OPPORTUNITIES FOR GROWTH IN THE NAMIBIAN AUTOMOTIVE INDUSTRY

by

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ABSTRACT

The manufacturing industry in Namibia faces several constraints impeding the establishment of an automotive manufacturing industry able to imitate the success of the automotive industry in South Africa. This study aimed to improve understanding and need of development of the domestic automotive industry of a developing country like Namibia into bordering regions. The research focused on the growth of Namibia's automotive component manufacturing base by linking it to the automotive supply chain in South Africa. The research also focused on the factors constraining the growth of the automotive industry in Namibia.

This research attempts to enhance the field of business management in general. In this endeavour, this study's research contribution in regard to general business management is in the field of strategic management and, more specifically, the sub-discipline of supply chain management.

Growth theories and models covered in this research include Porter's Model on Competitiveness of Nations, Porter's Country and International Competitiveness, Peng's Model of Country Competitiveness, Porter's Diamond Model, and Porter's Model on Industry Clusters.

The study used a mixed method of research. A quantitative, structured questionnaire was applied to 136 individuals with expertise and notable experience of the automotive industry in Namibia and South Africa. The qualitative research consisted of 20 face-to-face in-depth interviews conducted with others in the same target population. Descriptive and inferential data analyses were employed to assess respondents' data.

The implications from the findings of this research are twofold. The lessons drawn from this study can contribute to an investor-friendly regulatory foundation that will support the development and implementation of policies to establish a viable automotive manufacturing industry in Namibia as well as how a developing automotive industry in Namibia can benefit from being part of the South African automotive supply chain.

This research underscored public policy as a crucial driver of the growth of manufacturing industries and benefits for a developing automotive industry of taking part in the regional supply chains of major automotive manufacturing hubs.

Key terms: automotive industry growth; automotive industry sectors; investment incentives; manufacturing encouragement; automotive supply chain; constraining factors, automotive component manufacturing; policy regimes; qualitative research; descriptive data analysis; inferential data analysis.

OPSOMMING

Die vervaardigingsbedryf in Namibië ervaar verskeie beperkings wat die vestiging van ’n motorvervaardigingsbedryf wat in staat is om die sukses van die motorbedryf in Suid-Afrika na te boots, nadelig raak. Hierdie studie is daarop gerig om begrip vir die behoefte aan die ontwikkeling van die plaaslike motorbedryf in ’n ontwikkelende land soos Namibië en aanliggende streke te verbeter.

Hierdie navorsing fokus op die groei van die vervaardiging van motorkomponente in Namibië deur dit aan die voertuigvoorsieningsketting in Suid-Afrika te koppel. Die navorsing fokus ook op die faktore wat die groei van die motorbedryf in Namibië belemmer.

Die navorsing poog om die terrein van sakebestuur oor die algemeen te versterk. In hierdie poging is die studie se bydrae ten opsigte van algemene sakebestuur op die terrein van strategiese bestuur en, meer bepaald, die subdissipline van voorsieningskettingbestuur.

Groeiteorieë en -modelle wat in hierdie navorsing gedek word, sluit in Porter se Model van die Mededingendheid van State, Porter se Model van Staat- en Internasionale Mededingendheid, Peng se Model van Landmededingendheid, Porter se Diamantmodel, en Porter se Model van Bedryfsklusters.

Die studie het ’n gemengde navorsingsmetode gebruik. ’n Kwantitatiewe, gestruktureerde vraelys is op 136 individue met kennis en besondere ervaring van die motorbedryf in Namibië en Suid-Afrika toegepas. Die kwalitatiewe navorsing het bestaan uit 20 indringende onderhoude van aangesig tot aangesig wat met persone in dieselfde teikenpopulasie gevoer is. Beskrywende en afgeleide dataontledings is ingespan om respondente se data te assesseer.

Die implikasies van die bevindings van hierdie navorsing is tweeledig. Die lesse wat uit hierdie studie geleer word, kan bydra tot ’n beleggersvriendelike regulatiewe stigting wat die ontwikkeling en inwerkingstelling van beleide sal ondersteun om ’n lewensvatbare motorvervaardigingsbedryf in Namibië tot stand te bring. Dit dui ook aan hoe ’n ontwikkelende motorbedryf in Namibië voordeel daaruit kan trek om deel van die Suid-Afrikaanse motorvoorsieningsketting te wees.

Hierdie navorsing het openbare beleid beklemtoon as ’n belangrike aandrywer van die groei van vervaardigingsbedrywe en voordele vir ’n ontwikkelende motorbedryf deur deelname aan die streeksvoorsieningskettings van groot motorvervaardigingskerns.

Sleutelwoorde: groei van die motorbedryf; motorbedryfsektore; beleggingsaansporings; vervaardigingsaanmoediging; motorvoorsieningsketting; beperkende faktore, motorkomponentvervaardiging; beleidstelsels; kwalitatiewe navorsing; beskrywende dataontleding; afgeleide dataontleding.

ISIFINQO

Imboni yokukhiqiza eNamibia ibhekene nezingqinamba ezimbalwa ezivimbela ukusungulwa kwemboni yokukhiqiza izimoto ekwazi ukulingisa impumelelo yemboni yezimoto eNingizimu Afrika. Lolu cwaningo luhlose ukuthuthukisa ukuqonda kanye nesidingo sokuthuthukiswa kwemboni yezimoto yasekhaya yezwe elisathuthuka njengeNamibia libe yizifunda ezisemngceleni.

Lolu cwaningo lugxile ekukhuleni kwesizinda sokukhiqiza izimoto saseNamibia ngokusixhumanisa nochungechunge lokuhlinzekwa kwezimoto eNingizimu Afrika. Ucwaningo luphinde lwagxila ezintweni ezivimbela ukukhula kwemboni yezimoto eNamibia.

Lolu cwaningo luzama ukuthuthukisa umkhakha wokuphathwa kwebhizinisi jikelele. Kulo mzamo, igalelo lalolu cwaningo lumayelana nokuphathwa kwebhizinisi jikelele lisemkhakheni wokuphatha amasu futhi, ikakhulukazi, igatshana elingaphansi kokuphathwa kokuhlinzekwa kochungechunge.

Imibono ethe xaxa ekucwaningeni kocwaningo oluhlanganisa iModeli kaPorter's Yokuncintisana Kwezizwe, Ukuncitisana kweZwe lika Porters kanye Namazwe Ngamazwe, Imodeli kaPeng Yokuncitisana Yezwe, Imodeli Yedayimane kaPorter, kanye neModeli ka Porter's Yamaqoqo Emboni.

Ucwaningo lusebenzise indlela exubile yocwaningo. Uhlu lwemibuzo oluningi, oluhlelekile lwasetshenziswa kubantu abayi-136 abanolwazi oluphawulekayo lwemboni yezimoto eNamibia naseNingizimu Afrika. Ucwaningo lwesimo belubandakanya izingxoxo ezijulile ezingama-20 ezenziwa nabanye abantu besibalo esifanayo. Ukuhlaziywa kwedatha okuchazayo nokuncane kuye kwasetshenziswa ukuze kuhlolwe imininingwane yabaphendulayo.

Imiphumela evela emiphumeleni yalolu cwaningo ikabili. Izifundo ezithathwe kulolu cwaningo zingaba nomthelela ekwakhiweni kwesisekelo sokulawula esilungele abatshalizimali esizokweseka ukuthuthukiswa kanye nokuqaliswa kwezinqubomgomo zokusungula imboni esebenzayo yokukhiqiza izimoto eNamibia kanye nokuthi imboni yezimoto ethuthukayo eNamibia ingazuza kanjani ngokuba yingxenye yochungechunge lokuhlinzekwa kwezimoto eNingizimu Afrika.

Lolu cwaningo lugcizelele inqubomgomo yomphakathi njengomholi obalulekile wokukhula kwezimboni zokukhiqiza kanye nezinzuzo zemboni yezimoto ethuthukayo yokubamba iqhaza kuchungechunge lokuhlinzeka ngezifunda lwezindawo ezinkulu zokukhiqiza izimoto.

Amagama abalulekile: ukukhula kwemboni yezimoto; imikhakha yezimboni zezimoto; izikhuthazo zokutshala izimali; ukukhuthazwa kokukhiqiza; uchungechunge lokuhlinzeka ngezimoto; izici ezicindezelayo, ukukhiqizwa kwengxenye yezimoto; izinqubo zenqubomgomo; ucwaningo lwesimo; ukuhlaziywa kweminingwane echazayo; ukuhlaziywa kweminingwane engajwayelekile

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LIST OF ABBREVIATIONS AND ACRONYMS

The following abbreviations are used throughout the study.

AfCFTA	African Continental Free Trade Area
AGOA	African Growth and Opportunity Act
AIEC	Automotive Industry Export Council
APDP	Automotive Production and Development Programme
ASCCI	Automotive Supply Chain Competitiveness Initiative
COMESA	Common Market for Eastern and Southern Africa
COVID-19	Coronavirus Disease
EAN	Economic Association of Namibia
EPA	Economic Partnership Agreement
EPZ	Export processing zone
EU	European Union
EV	Electric Vehicle
FDI	Foreign Direct Investment
FTA	Free Trade Agreement
GDP	Gross Domestic Product
GVC	Global value chain
HGF	High-Growth Firm
HRM	Human Resource Management
IEA	International Energy Agency
JV	Joint Venture
LCV	Light commercial vehicle
MNC	Multinational Corporation

NAACAM	National Association of Automotive Component & Allied Manufacturers
NAAMSA	National Association of Automobile Manufacturers of South Africa
NACC	Namibian Competition Commission
NEV	New Energy Vehicle
OICA	International Organization of Motor Vehicle Manufacturers
OEMs	Original Equipment Manufacturers
PCA	Principal Component Analysis
PPP	Public-Private Partnership
PwC	PricewaterhouseCoopers
R&D	Research and Development
RBV	Resource-Based View
ROR	Real Options Reasoning
ROT	Real Options Theory
ROV	Real Options Valuation
SAAM	South African Automotive Masterplan
SADC	Southern African Development Community
SACU	Southern African Customs Union
SPSS	Statistical Package for Social Science
SSA	Sub-Saharan Africa
TFTA	Tripartite Free Trade Area
UNISA	University of South Africa
USA	United States of America

CHAPTER 1:
INTRODUCTION TO THE STUDY:
BACKGROUND AND RESEARCH PROBLEM

1.1 INTRODUCTION

The manufacturing industry in Namibia faces several constraints impeding the establishment of an automotive manufacturing industry able to imitate the success of the automotive industry in South Africa. There are, however, options that can create an environment for the Namibian economy in which it can diversify and in which the scope for automotive manufacturing can increase. It consists of the benefits of being a member of the Southern African Customs Union (SACU), which include opportunities to expand the contribution to the upstream and downstream supply chain of the expanding South African automotive production industry.

The importance of this study was demonstrated by way of identifying factors that constrain the growth of an automotive industry in developing countries like Namibia. The knowledge gap that will be filled lies in establishing how a developing country's automotive industry can grow and benefit from engagement in the supply chain of nearby key regional automotive production networks like that of neighbouring South Africa.

In respect of other scholars and studies on the subject, the lack of knowledge gap is evident as no significant information and knowledge is available on these constraining factors. The how and to what extent a developing automotive industry in Namibia can benefit from being part of the South African automotive supply chain does not appear in research theory and research on this topic.

This study aimed to improve understanding of development of the domestic automotive industry of a developing country like Namibia into bordering regions, near-by core production areas, and the integration of these into regional production networks, with reference to the larger South African automotive industry.

Contribution of this study was in the field of strategic management. The sub-discipline where this study was positioned and contributed towards can be defined as supply

chain management. Academic research on strategic management and competitive advantage, as included in this specific study, includes strategic management of high-growth firms (HGFs) and industries (Demir, Wennberg and McKelvie, 2017) and Porter's Country and International Competitiveness (Hole, Snehal and Bhaskar, 2019). It is not foreseen that any one or more specific theoretical models are tested, or new frameworks or conceptual models developed for the automotive industry, as part of this thesis. The research objectives in Section 1.9 below do not include testing of theoretical models.

This study represented an important contribution to the body of knowledge pertaining to growth of an automotive industry in developing countries, which have direct implication for automotive industries in Africa's developing economies, of which Namibia had special reference in this study.

Research in this study was a mixed (multiple) method nature. It consisted of descriptive quantitative research, with descriptive and inferential data analysis of data gathered in an empirical survey. The descriptive statistics derived from the empirical survey are complimented by thematic analysis of the qualitative open-ended components in the interview guide. Qualitative research was conducted in the form of face-to-face in-depth interviews with participants other than respondents in the empirical survey. The target population of this specific study from which data were collected were role-players with expertise and notable experience in the automotive industry in Namibia and South Africa, as described in Section 1.12.3 below. The population was chosen as to focus on driving instruments of growth to assist the Namibian government and industry stakeholders with options to expand the automotive industry in Namibia.

In this introductory chapter, to underline the theoretical underpinning of this specific study, it is pertinent that theories, models, frameworks, and growth strategies are first contrasted: theories describe, explain, and predict phenomena (Schlager, 2019:293) and are defined as sets of statements, principles, and ideas relating to a particular subject. Models represent more visual representation of reality or concepts (Lahti, Wincent and Parida, 2018:3). It is emphasised that the terms 'theory' and 'model' usually refer to the same concept. In this specific thesis, these terms were used interchangeably. In addition, frameworks organise diagnostic and prescriptive inquiry

in the attempt to identify the universal elements that any theory relevant to the same kind of phenomena would need to include (Schlager, 2019:293). Frameworks were used to compare theories, allowing policy scholars to use a common language and to identify pressing questions to pursue (Whitfield, Staritz and Morris, 2020:1018).

The layout of Chapter 1 consists of the background to the study with an introduction to the Namibian automotive industry, the theoretical foundation, the research problem, research objectives, research questions, hypotheses development, research design and methodology, and the outline of the thesis and chapter layout.

1.2 BACKGROUND TO THE STUDY

1.2.1 The Namibian Automotive Industry

To provide background information to the research problem, this section entails a brief discussion of the automotive industry in Namibia.

1.2.1.1 Policy regimes

Additional to the SACU membership discussed in Section 1.1 above, Namibia forms part of the 15-country Southern African Development Community (SADC, 2021a). The SADC operates as a free trade area and allows access to a market of approximately 360 million people as of 2019 (SADC, 2021c). It has an estimated regional gross domestic product (GDP) of US$694 billion in 2019. Furthermore, Namibia is part of the SADC's Economic Partnership Agreement (EPA), providing duty-free trade with the 28-country European Union (EU). The EPA replaced the EU's Trade, Development and Cooperation Agreement (TDCA), which aims to further harmonise trade relations within the region, as well as to further African integration. Along with 38 other African countries, Namibia enjoys duty- and quota-free access into the United States of America (USA) under the African Growth and Opportunity Act (AGOA). The AGOA and its extension up to 2025, along with the USA government, are supportive of the continent's regional integration aspirations (Automotive Industry Export Council [AIEC], 2022:40).

Being a member of SACU, the same automotive policy regimes as in South Africa apply to Namibia (AIEC, 2022:40). On this basis, new vehicle sales in Namibia are

reported by the National Association of Automobile Manufacturers of South Africa (*naamsa*), the Automotive Business Council in South Africa, as part of South African sales, as if Namibia was a province of South Africa (AIEC, 2022:109). In almost all instances, automotive dealerships in Namibia operate under similar franchise agreements with the global vehicle manufacturer companies or original equipment manufacturers (OEMs), such as Volkswagen, Toyota, Ford, and others.

The automotive industry in Namibia benefits greatly from imports from South Africa and the impact of its automotive policy programmes in terms of increased choices (AIEC, 2022:25). For the month of February 2022, South Africa emerged as Namibia's largest trading partner for both trade flows in the import as well as export baskets (Namibia Statistics Agency, 2022). South Africa's share was 38.5% of the value of all goods received into Namibia in February 2022, amounting to N$3.7 billion. The import basket mainly comprised of motor vehicles, vessels, petroleum oils, inorganic chemicals as well as precious stones (diamonds). In November 2021, South Africa exported R4.54 billion and imported R1.49 billion from Namibia, resulting in a negative trade balance of R3.05 billion on Namibia's trade account (OEC World, 2021). Motor vehicles for the transport of goods are mainly sourced from South Africa and the United Kingdom (Namibia Statistics Agency, 2022). Namibia remained South Africa's sixth largest automotive component export country in 2021 (AIEC, 2022:81) with exports amounting to R2.5 billion in that year.

The total new units sold in Namibia for the passenger and light commercial vehicle (LCV) segments decreased from 11 186 in 2010 to 8 662 in 2021, a decrease of 22.5% (Lightstone Auto, 2022). Impact of the coronavirus disease (COVID-19) pandemic is described in Section 1.2.1.5 below. New vehicle sales in Namibia reflected a decline in volumes of 29.9% since 2017, compared to a 17.4% decline in South Africa since 2017 (Lightstone Auto, 2022).

In Namibia, Toyota vehicle sales in 2021 comprised 41.0% of total new passenger vehicles sales, with Volkswagen in the second position at 16.0%, Nissan at 7.4%, and Ford fourth at 7.2% (Lightstone Auto, 2022). Kia came in fifth at 5.5%.

1.2.1.2 Namibian automotive component industry

The Namibian automotive industry is largely underdeveloped, with active market players only in the automotive retail and the automotive aftermarket services (Namibian Competition Commission [NACC], 2019). These consist of panel repair shops and motor repair service centres. One company is involved in the manufacture of vehicles for the security services (Windhoeker Maschinenfabrik), while a few companies have produced parts for the automobile industry. Most of these companies have produced parts for the domestic market on a small scale, driven by the consumer demand, while one company has assembled vehicles exclusively for the export market (PSA Groupe with Peugeot and Opel).

An example of an automotive parts manufacturer in Namibia is Namibia Press & Tools, an established automotive components supplier based in Walvis Bay that manufactures engine parts on a limited scale for OEMs such as Volkswagen, Audi, BMW, Renault, and Opel.

Other automotive enterprises are largely involved in automotive aftermarket retail activities for the Namibian market (NACC, 2019:1), such as repair services (dealership service centres), engine refurbishing (Namib Diesel), automotive panel beaters (Star Body Works), tooling (Windhoek Tool Centre), outdoor automotive accessories (Cymot), and tyre services (Windhoek Tiger Wheels & Tyre).

Statistics released by the Bank of Namibia do not separately and specifically reflect the scope of the manufacturing of automotive components as it is small and insignificant (Bank of Namibia, 2021). Most significant sectors of the manufacturing industry, which could in theory have a bearing on automotive component manufacturing, consist of fabricated metals (N$571 million in 2020 or 0.3% of the GDP), basic non-ferrous metals (N$1.4 billion in 2020 or 0.8% of the GDP), leather and related products (N$265 million in 2020 or 0.2% of the GDP), wood and wood products (N$629 million in 2020 or 0.4% of the GDP), and rubber or plastic products (N$385 million in 2020 or 0.2% of the GDP) (Bank of Namibia, 2021).

The South African automotive component market is discussed next. This specific study included data collection and analysis on views on how Namibia can increase its engagement in the supply chain of the automotive industry of South Africa.

1.2.1.3 Namibia's opportunity to expand to supply chains of the South African automotive industry

In Section 1.4.2 below, the definition of supply chains in respect of global automotive industries are discussed. Data were collected to evaluate which automotive component categories, which can be manufactured in Namibia, have the largest potential to take part in the supply chain of the automotive industry of South Africa.

The notion is raised that South Africa plays the leading role as originator of the demand in the region (World Bank Group, 2022a). South Africa is seen as the gateway to regional trade and possess comparative advantage as a key player in global value chains (GVCs) on the subcontinent. For countries in the SADC, regional integration is fundamental to ensure successful export-orientated growth (Knight et al., 2020:591, Virk and Cook, 2018).

The operations of domestic locally owned component companies in South Africa are mostly on the second- and third-tier supplier levels, which supply foreign-owned multinational corporations (MNCs) (AIEC, 2022:93). The first-tier suppliers, of which around 75% are foreign-owned MNCs, in turn make supplies to OEMs (National Association of Automotive Component and Allied Manufacturers [NAACAM], 2019). Lower-tier domestic component manufacturers typically need assistance from government to become a competitive sustainable part of the automotive supply chain.

Automotive component companies in South Africa are active in the export market with sales to supply chains of international OEMs. There are approximately 500 automotive component suppliers in South Africa (AIEC, 2021:5). The bulk of locally manufactured automotive components, however, are sold to local OEMs as original equipment components or as replacement parts. The vehicle and automotive component manufacturing activity represents the largest manufacturing sector in South Africa's economy, a substantial 18,7% of value-addition within the domestic manufacturing output (AIEC, 2021:5). The total South African automotive component export value amounted to R69.2 billion in 2021 (AIEC, 2022:83). The most significant product categories of component exports of South Africa to the rest of Africa in 2021 were tyres (9.0%), engine parts (6.3%), and transmission shafts (5.6%) (AIEC, 2022:48). In this regard, it needs to be established which automotive parts are imported by the

South African automotive industry that could be manufactured by Namibia to help with the growth of the industry in Namibia.

1.2.1.4 The impact of the second-hand vehicle market in Namibia

Grey imports are new or used motor vehicles and motorcycles legally imported from another country through channels other than the maker's official distribution system. The synonymous term 'parallel import' is sometimes substituted. Importers in Namibia are sidestepping local laws and are exploiting loopholes in the SACU import regulations by illegally importing grey imports 'on paper' via Botswana, which is also a member of SACU (The Namibian, 2018c). Vehicles are imported from Japan, the USA, as well as the EU, and can be cheap, sometimes selling for as little as US$1 000. These grey imports consist mostly of models such as Toyota, Opel, and Volkswagen.

The popular view in South Africa is that the automotive industry can only expand if second-hand vehicles that illegally enter the SACU region, consisting of Botswana, Lesotho, Namibia, South Africa, and Swaziland, are prohibited (South African Revenue Services [SARS], 2020.) This would open the SACU market to more new vehicle sales, which would drastically improve the opportunities for economies of scale in the automotive market in Southern Africa.

1.2.1.5 The economic impact of COVID-19 since 2020

The total vehicle units sold in Namibia decreased substantially in 2020, during the pandemic, to 7612 units, representing a 26.9% decrease. It is representative of the global picture of decline in automotive sales and production, described in Section 3.2.3 in Chapter 3.

