 4.2 | Big Data<br>artificial intelligence (AI)<br>machine learning<br>automation | technical<br>data<br>analytical<br>database<br>intelligence | **Theme 4:**<br>Information Integration<br>**Subcategory:**<br>Analysing and collecting data |

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| | **Supply chain Integration (SCI)** | **DC2** | **Highly functional information technology (IT) capability:**<br>A highly integrated back-end IT system powered by cloud-based technologies and ERP systems allow organisations to collect and analyse large amounts of data. The IT system facilitates data sharing and collaboration across internal organisational functions, leading to strategic planning and better decision-making. | Chapter 4, Table 4.2 | information technology<br>IT systems<br>information solutions<br>cloud<br>legacy systems | Information*<br>systems*<br>legacy*<br>cloud* | **Theme 4:**<br>Information Integration<br>**Subcategory:**<br>IT system's capability |
| | | **Process Integration**<br>A holistic approach to SCI, which emphasises the joint management of supply chain processes across functional units. Process integration is achieved through organisational governance in terms of leadership support, the cross-functional team approach, as well as the alignment of supply chain goals with organisational objectives and process-oriented performance measures. Process integration requires organisational change and personnel support. | | | | | |
| | | **DC3** | **Supply chain process integration capability:**<br>The ability of an organisation to restructure supply chain processes to share strategic resources and capabilities effectively and efficiently across the organisation's supply chain. | Chapter 4, Table 4.5 | supply chain<br>alignment<br>integration | operations<br>supply chain*<br>process<br>internal<br>alignment*<br>integrate*<br>collaborate | **Theme 5:**<br>Process Integration |
| | | **DC4** | **Progressive organisational governance capability:**<br>The ability of an organisation to adapt to change by dynamically adjusting the organisation's basic (standard) governance processes. | Chapter 4, Table 4.5 | governance | governance* | **Theme 5:**<br>Process Integration<br>**Subcategory:**<br>Reconceiving organisational legacy |
| | | **DC5** | **Cross-functional integration capability:**<br>The ability of an organisation to eliminate internal boundaries and build strong boundary-spanning relationships (for example, relationships across functions and hierarchies within the internal supply chain of the organisation). | Chapter 4, Table 4.7 | relationship<br>(only relating to *employees* of the retailer) | relationships*<br>cross-functional | **Theme 5:**<br>Process Integration<br>**Subcategory:**<br>Cross-functional collaboration |

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| | **Supply chain Integration (SCI)** | **DC6** | **Leadership orientation capability:**<br>The ability of a leader to make strategic decisions on resource reallocation and organisational infrastructure mobilisation to advance the organisation's internal SCI efforts. | Chapter 4, Table 4.5 | leadership | leadership* | **Theme 6:**<br>Social Capital Integration<br>**Subcategory:**<br>Leadership orientation |
| | | **DC7** | **Dynamic goal alignment and performance measurement capability:**<br>The ability of an organisation to readjust supply chain goals in pursuit of opportunities and simultaneously adapt performance measures to attain new goals. | Chapter 4, Table 4.5 | performance measurement | aim<br>team<br>outcomes<br>performance measurement* | **Theme 1:**<br>Strategy<br>**Subcategory:**<br>Building buy-in<br>**Code:**<br>Alignment of performance measurement structures (S2) |
| | | **Social Capital Integration**<br>A set of social resources embedded in the boundary-spanning relationships of an internal supply chain, including not only relationships but also a cooperative organisational culture characterised by trust and mutuality which serve as the relational glue for process and information integration. | | | | | |
| | | **DC8** | **Developing a collaborative and disruptive organisational culture:**<br>The ability of an organisation to create a culture that encourages personnel to be innovative and collaborative, with a tolerance for failure, allows organisational resources to be rapidly reallocated in pursuit of SCI opportunities. | Chapter 4, Table 4.7 | culture | trust<br>respect<br>culture*<br>loyalty | **Theme 6:**<br>Social Capital Integration<br>**Subcategory:**<br>Leadership orientation<br>**Code:**<br>Cultivating a culture of digital transformation (SC3) |

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| | | **DC9** | **Knowledge management and organisational learning capability:** The ability of an organisation to capture and transfer knowledge and the level of organisational learning that facilitates knowledge ('know-how') transfer between personnel from different functions and hierarchical levels in the organisation. | Chapter 4, Table 4.7 | skills development<br>capacity building<br>know-how<br>knowledge<br>learning<br>training | knowledge*<br>skills*<br>training*<br>talent<br>retention<br>learning* | **Theme 6:**<br>Social Capital Integration<br>**Subcategory:**<br>Knowledge and workforce management |
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| | **Omni-channel Integration** | **Front-end Integration**<br>The integration of a retailer's physical and digital channels and touchpoints to provide customers with a seamless and consistent shopping experience across the retailer's channel mix. | | | | | |
| | | **DC10** | **Front-end integration capability:**<br>The ability of a retailer to create an 'omnichannel environment' to continuously identify and integrate additional physical and digital channels and touchpoints into the omnichannel offering to attract new customers. | Chapter 5, Table 5.5 | omnichannel | Omnichannel*<br>channels<br>digital<br>website<br>e-commerce<br>bricks-and-mortar | **Theme 7:**<br>Front-end Integration |
| | | **DC11** | **Seamless and consistent integration of physical and digital channels and touchpoints:**<br>The ability of a retailer to integrate physical and digital channels and touchpoints to create an easy, consistent, speedy, and pleasant shopping experience for customers. | Chapter 5, Table 5.5 | seamless<br>consistent | engagement<br>seamlessly*<br>website<br>convenience<br>value-creating<br>touchpoints | **Theme 7:**<br>Front-end Integration<br>**Subcategory:**<br>Front-end channel orchestration<br>**Code:**<br>Seamlessly integrating channels and touchpoints (FI1) |
| | | **DC12** | **Advanced payment ecosystem:**<br>The ability of a retailer to implement an advanced payment ecosystem which allows customers to pay for products through any of the customers' preferred payment solutions s. | Chapter 5, Table 5.5 | payment | payment* | **Theme 7:**<br>Front-end Integration |

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| | Omni-channel Integration | **DC13** | **Highly functional and integrated mobile application:** A retailer with a mobile application can reach customers when it is most convenient for them, can attract new customers, and can collect rich real-time information on customer behaviour. | Chapter 5, Table 5.5 | mobile app | mobile* | **Theme 7:** Front-end Integration |
| | | **DC14** | **Integrating of social media platforms into the omnichannel process:** The ability of a retailer to integrate various social media platforms into the omnichannel process to collect customer data and create opportunities to attract new customers and to continuously renew the omnichannel process in response to real-time demand changes from customers. | Chapter 5, Table 5.5 | social-media | social-media* | **Theme 7:** Front-end Integration |
| | | **DC15** | **Creation of comprehensive customer profiles:** The ability of a retailer to integrate and share data across channels and touchpoints to create detailed and comprehensive customer profiles to personalise the shopping experience for each customer. | Chapter 5, Table 5.2 | consumer customer | consumers* satisfaction customisation segmentation | **Theme 7:** Front-end Integration **Subcategory:** Customer and market intelligence **Code:** Develop a comprehensive understanding of customers (FI4) |
| | | **Back-end fulfilment** The integration of the retailer's back-end processes which facilitate the picking and packing of orders before final delivery to the customer. Back-end fulfilment includes picking location (in store, separated fulfilment centres or central warehouses), picking automation (manual, semi-automated and fully automated) and picking integration (separated, integrated or capacity optimised and integrated). | | | | | |
| | | **DC16** | **Inventory harmonising capability:** The ability of a retailer to create innovative and modern inventory management processes (such as integrating inventory across different warehouses and distribution centres) to allow the retailer to react to market shifts agilely. | Chapter 6, Table 6.3 | warehouse distribution centre | inventory warehouse* fulfilment centralised picking | **Theme 8**: Back-end fulfilment **Subcategory:** Strategically harmonising inventory fulfilment solutions |

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| | **Omni-channel Integration** | **Last-mile Distribution**<br>The integration of the final leg of the omnichannel supply chain in which order delivery takes place. Last-mile distribution includes strategic considerations in terms of various delivery modes (home delivery and click-and-collect); delivery times (delivery velocity and time slot planning); delivery area (local, regional and national) and finally returns (no returns but money-back; check and return at reception, CEP returns and accept and refund in retail outlets). | | | | | |
| | | **DC17** | **Innovative last-mile distribution processes:**<br>The ability of a retailer to introduce and integrate new infrastructure and transportation options into existing delivery modes and use innovative last-mile distribution processes such as technologies to track orders in real time. | Chapter 6, Table 6.3 | distribution<br>delivery | click-and-collect<br>home delivery*<br>lockers | **Theme 9:**<br>Last-mile distribution<br>**Subcategory:**<br>Designing superior last-mile distribution processes<br>**Code:**<br>Curating unique and innovative last-mile distribution processes (LD1) |
| | | **DC18** | **Offering flexible delivery times and options:**<br>The ability of a retailer to offer speedy delivery (delivery velocity) and different time slots to create a seamless omnichannel experience for customers. | Chapter 6, Table 6.3 | delivery slot<br>delivery window | outsourced<br>same-day | **Theme 9:**<br>Last-mile distribution<br>**Subcategory:**<br>Designing superior last-mile distribution processes<br>**Code:**<br>Curating unique and innovative last-mile distribution processes (LD1) |

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| | **Omni-channel Integration** | **DC19** | **Cross-channel returns management capability:**<br>The ability of a retailer to integrate the returns management process to allow for returns processing regardless of the point of purchase. | Chapter 6, Table 6.3 | product returns | returns* | **Theme 9:**<br>Last-mile distribution<br>**Subcategory:**<br>Designing superior last-mile distribution processes<br>**Code:**<br>Curating unique and innovative last-mile distribution processes (LD1) |
| **Ability to adapt to change (Adaptability)** | | | Adaptability signals the ability of a retailer to exploit existing or new opportunities in response to changing environments or changes in the market, such as advances in technology or changing customer needs. | Chapter 2, Section 2.6.1.2 | change<br>adapt | growing<br>change*<br>future-fit<br>competitive<br>expansion<br>innovate<br>benchmarking<br>differentiate<br>excellence<br>disruption<br>adapt*<br>market-leading<br>dynamic<br>fast-growing<br>fast-changing | **Theme 10:**<br>Adaptability |