It was essential for this specific study to review the effect of COVID-19 on global and regional economic industries since 2020. The economic impact of the pandemic on the automotive industry was reviewed by describing the consequences on global and regional automotive sales and production in Section 3.2.3. The expected impact for automotive sales over the next five years are included in the different sections in Sections 3.2.3 and 3.3.6, pertaining to features of the global, African, South African, and the Namibian automotive industry.

1.2.1.6 The new energy vehicle challenge in the global automotive industry

Governments around the globe are implementing climate-friendly measures and requirements necessitated by the Paris Agreement of 2016, a legally binding international treaty on climate change (United Nations Climate Change, 2022). The Paris Agreement requires fully realising technology development and transfer for both improving resilience to climate change and reducing greenhouse gas (GHG) emissions.

New energy vehicles (NEVs) and electric vehicles (EVs) are taken to be the future driving technology adopted in accordance with the Paris Pact (AIEC, 2022:17). Vehicle emission regulations are tightened globally, resulting in the global motor industry's shift towards eco-friendly vehicles. Notably, there are numerous factors that contributed to increased EV registrations around the globe (International Energy Agency [IEA], 2021). This is discussed in Section 3.2.4 (NEV challenges in the global automotive industry). However, the uptake of EVs in Namibia is slow, with adoption mainly seen among upper-middle to high-income customers (The Namibian, 2022b).

Following from the brief background of the Namibian automotive industry above, the next section covers the theoretical foundation which applies to the study, and which is linked to the situation in Namibia.

1.3 THE THEORETICAL FOUNDATION

It must be noted at the commencement of discussion of the theoretical foundation in this introductory chapter that abbreviations and acronyms that are used throughout the study were listed at the start of this thesis, on pages xxi to xxii.

The theoretical foundation guides the reader on how the literature review is supported and is described in this chapter under Sections 1.4 (Global automotive industries), 1.5 (Strategies to grow automotive industries), and 1.6 (Theories supporting automotive growth strategies). A theoretical foundation of growth strategies and the way these are supported by theories are presented in Section 1.7 in conclusion to this section.

1.4 GLOBAL AUTOMOTIVE INDUSTRIES

In the next sections, focus is placed on the essence of global automotive industries by way of discussions of Sections 1.4.1 (Global value chains), 1.4.2 (Supply chain management), and 1.4.3 (The growth of automotive industries in developing countries in the sub-Saharan Africa (SSA) region with reference to South Africa). In the following sections, a brief discussion introduces each element of the theoretical foundation whereafter a reference is made where in this specific study, the detailed description is included.

Global value chains (GVCs), being the essence of open-economy growth models and responsible for economic growth in most developing countries, are discussed first.

1.4.1 Global Value Chains

Global value chains (GVCs) involve task-based trade that takes place across various stages of the production process and span various countries (World Bank Group, 2020). Global value chains (GVCs) include multiple inputs of intermediate goods and services to produce a final product for exports. It is elaborated that GVCs in developing economies generate and add to industry growth (World Bank Group, 2020).

Global value chains (GVCs) are included in this study's research on the basis that the literature review of this specific study had successful growth strategies of automotive industries in other countries, which can be applied and employed in Namibia. Strategies to grow the automotive industries are discussed in Section 2.5 in the next chapter.

Description of regional automotive trade on foundation of GVCs on the African continent by means of the African Tripartite Free Trade Area (TFTA) and the African Continental Free Trade Area (AfCFTA) are discussed in this specific study. Data were collected and analysed on how to grow the Namibian automotive industry by linking growth to value chains in SACU and the SADC. In this regard, global free trade agreements (FTAs) in respect of the USA's AGOA and the EU's SADC-EPA were evaluated. These are discussed in Section 2.4.1.3.

1.4.2 Supply Chain Management

Supply chains are defined as networks of interdependent organisations that collaborate with different processes and activities in creating value by way of providing products and services to consumers hands (Wilhelm and Dolfsma, 2018:44).

It is argued that supply chain management is the agent that generates competitive advantage for an industry's individual companies and networks of organisations (Pavlínek, 2020:513; Sisay et al., 2021:223). In this regard sources of competitive advantage and key elements of supply chain management are discussed in this specific study Section 2.5.4 of the next chapter.

Theories and growth strategies that enable Namibia to become a more valuable member of the South African automotive supply chain are pertinent in addressing the research question. The research question is stated in Section 1.10 below. Supply chain management, with specific reference to the role of South Africa, in regional supply chains is discussed in Section 2.4.2 of the next chapter.

1.4.3 The Growth of the Automotive Industries in Developing Countries in the Sub-Saharan Africa Region with Reference to South Africa

Studies have indicated that the global automotive industry is one of the largest industrial sectors globally (World Bank Group, 2022b). However, relative minimal domestic production in the automotive industry in the countries in SSA, outside of South Africa, are in existence. These countries experience lower levels of industrialisation and manufacturing capabilities are limited while these countries fail to meet the opportunities presented by the attractive demand in the global automotive industry.

This specific study covered growth studies for increased production in SSA countries such as Namibia. Collection and analysis of data on growth of automotive component manufacturing and employment in SSA countries, by linking it to the TFTA and AfCFTA, were essential focal points of this specific study. These are discussed in Section 2.4.3.1 of the next chapter on market growth strategies.

In addition, this specific study explored how the government in Namibia promotes lower-tier domestic component manufacturers in respect of regional integration to

become a competitive sustainable part of the automotive supply chain of South Africa. It followed on from other studies that suggested it is required from African countries to implement suitable policies to accelerate regional integration in their endeavours to gain on benefits of the prosperous global automotive industry (Knight et al., 2020:591).

It is further argued in studies on the growth of the automotive industries (Black et al., 2019) that domestic growth strategies in South Africa since the 1990s have focused on South Africa becoming largely integrated in the global automotive industry with increased foreign investment and trade in South (Spitsin et al., 2018:57). These researchers focused on the automotive component manufacturing industry in South Africa, as a typically emerging market. This specific study collected and analysed data that for specific industries, including the automotive industry, to grow the need is evident to engage with global market players in strategic partnerships through joint ventures (JVs), franchising, and licensing as well as technology agreements (Awamleh and Ertugan, 2021). The role of engagement in the regional supply chains, such as those of South Africa, was believed to be a crucial foundation of these strategic partnerships (Demir, Wennberg and McKelvie, 2017:3). This is included in this specific study in Section 2.4.3.3.

Initial models and theories supporting growth of automotive industries, introduced in the next section, are discussed in detail in the next chapter in Section 2.5.

1.5 STRATEGIES TO GROW AUTOMOTIVE INDUSTRIES

Fragmented production strategies are discussed in this section on strategies to grow automotive industries. This is followed by a discussion of strategic management of HGFs and industries, restructuring and internationalisation of an automotive industry, dynamic capabilities of the firm, and the real options theory (ROT) in strategic management

1.5.1 Fragmented Production Strategies

The fragmentation of locations of production across the globe increases opportunities for these countries to focus on manufacturing, in line with their comparative advantage (Kafel and Ziębicki, 2021:16). Fragmented production processes are referred to when the global automotive industry fragments its production processes into smaller blocks

located in various countries based on costs advantages (Marcato, Baltar and Sarti, 2019:876).

Namibia is close to South Africa, a large key export market. This adds to possible selection by global OEMs as a preferable location of production in Namibia. This specific study considered Namibia's close location to South Africa as well as its openness to regional trade and how these add to the potential of launching motor vehicle assembly and production of components in Namibia. This is discussed in Section 2.5.1.

In this specific study, data were collected in an empirical survey on the specific automotive industry sectors in Namibia that seemingly have the most potential to add to growth of the automotive industry. Sectors consist of vehicle assembly, component production, automotive dealerships, and aftermarket sales and services (see Section 2.5.1). The foundation of this study consisted of strategies of firms in specific industries for increased production and increased participation in the regional and global automotive industry. In this regard, HGFs are discussed next.

1.5.2 Strategic Management of High-Growth Firms and Industries

Scholars in strategic management theory (Kafel and Ziębicki, 2021:16) define HGFs as "firms growing at or above a particular pace, measured either in terms of growth between a start and end year, or as annualized growth over a specific number of years" (Riasanow, Galic and Böhm, 2017:3192; Demir, Wennberg and McKelvie, 2017:3). Other scholars in academic literature suggested that HGFs exist in all industries (De Marco, Mangano and De Magistris, 2021:310). In the case of the automotive industry, all firm sizes from OEMs to dealerships are included.

Some studies focused on the strategic factors of growth (Riasanow, Galic and Böhm, 2017:3192). Five drivers of growth in HGFs are explored to consist of human capital, strategy, human resource management (HRM), innovation, and capabilities (Wilhelm and Dolfsma, 2018:34; Teece, 2019:3; Hole, Snehal, and Bhaskar, 2019:1436).

Drivers of growth in HGFs are discussed in Section 2.5.2.2 in the next chapter. This specific study included investigation of the most recent developments in relation to growth in industries. Firms and sectors that recently added to the growth of the domestic automotive industry in developing countries and in Namibia were focused on

in this study. Options for restructuring strategies for such industries are discussed in the next section.

1.5.3 Restructuring and Internationalisation of an Automotive Industry

This specific study included research on increased internationalisation by large domestic automotive firms in the European automotive industry between 2005 and 2016 (Pavlínek, 2020:509; Mujkic and Klingner, 2019:365). This is discussed in Section 2.5.3 in the next chapter. This specific research included motives that played significant roles in the geographic restructuring of the European automotive industry, which consisted of:

- large differences in national labour costs;
- the various and different corporate tax regimes; and
- cost-cutting initiatives.

Derived from the research of Pavlínek (2020:509), in this specific study the Namibian automotive industry is discussed in Chapter 3 where it is indicated that the government was resolute to accelerate growth and increased employment in Namibia. Theory and market growth strategies of global automotive firms in respect of internationalisation strategies were included in this specific study as to the motivation for creation of local assembly factories and component production facilities.

It is highlighted in this specific research that studies of Pavlínek (2020:535) signified the substantially enhanced role of large global suppliers. His research emphasised the weakening role of domestic firms on the back of the intense global competitive automotive industry that necessitates restructuring of the local industry (Sisay et al., 2021:223). This is discussed in Section 2.5.3 in the next chapter.

It is imperative to take cognisance in conclusions and recommendation in this specific research, as discussed in Chapter 7, flowing from research of Pavlínek (2020:235), that automotive industries located in bordering regions, in near-by core production areas, and in other less developed regions are progressively being restructured to be under the enlarged control of foreign OEMs (Virk and Cook, 2018; De Marco, Mangano and De Magistris, 2021:310). This restructuring and internationalisation of the global automotive industry has bearing on the dynamic capabilities of firms and industries, as discussed in the next section.

1.5.4 Dynamic Capabilities of the Firm

In the global automotive industry, OEMs such as Volkswagen and Rolls-Royce compete for different customers because of different production technologies and distinct marketing and sales methods (De Marco, Mangano and De Magistris, 2021:310; Awamleh and Ertugan, 2021). The dynamic capabilities framework emphasises the distinctive role of managers in asset and capability coordination and recombination.

Teece (2019:3) highlighted in his research that firms differentiate themselves from competitors through learning, entrepreneurship, innovation, and shrewd decision making. Dynamic capabilities of firms are defined as the ability to make swift and distinctive business decisions to adapt to changes in the business environment.

The aim of this study was to identify variables that constrain and inhibit the growth of the automotive industry in Namibia, including dynamic capabilities of firms such as innovation and technological advancement to establish and grow a manufacturing automotive industry. Section 2.5.4 covers academic research on dynamic capabilities of firms and industries.

Other academic research (Nakagawa and Watanabe, 2017:107) highlighted that firms in specific industries choose diverse technological and organisational approaches, different business models, and unique strategies even when these firms are engaged in similar market segments. Strategic management decisions create different styles in the way of doing business (Teece, 2019:4), which lead to interfirm heterogeneity (Demir, Wennberg and McKelvie, 2017:26).

This specific study analysed and evaluated the government in Namibia's aim to establish growth in the domestic automotive industry. The government's policy framework, with incentives for manufacturers and exporters, was assessed to what extent it contributes to capabilities of firms to increase manufacturing and production in the country. This study included valuation if government incentives target the promotion of exports into the region and to the rest of the world. Academic literature on dynamic capabilities of firms and industries as well as public policy are discussed in Section 2.5.4.4 of the next chapter.

Being relevant to dynamic capabilities of firms and industries, ROT is discussed next.

1.5.5 The Real Options Theory in Strategic Management

Included in the literature review of this study is the way ROT addresses the essential issues of strategy, being sources of competitive advantage, and firm differences. This is discussed in the next chapter in Section 2.5.5.

Teece (2019:4) underlined five basic types of standalone ROT as identified in strategic management theory, consisting of the following:

- Options to initiate or postpone market entry
- Options to grow when entering a foreign market
- Options to expand or scale down business operations
- Option to change inputs, outputs, and suppliers
- Options to exit a market

Real options theory (ROT) was included in this specific study as it forms an essential part of the academic literature review for this study to define, analyse, and evaluate growth of the automotive industry in Namibia. Competitive advantage and firm differences in the Namibian country context, flowing from abundant national resources and technology advances of innovation, are examined in Section 3.3 on features of the Namibian automotive industry. Study of theories such as ROT are included in this specific study on the basis that ROT enhances its contribution to strategic management in confronting core issues of corporate and competitive strategy in fundamental strategy domains. As discussed in Section 1.1, the contribution of this study is in the field of strategic management (Kafel and Ziębicki, 2021:16).

Theories and models such as Porter's Model on Competitiveness of Nations, Porter's Model on Industry Clusters, and Peng's Model of Country Competitiveness, being theories supporting automotive growth strategies, are discussed in the next section.

1.6 THEORIES SUPPORTING AUTOMOTIVE GROWTH STRATEGIES

Section 1.1 above highlighted differences between models, theories, and frameworks, as were applicable for this specific research. Some models are discussed next.

1.6.1 Porter's Model on Competitiveness of Nations

This thesis focused on Namibia as a country where growth of the automotive industry was analysed and evaluated. Factors of competitiveness and comparative advantage of the country and the industry were pertinent to this study, as elaborated upon in Chapter 3 with description on the Namibian automotive industry.

Strategic management literature, which was the essence of this specific study, encompasses the search for competitive advantage of not only firms but of nations (Sisay et al., 2021:223; Vlados, 2019:33; Kafel and Ziębicki, 2021:16). Porter investigated how groups of successful industries and firms emerge in one country or nation (Hole, Snehal, and Bhaskar, 2019:1436; Vlados, 2019:33).

In this specific study, country competitiveness to increase growth of the Namibian automotive industry was examined. Porter's notion of country competitiveness is discussed in Section 2.6.1 of the next chapter. It is relevant to indicate that Namibia was ranked on international competitiveness as being number 100 out of 140 countries in 2017 (Economic Association of Namibia [EAN], 2018).

Porter's research on competitive advantage and his Diamond Framework (Afzal, Lawrey and Gope, 2019) were essential studies for this specific research to exhaust all the parameters of competitive behaviour studied by industrial organisation specialists as part of business management. Porter's Diamond framework suggested that a country's economic success is the product of four interdependent factors: factor conditions, demand conditions, related and supported industries, and company strategy, structure, and rivalry (Afzal, Lawrey and Gope, 2019:338). Two additional factors added to his Diamond Framework (Wonglimpiyarat, 2018:76): government policy (Usman and Daniel, 2020:6) and chance or externally derived incidents (Whitfield, Staritz and Morris, 2020:1018). Porter's Diamond Framework is discussed in Section 2.6.2.

The next section discusses Porter's concept of industry clusters to increase the competitiveness and growth of industries, which were pertinent to the research objectives of this specific research thesis.

1.6.2 Porter's Model on Industry Clusters

Porter defined clusters as *"geographic concentrations of interconnected companies, specialised suppliers, service providers, firms in related industries and associated institutions in particular fields"* (Mehta and Tariq, 2020:223; Brugman and Verbeke, 2018; Vlados, 2019:33). In his model on industry clusters, Porter emphasised industry productivity at locations and clusters in a micro-economic approach. It was argued that the competitiveness of firms located in these locations was improved (Brugman and Verbeke, 2018).

It was pertinent to include, in this specific research, factors in respect of cluster location of facilities for production of components and vehicle assembly facilities to grow the automotive industry in Namibia. The rationale for inclusion of this model manifested from Porter's argument that clusters need to be built as the core challenges of developing countries to ensure engagement in global production networks or GVCs (Whitfield, Staritz and Morris, 2020:7; Pavlínek, 2020:513). Porter contended that clusters realise external economies, optimise international trade advantages, and address country competitiveness, as discussed in the next section (Brugman and Verbeke, 2018). Industry clusters are discussed in Section 2.6.3.2.

1.6.3 Peng's Model of Country Competitiveness

The importance to include Peng's Model of Country Competitiveness in literature review for this study is highlighted next.

Success or failure to increase the competitive nature of Namibia's engagement in regional Southern Africa value chains of the automotive industry were reviewed in this study. Focus was placed to review success of the task and policy regime of the government based on Peng's institutional-based view of international business strategy. Research and discussions on the role of the government was included in this specific study in Section 3.3.2. Arguments of Peng on country competitiveness are discussed next.

Peng et al. (2018:187) argued that the strategic management tripod consists of the industry-based view, resource-based view (RBV), and institution-based view of competitive advantage. These three perspectives of strategy are regarded as

contributing to the four fundamental questions in strategic management theory, pronounced by Rumelt, Schendel, and Teece (Peng et al., 2018:187).

- How do firms behave?
- Why are firms different?
- What determines the scope of the firm?
- What determines the success or failure in international competition (Kafel and Ziębicki, 2021:16)?

This specific study reviewed success or failure to increase the competitive nature of Namibia's engagement in regional value chains of the automotive industry in Southern Africa. Peng's Model is discussed in Section 2.6.5 in the next chapter.

The theoretical framework discussed in previous sections is illustrated in Table 1.1 below.

1.7 A THEORETICAL FOUNDATION OF GROWTH STRATEGIES AS SUPPORTED BY THEORIES

In Table 1.1 below, a theoretical foundation of growth strategies and the way these are supported by theories is depicted. This foundation forms the foundation of discussions in Chapter 2 on market growth strategies.

Table 1.1: Growth strategies supported by theories and models with research questions relevant to specific growth strategies, theories, and models

Author / Researcher	Growth Strategies	Growth Theories and Models	Research Questions Relevant to Specific Growth Strategies, Theories, and Models
Marcato, Baltar and Sarti (2019:876) Peng and Liang (2021:1) Peng et al. (2018:187)	Fragmented production strategies	Porter's Model on Competitiveness of Nations Porter's Country and International Competitiveness Peng's Model of Country Competitiveness	What are the specific areas and aspects of the automotive industry in Namibia that would be most applicable and pertinent for Namibia to focus upon to ensure growth of the industry? Which specific growth strategies and incentive schemes that govern automotive industries in other countries can be implemented effectively in Namibia? How can growth strategies be employed to make Namibia a more

Author / Researcher	Growth Strategies	Growth Theories and Models	Research Questions Relevant to Specific Growth Strategies, Theories, and Models
			valuable part of the South African automotive supply chain?
Demir, Wennberg and McKelvie (2017:2)	Strategic management of HGFs and industries	Porter's Diamond Model Porter's Model on Industry Clusters	Which variables constrain and inhibit the growth of the automotive industry in Namibia? How can growth strategies be employed to make Namibia a more valuable part of the South African automotive supply chain?
Pavlínek (2020:509)	Restructuring and internationalisation of an automotive industry	Porter's Model on Industry Clusters Porter's Diamond Model	Which variables constrain and inhibit the growth of the automotive industry in Namibia? What are the specific areas and aspects of the automotive industry in Namibia that would be most applicable and pertinent for Namibia to focus upon to ensure growth of the industry?
Teece (2019:3)	Dynamic capabilities of the firm	Porter's Model on Competitiveness of Nations Porter's Country and International Competitiveness Peng's Model of Country Competitiveness	Which variables constrain and inhibit the growth of the automotive industry in Namibia? How can growth strategies be employed to make Namibia a more valuable part of the South African automotive supply chain?
Trigeorgis and Reuer (2017:56)	The ROT in strategic management	Porter's Model on Industry Clusters Porter's Diamond Model	How can growth strategies be employed to make Namibia a more valuable part of the South African automotive supply chain? How can the automotive component manufacturing base and employment in Namibia grow by linking it to regional in SACU, the SADC, the Tripartite Free Trade Area (TFTA), and African Continental Free Trade Area (AfCFTA)? How can the automotive component manufacturing base and employment in Namibia grow by linking growth via global free trade agreements (FTAs) with SACU in respect of the USA's African Growth and Opportunity Act (AGOA) and the EU's SADC-Economic Partnership Agreement (EPA)?

Source: Author generated

The next sections consist of 1.8 (the research problem), 1.9 (research objectives) and 1.10 (research questions).

1.8 THE RESEARCH PROBLEM

The essence of the research problem lies therein that there is not significant information and knowledge available regarding the factors that constrain the growth of the motor industry in Namibia. It is thus essential to ascertain which factors constrain growth of the automotive industry in Namibia. It must be established which avenues can be explored to grow the automotive industry in Namibia.

The specific research gap addressed by this specific study is unique to Namibia as an emerging African market. No other academic research or literature could be found on Namibia country-specific description of the automotive industry or inhibiting factors of the growth thereof. In the introduction to this chapter it was highlighted that the knowledge gap identified with this thesis was how a developing country's automotive industry can develop from partaking in the supply chain of nearby core production areas, like that of South Africa.

Some studies focused on the automotive industry in other developing countries such as India (Tripathi, 2019), Singapore and Thailand (Wonglimpiyarat, 2018), and South Africa (Moos and Sambo, 2018). It was found that academic research was conducted on supply chains in industries other than the automotive industry in Namibia, such as the research of Hole, Snehal, and Bhaskar (2019), Gereffi (2017), and Marcato, Baltar and Sarti (2019).

Identifying factors that constrain the growth of the automotive industry in Namibia is the essence of the research problem. It must be established whether, and how, constraints to grow the motor industry relate to assembly of motor vehicles by original OEMs, restructuring of aftermarket component production, establishing new franchise dealerships, attributes of the political economy landscape, or other factors. In this regard, Real options reasoning (ROR) as discussed below in Section 2.5.5.3 have reference. ROR represents a way of executive management thinking while relying on logic and informative principles (Čirjevskis, 2021:1). ROR entails strategic and intuitive ways of thinking as well as representing a logical or metaphorical tool to create and keep options open or exploit these options (Demir, Wennberg and McKelvie, 2017:26).