# ANNEXURE B
# A COMPLETE LIST OF WORDS INCLUDED IN THE DOCUMENT ANALYSIS AND THEIR FREQUENCIES

| Each word's ranking within the total analysis | Words | Classification of each word | Assigned name | 2016 | 2017 | 2018 | 2019 | 2020 | Total | Percentage within total document analysis | Percentage of occurrence of each word within each DC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | consumers | Front-end Integration | DC15 | 651 | 994 | 1793 | 1833 | 1260 | 6531 | 7.6% | 91% |
| 2 | aim | Process Information | DC7 | 831 | 1013 | 1176 | 1279 | 1061 | 5360 | 6.2% | 78% |
| 3 | operations | Process Information | DC3 | 1083 | 932 | 977 | 1085 | 967 | 5044 | 5.9% | 40% |
| 4 | strategy | Dynamic Capabilities | Strategy | 834 | 954 | 945 | 1190 | 929 | 4852 | 5.6% | 54% |
| 5 | growing | Ability to adapt to change | Adaptability | 990 | 612 | 1099 | 1061 | 784 | 4546 | 5.3% | 42% |
| 6 | resources | Dynamic Capabilities | Resources | 653 | 616 | 693 | 773 | 795 | 3530 | 4.1% | 100% |
| 7 | supply chain | Process Information | DC3 | 381 | 545 | 612 | 635 | 691 | 2864 | 3.3% | 22% |
| 8 | governance | Process Information | DC4 | 418 | 554 | 579 | 601 | 500 | 2652 | 3.1% | 100% |
| 9 | knowledge | Social Capital Integration | DC9 | 373 | 508 | 590 | 654 | 460 | 2585 | 3.0% | 40% |
| 10 | process | Process Information | DC3 | 310 | 382 | 446 | 492 | 437 | 2067 | 2.4% | 16% |
| 11 | omnichannel | Front-end Integration | DC10 | 234 | 254 | 427 | 456 | 505 | 1876 | 2.2% | 35% |
| 12 | change | Ability to adapt to change | Adaptability | 223 | 278 | 441 | 476 | 427 | 1845 | 2.1% | 17% |
| 13 | social media | Front-end Integration | DC14 | 284 | 262 | 405 | 451 | 431 | 1833 | 2.1% | 100% |
| 14 | information | Information Integration | DC2 | 240 | 308 | 372 | 529 | 373 | 1822 | 2.1% | 54% |
| 15 | delivery | Last-mile Distribution | DC17 | 193 | 253 | 469 | 479 | 361 | 1755 | 2.0% | 49% |
| 16 | policy | Dynamic Capabilities | Strategy | 212 | 311 | 339 | 382 | 348 | 1592 | 1.8% | 18% |

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| 17 | engagement | Front-end Integration | DC11 | 123 | 213 | 395 | 420 | 426 | 1577 | 1.8% | 61% |
| 18 | systems | Information Integration | DC2 | 262 | 285 | 328 | 312 | 236 | 1423 | 1.7% | 43% |
| 19 | internal | Process Information | DC3 | 241 | 261 | 254 | 289 | 361 | 1406 | 1.6% | 11% |
| 20 | channels | Front-end Integration | DC10 | 140 | 254 | 301 | 293 | 282 | 1270 | 1.5% | 24% |
| 21 | skills | Social Capital Integration | DC9 | 183 | 242 | 258 | 308 | 246 | 1237 | 1.4% | 19% |
| 22 | click-and-collect | Last-mile Distribution | DC17 | 7 | 48 | 363 | 374 | 330 | 1122 | 1.3% | 31% |
| 23 | future-fit | Ability to adapt to change | Adaptability | 197 | 135 | 218 | 285 | 247 | 1082 | 1.3% | 10% |
| 24 | relationships | Process Integration | DC5 | 183 | 189 | 204 | 275 | 229 | 1080 | 1.3% | 100% |
| 25 | trust | Social Capital Integration | DC8 | 205 | 160 | 195 | 339 | 157 | 1056 | 1.2% | 39% |
| 26 | training | Social Capital Integration | DC9 | 186 | 199 | 238 | 222 | 182 | 1027 | 1.2% | 16% |
| 27 | plan | Dynamic Capabilities | Strategy | 179 | 187 | 190 | 249 | 201 | 1006 | 1.2% | 11% |
| 28 | capabilities | Dynamic Capabilities | Capabilities | 158 | 183 | 212 | 246 | 200 | 999 | 1.2% | 100% |
| 29 | technical | Information Integration | DC1 | 134 | 180 | 252 | 261 | 172 | 999 | 1.2% | 52% |
| 30 | team | Process Integration | DC7 | 153 | 185 | 197 | 225 | 234 | 994 | 1.2% | 15% |
| 31 | leadership | Process Information | DC6 | 128 | 167 | 222 | 231 | 195 | 943 | 1.1% | 100% |
| 32 | digital | Front-end Integration | DC10 | 39 | 71 | 288 | 356 | 173 | 927 | 1.1% | 17% |
| 33 | inventory | Back-end Integration | DC16 | 126 | 111 | 191 | 210 | 196 | 834 | 1.0% | 60% |
| 34 | alignment | Process Information | DC3 | 84 | 178 | 179 | 214 | 172 | 827 | 1.0% | 6% |
| 35 | principles | Dynamic Capabilities | Strategy | 108 | 145 | 186 | 187 | 169 | 795 | 0.9% | 9% |
| 36 | competitive | Ability to adapt to change | Adaptability | 70 | 123 | 212 | 200 | 179 | 784 | 0.9% | 7% |