The research problem was expanded to include establishing how Namibia benefits from support to the automotive supply chain in South Africa and how Namibia can become a prominent secondary supplier in respect of automotive components and accessories to the South African motor industry (Whitfield, Staritz and Morris, 2020). A lack of knowledge was evident regarding whether, and to what extent, a developing automotive industry in Namibia benefits from being part of the South African automotive supply chain (Whitfield, Staritz, and Morris, 2020).

1.9 RESEARCH OBJECTIVES

The objectives of the research consisted of primary and secondary objectives, which are discussed in this section. The primary and secondary objectives informed the research questions, discussed in Section 1.10, as well as hypothesis statements, discussed in Section 1.11. It is crucial that research questions fit in with the research objectives. In the next section, reference is given to specific research objectives that apply for individual questions and hypotheses.

1.9.1 The Primary Objective

The primary objective of the research was to ***ascertain how to grow the automotive industry in Namibia.***

1.9.2 The Secondary Objectives

To achieve the primary objective, the following secondary objectives for the study were formulated:

- To identify which variables constrain the growth of the automotive industry in Namibia, being upstream for original equipment component manufacturers and aftermarket component manufacturers, as well as downstream in expanding existing dealerships or establishing new franchise dealerships.
- To examine how the automotive component manufacturing base and employment in Namibia can grow by linking it to the automotive supply chain in South Africa, as the dominant vehicle manufacturing and consumption country in the region.

- To examine how the automotive component manufacturing base and employment in Namibia can grow by linking it to regional integration in SACU, the SADC, the Tripartite Free Trade Area (TFTA), and African Continental Free Trade Area (AfCFTA).
- To examine how the automotive component manufacturing base and employment in Namibia can grow via global free trade agreements (FTAs) with SACU in respect of the USA's African Growth and Opportunity Act (AGOA) and the EU's SADC-Economic Partnership Agreement (EPA).
- To identify specific successful growth strategies and incentive schemes of policy regimes that govern automotive industries in other countries and that can be implemented effectively in Namibia.
- To determine if an association exist between the most promising motor industry sectors to grow (perceived) and business characteristics.
- To determine if an association exist between the extent of the automotive industry in Namibia to grow and the top three inherent strengths, opportunities, areas to embark on, and strategies to be implemented for growth in the Namibian automotive industry respectively, as well as the automotive component categories that can be manufactured in Namibia with the largest potential, as perceived by stakeholders in the automotive industry.
- To determine if constraints to growth, incentive measures, government encouragements, or support factors that add to growth, growth in the automotive industry of South Africa, and growth in the automotive industry globally are perceived differently by:
    - different extent levels of the capability of the Namibian automotive manufacturing industry to grow, as indicated by the stakeholders in the automotive industry.
    - the motor industry sector in Namibia with the most promising opportunity to grow, as indicated by the stakeholders in the automotive industry.

1.10 RESEARCH QUESTIONS

The primary research question formulated to guide this study was:

How to grow the automotive industry in Namibia

From this primary research question, the following secondary research questions were developed:

- Which variables constrain and inhibit the growth of the automotive industry in Namibia?
- How can growth strategies be employed to make Namibia a more valuable part of the South African automotive supply chain?
- How can the automotive component manufacturing base and employment in Namibia grow by linking it to regional integration in SACU, the SADC, the Tripartite Free Trade Area (TFTA), and African Continental Free Trade Area (AfCFTA)?
- How can the automotive component manufacturing base and employment in Namibia grow by linking growth via global free trade agreements (FTAs) with SACU in respect of the USA's African Growth and Opportunity Act (AGOA) and the EU's SADC-Economic Partnership Agreement (EPA)?
- Which specific growth strategies and incentive schemes that govern automotive industries in other countries can be implemented effectively in Namibia?
- Does an association exist between the most promising motor industry sectors to grow (perceived) and business characteristics?
- Does an association exist between the extent of the automotive industry in Namibia to grow and the top three inherent strengths, opportunities, areas to embark on and strategies to be implemented for growth in the Namibian automotive industry respectively, as well as the automotive component categories that can be manufactured in Namibia with the largest potential, as perceived by stakeholders in the automotive industry.
- How do stakeholders in the automotive industry perceive constraints to growth, incentive measures, government encouragements or support factors that add

to growth, growth in the automotive industry of South Africa and growth in the automotive industry globally differently in respect of:

- their different extent levels of the capability of the Namibian automotive manufacturing industry to grow indicated?
- their indicated motor industry sector in Namibia with the most promising opportunity to grow?

1.11 HYPOTHESIS DEVELOPMENT

Six hypotheses were drafted and tested, as listed in the Table 1.2 below. Statistical tests applicable as well as the nature of the tests were added to the table and depicted in Table 6.2 subsequently. Chapter 6 contains discussions on hypotheses developed for this study. Table 1.2 below indicated how each hypothesis is linked back to the relevant research objectives. The outcome of the hypothesis, whether supported or not, is discussed in Section 6.2 in the chapter on inferential data analysis. Main findings are listed in Section 6.6. The conclusions drawn from the data analysis conducted in Chapter 5 on descriptive data analysis and Chapter 6 on inferential data analysis are discussed in Chapter 7 on conclusions and recommendations.

In order to elaborate on the theoretical discussion of the hypotheses, it is emphasized in Section 6.1 that hypotheses were drafted to be directly related to the research objectives. Research objectives are depicted in Section 1.9 in the above. The theoretical relation to research objectives is illustrated in Table 1.2 below. Validation of hypotheses are addressed by stating variables used and variables measured for the various hypotheses as depicted in Table 1.2 below. The validation of hypothesis is further explored in discussions of whether hypothesis were supported or not, as discussed in Section 6.2.

Table 1.2: Hypotheses, aims, and research objectives

No	Details of Hypothesis	Theoretical relation to Research Objectives	Variable Used and Measured
A	There is an association between the motor industry sectors perceived by respondents to present the most promising opportunity	To draft a foundation of driving instruments of growth to assist the Namibian government and industry stakeholders with options to expand the	Respondents' perceived motor industry sectors with the most promising opportunity to grow the

No	Details of Hypothesis	Theoretical relation to Research Objectives	Variable Used and Measured
	to grow the Namibian automotive industry and business characteristics of respondents (Q4 with Q1.1. to Q1.6).	automotive industry in Namibia. To determine if an association exists between the most promising motor industry sectors to grow (perceived) and business characteristics.	Namibian automotive industry. Business characteristics of respondents including ownership, employment, and business activities of the respondent.
B	There is a difference between the perceived extent of the 'capability of the automotive industry in Namibia to grow' groups in terms of various constraints affecting the growth of the Namibian automotive industry, as listed in the empirical survey (Q3 with Q15).	By understanding how the different groups perceived the challenges and where they differ, contribute to the analysis that aims to identify which variables constrain the growth of the automotive industry in Namibia, being upstream for original equipment component manufacturers and aftermarket component manufacturers as well as downstream in expanding existing dealerships or establishing new franchise dealerships.	Respondents' perceived extent of the capability of the automotive industry in Namibia to grow. All constraints affecting growth listed in the questionnaire including logistics costs, productivity, innovation, modernisation, import barriers, investment incentives and others.
C	There is a difference between the perceived extent of the capability as related to the automotive industry in Namibia to grow in terms of factors adding to the growth of the Namibian automotive industry, as listed in the empirical survey (Q3 with factors in Q16).	By understanding how the different groups perceived the factors that will contribute to growth and where they differ, contribute to identifying specific successful growth strategies and incentive schemes of policy regimes that govern automotive industries in other countries, which can be implement effectively in Namibia. To determine if an association exists between the extent of the automotive industry in Namibia to grow and the top three inherent strengths, opportunities, areas to embark on, and strategies to be implemented for growth in the Namibian automotive industry respectively, as well as the automotive component categories that can be manufactured in Namibia with the largest potential, as perceived by stakeholders in the automotive industry.	Respondents' perceived extent of the capability of the automotive industry in Namibia to grow. Respondents' ratings of factors adding to growth of the Namibian automotive industry. Growth factors listed in the questionnaires such as infrastructure, PPPs, and others.
D	There are differences between the groups	By understanding how the different groups perceived the	Respondents' perceived extent of the capability of the

No	Details of Hypothesis	Theoretical relation to Research Objectives	Variable Used and Measured
	representing the perceived extent of the capability of the Namibian automotive manufacturing industry to grow in terms of each of 10 components identified from question 6 to question 14 in the empirical survey (Q3 with factors in Q6 to Q14).	10 identified components and where they differ, contribute to: (i) examining how the automotive component manufacturing base and employment in Namibia can grow by linking it to the automotive supply chain in South Africa, as the dominant vehicle manufacturing and consumption country in the region.	automotive industry in Namibia to grow. Dominance effect of vehicle production of South Africa in the SADC region. Perceptions of the respondents on the potential of opportunities in the South African automotive industry to grow the Namibian industry.
		(ii) examining how the automotive component manufacturing base and employment in Namibia can grow by linking it to regional integration in SACU, the SADC, the Tripartite Free Trade Area (TFTA), and African Continental Free Trade Area (AfCFTA).	Dominance effect of vehicle production of South Africa in SSA.
		(iii) examining how the automotive component manufacturing base and employment in Namibia can grow via free trade agreements (FTAs) with SACU in respect of the USA's African Growth and Opportunity Act (AGOA) and the EU's SADC-Economic Partnership Agreement (EPA).	Growth in the Automotive Industry in the SADC and globally. Perceptions of the respondents on the potential of the perceived impact of South African vehicle production on the global automotive industry.
		To determine if constraints to growth, incentive measures, government encouragements, or support factors that add to growth, growth in the automotive industry of South Africa, and growth in the automotive industry globally are perceived differently by: (i) different extent levels of the capability of the Namibian automotive manufacturing industry to grow, as indicated by the stakeholders in the automotive industry.	Respondents' perceived extent of the capability of the automotive industry in Namibia to grow. Perceptions of the respondents on the potential of opportunities in the South African and global automotive industry to grow the Namibian industry.

No	Details of Hypothesis	Theoretical relation to Research Objectives	Variable Used and Measured
E	There are differences between the groups representing the perceived motor industry sector in Namibia that have the most promising opportunity to grow in terms of each of 10 components identified from Question 6 to Question 14 in the empirical survey (Q4 with factors in Q6 to Q14).	By understanding how the different groups perceived the 10 identified component and where they differ, contribute to examining how the automotive component manufacturing base and employment in Namibia can grow by linking it to the automotive supply chain in South Africa, as the dominant vehicle manufacturing and consumption country in the region.	Respondents' perceived motor industry sectors with the most promising opportunity to grow the Namibian automotive industry. Perceptions of the respondents on the potential of opportunities in the South African automotive industry to grow the Namibian industry.
		To determine if constraints to growth, incentive measures, government encouragements, or support factors that add to growth, growth in the automotive industry of South Africa, and growth in the automotive industry globally are perceived differently by: (ii) the motor industry sector in Namibia with the most promising opportunity to grow, as indicated by the stakeholders in the automotive industry.	Respondents' perceived motor industry sectors with the most promising opportunity to grow the Namibian automotive industry. Perceptions of the respondents on the potential of opportunities in the South African and global automotive industry to grow the Namibian industry.
F	There is an association between the perceived extent of the automotive manufacturing industry in Namibia's capability to grow and each of the themes identified per question (Q3 with open-ended Q18 to Q22).	To identify specific successful growth strategies and incentive schemes of policy regimes that govern automotive industries in other countries, considering the association with the perceived extent of the capability to grow, which can be implement effectively in Namibia.	Respondents' perceived extent of the capability of the automotive industry in Namibia to grow. Respondents' ratings of factors adding to growth of the Namibian automotive industry. Growth factors listed in the questionnaires such as infrastructure, PPPs, and others.

Source: Author generated

1.12 RESEARCH DESIGN AND METHODOLOGY

Schindler (2019:3) stated that, in general, research methodology describes the research process and the kind of tools and procedures to be used. The methodology applied in the research study is summarised below. As was indicated in Section 1.1

above, research in this study was of a sequential mixed (multiple) method nature. It consisted of descriptive quantitative research and qualitative thematic analysis of the qualitative open-ended components of the interview guide (see methodology Section 4.7). It is elaborated in Section 4.7.3 that the foundation for additional consequential qualitative data analysis in this specific study was to provide more in-depth understanding of the descriptive and inferential statistics derived from the empirical survey.

The research philosophy intended to link practice with theory, in line with the primary objective of the study to ascertain how to grow the automotive industry in Namibia. The present study gathered data from individuals with expertise and notable experience as representatives of the role-players of the automotive industry in Namibia and in South Africa as to focus on driving instruments of growth to assist the Namibian government and industry stakeholders with options to expand the automotive industry in Namibia.

The research philosophy of the present research had, as foundation, the formulation of a clear research question, and to derive specific research objectives and questions that were needed to justify and contextualise the study. The research philosophy of the present research had elements in its style of the thinking of empiricism. Empiricists attempt to describe, explain, and make predictions by relying on information gained through observation (Saunders, Lewis and Thornhill, 2019:144-145).

1.12.1 Target Population, Sampling Method, and Planned Sample Size

A target population is the total collection of elements about which the research intends to make some inferences (Schindler, 2019:36). It includes selecting the sample, if a complete census of the whole population should not be possible.

As discussed in Section 1.1 above, the target population of this study consisted of role-players with expertise and notable experience in the automotive industry in Namibia and South Africa. The size of the target population is unknown. Individuals included in the population at large consisted of representatives of role-players in the automotive industry The target population for the empirical survey as well the face-to-face interviews were the same.

The present study employed a judgmental non-probability sampling technique to sample the respondents from role-players in the automotive industry in Namibia and South Africa. In purposive or judgemental sampling, the sample elements are chosen deliberately and subjectively to be representative of the sample. Various criteria, such a best knowledge and experience of the research subject, are used in the selection process (Murtagh, Orlov and Mirkin, 2018:24).

The sample frame (those sample units which were accessible for selection in the sampling process) are made up of role-players of automotive industries. In Section 4.8.2 of the methodology chapter, it is described in detail that the planned sample size totalled 136. Questionnaires were sent to these individuals, as part of quantitative data collection of this study.

Table 1.3: Sample frame of the empirical survey

Number of Role Players	Institutions	Employment Position
7	Original equipment manufacturers (OEMs) with assembly operations in South Africa	General managers
1	Original equipment manufacturers (OEMs) with assembly operations in Namibia	General managers
4	Associations in the automotive industry in South Africa	Chairmans and executive directors
7	Major independent importers that import motor vehicles into South Africa and Namibia	General managers
3	Component manufacturers in Botswana (1) and Lesotho (2), supplying the value chain of the South African automotive manufacturing industry	Business owners, directors, and general managers
3	Governmental and non-governmental stakeholders in Namibia	Executive directors of ministries, committee members and policy makers
4	Component manufacturers in Namibia	Executive directors and general managers
5	Automotive dealerships in Namibia	Dealer principals and departmental managers

Source: Author generated

For the qualitative research of this study, face-to-face interviews were held with an additional 20 individuals, being role-players of the automotive industry in Namibia. These are listed in Table 1.4 below.

Table 1.4: Sample frame for face-to-face interviews

Number of Participants	Economic Sector	Business Activities	Employment Position
4	Automotive dealerships	Franchised automotive dealerships consisting of vehicle and parts sales as well as after-sales services	Dealer principals and departmental managers
3	Auto industry research institutions	Stockbrokers and asset management firms	Economists and researchers
2	Component manufacturers	Business producing components used in the automotive manufacturing industry	Departmental and production managers
3	Logistics providers	Firms providing logistics and transport solutions	Departmental managers
2	Auto industry engineering	Firms providing engineering services and support to the automotive industry	Owners and departmental managers
5	Automotive asset finance institutions	Commercial bank and registered financial services providers	Vehicle and asset finance managers
1	Government	Government institutions and departments with interest and bearing on the automotive industry	Executive directors of ministries, committee members and policy makers

Source: Author generated

The realised sample of 35 individuals is discussed in Section 4.9.1 in the chapter on data collection methodology.

1.12.2 Questionnaire

An empirical survey was employed in the quantitative part of the research of this study. Quantitative research is discussed in Chapter 4 on research methodology. As part of qualitative research of this study, face-to-face in-depth interviews were held with role-players of the automotive industry in Namibia. Methodology of qualitative research in this study is included in Chapter 4.

A questionnaire with closed and open-ended questions representing the data-collection instrument was sent to the role-players taking part in the quantitative

empirical survey (Schindler, 2019:80). All the respondents were given an opportunity to complete the questionnaire by email through an online survey.

1.12.3 Data Collection

The contact information of respondents in the empirical survey was gathered through emails, telephone calls, and personal approaches to enable the researcher to invite them to participate in completing the questionnaire. For the face-to-face interviews, telephonic conversations were conducted to convey information about the researcher and the research itself and to enquire about willingness and availability of potential participants. Thereafter, an e-mail messages were sent with more information and a request for an appointment.

A pilot testing process, to check for ambiguities and uncertainties, was followed in drafting the questionnaire. The group consisted of individuals who represented sectors of the economy not directly related to the automotive industry, such as property management, agriculture, and finance. The participants in the pre-testing process were not included in the realised sample who completed the final empirical survey. Pre-testing of the questionnaire is discussed in detail in Section 4.9.5.

Interview questions used in the qualitative face-to-face interviews were derived from the open-ended questions drafted for the empirical survey. The face-to-face interviews with role-players in the automotive industry and associated sectors were performed to validate findings of the empirical survey. These open-end questions were reframed and restructured to increase adaptability in face-to-face interview milieus. A pilot testing process was equivalently followed in drafting the questions for the interviews on the same fundamentals discussed in the previous paragraph.

1.12.4 Data Processing and Analysis

Data analysis or data synthesis involves the breaking up of data into manageable themes, patterns, trends, and relationships. Numeric data-gathering questionnaires are usually well-structured and relatively easy to capture in spreadsheet format and statistical packages (Schindler, 2019:80). Textual data, as is the case with open-ended questions, are much richer in meaning and appropriation but are difficult to capture in a short and structured manner (Maxwell, 2019:132).

In the first stage of data analysis, being the quantitative data analysis stage, the data from the completed questionnaires of the empirical survey were cleaned. The data collected through the empirical survey were summarised by means of descriptive statistical analysis in the form of figures, tables, and illustrations. The objective of descriptive statistical analysis is to develop sufficient knowledge to describe the body of the data. The next statistical procedure was the inferential statistical analysis of estimation of population values and testing of the statistical hypotheses forthcoming from the statistics as discussed by Schindler (2019:358).

In the second stage of the qualitative data collection and analysis stage, coding was used as a way of analysing qualitative data. This was done by using attribute coding and thereafter themed in line with the code-to-theory model of Saldaña (2016). A code in a qualitative data analytic is most often a word or short phrase that symbolically assigns an essence-capturing, and suggestive attribute for a portion of language-based or visual data (Saldaña, 2016:4). The data consisted of interview transcripts and participant observation field notes, collected in face-to-face interviews with the 20 participants. In qualitative data analysis, a code is a researcher-generated construct that symbolises or translates data and thus attaches interpreted meaning to each individual participant comment for later purposes of pattern detection, categorisation, assertion or proposition development, theory building, and other analytic processes (Maxwell, 2019:132). It is noted that coding is a cyclical act where the first cycle of coding data is rarely perfectly attempted. The second cycle and cycles thereafter of recoding further manages, filters, highlights, and focuses the salient features of the qualitative data record for generating patterns, categories, themes, and concepts, grasping meaning, and building theory.

1.12.5 Reliability and Validity

Reliability and validity are discussed in detail in Section 4.13 of Chapter 4 (Research methodology). The topics are introduced hereunder for both qualitative and quantitative data analysis.

Validation and reliability of quantitative data analysis in this specific study are described first.

With quantitative data analysis, reliability is concerned with estimating the degree to which a measurement is free of random error (Schindler, 2019:36,181). Three reliability estimates exist, namely stability that is tested by using the test-retest method, internal consistency that measures the homogeneity of the instrument, and equivalence (test-retest) related to the degree to which alternative forms of the same measure produce the same or similar results.

The present research ensured that measurement tools were easy and efficient to use, as well as an accurate counter and an exact indicator of what the research was measuring. Reliability can be improved with investigator consistency by conducting the research under the scrutiny of skilled academics of a university (Saunders, Lewis and Thornhill, 2019:144-145).

Validity discloses the scale to which a gauging instrument measures what it is supposed to measure to assist the researcher in solving the research problem (Schindler, 2019:181). The present research ensured that the measuring instrument adequately covered all the exploratory questions regulating the study to adhere to content validity. The different types of validity in quantitative data analysis are face validity, content validity, criterion validity, construct validity, convergent validity, and discriminant validity (Bryman and Bell, 2018:38), as are discussed next.

- A scale is set to have face validity when an inspection of the test items proves to experts that the items match the definition.
- Content validity was relevant to this specific study as the items in the questionnaire described the entire scope of the concept being measured.
- Construct validity is present when a measure reliably measures and truthfully represents a unique concept. Construct validity, applicable to Questions 6 to 14 of the questionnaire, was confirmed using principal component analysis (PCAs). Principal component analysis (PCA) was used as the data analysis method in the quantitative data analysis section of this study. Principal component analysis (PCA) includes the use and measure of internal consistency (reliability), or Cronbach's Alpha, and is described in Section 6.3.1.

The evaluation of reliability and validity of qualitative data analysis is displayed in Table 1.5 below. It is discussed in further detail thereafter.

Table 1.5: Reliability and validity in qualitative research

Reliability / Validity	Evaluation
External reliability	Describes the degree to which a study can be reproduced. Although difficult, it is suggested that researchers that repeat qualitative studies, should adopt a similar social role as the original researcher.
Internal reliability	Consists of the agreement or disagreement of the collection of data, when more than one observer is involved.
External validity	Defines the degree to which the findings of the study can be generalised across other research
Internal validity	Defined as the strength of qualitative research, internal validity refers to the match between the researcher's observations and the theoretical ideas that are developed

Source: Bryman and Bell (2018:36)

The main criterion for evaluating qualitative research is known as trustworthiness (Wiid and Diggines, 2017:63). Trustworthiness is made up of four criteria, as specified in Table 1.6 hereunder (Bryman and Bell, 2018:36). The four criteria each have an equivalent criterion used in quantitative research, as indicated in Table 1.6 below and discussed in detail in the sections that follow.

Table 1.6: Trustworthiness criteria and equivalent qualitative criteria

Trustworthiness Criteria	Equivalent Quantitative Criteria
Credibility	Internal validity
Transferability	External validity
Dependability	Reliability
Confirmability	Objectivity

Source: Bryman and Bell (2018:36)

Credibility

The credibility of the findings of a qualitative research study necessitates ensuring that research is carried out according to good research practices. It also entails submitting research findings to the people involved in the study to confirm that the researcher understood their social world (Bryman and Bell, 2018:36). It can be deduced that credibility is defined as how researchers ensure that their study measures what was intended, as well as the confidence in the truth of the findings (Wiid and Diggines, 2017:20).

Methods to increase the credibility of a qualitative research study include triangulation, random sampling, peer scrutiny, persistent observation, reflective commentary, and examination of previous research findings (Bryman and Bell, 2018:44).

For this study, credibility was increased with the following procedures:

- Persistent observation: The characteristics and elements were identified and focused upon that are most relevant to the problem.
- Continuous examination of previous research: The researcher reviewed findings in similar fields throughout the duration of the study.
- Peer scrutiny: To ensure the researcher understood the contents of the data, and that they are an accurate reflection of the data, a peer reviewing of the codes and themes generated were done.
- Reflective commentary and reflection reports: The researcher kept researcher notes throughout the coding and analysis process.

Transferability

Qualitative research involves contextual uniqueness, and the findings should be treated differently to ensure transferability (Bryman and Bell, 2018:44). Transferability of the findings can be increased by providing a thick, rich, and broad description of the methods followed to conduct the research (Wiid and Diggines, 2017:63). In this way other researchers can make judgements, based on the database, to determine if the study was reliable in relation to other similar research.

For this study, transferability was increased by providing a thick, rich, and generous description of the methods followed to conduct the research. Transferability was also increased with the keeping of paper records of all the user-generated content that was analysed for the purposes of this study.

It must be emphasised that, although this study was conducted in a specific industry, the findings could be applied to similar service industries. The themes created are general in nature and not industry specific. This in turn increases the transferability aspect of this study.

Dependability

The dependability criterion focuses on the fact that the findings could be repeated (Bryman and Bell, 2018:44). Dependability also involves following an auditing process to establish the merits of the research and show that the findings are consistent (Wiid and Diggines, 2017:63). It is suggested that the dependability of a study can be increased by detailed discussions of methodology applied, the data gathering process, data analysis, and the interpretation thereof.

For this study, dependability was increased by ensuring that an appropriate audit process was followed by providing in-depth discussions on the descriptions of the case. The researcher also ensured that the coding and re-coding process was scrutinised by peers. Computer software such as ATLAS.ti was used to generate computer-assisted codes from transcriptions of face-to-face interviews with participants. ATLAS.ti is an integrated statistical program. It supports the analysis of written texts, audio, video, and graphic data (ATLASti.com, 2020). This program assists to manage, explore, compare, and extract meaningful segments from large amounts of data in a systematic yet flexible way, increasing dependability of the data analysis process. ATLAS.ti enabled the researcher to extract meaningful reports based on the analysis and findings of themes and codes, to be used for the data analysis discussion as presented in Chapter 4 of this dissertation.

Confirmability

Confirmability is referred to as the audit trail of the research. It requires assurance that the research findings are grounded in data as well as that the researcher has not let bias, motivation, or personal values influence the research findings (Bryman and Bell, 2018:44). The credibility of the audit trail is enhanced with raw data, field notes, and pilot studies. Techniques to comply with confirmability include audit trails, triangulation, and reflexivity. According to Schindler (2019:143), triangulation combines several qualitative methods or combining qualitative with quantitative methods. Reflexivity is achieved by developing reflective journals and reports on perspectives, positions, values, and beliefs (Bryman and Bell, 2018:157).

For this study, confirmability was increased by keeping safe all the raw data collected from the face-to-face interviews to create an audit trail. This was done to ensure that researcher bias was avoided. Reflexivity was ensured with drafting reflective journals and researcher notes throughout the coding and analysis process. This was done to report on certain findings that cannot be deduced by directly looking at the user-generated content in isolation.

The four methods discussed in the above to increase trustworthiness were implemented throughout the entire research process in this specific study. This process was strictly applied to ensure that the final data collection would be reliable and valid in terms of a qualitative study.

Overview of the measures to ensure the trustworthiness of the study was included in this section. The most important ethical considerations of the research study are discussed next.

1.12.6 Ethical Considerations and Requirements

The study followed all the ethical standards prescribed by the University of South Africa (UNISA) during the research process. Ethical clearance for the study was obtained (see Appendix A). Experienced researchers of the university evaluated the process of conducting an empirical survey and face-to-face interviews with stakeholders of the automotive industry (Saunders, Lewis and Thornhill, 2019:144-145). The significance of the research was first, and most importantly, explained to the participants. The participants were assured of the confidentiality of the information that would be gathered by the researcher. The ethical considerations are discussed in more detail in chapter 7.

1.13 OUTLINE OF THE RESEARCH AND CHAPTER LAYOUT

The thesis is structured into seven chapters as follows:

Chapter 1: Background and Problem Statement

Chapter 1 stated the foundation, background, and theoretical model of the research and the outline of the final thesis. It included an explanation of the research problem, the problem statement, research methodology, research methods, and the research

philosophy. An overview of the primary and secondary research objectives was defined as a guideline to solve the research problem. The secondary research was depicted, pertaining to presentation of the academic and the theoretical foundation of the research. A summary of each chapter of the final thesis was offered.

Chapter 2: Market Growth Strategies

Chapter 2 consists of an in-depth literature review of academic research on growth of industries. It includes theories on strategic business management, supply chains, and growth strategies essential to the research as well as a review and presentation of Porter's Model of Competitive Advantage, objectives of industries to form competitive advantage, an industry's growth options, and the industry's value and supply chain growth opportunities.

Chapter 3: The Namibian Automotive Market

The success-bearing and inhibiting factors of the automotive industry in Namibia are described in Chapter 3 and includes the description and scope of role-players and stakeholders as well as the underlying nature of the Namibian automotive industry.

Chapter 3 reviews, as background to description of the Namibian automotive industry, aspects of the global automotive industry such as the global and South African automotive industry, with cognisance of policy regimes. This chapter includes a literature review pertaining to the global and regional integration and nature of the automotive industry in SSA, with specific bearing on South Africa and Namibia and other SACU countries. The automotive value chain of the vehicle and component manufacturing industry in South Africa in the context of the global automotive industry is demarcated. The impact of the COVID-19 pandemic is depicted, as well as current trends and development of new energy and EVs are covered.

Chapter 4: Research Methodology

Chapter 4 presents the research methodology employed in the study in broad terms. The chapter discusses how the required information was collated, including the secondary sources where information was obtained. This chapter also provides a comprehensive discussion of the methods used in collecting the primary research data. The research population and unit of analysis are defined.

This chapter covers all methods in the process of data analysis and reflects on trustworthiness of the data-collection instruments.

Chapter 5: Descriptive and Thematic Data Analysis, and Interpretation of Survey Findings and Qualitative Data Collected

Results of the main data analysis method and thematic analysis are offered in Chapter 5. In this chapter, descriptive statistics derived from the empirical survey are discussed together with thematic analysis of the qualitative open-ended components of the questionnaire. This chapter includes a comprehensive scrutiny and exploration of results of the questionnaires of the survey. Main findings are drafted and presented in tables, diagrams, and graphs. This chapter includes frequency tables that were employed to determine more detailed variable relationships, founded on breakdown of responses. Thematic analysis is presented in rich detail, being the themed findings from the open-ended components of the questionnaire, following Saldaña's model (Saldaña, 2016) (see Methodology Section 4.7).

Chapter 6: Inferential Data Analysis

This chapter converged on the inferential data analysis and presentation of the research results. It describes the inferential data analysis that was done on the perceptions and expectations of respondents regarding opportunities to grow the automotive industry in Namibia to meet the set objectives. The chapter includes key inferences which were made that addressed the research aim, objectives, and study purpose described in Chapter 1 of this research study. Key relationships in the data obtained from the empirical survey are presented and explained in this chapter.

Chapter 7: Conclusions and Recommendations

The essence of the research and thesis are presented in Chapter 7 with recommendations and findings based on the results of the research on how to expand the automotive industry in Namibia. The chapter re-visits and evaluates the research objectives and aims of the research. The final conclusions and managerial sanctions are stated. This chapter includes an illustration of the substantiation of the research objectives. The limitations of the research and further research suggestions are presented to conclude this chapter.

1.14 CONCLUSION

This chapter provided an introduction and foundation to this study. The research problem was identified and research objectives were developed. A brief overview of the research methodology and ethical considerations was provided.

The next chapter serves as the first literature review chapter, with a comprehensive in-depth review of academic research on growth of industries. It includes theories on business management, supply chains, and growth strategies that underscore the theoretical underpinning of this research and that are essential to the research.

This study aimed to identify the most appropriate opportunities to grow the automotive industry in Namibia. Constraints and drivers of growth for the automotive manufacturing industry in Namibia were explored as described in the next chapters.

During the process of research in this study, role-players, appropriate public policies, and current policy regimes and manufacturing incentive measurements were pursued and analysed. The purpose was to formulate practical proposals and encouragement schemes to grasp opportunities for growth of the automotive industry in Namibia.

It is crucial for this study to contribute to the body of knowledge pertaining to growth of an automotive industry. In exploring the emerging issue of growing automotive industries of developing countries, much-needed emphasis had to be placed on drivers of growth of automotive industries as well as on the crucial role that public policy of government plays. Inferences and deductions were sought, which would have made direct implication for automotive industries in Africa's developing economies, of which Namibia has special reference in this study.

CHAPTER 2:
MARKET GROWTH STRATEGIES

2.1 INTRODUCTION

Expansion into an automotive industry has long been the prized objective of developing countries, not least for it being a source of national pride. The technological competencies and accompanying advantages of upstream activities flowing from the production of vehicles, automotive parts, and components are illustrative of growing local economies, increased prosperity, and employment opportunities. Participating in regional and global production networks adds to this prestige (Pavlínek, 2020:513; Virk and Cook, 2018; Knight et al., 2020:591).

In this introductory section of this chapter on market growth strategies, it is sensible that theories, models, frameworks, and growth strategies are reiterated.

A theory generally describes, explains, and predicts phenomena (Schlager, 2019:293). A theory is defined as the set of statements, principles, and ideas relating to a particular subject. Theories are used to explain, predict, and understand a phenomenon and, in many cases, to challenge and extend existing knowledge (Teece, 2019:17). The terms ‘theory’ and ‘model’ usually refer to the same concept. A model is a more visual representation of reality or a concept (Lahti, Wincent and Parida, 2018:3).

It must be emphasised that, in this thesis, ‘theory’ and ‘model’ is used interchangeably.

According to Schlager (2019:293), “*frameworks organize diagnostic and prescriptive inquiry. They attempt to identify the universal elements that any theory relevant to the same kind of phenomena would need to include*.” Schlager’s research stated that frameworks can be used to compare theories, allowing policy scholars to use a common language and to identify pressing questions to pursue (Whitfield, Staritz and Morris, 2020:1018).

Table 1.1 in Chapter 1 listed recent and current academic theories, models, and frameworks on market growth strategies, which form the basis and theoretical foundation of this thesis (Schlager, 2019:293). These are discussed in detail in this

chapter. It is not foreseen that any one or more specific theoretical models are tested, or new frameworks or conceptual models developed for the automotive industry, as part of this thesis.

Specific growth strategies, as well as strategic management literature (Kafel and Ziębicki, 2021:16), were included in the literature review and focused upon (Demir, Wennberg and McKelvie, 2017:3). These growth strategies were applied in the research methodology of this specific study. It formed the foundation of the design of measurement tools for data collected in the empirical survey and face-to-face in-depth interviews, as described in the descriptive and inferential data analysis processes in Chapters 5, 6, and 7.

This chapter starts with the strategy foundation in Section 2.2 and thereafter the field of strategic management, strategy as practice, growth strategies and supporting theories and specific growth strategies linked to the automotive industry are discussed (Schlager, 2019:293).

2.2 STRATEGY FOUNDATION

Table 2.1 below, following on Table 1.1 in Section 1.7 in the previous chapter, lists the theories pertinent to this study (Schlager, 2019:293). Table 2.1 reflects on the relevance of these growth strategies, theories, and models to this specific study. Relevance is emphasised by stating the research questions, which have a direct bearing on individual growth strategies, theories, and models.

The reference made in the last chapter on conclusions and recommendations in Section 7.2 on links between growth theories, models, and findings of this specific study is emphasised.

The next sections reflect how these theories support the academic literature and models.

Table 2.1: Growth strategies supported by theories and models with research questions relevant to specific growth strategies, theories, and models

Author / Researcher	Growth Strategies	Growth Theories and Models	Research Questions Relevant to Specific Growth Strategies, Theories, and Models
Marcato, Baltar and Sarti (2019:876) Peng and Liang, (2021:1) Peng et al. (2018:187)	Fragmented production strategies	Porter's Theory on Competitiveness of Nations Porter's Country and International Competitiveness Peng's Model of Country Competitiveness	What are the specific areas and aspects of the automotive industry in Namibia that would be most applicable and pertinent for Namibia to focus upon to ensure growth of the industry? Which specific growth strategies and incentive schemes that govern automotive industries in other countries can be implemented effectively in Namibia? How can growth strategies be employed to make Namibia a more valuable part of the South African automotive supply chain? Does an association exist between the most promising motor industry sectors to grow perceived and business characteristics?
Demir, Wennberg and McKelvie (2017:2)	Strategic management of high-growth firms and industries	Porter's Diamond Model Porter's Theory on Industry Clusters	Which variables constrain and inhibit the growth of the automotive industry in Namibia? How can growth strategies be employed to make Namibia a more valuable part of the South African automotive supply chain? How do stakeholders in the automotive industry perceive constraints to growth, incentive measures, government encouragements or support factors that add to growth, growth in the automotive industry of South Africa and growth in the automotive industry globally differently in respect of: (i) their different perceived extent levels of the capability of the Namibian automotive manufacturing industry to grow indicated? (ii) their indicated motor industry sector in Namibia with the most promising opportunity to grow?
Pavlinek (2020:509)	Restructuring and internationali-sation of an automotive industry	Porter's Theory on Industry Clusters Porter's Diamond Model	Which variables constrain and inhibit the growth of the automotive industry in Namibia? What are the specific areas and aspects of the automotive industry in Namibia that would be most applicable and pertinent for Namibia to focus upon to ensure growth of the industry? Does an association exist between the extent of the automotive industry in Namibia to grow and the top three inherent strengths, opportunities, areas to embark on and strategies to be implemented for growth in the Namibian automotive industry respectively, as well as the automotive component categories that can be manufactured in Namibia with the

Author / Researcher	Growth Strategies	Growth Theories and Models	Research Questions Relevant to Specific Growth Strategies, Theories, and Models
			largest potential, as perceived by stakeholders in the automotive industry?
Teece (2019:3)	Dynamic capabilities of the firm	Porter's Theory on Competitiveness of Nations Porter's Country and International Competitiveness Peng's Model of Country Competitiveness	Which variables constrain and inhibit the growth of the automotive industry in Namibia? How can growth strategies be employed to make Namibia a more valuable part of the South African automotive supply chain?
Trigeorgis and Reuer (2017:56)	The real options theory (ROT) in strategic management	Porter's Theory on Industry Clusters Porter's Diamond Model	How can growth strategies be employed to make Namibia a more valuable part of the South African automotive supply chain? How can the automotive component manufacturing base and employment in Namibia grow by linking it to regional in SACU, SADC, the Tripartite Free Trade Area, and African Continental Free Trade Area (AfCFTA)? How can the automotive component manufacturing base and employment in Namibia grow by linking growth via global free trade agreements with SACU in respect of the USA's African Growth and Opportunity Act (AGOA) and the EU's SADC-Economic Partnership Agreement (EPA)? Does an association exist between the extent of the automotive industry in Namibia to grow and the top three inherent strengths, opportunities, areas to embark on and strategies to be implemented for growth in the Namibian automotive industry respectively, as well as the automotive component categories that can be manufactured in Namibia with the largest potential, as perceived by stakeholders in the automotive industry?

Source: Author generated

2.2.1 The Field of Strategic Management

Strategic management implies the need for modern companies to explore simultaneously new opportunities, to ensure future profits, and to use any present competences for current profitability (Kafel and Ziębicki, 2021:16). The field of strategic management encompasses all these activities necessary to achieve competitive advantage in the long term (Teece, 2019:27).

It is pertinent to note that the contribution of this study is in the field of strategic management (Kafel and Ziębicki, 2021:16). The academic criterion of this thesis has a foundation the field of business management, but the sub-discipline where this study is positioned and contributes towards can be defined as supply chain management (Wilhelm and Dolfsma, 2018:44).

Some of the theories and frameworks, such as the Porter's Diamond Framework (Afzal, Lawrey and Gope, 2019:338; Wonglimpiyarat, 2018:76) discussed in section 2.6.4 hereunder, were formulated over a decade ago, as outlined and referenced in this chapter. However, changes in the global economy over the past couple of decades have also shaped the academic thinking on strategy, strategic management, and competitive advantage to a substantial degree, as highlighted by academic literature (Sisay et al., 2021:223) discussed in this chapter.

2.2.2 Strategy as a Practice

The theories and frameworks discussed in this chapter include concepts of GVCs (Whitfield, Staritz and Morris, 2020:7), supply chain management, growth of automotive industries in developing countries, as well as other recent automotive industry growth theories (Wilhelm and Dolfsma, 2018:44). Frameworks to support automotive industry growth strategies are also covered (Schlager, 2019:293).

2.2.3 Growth Strategies and Supporting Theories

It must be noted that a secondary research question of this specific research has reference to growth strategies that can be employed to make Namibia a more valuable part of the South African automotive supply chain.

A clear understanding of academic and theoretical growth theories (Schlager, 2019:293) and how they are used, as well as their support of the literature, are the focal points in discussions in the next sections of this thesis. In these discussions of growth theories and supporting theories, the most significant contributions to theory, practice, and policy, as well as the implications, are highlighted (Whitfield, Staritz and Morris, 2020:1018). The research questions highlighted in Section 1.7 in the previous chapter are supported by these academic and theoretical growth theories.

2.2.4 Specific Growth Strategies Linked to the Automotive Industry

The automotive industry in Namibia can be taken as the matter of scope for this thesis. The contribution of this study is in its implication to the field of study and practice regarding strategic management and industry growth (Kafel and Ziębicki, 2021:16). As discussed in the section below, theories and frameworks (Schlager, 2019:293) on strategies to grow a specific industry should include theories that analyse why firms establish global automotive production networks (Pavlínek, 2020:513) as well as fragmented production and investment in foreign industries (Marcato, Baltar and Sarti, 2019:876).

2.3 THE THEORETICAL FOUNDATION

The theoretical foundation highlights the underpinning of the study and is structured to guide how it supports the literature review (Schlager, 2019:293). In the following sections, the theoretical foundation is discussed in terms of the following categories:

- Global automotive industries (Section 2.4);
- Strategies to grow the automotive industries (Section 2.5);
- Theories that support these automotive growth strategies (Section 2.6).

2.4 GLOBAL AUTOMOTIVE INDUSTRIES

In the next sections, focus is placed on the essence of global automotive industries by way of discussions of GVCs (Section 2.4.1), supply chain management (Section 2.4.2), and the growth of automotive industries in developing countries (Section 2.4.3).

2.4.1 Global Value Chains

2.4.1.1 Global value chains defined

Namibia, being a member state of SACU, and following the renewed SACU Agreement in 2004 that requires SACU to negotiate all trade agreements as a bloc (AIEC, 2022:47), indicates the pertinence of including academic research on GVCs in the literature review of this specific study. Access to global markets and taking part in GVCs have been enhanced through bilateral agreements with most of South Africa's major trading partners.

According to a report from the World Bank Group (2022a), the SACU region faces a distinctly changed environment that became apparent over the past two decades, as in the following (Virk and Cook, 2018; Knight et al., 2020:591):

- In the first instance, international trade is increasingly being shifted away from high-income developed countries towards developing markets.
- Second, global production and value networks or GVCs (Pavlínek, 2020:513) are increasingly becoming more evident to ensure sustainable production hubs in Southern Africa.

The World Bank Group (2020) describes GVCs in theory as involving task-based trade that takes place across various stages of the production process. Global value chains (GVCs) span various countries and include multiple inputs and exports of intermediate goods and services to produce a final exportable product. Global trade, on the back of multiple value chains around the globe (Gereffi, 2019) was enabled by the so-called global trade unbundling, because of the following:

- A combination of improved shipping technology, radical technology changes in information communication technology (ICT) (Awamleh and Ertugan, 2021), and global trade liberalisation (Whitfield, Staritz and Morris, 2020:7) was the enabler factor for MNCs to establish networks of intra- and inter-firm production and trade (Pavlínek, 2020:513).
- As a result of the emergence of GVCs, more than 50% of the world's manufactured imports are currently intermediate goods. In addition, more than 70% of service imports of the world consists of intermediate services (World Bank Group, 2020).

2.4.1.2 Global value chains in developing economies

The literature review for this study included specific growth strategies and incentive schemes that govern automotive industries in other countries most effectively that can be implemented in Namibia for growth of the local automotive industry. Global value chains (GVCs) in other developing economies represent enablers of industry growth and are pertinent to this study's research.

Global value chains (GVCs) offer potential for smaller developing countries to benefit from global integration (World Bank Group, 2020), based on the following:

- Under the new global trade dynamics discussed in the previous paragraph, developing countries can specialise in specific activities, such as specific components or subassemblies, whilst importing required inputs (Gereffi, 2019).
- Recent strategies and theories have shown that, although this situation of specialisation of developing countries (Schlager, 2019:293) does not represent a permanent guarantee of significant value-adding activities, it is the first step to upgrade developing economies (World Bank Group, 2020).