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| 37 | talent | Social Capital Integration | DC9 | 115 | 166 | 162 | 167 | 121 | 731 | 0.8% | 11% |
| 38 | payment | Front-end Integration | DC12 | 125 | 126 | 129 | 141 | 197 | 718 | 0.8% | 100% |
| 39 | values | Dynamic Capabilities | Strategy | 139 | 136 | 157 | 134 | 149 | 715 | 0.8% | 8% |
| 40 | expansion | Ability to adapt to change | Adaptability | 107 | 145 | 174 | 157 | 124 | 707 | 0.8% | 7% |
| 41 | data | Information Integration | DC1 | 99 | 134 | 175 | 176 | 104 | 688 | 0.8% | 36% |
| 42 | home delivery | Last-mile Distribution | DC17 | 96 | 122 | 133 | 139 | 198 | 688 | 0.8% | 19% |
| 43 | seamlessly | Front-end Integration | DC11 | 73 | 126 | 164 | 163 | 124 | 650 | 0.8% | 25% |
| 44 | respect | Social Capital Integration | DC8 | 148 | 116 | 108 | 142 | 112 | 626 | 0.7% | 23% |
| 45 | innovate | Ability to adapt to change | Adaptability | 108 | 122 | 137 | 141 | 92 | 600 | 0.7% | 6% |
| 46 | culture | Social Capital Integration | DC8 | 44 | 102 | 120 | 143 | 151 | 560 | 0.6% | 21% |
| 47 | retention | Social Capital Integration | DC9 | 85 | 106 | 120 | 141 | 97 | 549 | 0.6% | 9% |
| 48 | website | Front-end Integration | DC10 | 77 | 97 | 100 | 125 | 115 | 514 | 0.6% | 10% |
| 49 | e-commerce | Front-end Integration | DC10 | 54 | 101 | 124 | 97 | 127 | 503 | 0.6% | 9% |
| 50 | benchmarking | Ability to adapt to change | Adaptability | 59 | 102 | 96 | 104 | 91 | 452 | 0.5% | 4% |
| 51 | loyalty | Social Capital Integration | DC8 | 58 | 99 | 107 | 99 | 70 | 433 | 0.5% | 16% |
| 52 | outcomes | Process Information | DC7 | 23 | 70 | 98 | 110 | 110 | 411 | 0.5% | 6% |
| 53 | mobile | Front-end Integration | DC13 | 66 | 78 | 97 | 99 | 66 | 406 | 0.5% | 100% |
| 54 | satisfaction | Front-end Integration | DC15 | 51 | 77 | 75 | 76 | 100 | 379 | 0.4% | 5% |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 55 | integrate | Process Information | DC3 | 82 | 69 | 58 | 62 | 44 | 315 | 0.4% | 2% |
| 56 | learning | Social Capital Integration | DC9 | 36 | 62 | 74 | 78 | 60 | 310 | 0.4% | 5% |
| 57 | convenience | Front-end Integration | DC11 | 8 | 58 | 78 | 93 | 62 | 299 | 0.3% | 12% |
| 58 | differentiate | Ability to adapt to change | Adaptability | 13 | 50 | 70 | 72 | 58 | 263 | 0.3% | 2% |
| 59 | warehouse | Back-end Integration | DC16 | 60 | 23 | 64 | 44 | 46 | 237 | 0.3% | 17% |
| 60 | returns | Last-mile Distribution | DC19 | 30 | 33 | 50 | 64 | 52 | 229 | 0.3% | 100% |
| 61 | collaborate | Process Information | DC3 | 22 | 47 | 48 | 62 | 45 | 224 | 0.3% | 2% |
| 62 | bricks-and-mortar | Back-end Integration | DC10 | 26 | 53 | 59 | 70 | 9 | 217 | 0.3% | 4% |
| 63 | fulfilment | Back-end Integration | DC16 | 28 | 32 | 24 | 30 | 31 | 145 | 0.2% | 10% |
| 64 | excellence | Ability to adapt to change | Adaptability | 6 | 31 | 29 | 37 | 31 | 134 | 0.2% | 1% |
| 65 | customisation | Front-end Integration | DC15 | 16 | 27 | 28 | 35 | 20 | 126 | 0.1% | 2% |
| 66 | segmentation | Front-end Integration | DC15 | 18 | 16 | 35 | 30 | 20 | 119 | 0.1% | 2% |
| 67 | analytical | Information Integration | DC1 | 21 | 31 | 24 | 24 | 17 | 117 | 0.1% | 6% |
| 68 | centralised | Back-end Integration | DC16 | 12 | 28 | 12 | 29 | 22 | 103 | 0.1% | 7% |
| 69 | disruption | Ability to adapt to change | Adaptability | 3 | 6 | 20 | 23 | 44 | 96 | 0.1% | 1% |
| 70 | adapt | Ability to adapt to change | Adaptability | 4 | 13 | 17 | 23 | 24 | 81 | 0.1% | 1% |
| 71 | performance measurement | Process Integration | DC7 | 13 | 17 | 12 | 19 | 23 | 84 | 0.1% | 1% |
| 72 | database | Information Integration | DC1 | 10 | 25 | 16 | 13 | 7 | 71 | 0.1% | 4% |
| 73 | outsourced | Last-mile Distribution | DC18 | 14 | 10 | 15 | 15 | 15 | 69 | 0.1% | 81% |
| 74 | picking | Back-end Integration | DC16 | 11 | 20 | 5 | 18 | 14 | 68 | 0.1% | 5% |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 75 | legacy | Information Integration | DC2 | 9 | 14 | 16 | 17 | 11 | 67 | 0.1% | 2% |
| 76 | market-leading | Ability to adapt to change | Adaptability | 6 | 14 | 17 | 21 | | 58 | 0.1% | 1% |
| 77 | intelligence | Information Integration | DC1 | 17 | 12 | 8 | 12 | 8 | 57 | 0.1% | 3% |
| 78 | dynamic | Ability to adapt to change | Adaptability | 4 | 5 | 9 | 13 | 15 | 46 | 0.1% | 0% |
| 79 | routine | Dynamic Capabilities | Strategy | 4 | 12 | 4 | 11 | 7 | 38 | 0.0% | 0% |
| 80 | cloud | Information Integration | DC2 | | 5 | 7 | 13 | 7 | 32 | 0.0% | 1% |
| 81 | value-creating | Front-end Integration | DC11 | 4 | 5 | 4 | 10 | | 23 | 0.0% | 1% |
| 82 | fast-growing | Ability to adapt to change | Adaptability | 3 | 5 | 5 | 4 | | 17 | 0.0% | 0% |
| 83 | touchpoints | Front-end Integration | DC11 | 2 | 2 | 3 | 6 | 4 | 17 | 0.0% | 1% |
| 84 | same-day | Last-mile Distribution | DC18 | | | 5 | 4 | 7 | 16 | 0.0% | 19% |
| 85 | lockers | Last-mile Distribution | DC17 | 5 | 1 | | | 2 | 8 | 0.0% | 0% |
| 86 | fast-changing | Ability to adapt to change | Adaptability | 1 | | | 3 | | 4 | 0.0% | 0% |
| 87 | cross-functional | Process Integration | DC5 | | | | 2 | | 2 | 0.0% | 0% |