It is stated (World Bank Group, 2020) that nowhere else is it more evident that GVCs are at the heart of open-economy growth models, and are responsible for growth as well as poverty reduction, than in the countries across East Asia (Afzal, Lawrey and Gope, 2019:338): Substantial cross-border production networks (Pavlínek, 2020:513) were developed in East Asian countries (with China as demand instrument) while, in the process, taking advantage of:

- low wages and large labour forces in Vietnam, Cambodia, and Indonesia (Afzal, Lawrey and Gope, 2019:338; Campling et al., 2021:139);
- technologies driven from lead countries, like Taiwan, Korea, China, Malaysia, and Thailand (Awamleh and Ertugan, 2021; Dishon and Yabs, 2017:111); and
- focus on logistics and services from Singapore, among others (Goswami et al., 2020:7565).

The report by the World Bank Group (2022a) expressed the opinion that South Africa, like China as discussed earlier, has a critical role as a demand engine and gateway for the region (Knight et al., 2020:591; Virk and Cook, 2018) and will benefit from comparative advantage while engaging in GVCs (Gereffi, 2019). In this regard, regional integration (Knight et al., 2020:591) will likely be the key to successful export-orientated growth in the SACU region (Virk and Cook, 2018).

2.4.1.3 Global value chain requirements to be successful in the South African Customs Union (SACU)

This study collected data to analyse how to grow the Namibian automotive industry by linking growth to the regional automotive trade in SACU, the SADC, the AFTA, and the AfCFTA. In addition, options of growth via global FTAs with SACU in respect of the USA's AGOA and the EU's SADC-EPA were evaluated.

For SACU countries (of which Namibia is a member state) to compete in the GVCs of the global automotive industry, it is a substantial requirement that economies of scale must be the order of the day. Currently, economies of scale are limited within the SACU region (Virk and Cook, 2018). It is non-existent, to a large degree, outside the borders of South Africa, as stated by the World Bank Group (2022a).

The opinion was raised in the report by the World Bank Group (2022a) that, theoretically, at the heart of efficient regional integration (Virk and Cook, 2018), the following aspects should be in place:

- Close trade relationships and linkage of SACU member states for trade in goods;
- Increased investment in regional supply chains (Wilhelm and Dolfsma, 2018:44);
- Expanded technology systems and business relationships (Awamleh and Ertugan. 2021);
- Effective use of efficient infrastructure services of telecom (Moos and Sambo, 2018:467), internet, and transport to coordinate disseminated production (World Bank Group, 2020).

2.4.2 Supply Chain Management in South Africa

Theories and growth strategies that can be employed to make Namibia a more valuable part of the South African automotive supply chain are pertinent to address the research question in this regard, as stated in Section 1.7.

According to Wilhelm and Dolfsma (2018:44), a supply chain is a network of connected and interdependent organisations that work together with the different processes and

activities that are required to create value in the form of products and services in the consumers' hands.

This theoretical definition is expanded to include all the processes required for the manufacturing, distribution, and recycling of materials and components, finished products, and services (Gereffi, 2019). One individual company can be part of numerous different supply chains, in the event of multiple products, as every product has its own supply chain (Wilhelm and Dolfsma, 2018:44).

Wilhelm and Dolfsma (2018:44) theorised that supply chain management is a key driver of competitive advantage for individual companies and networks of organisations (Pavlínek, 2020:513; Sisay et al., 2021:223) on account of the following:

- Sources of competitive advantage from a supply chain perspective consist of financial performance, product quality, service delivery and time, and place utilities (Wilhelm and Dolfsma, 2018:44).
- A key element of supply chain management is the quality of relationships between key members of the supply chain with the need to operate as a collective and to compete against other supply chains (Wilhelm and Dolfsma, 2018:44).

Aspects mentioned above will be investigated in this specific study.

Flowing from discussions in the above on GVCs (Whitfield, Staritz and Morris, 2020:7) as well as supply chain elements of the automotive industry in South Africa (Wilhelm and Dolfsma, 2018:44), automotive industries in the SSA region are discussed next.

2.4.3 The Growth of Automotive Industries in Developing Countries in the Sub-Saharan Africa Region with Reference to South Africa

2.4.3.1 Dilemma of current domestic production in Sub-Saharan Africa countries

It is highlighted by the World Bank Group (2022b) that, although the global automotive industry was one of the largest industrial sectors globally, there is little domestic production in this industry in countries in SSA, other than in South Africa. This is attributed to low levels of industrialisation and limited manufacturing capabilities

(Teece, 2019:3). The automotive industries of SSA countries do not endeavour to meet the opportunities presented by the thriving demand in the international automotive industry.

Growth studies for increased production in SSA countries such as Namibia formed an essential part of research in this study. This study included collection and analysis of data on the growth of the automotive component manufacturing base and employment in Namibia by linking it to the TFTA and AfCFTA.

In the opinion of Black et al. (2019) and according to a report from the World Bank Group (2022b), it is further indicated that the small size of the domestic market of most SSA countries, as well as the relatively poor regional location (Virk and Cook, 2018), inhibit international investment and integration into the global automotive industry.

Less supportive automotive industry development policies of governments (Usman and Daniel, 2020:6) can also contribute to the negative effect on the GDP that results from import expansion and low local content in domestically assembled vehicles (Usman and Daniel, 2020:6). Vehicle imports can become a notable foreign exchange burden in the absence of domestic production or non-participation in automotive industry value-adding processes (Spitsin et al., 2018:57).

On the contrary, according to the research of Anthony Black (Black et al., 2019), a growing vibrant automotive industry is generally characterised by a large degree of export expansion, substantial inflows of foreign investment (Spitsin et al., 2018:57), new technology that results in productivity improvement (Awamleh and Ertugan, 2021), falling import duties, streamlining in the economy, and greater economies of scale in local production (Pavlínek, 2020:509).

2.4.3.2 Prescriptive action and exploring options – the role of value chains and growth of the gross domestic product in Sub-Saharan Africa countries

Recent research by Black et al. (2019) suggested that African countries need to adopt appropriate policies and accelerate regional integration policies (Knight et al., 2020:591) in their efforts to reap the benefits of the flourishing international automotive industry (Virk and Cook, 2018). In this current study, the following theoretical rationale was explored: how the government in Namibia promotes lower-tier domestic

component manufacturers in respect of regional integration to become a competitive sustainable part of the automotive supply chain of South Africa.

Frameworks of Black et al. (2019) investigated whether the demand of the growing international automotive industry can be met by SSA countries through either imports or domestic production. Black et al. (2019) elaborated that the automotive industry embraces a full range of industrialisation processes, including metal fabrication, plastics, and electronics, with considerable technological spill overs (Awamleh and Ertugan, 2021) to other industries (Dishon and Yabs, 2017:111).

Black et al. (2019) argued that the value chain of the automotive industry played major roles in the national development and growth of the GDP in countries such as Korea, Thailand, Brazil, and Mexico. Growth strategies and policy measures governing automotive industries in other countries that can be implemented effectively in Namibia to grow its automotive industry were focal points of research in the current study.

The research of Black et al. (2019) explored the way a national or regional industry is integrated into GVCs (Whitfield, Staritz and Morris, 2020:7) has significant implications for the growth of that industry (Black et al., 2019). Improved integration can ensure the growth of the industry (Demir, Wennberg and McKelvie, 2017:3), brought about by increased foreign direct investment (FDI) (Sass, 2020:231), expanded production, and generalised upgrading.

2.4.3.3 Essence of the success of the South African automotive industry

Black et al. (2019) conjectured, in addition to the above, the factors that constrain the rapid expansion of an automotive industry. In this current study, variables that constrain and inhibit the growth of the automotive industry in Namibia were explored as a secondary research question, as stated in Section 1.7. This study reflected on the success and failure of growth factors in the South African automotive industry and campaigns to apply these in Namibia, as is discussed next.

These factors (Black et al., 2019) represent depressed perspectives of future growth (Demir, Wennberg and McKelvie, 2017:3). These factors consist of uncompetitive and protected industries, heavy subsidised low base exports, low productivity, and high wariness of trade liberalisation, as were features of the South African automotive industry in the early 1990s (Sisay et al., 2021:223).

Black et al. (2019) argued in their framework on the growth of the automotive industry (Demir, Wennberg and McKelvie, 2017:3) in South Africa, that, since 1990, domestic growth strategies have focused on becoming highly integrated into the global automotive industry on the back of increased foreign investment and trade (Spitsin et al., 2018:57).

By the turn of the century, the South African automotive industry became a highly outward-oriented leading export sector that was influenced by positive government industry expansion programmes and industry development policies (Usman and Daniel, 2020:6). Government policies and plans coupled tariff reductions with strong export support. These strengthened the ties of OEMs with their licensors and subsidiaries in South Africa to draw them into their global networks (De Marco, Mangano and De Magistris, 2021:310). Access to high volume markets for both vehicles and components on a global scale was strengthened and expanded upon (Pavlínek, 2020:513).

Researchers in academic literature (Gereffi, 2019) focused on the automotive component manufacturing industry in South Africa as a typically emerging market. It was theorised that, for specific industries like the automotive industry to grow, firms need to engage with global market players in strategic partnerships through JVs, franchising, licensing, and technology agreements (Awamleh and Ertugan, 2021) while reducing labour costs in the industry (Campling et al., 2021:139). The role of firms in the supply chain of this specific industry was believed to be a crucial foundation for these strategic partnerships (Demir, Wennberg and McKelvie, 2017:3).

A study by Black et al. (2019) concluded that the example of the expansion of the Australian automotive industry followed similar lines as South Africa, as discussed above. The Button Car Plan of 1985 created a more competitive automotive industry in Australia (Sisay et al., 2021:223) and ensured rapid integration into the global automotive industry. Its major strategies were highlighted as being:

- reduction in import tariffs;
- abolition of local content requirements;
- improvement of plant and model volumes;
- increase of specialisation;
- increase of export facilitation; and

- penalisation of low-volume production.

2.5 STRATEGIES TO GROW AUTOMOTIVE INDUSTRIES

Initial models and theories supporting growth of automotive industries (Schlager, 2019:293) are discussed in section 2.6. In this section, Section 2.5, recent industry growth strategies are covered.

2.5.1 Fragmented Production Strategies

In some academic research (Marcato, Baltar and Sarti, 2019:876) it is opined that technology advancements (Awamleh and Ertugan, 2021) and innovations in telecommunication and transportation (Wilhelm and Dolfsma, 2018:34) enabled and increased developing countries' participation in the global automotive industry.

The global automotive industry fragmented its production processes into smaller segments, also referred to as fragmented production processes, in various countries (Marcato, Baltar and Sarti, 2019:876). It can be described as the manufacture of automotive parts and components (Gereffi, 2019), as well as the assembly of motor vehicles, relocated to different places around the world, based on cost advantages.

This study collected data on the sector of the automotive industry in Namibia that has the most potential to add to the growth of the automotive industry, being either vehicle assembly, component production, automotive dealerships, or aftermarket sales and services. The basis of findings of the research of this study was strategies for increased production and increased participation in the regional and global automotive industry.

2.5.1.1 Global production networks

In essence, the international fragmentation of production locations multiplies the opportunities for countries to specialise in accordance with their comparative advantage (Kafel and Ziębicki, 2021:16). It is argued (Marcato, Baltar and Sarti, 2019:876) that the global automotive industry is, in essence, an assembly industry where more than 1 000 automotive parts and components (Gereffi, 2019) are produced by independent industries around the world.

Theoretical concepts such as international production sharing, distributed manufacturing, and dispersed manufacturing are synonymous with global production networks (Pavlínek, 2020:513). Global production networks are created by the relocation of segmented production processes consisting of more than one production block (Pavlínek, 2020:513). The various production blocks are connected through numerous service links, such as telecommunications, research and development (R&D), insurance, quality control, transportation, design, and other services in various degrees of interdependence.

Marcato, Baltar and Sarti (2019:876) argued that the degree of fragmentation can be measured by the number of stages in the production blocks. As the various production blocks increase in numbers, the service links connecting the different production blocks, grow in importance.

2.5.1.2 Service links

In recent academic research (Marcato, Baltar and Sarti, 2019:876), focus was placed on strategic management (Kafel and Ziębicki, 2021:16) and indicated that industry growth can be accelerated when firms are encouraged to switch from vertically integrated production processes to a process of fragmented production blocks connected by service links (Grieger and Ludwig, 2019:473; Marcato, Baltar and Sarti, 2019:876). In this current study, the extent and scope of service links in the local automotive industry flowing from the automotive aftermarket retail sector were determined. These included businesses such as automotive repair services, engine refurbishing, automotive body repair shops, tooling, automotive outdoor accessories, and tyre services. Service links form an integral component of manufacturing processes, which is an important factor in this study's goal to accelerate the growth of the manufacturing sector of the automotive industry.

The service links are optimised with economies of scale (Grieger and Ludwig, 2019:473) and include services and coordination tasks (Gereffi, 2019), as mentioned earlier. Service links are crucial to ensure the connection of production blocks into single integrated production processes.

The elements of service link costs consist of either trade costs, investments costs, communication costs, or coordination costs, as depicted in Table 2.2 below.

Table 2.2: Elements of service link costs

Category and Sub-Category	Details
Trade Costs:	
Transportation costs	Shipment and freight charges
Policy barrier costs	- Tariff barriers: ad valorem tariffs, specific tariffs, non-tariff barriers (quotas, others).
	- Indirect costs due to prohibition to entry, absence of national treatment and other.
	- FDI discriminated measures.
Information costs	Search costs for sellers and buyers, research costs for preference of foreigners.
Costs associated with use of different currencies	Costs of exchange rates volatility, risk edge and uncertainty.
Legal and regulatory costs	Direct and indirect costs to deal with legal regulatory issues and procedures.
Local distribution costs	Costs to use local infrastructure and to efficiently deliver goods to local consumers.
Investment Costs:	
Information costs	Search costs for suppliers.
Contract enforcement costs	Direct and indirect costs to ensure contract implementation.
Legal and regulatory costs	Direct and indirect costs for dealing with legal regulatory issues and procedures.
Communication Costs:	
	Telecommunication costs, Internet fees.
Co-ordination Costs:	
Timeliness	Indirect costs due to inadequateness of timely delivery.
Uncertainty	Indirect costs due to uncertainty regarding coordination of a series of activities from production to shipment of end products.

Source: Adapted from Grieger and Ludwig (2019:473)

2.5.1.3 Location of production

When it comes to physically larger and heavier automotive parts and components, as compared to the electronics industry (Dishon and Yabs, 2017:101), it is preferable for an automotive industry in a specific country to be near the component producer and assembly factories (Gereffi, 2019).

A crucial feature of automotive parts and components is that very few parts can be used as generic parts in a variety of final products (Gereffi, 2019), contrasting with the electronics industry (Awamleh and Ertugan, 2021). This unique attribute places limits on automotive parts and components manufacturing firms (Awamleh and Ertugan, 2021) and in their efforts to reach economies of scale in production and economies of scope in design.

In this regard, the theoretical definition of the modern business practice of global sourcing includes and describes the requirements of different organisational functions or departments to analyse and select sourcing alternatives most effectively (Goswami et al., 2020:7565). These functions or departments include purchasing, production, logistics, and R&D.

It is indicated in academic research (De Marco, Mangano and De Magistris, 2021:310) that the automotive industry is typical of extremely concentrated firm structures that have a small number of large multinational enterprises or OEMs that dominate global production (Mujkic and Klingner, 2019:365).

Namibia is close to a large key export market that enhances potential for favourable selection by OEMs as preferable location of production. This study took into consideration how the close location to South Africa as well as Namibia's openness to regional trade add to potential establishment of motor vehicle assembly and production of components in this location. Namibia's potential participation in global productions facilities, as covered in this study, is discussed next.

2.5.1.4 Scale of global production participation

This section discusses the scale of global production participation strategies in terms of infrastructure (Moos and Sambo, 2018:467), FDI and trade openness (Sudan, 2022:2; Sass, 2020:231), labour costs (Campling et al., 2021:139), and exchange rates (Spitsin et al., 2018:57).

2.5.1.4.1 Infrastructure

Determinants of the participation in automotive global production networks are primarily identified as being infrastructure conditions (Moos and Sambo, 2018:467;

Pavlínek, 2020:513). Infrastructure conditions affect both communications and coordination costs, as depicted in Table 2.2 above.

As is the case with the vast size and the geographical positioning of Namibia, transport costs and time to reach destinations add to the crucial role that infrastructure conditions play (Moos and Sambo, 2018:467).

2.5.1.4.2 Foreign direct investment and trade openness

Other determinants of the scale of participation in global automotive production networks (Pavlínek, 2020:513) were identified as being FDI and trade openness (Sudan, 2022:2, Sass, 2020:231). Foreign direct investment (FDI) openness can be described as the instances where the investor is able to have full ownership of the venture. Trade openness was considered because of the trade liberalisation and protection of the automotive sector which has occurred in some developing countries (Sudan, 2022:2).

2.5.1.4.3 Labour costs

Another factor to consider in global automotive production networks is the positive effect that labour costs have on the participation in global production networks (Campling et al., 2021:139; Pavlínek, 2020:513). Research on the labour costs coefficient suggests that higher labour costs represent increased labour productivity and, consequently, the production of higher export value as it relates to higher quality products (Campling et al., 2021:139). The quality of labour, in turn, depends on the level of technology available in the specific automotive industry and country (Awamleh and Ertugan, 2021).

2.5.1.4.4 Exchange rates

Another important determining factor consists of the exchange rate of the currency of the specific automotive industry and country (Spitsin et al., 2018:57). A depreciation or weakening of the domestic exchange currency makes exported vehicles, as well as automotive parts and components (Gereffi, 2019), from that country more competitive in the world market, pricewise (Sisay et al., 2021:223).

Competitive advantage (Sisay et al., 2021:223) and firms' performance and successes in high-technology industries in the global marketplace (Awamleh and Ertugan, 2021), seen from research on HGFs, are discussed next.

2.5.2 Strategic Management of High-Growth Firms and Industries

Demir, Wennberg and McKelvie (2017:2) placed focus with their review and theoretical conceptualisation on the strategic management theory of HGFs (Kafel and Ziębicki, 2021:16). These scholars postulated that HGFs exist in all industries and include all firm sizes, from OEMs to dealerships as in the case of the automotive industry (De Marco, Mangano and De Magistris, 2021:310). Scholars focused on the strategic aspects contributing to growth (Riasanow, Galic and Böhm, 2017:3192) and highlighted the five drivers as being human capital, strategy, HRM, innovation, and capabilities (Wilhelm and Dolfsma, 2018:34; Teece, 2019:3; Hole, Snehal, and Bhaskar, 2019:1436). These drivers are discussed in Section 2.5.2.2.

Most recent and current developments in relation to growth in the automotive industry in Namibia were investigated in this study. Focus was placed on firms and industries that recently added to growth of the domestic automotive industry, as discussed, and defined in the next section.

2.5.2.1 High-growth firms defined

Scholars in strategic management theory (Kafel and Ziębicki, 2021:16) agree that HGFs are defined as "firms growing at or above a particular pace, measured either in terms of growth between a start and end year, or as annualized growth over a specific number of years" (Riasanow, Galic and Böhm, 2017:3192; Demir, Wennberg and McKelvie, 2017:3). Potential for new ventures in Namibia based on international best practices in the way to do business, pertaining to high-growth businesses, was identified in this study and applied to the research question on how to grow the automotive industry in Namibia. The theory and definition of HGFs, as discussed in the next sections, indicate growth strategies for firms in Namibia's automotive industry, which represented the foundation of findings of this research study, as highlighted in Chapter 7.

Theory on specific factors that lead to the development of HGFs in various industries, and their continued growth, remains fragmented and without any methodical assessment (Demir, Wennberg and McKelvie, 2017:2). Reasons consist of inconsistent definitions, sampling challenges, and organisational complexity, as discussed next.

- **Inconsistent use and measure of high growth:** Specifics regarding the speed of growth, the essence of how growth is quantified, and the number of years in which growth occurs add to uncertainty regarding how HGFs are identified.
- **Sampling of HGFs for inclusion in strategic management theory problematic:** The nature of high growth consists often in a short timeframe. Many HGFs are acquired following their growth or shut down based on the major risks involved in such rapid growth and contraction periods.
- **Significant challenges with HGFs in determining what kind of strategies for rapid growth needed:** With HGFs, the level and pace of growth involves substantial organisational complexity compared with firms with average growth.

2.5.2.2 Drivers of strategic management of high-growth firms

Empirical theories and frameworks indicate that drivers of high growth in these HGFs depend on the ways founders and employees leverage the drivers discussed in this section (Demir, Wennberg and McKelvie, 2017:4).

As discussed in the above, a conceptual model of strategic drivers of high growth is depicted in Figure 2.1 hereunder.

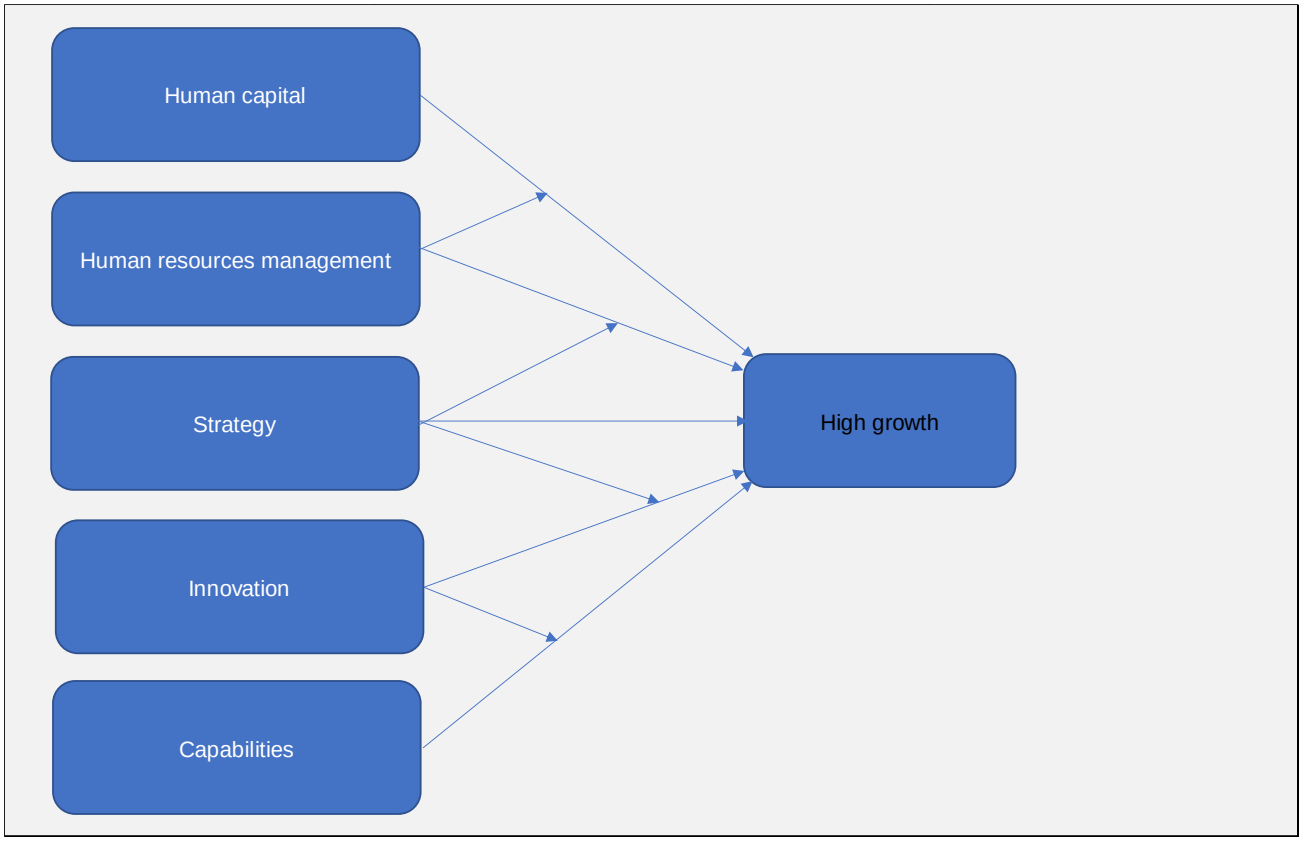

Figure 2.1: A conceptual model of strategic drivers of high growth
Source: Demir, Wennberg and McKelvie (2017:38)

The drivers depicted in the figure are discussed next.

- **Human capital:** The various forms of human capital include the educational level and skills of founders-managers; it includes management experience in the industry, the market, and its technology (Awamleh and Ertugan, 2021) as well as management's cognitive abilities (Demir, Wennberg and McKelvie, 2017:20).
- **Human resource management (HRM) practises:** Empirical theories and frameworks revealed that HRM practices that have the potential to enhance firm performance consist of extensive recruitment, selection, and training procedures; formal information sharing (Awamleh and Ertugan, 2021); attitude assessment; job design; grievance procedures; management participation programmes; performance appraisals; and promotion and incentive compensation systems that recognise and reward employee merit (Demir, Wennberg and McKelvie, 2017:28).

- **Firm strategy:** Strategic management scholars (Riasanow, Galic and Böhm, 2017:3192; Kafel and Ziębicki, 2021:16) define strategy in their theories as a stream of organisational decisions that determines a company's objectives, purposes, and policies in that specific industry. A firm's strategy produces its plans for achieving its goals (Demir, Wennberg and McKelvie, 2017:26). Two principal strategy practices indicate a pertinent relationship with HGFs, namely strategic planning and differentiation (Picciano, 2017:166). With strategic planning, formalised strategic-planning practices are followed with deliberate emphasis on product/market contingencies (Riasanow, Galic and Böhm, 2017:3192). With differentiation strategies, scholars in strategic management theory (Kafel and Ziębicki, 2021:16) found that larger HGFs have diversified portfolios of products sold in several markets that protects the firms from the vulnerability of a single-product strategy (Demir, Wennberg and McKelvie, 2017:27).

- **Firm innovation:** It has long been assumed that innovation has a positive relationship with high growth (Wilhelm and Dolfsma, 2018:34). The notion of innovation is described by Schumpeter as being the "*doing of new things or the doing of things that are already being done in a new way*" (Michael, 2007), including products, services, and processes that are new to the firm or the industry in which the firm operates. Academic research reviewed for the theory, frameworks, and strategies of this thesis examined the link between innovation and high growth in respect of R&D spending (Wilhelm and Dolfsma, 2018:34), the number of patents, and the number of new products or processes introduced to the market (Dishon and Yabs, 2017:110).

- **Firm capabilities for growth:** In strategic management theories (Kafel and Ziębicki, 2021:16) and frameworks (Demir, Wennberg and McKelvie, 2017:34), firm capabilities represent ratification of resources (Gellweiler, 2018:5), practices, and processes to bring changes and replacements to achieve certain goals beneficial to the firm (Schlager, 2019:293). Capabilities need to be the core of the firm by way of being exemplified in employees' practices and entrenched in the firm's systems and technologies (Teece, 2019:3; Awamleh and Ertugan, 2021).

Strategic management theory (Riasanow, Galic and Böhm, 2017:3192; Kafel and Ziębicki, 2021:16) highlights a fundamental unanswered strategy and theory question: do ideal levels of growth exist that allow firms or industries to achieve sustained competitive advantage (Sisay et al., 2021:223) and continued high levels of performance (Demir, Wennberg and McKelvie, 2017:51)? In the next section, focus is placed on multi-dimensional profit-seeking strategies of automotive firms, being part of the changing geography of the global automotive industry.

2.5.3 Restructuring and Internationalisation of an Automotive Industry

Pavlínek (2020:509) highlighted increased internationalisation by large domestic automotive firms (Mujkic and Klingner, 2019:365) in the European automotive industry, as well as the decreasing role they played in the industry between 2005 and 2016.

In this study, the Namibian automotive industry is discussed in broad details in the next chapter. It is described that the government is steadfast and determined to stimulate growth and increased employment in Namibia. Theory and market strategies of growth of the global automotive firms and the global automotive industry in respect of their internationalisation strategies were included in this study as to the bearing thereof for local establishment of assembly factories and component production facilities.

It is reiterated that the automotive industry is one of the most globalised industries with the presence of large assemblers and global suppliers in all major markets around the globe (Whitfield, Staritz and Morris, 2020:7). It was stated, however, that the automotive industry's geographic structure is based on integrated regional production networks (Pavlínek, 2020:513) and regional and/or local clusters of production (Brugman and Verbeke, 2018). It was further elaborated that the main advantage of this regional integration (Knight et al., 2020:591) consists of the more efficient territorial utilisation of labour and macro-regional specialisation to enhance greater economies of scale (Campling et al., 2021:139; Pavlínek, 2020:509; Virk and Cook, 2018). This empirical analysis of Pavlínek (2020:509) had a goal to investigate the investment and location decisions of multinational automotive firms. It aimed to improve understanding of the geographical development of the automotive industry into bordering regions (Knight et al., 2020:591), nearby core production areas (Common Market for Eastern

and Southern Africa [COMESA], 2022), and the integration of these into macro-regional production networks (integrated peripheries) (Pavlínek, 2020:513). Pavlínek (2020:510) argued that reasons that played a significant role in the geographic restructuring of the European automotive industry between 2005 and 2016 consisted of the following:

- Large differences in national labour costs (Campling et al., 2021:139);
- The various and different corporate tax regimes; and
- Cost-cutting initiatives.

2.5.3.1 Reasons for location decisions ('peripheral integration') of automotive firms and the changing geography of the automotive industry

Pavlínek (2020:511) argued that location decisions of global automotive firms are eventually tied to profit-seeking actions. In this current study, the location rationale for the establishment of the Groupe SA assembly line for production of Peugeot and Opel modes at Walvis Bay in Namibia was researched. Factors of success, as well as indicators of failure, for this government partnership and venture were investigated.

For all firms, it is essential that production costs are kept under control to be as profitable as possible. Factors of production costs, raw material costs and non-materials inputs in production, R&D costs, administrative costs, and transportation and logistics costs form part of production costs (Goswami et al., 2020:7565). It is, however, always easier for firms to reduce labour costs than other production costs (Campling et al., 2021:139).

2.5.3.2 Peripheral automotive production regions and 'peripheral integration'

According to Pavlínek (2020:513), regions of sustained growth and development within regional production networks or integrated peripheries (Knight et al., 2020:591) are characterised by the following elements:

- Substantially lower wages than in traditional core regions of the automotive industry (Virk and Cook, 2018);

- A notable labour surplus in the region at the initial stages of growth (Campling et al., 2021:139),
- The region's physical proximity to large and attractive markets that reduce transport costs, especially when accompanied by a modern transport infrastructure (Moos and Sambo, 2018:467; Knight et al., 2020:591);
- The country's membership in regional trade agreements and preferential trading arrangements to ensure tariff-free access to these large lucrative markets;
- An automotive industry with large degrees of foreign ownership and control on the foundation of FDI (Sass, 2020:231):
- A high export-driven automotive industry with production of standardised vehicles, niche-market vehicles, and broad-spectrum automotive components;
- An industry characterised by limited development of high value-added and strategic functions, such as R&D (Dishon and Yabs, 2017:110);
- A country's government with FDI-friendly public policies (Usman and Daniel, 2020:6), attracting automotive FDI by means of low corporate taxes and providing liberal investment incentives (Sass, 2020:231);
- A country with liberal labour laws, flexible labour practices, and less active labour unions, when compared to the automotive industry core countries (Campling et al., 2021:139);
- A young, underdeveloped domestic automotive industry in infant stages; and
- Integration into regional production networks (Pavlínek, 2020:513) and assembly platforms through supplier linkages.

Beneficial factors such as Namibia's physical proximity to South Africa, being a lucrative market of size, and the well-developed domestic transport infrastructure were studied in this research regarding country-unique factors of peripheral integration. The potential of peripheral integration in other regional and continental markets, as discussed in the next section, was an essential focal point to research the growth of the Namibian automotive industry.

2.5.3.3 Technological, organisational, and institutional preconditions for integration of new peripheries into existing automotive production networks

New transportation technologies and logistical processes are required for the integration of new peripheries into regional production networks (Pavlínek, 2020:513; Goswami et al., 2020:7565). This is achieved by the development of modern transportation infrastructure of highways, high speed railways and harbours, and taking less time to market at lower cost (Moos and Sambo, 2018:467).

Organisational changes for integration of new peripheries into regional production networks (Pavlínek, 2020:513) take the form of re-organisation from domestic-based automotive industries into global production networks (Pavlínek, 2020:513). The changes include and result in efficient global sourcing, just-in-time delivery of pre-assembled modules, imports of components for assembly and exports of finished vehicles, and components from integrated peripheries to markets abroad.

Institutional changes (Mehta and Tariq, 2020:223) for integration of new peripheries into regional production networks (Pavlínek, 2020:513) are required to allow for the free international movement of commodities and capital. This includes the flow of capital to integrated peripheries for profits and dividends between the home economies of foreign investors and new peripheries (Virk and Cook, 2018).

2.5.3.4 The expansion of the automotive industry into new integrated peripheries conceptualised

In the empirical analysis in research by Pavlínek (2020:534), the dynamic nature of the global automotive industry, where global automotive firms constantly strive to improve their competitiveness and profitability, is highlighted (Sisay et al., 2021:223). It can be achieved with continuing technological and organisational innovation in existing locations (Dishon and Yabs, 2017:111; Wilhelm and Dolfsma, 2018:34). Location of production and assembly in more attractive locations or integrated peripheries to derive more profits increase competitiveness and profitability as well (Sisay et al., 2021:223). It was concluded in his research and frameworks that preconditions for integration of new peripheries into existing automotive production networks (Pavlínek, 2020:513) consist by and large of the search for low-cost locations

with low wages, low corporate taxes, and generous investment incentives. Lower production costs in new integrated peripheries, compared to the core country of the OEM (De Marco, Mangano and De Magistris, 2021:310), will lead to additional profit opportunities in new integrated peripheries. It has a substantial effect where job creation in new locations takes place with consequential job losses in traditional industry locations, such as in the European automotive industry.

Pavlínek (2020:535) elaborated that findings of his empirical analysis signify the substantially enhanced role of large global suppliers as well as the weakening role of domestic firms on the back of the intensely competitive automotive industry (Sisay et al., 2021:223). As a result, the automotive industries in integrated peripheries and other less developed regions (Virk and Cook, 2018) are increasingly being structured to be under the amplified control of foreign capital of OEMs (De Marco, Mangano and De Magistris, 2021:310).

In the next section, the research of Teece (2019:3) on dynamic capabilities of the firm is discussed, highlighting that capabilities flow from processes of learning to combining resources (Gellweiler, 2018:5) and employing complementary assets.

2.5.4 Dynamic Capabilities of the Firm

In his book *Competing in Capabilities*, John Sutton of the London School of Economics states: "*The proximate cause* [of differences in the wealth of nations] *lies, for the most part, in the capabilities of firms*" (Sutton, 2012:8; Vlados, 2019:33).

In his research and strategies, Teece (2019:3) highlighted the basic argument that firms differentiate themselves from competitors through learning, entrepreneurship, innovation, and shrewd decision-making (Wilhelm and Dolfsma, 2018:34). It is summarised that firms are made distinctive based on their capabilities to decide, to innovate, and to change swiftly (Teece, 2019:3).

Manufacturing in the Namibian automotive sector can be described as being in the first stages of development (Ministry of Industrialisation, Trade and SME Development, 2018). This study aimed to identify variables that constrain and inhibit the growth of the automotive industry in Namibia, including dynamic capabilities of firms such as innovation and technological advancement to kickstart a manufacturing automotive industry.

2.5.4.1 Capabilities, resources, and strategies of the firm

Resources are defined as the tangible and intangible assets that firms develop and effectively control (Teece, 2019:7; Gellweiler, 2018:5). Streams of services that the firm can use flow from resources such as skills of the firm's employees, its equipment, and the collective skills of the organisation. Capabilities are created in processes of learning, combining resources, and employing complementary assets (Teece, 2019:3). Capabilities of the firm consist of two categories, namely ordinary capabilities, and dynamic capabilities (Teece, 2019:7). Ordinary capabilities are operational in nature while dynamic capabilities are more strategic (Demir, Wennberg and McKelvie, 2017:26).

Dynamic capabilities reside with top management (Teece, 2019:3). They are inherent to the firm's values, culture, and joint ability to implement new business models or other changes quickly. The logical structure of the Dynamic Capabilities Framework of Teece (2019:11) is depicted in Figure 2.2 below and elaborated in the next paragraphs.

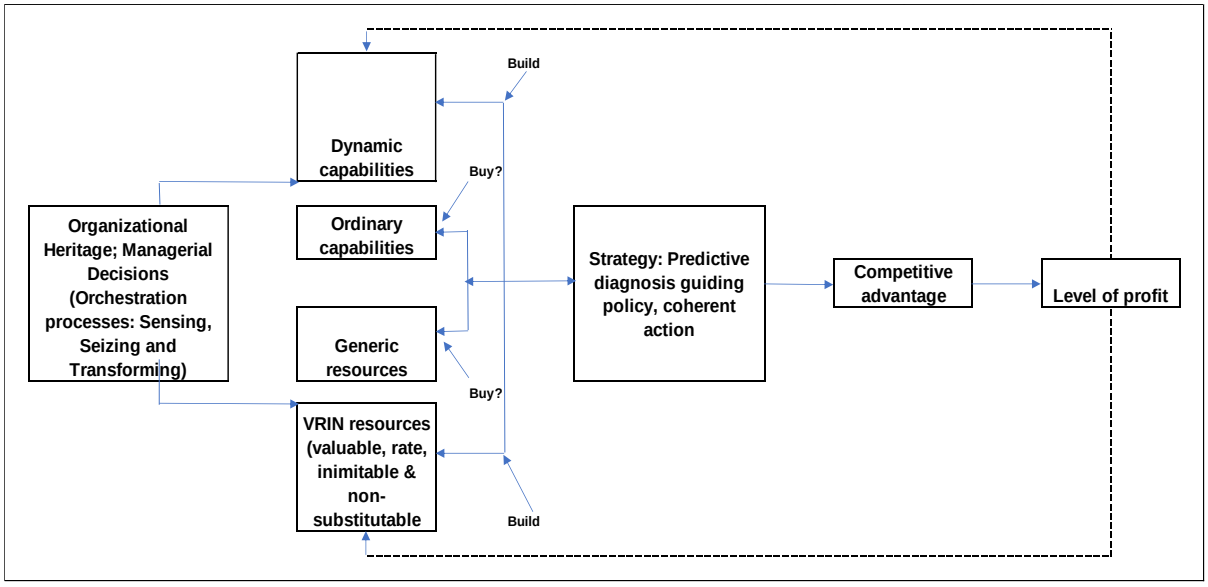

Figure 2.2: The logical structure of the Dynamic Capabilities Framework
Source: Teece (2019:11)

Although strategy and dynamic are distinct concepts, they are closely related: a critical attachment to dynamic capabilities consists of the strategy of the firm (Teece, 2019:3). Strategy encompasses the deployment of the firm's limited resources (Gellweiler,

2018:5) and alignment of its processes to face and overcome competitors. With strategic management (Demir, Wennberg and McKelvie, 2017:26; Kafel and Ziębicki, 2021:16), mistakes of competitors are exploited, in-house strengths are focused upon, and any constraints imposed by the firm's roots are overcome. Teece (2019:15) highlighted that a good company strategy contains essential drivers to identify obstacles, generate an approach to overcome these, and articulate action plans of practical steps to implement the policy and strategy (Whitfield, Staritz and Morris, 2020:1018).

2.5.4.2 Key elements of the Dynamic Capabilities Framework

Persistent extreme business uncertainty (Foster School of Business, 2017), the central role of firm-specific and firm-unique assets, the complexity co-ordinating inter-firm capabilities (Teece, 2019:3), and the effective allocation of resources (Gellweiler, 2018:5) are features of economic reality that firms face. These features of current economic reality must be included in any new framework or theory (Teece, 2019:17), as in the following:

- Deep uncertainty: In today's global business environment, capabilities (Teece, 2019:3) are spread over various geographic regions more than ever before (Virk and Cook, 2018). This interconnectedness has the potential to create repercussions from far-away corners of the globe to major markets easily and speedily (Foster School of Business, 2017).
- Non-priced assets: In almost all cases, strategic assets (Teece, 2019:4) generally present their full value only when they are combined by the owner with complementary or specialised assets (Demir, Wennberg and McKelvie, 2017:26). These strategic assets have mostly no market value in isolation as their value is context dependent. With reference to the automotive industry, context-dependent assets are applicable for knowledge assets such as technological capabilities (Teece, 2019:17). These capabilities can be secured only with acquiring a company or business unit, with its key personnel included.
- Complementarity and co-ordination: Alignment of activities within firms is required with technological and innovation capabilities (Teece, 2019:3; Wilhelm and Dolfsma, 2018:34) spread across a large organisation (Nakagawa and

Watanabe, 2017:107). The alignment is facing co-ordination, market design, and control challenges.

- Managerial asset orchestration: Managers, more than the price system of markets, can more easily accomplish vital co-ordination and alignment of assets and resources (Gellweiler, 2018:5) by owning and utilising the capability of achieving good internal and external alignment (Teece, 2019:17). Achieving such alignment happens through internalisation. In the Dynamic Capabilities Framework, the distinguishing role of the entrepreneur manager is orchestration of capabilities rather than the pursuit of cost minimisation of business activity for value-creating and value-capturing alignment.

2.5.4.3 A capability-based framework of heterogeneous firms

In the automotive industry, the different OEMs, such as Rolls-Royce and Volkswagen, compete for different customers (De Marco, Mangano and De Magistris, 2021:310). Different production technologies and different marketing and sales methods are subsequently required (Awamleh and Ertugan, 2021). Firms choose different technological and organisational approaches (Nakagawa and Watanabe, 2017:107), different business models, and different strategies even when these firms are pursuing the similar market segments. These strategic management decisions (Teece, 2019:4; Kafel and Ziębicki, 2021:16) create different approaches to doing business, leading to interfirm heterogeneity (Demir, Wennberg and McKelvie, 2017:26). The dynamic capabilities framework emphasises the distinctive role of managers in asset and capability co-ordination and recombination. Other economic research (Teece, 2019:21) has deflected attention away from the important role that the firm and its entrepreneurs and managers play in resource allocation (Gellweiler, 2018:5) in its business endeavours.

2.5.4.4 The capability-based theory applied to public policy

This study included evaluation of the aim of the Namibian Government to establish growth in the domestic automotive industry. The government's policy framework, with special incentives for manufacturers and exporters, was assessed in so far as it contributes to stimulate manufacturing and production in the country. This study

included the valuation of government incentives to target the promotion of exports into the region and to the rest of the world.

Only when government's public policy (Usman and Daniel, 2020:6) takes the capability-based theory of the firm into consideration (Teece, 2019:17) can governments facilitate innovative changes in the economy that offer major growth opportunities in the country's various industries (Teece, 2019:27).

- **Corporate governance and oversight**: Government's regulatory and legal frameworks often steer corporate governance away from the focus on the future success of businesses towards more short-term goals based on the emphasis of economic analysis (Usman and Daniel, 2020:6). Stringent corporate governance requirements constrain the boundaries of management to leverage the capabilities of the firm to the full, for long-term growth in employment and output (Teece, 2019:3).

- **Agency theory**: Agency theory describes the potential misalignment between owners and managers (Tripathi, 2019:1). In large public corporations, managers control day-to-day decisions and operational strategy (Mujkic and Klingner, 2019:365). Ownership often resides in fragmented groups of shareholders who may or may not own a significant number of shares in the firm. A co-ordination problem is thus created that is addressed only to a lesser degree by powers of the board of directors (Teece, 2019:27). The possibility often develops that managers may be able to operate the firm in ways that benefit themselves rather than the shareholders. In the dynamic capabilities approach to the firm (Teece, 2019:3), the risk of this self-interest-seeking behaviour by managers is taken as secondary concern. The urge to ensure that managers enhance the prospects of the firm is emphasised. Flowing from the dynamic capabilities approach to the firm, more fitting incentive systems and board oversight are established and implemented (Teece, 2019:3).

- **Development policy**: The dynamic capabilities framework of the firm highlights firm-level entrepreneurship, learning, and strategy. This approach of the firm is an integral part of public policy on economic development (Whitfield, Staritz and Morris, 2020:1018), seen in successes of the Asian 'tiger' economies being part of the Association of Southeast Asian Nations (ASEAN) Industrialisation

Cooperation Scheme (Afzal, Lawrey and Gope, 2019:338). Traditional economic development theorists place emphasis on resource accumulation (Gellweiler, 2018:5) with accompanying high rates of investment, but this often manifests in lacklustre outcomes in other developing countries (Teece, 2019:27).