| DC classification | Total | Percentage in total document analysis |
|---|---|---|
| DC3 | 12747 | 14.8% |
| Adaptability | 10715 | 12.4% |
| Strategy | 8998 | 10.4% |
| DC15 | 7155 | 8.3% |
| DC7 | 6849 | 7.9% |
| DC9 | 6439 | 7.5% |
| DC10 | 5307 | 6.2% |
| DC17 | 3573 | 4.1% |
| Resources | 3530 | 4.1% |
| DC2 | 3344 | 3.9% |
| DC8 | 2675 | 3.1% |
| DC4 | 2652 | 3.1% |
| DC11 | 2566 | 3.0% |
| DC1 | 1932 | 2.2% |
| DC14 | 1833 | 2.1% |
| DC16 | 1387 | 1.6% |
| DC5 | 1082 | 1.3% |
| Capabilities | 999 | 1.2% |
| DC6 | 943 | 1.1% |
| DC12 | 718 | 0.8% |
| DC13 | 406 | 0.5% |
| DC19 | 229 | 0.3% |
| DC18 | 85 | 0.1% |
| **Total** | **86164** | **100.0%** |

# ANNEXURE C

# INFORMED CONSENT

# PARTICIPANT INFORMATION SHEET

Title: **Internal Supply Chain Integration in Omnichannel Retailers: A Dynamic Capabilities Perspective**

**Dear Prospective Participant**

My name is Alicia Weber. I am doing research with Professors Hannie Badenhorst-Weiss and Orpha Cilliers towards a PhD in Logistics, Transport Economics, Purchasing and Supply Chain Management the University of South Africa. We are inviting you to participate in a study entitled Internal Supply Chain Integration in Omnichannel Retailers: A Dynamic Capabilities Perspective.