In conclusion, focus is placed with the Dynamic Capabilities Theory or model of the firm (Teece, 2019:3) on the unique place in economic theory that the entrepreneurial manager fulfils. Managers identify, integrate, and orchestrate needed capabilities while structuring business models, strategies, and decisions, often under deep uncertainty (Foster School of Business, 2017), to grow and maintain evolutionary fitness.

Connections to firm heterogeneity and competitive advantage (Sisay et al., 2021:223) in theory on strategic management (Demir, Wennberg and McKelvie, 2017:26; Kafel and Ziębicki, 2021:16) are discussed next, regarding ROT (Čirjevskis, 2021:1), which is taken as the "*opportunities to purchase real assets on possibly favourable terms*" (Trigeorgis and Reuer, 2017:44).

2.5.5 The Real Options Theory in Strategic Management

2.5.5.1 Types of real options in real options theory

The literature elaborated on how ROT addresses the fundamental issues of strategy, being sources of competitive advantage and firm differences. Studies on these issues formed an essential part of academic literature review for this study on the growth of the automotive industry in Namibia. Competitive advantage and firm differences in the Namibian country context, flowing from abundant national resources and technology advances of innovation, were examined.

Five basic types of standalone ROTs are identified in strategic management theory (Kafel and Ziębicki, 2021:16; Trigeorgis and Reuer, 2017:44). These consist of the following (Teece, 2019:4):

- Options to initiate or postpone market entry under circumstances of market demand uncertainty (Foster School of Business, 2017);

- Options to grow, such as in the case of the firm taking partial shareholding in other businesses to enter a foreign market with the possibility of expanding later (Spitsin et al., 2018:57);
- Options to expand, scale down, increase manufacturing capacity, or implement outsourcing (Lamprecht and Tolmay, 2017:135);
- Options to change inputs, outputs, and suppliers as, for example, to reallocate production across foreign subsidiaries (Spitsin et al., 2018:57); and
- Options to exit a market or sell technology if business conditions deteriorate (Awamleh and Ertugan, 2021).

It is highlighted that most firms possess combinations of the above-mentioned theory options across these five categories. Three distinct different phases of investing in ROT by firms can be described by explaining the basic stages of the real options chain or the real options lifecycle.

2.5.5.2 Basic stages of real options analysis in organisations

The processes of ROT analysis in organisations are described (Trigeorgis and Reuer, 2017:46) as follows:

- **Problem structuring**: A qualitative, strategic portrayal (Teece, 2019:4) of the problem structure is developed that indicates the various managerial options, their timing and inter-connection, the underlying uncertainties, and the key value drivers (Demir, Wennberg and McKelvie, 2017:26).

- **Valuation and modelling**: primary input data is collected to draft standard discounted cash flow (DCF), do an estimation and determination of a base-case net present value (NPV), and calculate a benchmark as base.

- **Implementation planning**: With reaching a recommendation for strategic investment (Teece, 2019:4), a decision plan is developed by management with elements of specify conditions for the exercise of real options in different circumstances. Operating policy and decision milestones across investment stages are developed (Whitfield, Staritz and Morris, 2020:1018).

Each of the following four lifecycle steps (Trigeorgis and Reuer, 2017:46) identify a unique set of challenges and opportunities for firms to seize and maintain value.

- Identify and recognise a hidden real option that is not exploited to date;
- Acquire or create a real option by searching, gathering information (Awamleh and Ertugan, 2021), and acquiring or organising needed resources (Gellweiler, 2018:5);
- Strengthen, maintain, and manage the real option with required development, preservation, or enhancement costs; and
- Exploitation, exercise, or implementation of the real option.

In the four lifecycle stages discussed above, the first two stages involve entrepreneurial activities, with managerial skills and organisational systems included in the last two stages. The most common approaches to real options decision are discussed next.

2.5.5.3 Approaches to real options decisions

Flowing from the basic lifecycle stages and the roles, contributions, and limitations of each of the three predominant approaches to ROT, decision-making is elaborated upon next. The most common approaches to real options decision-making are the following (Trigeorgis and Reuer, 2017:47):

- **Real options reasoning (ROR)**: Real options theory (ROT) is presented as a way of executive management thinking, relying on logic and informative principles (Čirjevskis, 2021:1). Real options theory (ROT) was taken as a strategic and intuitive way of thinking in strategy literature reviews (Demir, Wennberg and McKelvie, 2017:26). It is approached as a logical or metaphorical tool to create and keep options open or exploit these options. To summarise, real options reasoning (ROR) can be seen as a tool for the formulation and testing of hypotheses that were formed from verbal rather than analytical modelling.

- **Real options valuation (ROV) and modelling**: Real options valuation (ROV) and modelling entails analytical, mathematical, and simulation models to assess options and draft hypotheses for future strategy design and theory development. Current economics and finance literature focused largely on ROV, where formal mathematical models or simulation are used to value options. Mathematical models or simulations are useful for developing

propositions and comparative statistical insights into real options available to strategic management (Kafel and Ziębicki, 2021:16; Demir, Wennberg and McKelvie, 2017:34).

- **Behavioural perspectives**: The focal point is on the implementation of real options in organisations and business. This approach emphasises the human and behavioural element of strategic management (Teece, 2019:4; Kafel and Ziębicki, 2021:16) and the emerging constraints on capabilities of organisations. Differences in management's information processing (Awamleh and Ertugan, 2021) and beliefs exist across the various divisions of organisations. The differences contribute to differential effectiveness in executing real options.

2.5.5.4 Classification of real options theory

First, recent academic theory scholars (Trigeorgis and Reuer, 2017:49) examined the ***precursors of strategic investment*** regarding the purchase or exercise of various options together with their valuation and performance consequence.

Second, other frameworks and theories (Dishon and Yabs, 2017:110) include a predominant theme in real options frameworks that consists of the ***trade-off between firm commitment and flexibility.*** Issues are highlighted, dealing with investment timing, consisting of market entry or exit decisions, investment scope, and capacity choices being investment contraction or expansion (Trigeorgis and Reuer, 2017:51).

Third, in another stream of recent research (Trigeorgis and Reuer, 2017:51), the ***value of multinational operations*** was examined. In international business theories (Mujkic and Klingner, 2019:365) and frameworks, attention was given to static efficiency gains because of internalising strategies instead of licensing (Schlager, 2019:293). In ROT, the MNC (Mujkic and Klingner, 2019:365) is seen as a co-ordinated network with host country environments as a foundation. The MNC endeavours to strategically shift sourcing, production, and value-chain activities across countries to execute options regarding exchange rate movements (Spitsin et al., 2018:57) or environmental uncertainties (Demir, Wennberg and McKelvie, 2017:26). In this current study, data analysis included international fragmentation of production locations on the part of OEMs in emerging countries such as Namibia. The extent to which this enhances the

opportunities for these countries to specialise in accordance with their comparative advantage was explored.

Fourth, Trigeorgis and Reuer (2017:51) also mentioned other theories and frameworks which indicated that current strategic management theory (Kafel and Ziębicki, 2021:16; Teece, 2019:4) highlights issues of ***organisational realities, constraints, and implementation*** as included in ROT. These include most applicable sections of the ROT approach (Čirjevskis, 2021:1) such as implementation stages, managerial limitations, the exercise of options, agency conflicts and managerial incentives (Tripathi, 2019:1; Teece, 2019:27), management quality and real options, and cognitive biases in strategic management decisions (Demir, Wennberg and McKelvie, 2017:34).

Theories and frameworks in the final category addressed market valuation challenges (Trigeorgis and Reuer, 2017:51) where traditional and new measures of firm performance are examined. Focus is placed on whether/when firms access lucrative opportunities and contain downside risk. Research developed more applicable performance and risk measures for testing predictions resulting from ROT.

2.5.5.5 Contribution of real options theory to strategic management

For ROT (Čirjevskis, 2021:1) to enhance its contribution to strategic management (Kafel and Ziębicki, 2021:16) as one of the field's theoretical pillars (Demir, Wennberg and McKelvie, 2017:34), it is believed that ROT is confronting core issues of corporate and competitive strategy in fundamental strategy domains (Sisay et al., 2021:223). It is alleged that ROT provides description of challenges and promises of the theory for the strategic management field (Teece, 2019:4, Čirjevskis, 2021:1). Contribution of ROT to strategic management theory is described next (Trigeorgis and Reuer, 2017:51).

- **Heterogeneity in firm behaviour, organisational performance outcomes, and competitive advantage:** Real options theory (ROT) places emphasis on investment opportunities and firm-specific knowledge (Čirjevskis, 2021:1; Teece, 2019:17). In that regard, ROT contributes to the enhanced understanding of reasons for firms' differences and drivers of sustainable competitive advantage under uncertainty (Sisay et al., 2021:223).

- **Theory of the firm:** It is believed that ROT stresses uncertainty and irregularity in returns because of decision flexibility and expanded value-chain activities across borders (Čirjevskis, 2021:1; Foster School of Business, 2017). Real options theory (ROT) aims to identify international flexibility options as well as dynamic advantages presented by multinational networks (Pavlínek, 2020:513, Mujkic and Klingner, 2019:365) as a source of investments value in a dynamic global environment.

- **Role of uncertainty in management and strategy:** It is emphasised that with ROT decision-makers are introduced to proactive response to uncertainty (Čirjevskis, 2021:1). Real options theory (ROT) allows the firm to delay or stage investment commitments and change future decisions when market conditions change. These tools from ROT enable the firm to limit losses and benefit from uncertainty under other favourable conditions.

- **Trade-off between commitment and flexibility:** Efficient management of this trade-off determines the firm's competitive advantage (Sisay et al., 2021:223) and enable the firm to capitalise opportunities created by uncertainty and decision flexibility (Whitfield, Staritz and Morris, 2020:7). With the ROT approach, early commitment enhances future flexibility. This is done by preserving and creating future growth options, lessening the impact of uncertainty on investment returns (Čirjevskis, 2021:1).

- **Trade-off between competition and cooperation:** In strategic management literature (Demir, Wennberg and McKelvie, 2017:34), rivalry (Kafel and Ziębicki, 2021:16) and co-operation are seen as opposing or mutually exclusive strategy directions. When ROT is combined with game theory, dynamic strategy can be extended to incorporate strategic responses among firms in an industry with not only incorporating the trade-off between commitment and flexibility (Teece, 2019:27) but also expanding on shifts between competitive and co-operative modes over time (Sisay et al., 2021:223).

- **Organisation and governance mode choices:** In academic literature, scholars have identified four ways to deploy a resource as part of a firm's growth strategy: (1) buy or acquire, (2) develop internally, (3) rent or lease or contract, or (4) JVs (Čirjevskis, 2021:1). With ROT (Čirjevskis, 2021:1), it is promulgated

that JVs serve as a transitional organisational form and contrasts conventional understanding that JVs are instable, equilibrium-based organisational forms. In the ROT approach, JVs serve as arrangements for coping with uncertainty resulting from uncertain market entry, technology transfer, and partner competence development (Awamleh and Ertugan, 2021).

2.5.5.6 Real options theory challenges

There are some theory, strategy, and framework directions for future developments in strategic management (Kafel and Ziębicki, 2021:16; Demir, Wennberg and McKelvie, 2017:26) in relation to ROT, as discussed next.

- **Real options and the foundations of strategy:** According to Trigeorgis and Reuer (2017:56), more focus in academic research is needed on how ROT addresses the fundamental issues of strategy, being sources of competitive advantage (Sisay et al., 2021:223) and firm differences (Whitfield, Staritz and Morris, 2020:7). It is said that ROT is an investment theory that guides resource allocation (Gellweiler, 2018:5) decisions in firms.
- **Potential integration with other strategy theories:** Important differences between ROT and other theories such as industrial economics, transaction cost economics (TCE), and RBV (Gellweiler, 2018:5) occur because of different treatment of the role and types of uncertainty as considered (Schlager, 2019:293). Uncertainty is the crux of dilemmas, created by commitment versus flexibility and between competition (Kafel and Ziębicki, 2021:16) versus co-operation (Trigeorgis and Reuer, 2017:57). In addition, traditional industrial economies and game theory has placed more focus on external market structure factors as well as ex-post barriers to competition, such as capacity or contractual pre-emption (Kafel and Ziębicki, 2021:16). These theories emphasise modelling under strategic uncertainty in a rather predictable environment (Schlager, 2019:293). They essentially ignore market and other uncertainties that influence decision-makers regularly. Option games theory has recently been adjusted to cater for integration of ROT with industrial economies and game theory. This was done to account for both randomly determined demand and strategic uncertainty (Čirjevskis, 2021:1). Figure 2.3

below illustrates the ROT positioning in strategic management (Kafel and Ziębicki, 2021:16) relative to key strategy dilemmas.

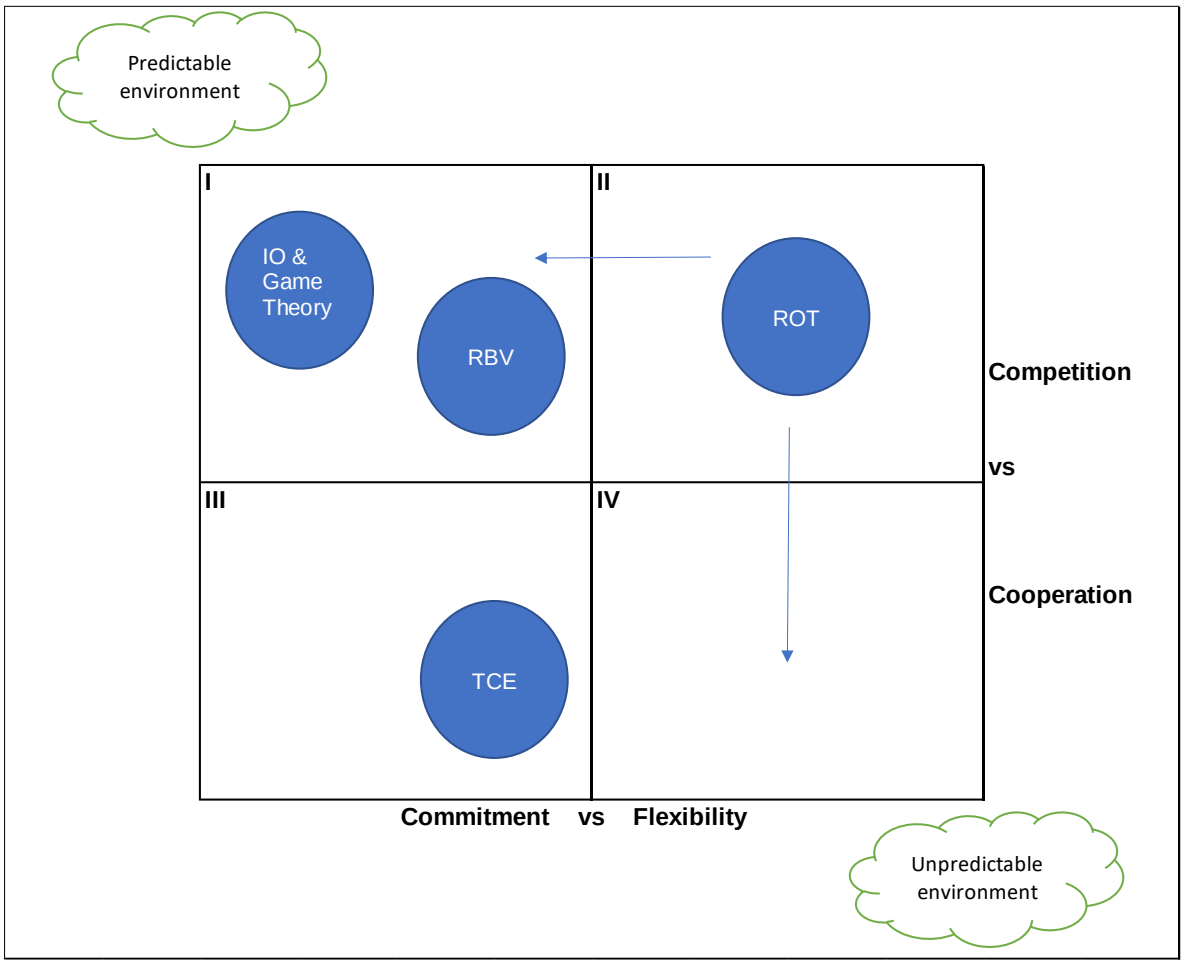

Figure 2.3: A conceptual model of strategic drivers of high growth
Source: Trigeorgis and Reuer (2017:57)

- **Roles of management and organisational considerations in ROT:** The practical application of ROT can be enriched by various streams of strategic management theory (Demir, Wennberg and McKelvie, 2017:26; Kafel and Ziębicki, 2021:16). This consists of the consideration of human characteristics and cognitive biases, managerial incentives, reward structures, control systems, operational procedures, and entrepreneurial culture. All these factors have a bearing on the success of firms' strategic investments and their value (Teece, 2019:4).
- **More integration of alternative ROT approaches**: Trigeorgis and Reuer (2017:58) mentioned that it is desirable in academic research, in relation to

ROT, to expand the qualitative versus quantitative debate. The combined contributions of the different ROT approaches must be considered. The combined usage of the different ROT approaches within real organisations must be researched more in strategic management theory (Kafel and Ziębicki, 2021:16) to identify gaps and their source between theory and practice. The descriptive and standardising value of a more integrated ROT must be assessed.

For future frameworks on ROT, Trigeorgis and Reuer (2017:59) encouraged development of academic thinking in relation to ROT to include aspects such as the use of new methodologies, increased focus on the firm's business unit, and individual project level analysis from a strategic perspective (Demir, Wennberg and McKelvie, 2017:26). The collection of more primary data on individual real options cases should be sought. It is stated that additional empirical work on ROT should examine the unique aspects of real options, being assessing real option awareness of strategic management (Teece, 2019:4, (Kafel and Ziębicki, 2021:16) as well as unique knowledge, training, learning, and differentiating shared from options.

Future strategies and frameworks on ROT should emphasise an organisational and implementation perspective and avoid a disconnected valuation or purely strategic reasoning approach. This requires focus on organisational processes, managerial incentives, control systems, and agency conflicts and behavioural biases (Tripathi, 2019:1).

Academic frameworks and current theories on market growth strategies (Schlager, 2019:293) were listed in Table 1.1 in Chapter 1. These formed the basis and theoretical foundation of this thesis. The theories are discussed in more detail below.

2.6 THEORIES SUPPORTING AUTOMOTIVE GROWTH STRATEGIES

It was highlighted in Section 2.1 that a theory describes, explains, and predicts phenomena (Schlager, 2019:293). It was emphasised that the terms 'theory' and 'model' usually refer to the same concept, where a model is a more visual

representation of reality or a concept (Lahti, Wincent and Parida, 2018:3). It was reiterated that, in discussions in this thesis, these terms are used interchangeably.

Porter's Diamond Framework (Wonglimpiyarat, 2018:76) is debated in the following paragraphs.

2.6.1 Porter's Model on Competitiveness of Nations

The quest for competitive advantage (Sisay et al., 2021:223), not only of firms but of nations (Vlados, 2019:33), is the idea at the centre of strategic management literature (Kafel and Ziębicki, 2021:16). This study focused on Namibia as a country, where the growth of the automotive industry was reflected upon. Factors of competitiveness and comparative advantage of the country and the industry were pertinent to this study.

Michael Porter had written over 18 books and over 125 articles on strategy (Harvard Business School, 2022a). His model of five prevailing forces in industries focused on the nature of strategy and its impact on a firm's strategy (Hole, Snehal, and Bhaskar, 2019:1436).

Porter's appointment to US President Ronald Reagan's Commission on Industrial Competitiveness in 1983 led to his second major model, published in his book *The Competitive Advantage of Nations* (Harvard Business School, 2022b; Vlados, 2019:33). This model considered the impact of location on the prosperity and competitive advantage of nations and countries (Sisay et al., 2021:223; Mujkic and Klingner, 2019:365).

Moreover, Porter investigated the way in which related groups of successful industries and firms emerge in one country or nation (Hole, Snehal, and Bhaskar, 2019:1436; Vlados, 2019:33). He opined that nations need to shift away from a poverty-reduction mentality. His model suggested that nations' economic success is the product of four interdependent factors. The four features of the Diamond Framework (Afzal, Lawrey and Gope, 2019:338) were theorised as being factor conditions, demand conditions, related and supported industries, and company strategy, structure, and rivalry. Porter added two additional factors to his Diamond Framework (Wonglimpiyarat, 2018:76), namely government policy (Usman and Daniel, 2020:6) and chance or externally derived incidents (Whitfield, Staritz and Morris, 2020: 1018). Both factors were not to ensure lasting competitive advantage but to rather support and complement the

system of national competitiveness (Sisay et al., 2021:223). Critique on Porter's model is touched upon next.

2.6.2 Porter's Country and International Competitiveness Model Contrasted

According to reports of EAN (2018), Namibia was ranked on international competitiveness as being number 100 out of 140 countries, one rank down compared to 2017. The report stated Namibia was the 6th most competitive economy in SSA, behind Mauritius (49), South Africa (67), Seychelles (74), Botswana (90), and Kenya (93). In this study, the effect of country competitiveness to increase growth of the Namibian automotive industry was examined.

To understand the large impact of Porter's Diamond Framework on management theory and literature (Afzal, Lawrey and Gope, 2019:338), as well as the little reference in economic literature, the country competitiveness (Sisay et al., 2021:223) and international competitiveness of a firm needs to be distinguished. In another study (Bontempo, 2022:49), A.J. Smit was quoted to have argued that the actual contribution of Porter's Diamond Framework (Wonglimpiyarat, 2018:76) to the body of knowledge in economic and management literature has never been clarified. Included in the foundation of the Diamond Framework (Afzal, Lawrey and Gope, 2019:338) were various theories of economics (Schlager, 2019:293). The Diamond Framework was based on logical reasoning rather than mathematical economic models (Afzal, Lawrey and Gope, 2019:338). Although the model made logical sense, Smit commented it was absent from international economic theory and textbooks (Bontempo, 2022:49). Hill and Hult (2017) opined that Porter's Diamond Framework has never been subjected to rigorous testing (Wonglimpiyarat, 2018:76).