**WHAT IS THE PURPOSE OF THE STUDY?**

I am conducting this research to determine how dynamic capabilities can facilitate omnichannel retailers' internal supply chain integration. *Dynamic capabilities* relate to the organisational processes by which managers alter their resource base, acquire and shed resources, integrate them, and recombine them to generate new value-creating strategies. As such, dynamic capabilities are the drivers behind the creation, evolution, and recombination of other resources into new sources of competitive advantages. Against the backdrop of dynamic capabilities, this study aims to determine what dynamic capabilities allow retailers to integrate their omnichannel supply chains to stay competitive in an ever-changing industry such as omnichannel retailing.

This study is expected to collect important information that could guide retailers in identifying dynamic capabilities that support the transformative supply chain processes required to be successful in omnichannel retailing in South Africa.

**WHY AM I BEING INVITED TO PARTICIPATE?**

You are invited to participate in this study due to your knowledge of omnichannel retailing. Additionally, because of the senior management position you hold within one of the key functions involved in the omnichannel supply chain of a South African retailer, i.e. supply chain management, logistics management, operations management, e-commerce management or any other related functions.

Your contact details were obtained in one of the following ways: (a) You are a registered member of The Professional Body of Supply Chain Managers in South Africa (SAPICS) and SAPICS agreed to forward this invitation to you, (b) other industry experts in your network nominated you to participate, or (c) you were identified by the researcher on a social media platform for professionals, such as LinkedIn.

**WHAT IS THE NATURE OF MY PARTICIPATION IN THIS STUDY?**

The study involves virtual interviews via Skype, Zoom or Google Meet, which will be audio recorded. If you agree to participate in this study, you will receive an interview protocol in advance to familiarise yourself with the questions that will be asked during the interview. The questions will cover issues surrounding your experience in terms of the management of omnichannel supply chain processes, information systems and personnel. The interview is expected to last approximately 60 minutes.

**CAN I WITHDRAW FROM THIS STUDY EVEN AFTER HAVING AGREED TO PARTICIPATE?**

Participating in this study is voluntary, and you are under no obligation to consent to participation. If you decide to participate, you will be asked to sign a written consent form (on the last page of this participant information sheet). Nevertheless, you are still free to withdraw at any time and without giving a reason.

**WHAT ARE THE POTENTIAL BENEFITS OF TAKING PART IN THIS STUDY?**

Your participation will contribute to the development of a conceptual framework of dynamic capabilities that facilitate the internal supply chain integration of omnichannel retailers. The expected value of this framework lies in guiding omnichannel retailers to (1) get insight into how managers can achieve internal omnichannel supply chain integration, (2) understand what capabilities facilitate omnichannel supply chain integration, and (3) recognise possible areas to integrate their omnichannel supply chain process to keep up with the dynamic omnichannel environment.

**ARE THEIR ANY NEGATIVE CONSEQUENCES FOR ME IF I PARTICIPATE IN THE RESEARCH PROJECT?**

This study is categorised as low risk, and the only foreseeable risk of harm is the potential inconvenience of the time you have to allocate to participate in the study. This study will not lead to any physical, psychological and social harm. In addition, any personal identification information will be removed from the data. See the next question for more detail in this regard.

**WILL THE INFORMATION THAT I CONVEY TO THE RESEARCHER AND MY IDENTITY BE KEPT CONFIDENTIAL?**

The identities of all participants and the retailers they are employed at will be kept **strictly confidential**. Only the researcher, the two supervisors and an independent statistician will have access to the data. However, these parties are legally bound by non-disclosure agreements. In addition, any answers you provide during the interviews will be coded using a pseudonym (for example Participant A or Retailer 1). To protect your identity at all times, you will be referred to by this pseudonym throughout the data, any publications, or other research reporting methods (such as conference proceedings).

**HOW WILL THE RESEARCHER(S) PROTECT THE SECURITY OF DATA?**

A software programme ATLAS.ti will be used to analyse the data, and all recorded data will be password protected on the researcher's computer. No external party will have access to the ATLAS.ti files used to analyse the data. The electronic copies of your answers will be stored in a password-protected folder for five years for future academic purposes; after that, it will be permanently deleted from the researcher's computer's hard drive.

**WILL I RECEIVE PAYMENT OR ANY INCENTIVES FOR PARTICIPATING IN THIS STUDY?**

Participation is voluntary, and neither payment nor an incentive is offered for participating in this study.

**HAS THE STUDY RECEIVED ETHICS APPROVAL?**

This study has received written approval from the Research Ethics Review Committee of the College of Economics and Management Science, Unisa. A copy of the approval letter may be obtained from the researcher.

**HOW WILL I BE INFORMED OF THE FINDINGS/RESULTS OF THE RESEARCH?**

If you would like to be informed of the final research findings or require any further information, please contact the researcher Alicia Weber telephonically on 072 840 3052 or via email snymaan@unisa.ac.za. Alternatively, if you are interested in any published material related to this study, you are welcome to request such documents from the researcher.

Should you have concerns about how the research has been conducted, you may contact the researcher's supervisors Prof Orpha Cilliers telephonically on (012) 429 4030 or via email cillijo@unisa.ac.za or Prof Hannie Badenhorst-Weiss at hanniebw@gmail.com. Alternatively, you may contact the research ethics chairperson Ms Carmen Poole of the Department of Applied Management, telephonically on 012 433 4668 or via email at loedoc@unisa.ac.za.

Thank you for taking the time to read this information sheet. To agree to partake in the study, kindly scroll to the next page to sign the informed consent form.

Thank you,

**Alicia Weber**
**PhD Researcher**

**[PLEASE SCROLL DOWN TO COMPLETE THE INFORMED CONSENT FORM]**

# CONSENT TO PARTICIPATE IN THIS STUDY

I, _____ (participant name and surname), confirm that the person asking my consent to take part in this research has explained to me the nature, procedure, potential benefits and anticipated inconvenience of participation in this study.

I have read and understood the study, as explained in the participation information sheet above. I have had sufficient opportunity to ask questions and am prepared to participate in the study.

I understand that my participation is voluntary and that I am free to withdraw at any time without penalty.

I am aware that the study findings will be processed into a research report, journal publications and/or conference proceedings, but that my participation will be kept confidential.

I also agree that the researcher may audio record the interview to aid with the data analysis process.

I have received a signed copy of the informed consent agreement.

**Participant Name & Surname:** _____ **Date:** _____

**Participant Signature**_____

**Researcher's Name & Surname**: Alicia Neva Weber **Date:** _____

**Researcher's signature**

# ANNEXURE D

# INTERVIEW PROTOCOL

# INTERVIEW PROTOCOL

## INTERNAL SUPPLY CHAIN INTEGRATION IN OMNICHANNEL RETAILERS: A DYNAMIC CAPABILITIES PERSPECTIVE

**SECTION A**

**INTRODUCTION**

**Dear Participant**

My name is Alicia Weber, and I am doing research with professors Hannie Badenhorst-Weiss and Orpha Cilliers towards a PhD in Logistics, Transport Economics, Purchasing and Supply Chain Management at the University of South Africa. My study is entitled Internal Supply Chain Integration in Omnichannel Retailers: A Dynamic Capabilities Perspective.

Thank you for your willingness to allocate some valuable time to allow me to conduct this interview with you. I want this interview to be an open and informal discussion during which you can share your 'real-life' experiences. The main issues that we will be covering today are concerned with the omnichannel supply chain. I am particularly interested in your experience with omnichannel supply chain processes and the capabilities that retailers should have to successfully compete in this dynamic environment.

This interview should last about 60 minutes; however, you may stop the interview at any time, without providing a reason and with no consequences to you. Also, if you feel uncomfortable with any question at any point, you have the right to opt not to answer that particular question.

May I record this interview to facilitate accuracy and recollection during the analysis process? Despite the interview being recorded, I would like to assure you that the discussion will be kept **strictly anonymous and confidential**. I will keep the recordings safe until they are transcribed for analysis. The transcribed notes will contain no personal identification information; any answers you provide during the interview will be coded using a pseudonym (for example, Participant A or Retailer 1).

Do you have any questions or comments before we start?

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## SECTION B OMNICHANNEL RETAILING

1. What does the concept "omnichannel" mean to you or within your organisation?

2. In your opinion, what is needed to create a successful omnichannel retailing model?

3. From a supply chain perspective, what would you consider some of your successes and struggles with the implementation of your omnichannel strategy?

4. What would your omnichannel supply chain (or experience) look like if you had no limitations?

5. Omnichannel retailing often requires end-to-end knowledge of all processes involved in creating an omnichannel experience for customers. Could you discuss if and how you create knowledge-sharing opportunities within your organisation or among employees from the different business units?

6. Omnichannel retailing requires a change to many of the organisation's legacy processes and structures. Could you discuss change management and how you motivate employees from different functions along the supply chain to "get on board" with omnichannel initiatives?

***Possible Probe(s):***

- *What role do you think management plays in creating a collaborative culture within an organisation?*
- *What role does upskilling play in getting employees on board with omnichannel initiatives?*

7. In your opinion, what makes an organisation dynamic? Or what capabilities are needed within an organisation which allow them to adapt to changing market conditions?

8. Could you discuss the use of data and systems and the importance of information management as part of the omnichannel supply chain?

9. I know that the cost of developing omnichannel systems is one of the most significant barriers to omnichannel retailing. Could you discuss the cost drivers of omnichannel retailing and how you have mitigated the effects of some of these costs?

## SECTION C
## INTERNAL SUPPLY CHAIN INTEGRATION

We will now be moving on to questions relating to internal supply chain integration.

Brief description of internal supply chain integration:

**Internal supply chain integration** involves the coordination, collaboration, and integration of all functional areas in an organisation directly involved in the organisation's internal supply chain.

10. What does internal integration (collaboration/coordination) mean to you or within your organisation?

***Possible Probe:***

- Could you perhaps elaborate on some measures or processes you use to create internal collaboration/coordination among business units?

## SECTION D

## COVID-19 PANDEMIC'S IMPACT ON THE OMNICHANNEL SUPPLY CHAIN

I would be remiss if I did not ask you a few questions about the pandemic's impact on your supply chain and your omnichannel offering.

11. In what significant way has the pandemic impacted or changed your supply chain and your omnichannel offering?

12. During your organisation's response to the pandemic, what were some of the key resources/ capabilities or strategies you relied on to adapt to the sudden changes brought on by the pandemic?

In conclusion, I would like to ask you …

13. What do you think the omnichannel supply chain looks like ten years from now?

***AND:***

- *In your experience, what are the capabilities retailers need to acquire **now**, to be competitive in your envisaged future of omnichannel retailing?*

14. Finally, is there anything you think I should have asked you on this topic that I have not already?

This concludes our interview. Thank you for taking the time to participate in my study, what you have shared with me today has been very insightful, and I am convinced that it will make a valuable contribution to my study.

- *Do you have any final questions or comments for me?*
- *Would you like to add or change any of the answers you have provided in this interview?*

We can then conclude this discussion. Thank you for taking time out of your busy schedule to (virtually) meet with me. I hope you have also found this discussion interesting and valuable.

**Alicia Weber (PhD Researcher)**

# ANNEXURE E
# ETHICS CLEARANCE CERTIFICATE

UNISA university of south africa

## UNISA DEPARTMENT APPLIED MANAGEMENT RESEARCH ETHICS REVIEW COMMITTEE (DAM-RERC)

Date: 4 December 2020

ERC Reference # : 2020_CEMS_DAM_017
Name: Ms Alicia Neva Weber
Student #: 50854356
Staff #:

Dear Ms Alicia Neva Weber

**Decision: Ethics Approval from December 2020 to December 2023**

---


**Researcher(s):** Ms Alicia Neva Weber
072 840 3052 / 012 429 4932 / snymaan@unisa.ac.za

**Supervisor (s):** Prof JA Badenhorst
082 449 7507 / hanniebw@gmail.com
Prof JO Cilliers
082 788 5915 / 012 429 4030 / cillijo@unisa.ac.za


**Working title of research:**
**Internal supply chain integration in omnichannel retailers: a dynamic capabilities perspective**

**Qualification:** PhD in Management studies (Supply Chain Management)

---

Thank you for the application for research ethics clearance by the Unisa DAM Ethics Review Committee for the above-mentioned research. Ethics approval is granted for three years.

*The **medium risk application** was **reviewed** by the DAM Ethics Review Committee in November 2020 in compliance with the Unisa Policy on Research Ethics and the Standard Operating Procedure on Research Ethics Risk Assessment. The decision was approved on the 3rd of December 2020.*

The proposed research may now commence with the provisions that:

1. The researcher will ensure that the research project adheres to the relevant guidelines set out in the Unisa Covid-19 position statement on research ethics attached.


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2. The researcher(s) will ensure that the research project adheres to the values and principles expressed in the UNISA Policy on Research Ethics.
3. Any adverse circumstance arising in the undertaking of the research project that is relevant to the ethicality of the study should be communicated in writing to the DAM Committee.
4. The researcher(s) will conduct the study according to the methods and procedures set out in the approved application.
5. Any changes that can affect the study-related risks for the research participants, particularly in terms of assurances made with regards to the protection of participants' privacy and the confidentiality of the data, should be reported to the Committee in writing, accompanied by a progress report.
6. The researcher will ensure that the research project adheres to any applicable national legislation, professional codes of conduct, institutional guidelines and scientific standards relevant to the specific field of study. Adherence to the following South African legislation is important, if applicable: Protection of Personal Information Act, no 4 of 2013; Children's act no 38 of 2005 and the National Health Act, no 61 of 2003.
7. Only de-identified research data may be used for secondary research purposes in future on condition that the research objectives are similar to those of the original research. Secondary use of identifiable human research data require additional ethics clearance.
8. No field work activities may continue after the expiry date (12/2023). Submission of a completed research ethics progress report will constitute an application for renewal of Ethics Research Committee approval.

*Note: The reference number **2020_CEMS_DAM_017** should be clearly indicated on all forms of communication with the intended research participants, as well as with the Committee.*

Yours sincerely,

Mrs C Poole
Chair: DAM-RERC
**E-mail: damrerc@unisa.ac.za**
**Tel: (012) 433-4668**

Prof RT Mpofu
Deputy Executive Dean
(on behalf of Prof Mogale)

Prof M Mogale
Executive Dean: CEMS
**E-mail: mogalmt@unisa.ac.za**
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# ANNEXURE F

# LANGUAGE EDITING CERTIFICATE

NIKANN
*Service
*Quality
*Excellence
Transcription and Typing Solutions

Cell: 079 886 5226
E-mail: nikki@nikann.co.za

# Language Editing Certificate

for

**ALICIA NEVA WEBER**

for the study

**INTERNAL SUPPLY CHAIN INTEGRATION IN OMNICHANNEL RETAILERS: A DYNAMIC CAPABILITIES PERSPECTIVE**

A thesis submitted in partial fulfilment of the requirements for the Degree:

**DOCTOR OF PHILOSOPHY IN MANAGEMENT STUDIES**

at the

**UNIVERSITY OF SOUTH AFRICA**

This is to certify that Nikki Solomon provided full language editing for this thesis

Nikki Solomon
25 April 2022