Afzal, Lawrey and Gope (2019:338) criticised Porter's Diamond Framework as not being a new theory on the competitiveness of countries (Sisay et al., 2021:223). Porter's framework enriches the appreciation of a firm's international competitiveness. International competitiveness has changed over the last decade on the back of changes in the world trade, globalisation of the world economy, worldwide distribution of technology and information (Awamleh and Ertugan, 2021), and the increase in multinational enterprises (Mujkic and Klingner, 2019:365). The country

competitiveness model of Porter was juxtaposed with the argument that, at firm level, international competitiveness does matter (Sisay et al., 2021:223).

There are currently two schools of thought on country competitiveness, namely the economic school and the management school (Bontempo, 2022:49).

The economic school rejects Porter's notion of country competitiveness. In the opinion of Sisay et al. (2021:223), countries do not compete internationally as they are not like firms that are contending with competitors in the global marketplace. It was also stated that countries do not compete globally as their welfare is maintained by their absolute level of productivity and not by international competitiveness (Sisay et al., 2021:223).

The management school supports competitiveness at a country level with the contention that countries are in competition with one another (Kafel and Ziębicki, 2021:16). Underlying management theories are based on the explicit assumption that the competitiveness of the firm (Sisay et al., 2021:223) is extended to country competitiveness (Schlager, 2019:293).

The next section discusses Porter's concept of industry clusters (Brugman and Verbeke, 2018) to increase the competitiveness and growth of industries.

2.6.3 Porter's Theory on Industry Clusters

2.6.3.1 Origin of cluster theory

In 1920, Alfred Marshall formulated the theory that clusters support specialised suppliers, allow labour market pooling (Campling et al., 2021:139; Brugman and Verbeke, 2018), and assist knowledge sharing (Teece, 2019:17).

Brugman and Verbeke (2018) opined that the geographic clustering of firms, outsourcing of innovation activities (Wilhelm and Dolfsma, 2018:34), and mobility of labour each allow knowledge circulation within industries (Teece, 2019:17). It was pertinent to include these factors in this research in respect of cluster location of facilities for production of components and vehicle assembly facilities to grow the automotive industry in Namibia.

Michael Porter, in his book *The Competitive Advantage of Nations* (1980), defined clusters as "*geographic concentrations of interconnected companies, specialised*

suppliers, service providers, firms in related industries and associated institutions in particular fields" (Mehta and Tariq, 2020:223; Brugman and Verbeke, 2018; Vlados, 2019:33). Porter's work on clusters initiated various other projects to study the impact of location on the wealth of nations (Brugman and Verbeke, 2018). It was noted that Porter's work on cluster theory has the nature of being a framework or a model to determine competitive advantage (Sisay et al., 2021:223). In addition, Wonglimpiyarat, (2018:76) initially criticised Porter's Diamond Framework as not being a new theory on the competitiveness of countries.

2.6.3.2 Specifics of Porter on cluster theory

Porter believed the four interdependent factors of his Diamond Framework (Brugman and Verbeke, 2018) interplayed to a substantial degree to form an interactive system, with competitive advantage as the outcome (Sisay et al., 2021:223). The focus was shifted to productivity at locations and clusters in a micro-economic approach where the competitiveness of firms located here was improved (Brugman and Verbeke, 2018).

The scholar Teece (2019:17) believed the notion of related and support-industry clusters (Brugman and Verbeke, 2018), as a separate contributing factor of national competitive advantage (Sisay et al., 2021:223), has been one of the most important contributions of Porter's Diamond Framework (Wonglimpiyarat, 2018:76). Porter argued that related and support-industry clusters in the form of networks of specialised input providers (Pavlínek, 2020:513), institutions (Mehta and Tariq, 2020:223), and spill-over effects of local rivalry are crucial foundations of the competitive advantage of nations (Vlados, 2019:33; Brugman and Verbeke, 2018).

Porter argued, in addition, that clusters embody scenarios where learning, innovation (Wilhelm and Dolfsma, 2018:34), and operating productivity are cultivated (Brugman and Verbeke, 2018). This is typical in all advanced economies but lacking in developing countries with limited productivity advances (Marcato, Baltar and Sarti, 2019:876).

Porter argued, furthermore, that clusters need to be built as the core challenge of economies of developing countries to be part of global production networks or GVCs

(Whitfield, Staritz and Morris, 2020:7; Pavlínek, 2020:513). Clusters realise external economies or optimise international trade advantages (Brugman and Verbeke, 2018).

2.6.3.3 Policy milieu influencing clusters

Porter's model included that it is crucial for the public policy of governments (Usman and Daniel, 2020:6) to focus on productivity improvement and innovation (Wilhelm and Dolfsma, 2018:34) as part of cluster development (Dishon and Yabs, 2017:110). Porter acknowledged the critique against government intervention by implicitly stating in his Diamond Framework (Afzal, Lawrey and Gope, 2019:338) that the role of government should rather be that of an influencing factor through economic policy (Brugman and Verbeke, 2018).

Various theories and frameworks focusing on the automotive industry in South Africa (Schlager, 2019:293) and India have found that the strategies occasionally adopted by governments have practical implications for their national economies (Usman and Daniel, 2020:6). These theories and frameworks in South Africa, such as that of Brugman and Verbeke (2018), highlight the challenge-led, collaboration-driven approaches to business strategies (Campling et al., 2021:139), such as cluster forming.

Competitiveness is understood as a crucial factor underpinning the wealth of nations and prosperity (Vlados, 2019:33; Sisay et al., 2021:223). Porter's Diamond Framework as an integrated model of competitiveness is discussed next.

2.6.4 Integration of Porter's Diamond Framework

Arguments for and against Porter's model of competitive advantage of nations were discussed above. The secondary research objectives of this study were included to identify which variables pertaining to Porter's model of competitive advantage constrained the growth of the automotive industry in Namibia. It can be deduced from Porter's model that a single strategy may not be appropriate across all developing countries (Vlados, 2019:33). Developing countries need to consider strategies within the context of trends in the global market (Bontempo, 2022:49).

The scope for marketing and promoting an industry, as well as the subsequent restructuring processes, vary considerably in relation to the kind of industry and the development stage of an industry in its integration into the global economy.

Peng referred to Porter's Diamond Framework (Peng and Liang, 2021:1; Wonglimpiyarat, 2018:76) as the most recent framework that explains, on a multi-level, the international competitiveness of countries (Sisay et al., 2021:223). In Peng's opinion, Porter's framework realistically connects firms, industries, and nations (Peng and Liang, 2021:1).

Peng's institution-based view (Mehta and Tariq, 2020:223; Peng et al., 2018:187) as the third leading perspective on strategic management (Kafel and Ziębicki, 2021:16) and country competitive advantage (Sisay et al., 2021:223) is discussed next.

2.6.5 Peng's Model of Country Competitiveness

Mike Peng argued that the strategic management tripod (Kafel and Ziębicki, 2021:16) consists of the industry-based view, RBV (Gellweiler, 2018:5), and institution-based view (Mehta and Tariq, 2020:223; Peng et al., 2018:187) of competitive advantage (Sisay et al., 2021:223). The strategy tripod is illustrated in Figure 2.4 below.

The three perspectives of strategy developed by Peng are regarded as contributing to the four fundamental questions in strategy as pronounced by Rumelt, Schendel, and Teece (Peng et al., 2018:187). Their four fundamental questions regarding strategic management theory are:

- How do firms behave?
- Why are firms different?
- What is the function of, or value added by, the headquarters' unit in a multi-business firm (what determines the scope of the firm)?
- What determines the success or failure of the firm in international competition (Kafel and Ziębicki, 2021:16)?

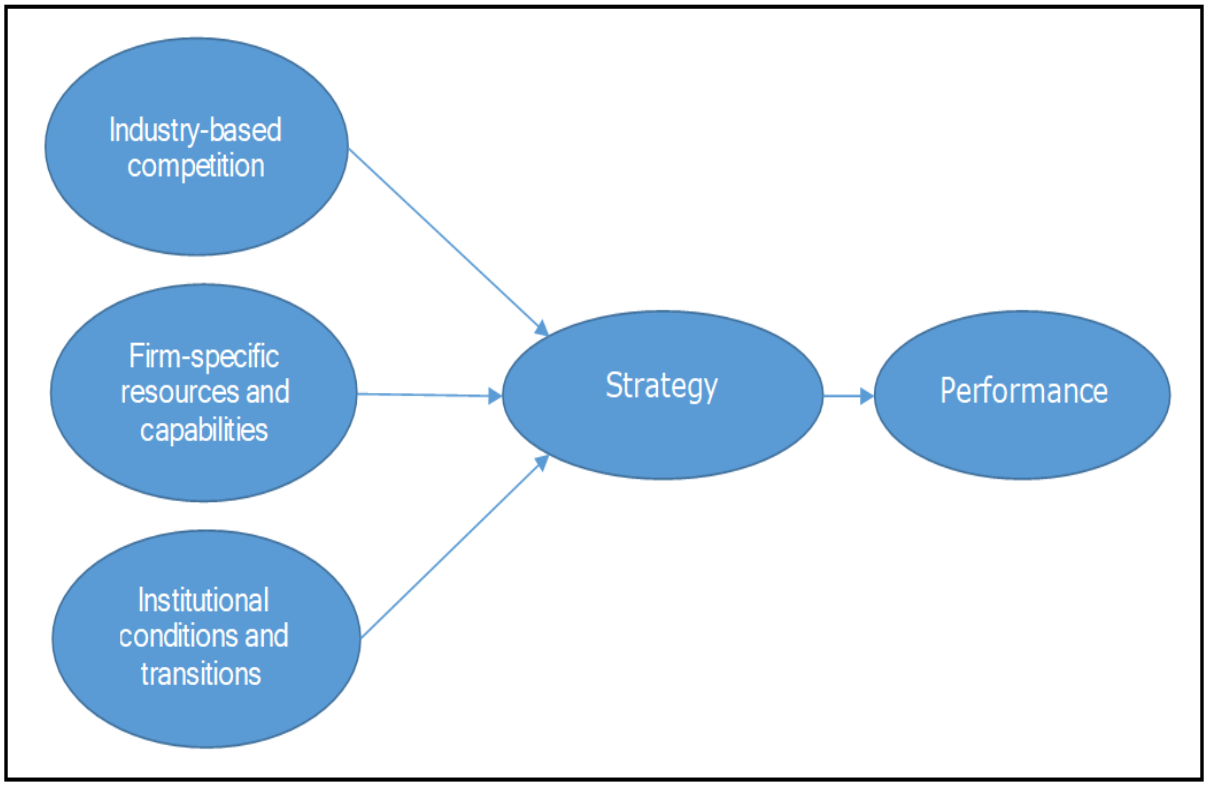

Figure 2.4: The institution-based view: a third leg of the strategy tripod
Source: Peng et al. (2018:187)

Success or failure to increase the competitive nature of Namibia's engagement in regional value chains of the automotive industry in Southern Africa was reviewed in this study. Focus was placed on reviewing the success of the task and policy regime of the government based on Peng's institutional-based view of international business strategy, as is discussed next.

2.6.5.1 Essence of Peng's institution-based view on strategy

2.6.5.1.1 Policy regimes

Peng (Mehta and Tariq, 2020:223) highlighted economist Douglas North's description of institutions in formal and informal camps as being "*humanly devised constraints that structure human interaction*". Socialist W. Richard Scott pronounced institutions as "*regulative, normative, and cognitive structures and activities that provide stability to social behaviour*" (Casady et al., 2018:1).

Table 2.3: Dimensions of institutions

Degree of Formality (North, 1990)	Examples	Supportive Pillars (Scott, 1995)
Formal institutions	- Laws	- Regulative (coercive)
	- Regulations	
	- Rules	
Informal institutions	- Norms	- Normative
	- Cultures	- Cognitive
	- Ethics	

Source: Peng et al. (2018:187)

According to Lamprecht and Tolmay (2017:135), the overall regulatory regime in South Africa is crucial in determining the actions of automotive firms (Engineering News, 2017h). As previously stated, the same automotive regimes in South Africa apply to Namibia as a member of SACU (AIEC, 2022:45; Whitfield, Staritz and Morris, 2020:1018). Within SACU, all trade agreements are negotiated as one trading bloc (AIEC, 2022:45). The automotive industry in Namibia benefits to a substantial extent from the impact of the South African government's automotive policy programmes in terms of increased choices on the back of the scale of imports from South Africa (Usman and Daniel, 2020:6; Whitfield, Staritz and Morris, 2020:1018).

2.6.5.1.2 Origins of different views

Michael Porter developed the industry-based view in 1980, based on his model of the five prevailing forces in industries (Hole, Snehal, and Bhaskar, 2019:1436). Porter's theories were discussed in Section 2.6 of this chapter.

Various articles in strategic management theory forums (Kafel and Ziębicki, 2021:16) established that a firm's resources and capabilities (Gellweiler, 2018:5) are crucial in the appreciation of the sources of sustained competitive advantage for firms (Sisay et al., 2021:223), and this is regarded as the foundation of the RBV (Gellweiler, 2018:5).

It can be deduced that Peng's institution-based view of competitive advantage (Mehta and Tariq, 2020:223; Peng et al., 2018:187) materialised because of the rise of the new institutionalism in social sciences while academic attention focused on how and why institutions matter. The institution-based view (Mehta and Tariq, 2020:223)

provides major new perceptions on new institutionalism as part of the broader intellectual movement in business strategy (Peng et al., 2018:187).

The institution-based view (Mehta and Tariq, 2020:223) was developed to try and address the lack of adequate attention on the context of internal and external forces associated with the RBV (Gellweiler, 2018:5) and industry-based view (Peng et al., 2018:187) of strategy and competitive advantage (Sisay et al., 2021:223).

2.6.5.1.3 Fundamentals of the Peng's institution-based view

Peng et al. (2018:187) opined that the institution-based view (Mehta and Tariq, 2020:223) in international business strategy was the third leg of the strategy tripod, with the focus on emerging economies. His theory criticised the other two views' lack of attention to context.

Peng et al. (2018:187) maintained that the foundation of the institution-based view is that institutions do matter, and that current academic research focused on the ways in which institutions matter (Mehta and Tariq, 2020:223).

The institution-based view (Mehta and Tariq, 2020:223) is concerned with external forces that spill over to firm strategy (Peng et al., 2018:187) and increased focus in the context of the internal forces of the RBV (Gellweiler, 2018:5) and industry-based view of competitive advantage (Sisay et al., 2021:223).

The institution-based view deliberated on firm rivalry (Mehta and Tariq, 2020:223), as included in Porter's Five Forces model (Hole, Snehal, and Bhaskar, 2019:1436) in efforts to analyse the factors that drive firm rivalry, such as government policies, informal media, and cost leadership strategies (Usman and Daniel, 2020:6).

2.6.5.2 The third leg of the strategy tripod in Peng's institution-based perspective

In developed countries, institutions (Mehta and Tariq, 2020:223) provide structure and market support functions smoothly and invisibly, according to Macmillan (Peng et al., 2018:187). In this study, the supporting infrastructure in Namibia was referenced with observation of institutional roles of stakeholders such as the government and the financial sector with banking and commercial regulations.

The opinion raised by Macmillan (Peng et al., 2018:187) that the absence of well-structured market-supporting institutions is evident where markets work poorly (Mehta and Tariq, 2020:223), as is the case in emerging countries (Peng et al., 2018:187). Lately, the institution-based perspective (Mehta and Tariq, 2020:223) has been more widely used to gain a better understanding of competitive scenarios in emerging economies. Academic theories, strategies, and frameworks (Schlager, 2019:293) focus more closely on the differences in institutional frameworks (Mehta and Tariq, 2020:223) in emerging economies, in addition to considering the industry-based view and RBV of competitive advantage (Sisay et al., 2021:223). A reason it is crucial to include the institution-based view (Mehta and Tariq, 2020:223) in the strategy tripod can be deduced from examples of recent academic research mentioned in Peng et al.'s (2018:187) research.

Factors that contribute to subsidiary performance in developed countries consist of corporate- or firm-specific effects that are consistent with the RBV of competitive advantage (Sisay et al., 2021:223). In emerging countries, country effects as part of institutional differences (Mehta and Tariq, 2020:223) and the institution-based perspective are more prominent effects of multinational subsidiary performance. This theory and frameworks clearly enunciated the emergence of the institution-based view as the third leg of the strategy tripod (Mehta and Tariq, 2020:223).

2.6.5.3 Peng's two core propositions of his institution-based view of competitive advantage

Peng et al. (2018:187) maintained that the central role of institutions in all economies consists of functions to reduce uncertainty and provide meaning.

Institutions draft the ruling norms of behaviour and define restrictions in the appropriate ways of doing business (Mehta and Tariq, 2020:223). Stimuli that direct decisions and actions flow from institutions and provide meaning and purpose to the decision-makers or strategists of businesses.

In his theories and frameworks, Peng included the following two propositions as part of the institution-based view of competitive advantage (Peng et al., 2018:187):

- Formal and informal directives in institutional frameworks (Mehta and Tariq, 2020:223) govern strategic choices and the pursuit of the interest of managers and firms.
- In scenarios where the directives of formal institutions are unclear or fail (Mehta and Tariq, 2020:223), informal constraints will play a bigger part in decreasing uncertainty, offering direction, conversing legality, and rewarding managers and firms.

Peng et al. (2018:187) concluded that, in the absence of solid formal institutional frameworks in the business environment in the country or economy, firms or businesses develop ways and means to change the formal and informal protocols in the way of doing business. This is done in a way where informal ties and connections provide economic exchange for continuity to weather formal institutional transitions (Peng et al., 2018:187).

2.6.5.4 Contribution of Peng's institution-based view to the four fundamental questions of strategy

As discussed above, the industry-based view (Peng et al., 2018:187) and RBV of competitive advantage (Sisay et al., 2021:223) have addressed the four fundamental questions of strategy. New insights, according to Peng, into these four fundamental questions, as brought by the institution-based view of strategy (Peng et al., 2018:187), are discussed next.

2.6.5.4.1 New insight into why firms differ

A fundamental assumption in strategy research is that firms, like individuals, differ (Peng et al., 2018:187). Firms differ across institutional frameworks (Mehta and Tariq, 2020:223), as is the case with the clear contrasts between Western firms and their counterparts in Japan. For example, Japanese firms avoid the costly formal structures of mergers and acquisitions (Zheng and Sheng, 2015:13) by way of *keiretsu* (Danso et al., 2021:5073), which is a more informal network of supplier management. In China, informal and interpersonal networks, or *guanxi*, serve as informal substitutes (Bian, 2018:597) in the absence or lack of formal institutional support (Pavlínek, 2020:513).

The industry-based view (Peng et al., 2018:187) and RBV (Gellweiler, 2018:5) alone do not raise an adequately profound or satisfactory understanding of the differences between firms, given the occurrence of institutional distinctions of, among others, *keiretsu* and *guanxi* (Danso et al., 2021:5073; Bian, 2018; Mehta and Tariq, 2020:223). The institution-based view of competitive advantage (Sisay et al., 2021:223) places into context the intensification of informal networks and interpersonal relationships during institutional transitions (Pavlínek, 2020:513) or the presence of underdeveloped formal institutional structures (Peng et al., 2018:187).

2.6.5.4.2 New understanding of how firms behave

The perspective of RBV is on firm-specific competencies that direct how firms behave, and it distinguishes between successful firms and businesses that are not so effective (Gellweiler, 2018:5).

Peng et al. (2018:187) opined that the industry-based view of competitive advantage (Sisay et al., 2021:223) suggests more clearly the strategic perspective of how firms behave to reach the least risk-exposed position relative to the five forces of the industry (Hole, Snehal, and Bhaskar, 2019:1436).

The institution-based view of competitive advantage (Sisay et al., 2021:223) posits, in addition, that both formal and informal institutional structures direct how firms behave (Mehta and Tariq, 2020:223). Within the same industries, it has been found that the diverse behaviour of firms in various countries occurs due to institutional differences, as propagated by the institution-based view (Mehta and Tariq, 2020:223).

2.6.5.4.3 New consideration of what determines a firm's scope

Scholars of international business theory with the RBV as perspective have paid more attention to the geographic spread of firms around the globe with synergy in related industries and products (Gellweiler, 2018:5).

The scope of the firm is described as the product and geographic spread of the business (Peng et al., 2018:187). Accordingly, strategy academics who prefer the industry-based view of competitive advantage (Sisay et al., 2021:223) have focused mostly on the product scope within a single-industry framework.

Both the industry-based view (Peng et al., 2018:187) and RBV (Gellweiler, 2018:5) have product-related diversification and scope as the source of competitive advantage while focusing on product relatedness (Peng et al., 2018:187). The industry-based view appeals to moderate product diversification in endeavours to reduce risk whilst the RBV accentuates synergies in related industries and products to attend to risk-reducing necessities (Peng et al., 2018:187).

The institution-based view explains more clearly the reasons for conglomeration forming across industry and products, given the formal institutional constraints of government on anti-competitive horizontal and vertical mergers and acquisitions (Usman and Daniel, 2020:6) to expand the firm's scope (Mehta and Tariq, 2020:223).

2.6.5.4.4 New comprehension on determinants of success and failure of firms internationally

All three perspectives of the strategy tripod, namely the RBV, industry-based view, and institutional-based view, focus on the answer to what makes up performance as representative of success and failure (Peng et al., 2018:187).

The industry-based view, based on the models of Porter, regard the level of competitiveness (Sisay et al., 2021:223) in an industry as a determinant of a firm's performance. Firm-specific capabilities are seen in the RBV to drive performance (Teece, 2019:3).

The institution-based view postulates that the influence of institutions contributes to differences in firms' performances (Mehta and Tariq, 2020:223). Firms that are well primed and conversant with formal and informal rules and ways of doing business in foreign industries (Spitsin et al., 2018:57) demonstrate increased performance relative to ineffectual rivals.

It can be agreed that the factual determinants of a firm's success and failure are undoubtedly a combination of the perspectives of all three pillars of the strategy tripod, as discussed above. The institution-based view of competitive advantage (Sisay et al., 2021:223) complements the existing industry-based view (Mehta and Tariq, 2020:223) as well as the RBV (Gellweiler, 2018:5). Current strategic management theory (Kafel and Zięb icki, 2021:16) highlights the institution-based view in that both informal and formal institutional constraints (Mehta and Tariq, 2020:223) affect the firm's strategy

and performance "*above and beyond the impact of firms' competencies and industry factors*" (Peng et al., 2018:187).

2.6.5.5 Peng's institution-based view of the competitive advantage continuum

Frameworks and theories based on the institution-based perspective on strategy (Peng et al., 2018:187) afford a threefold importance to strategy implementation and for future study, in the opinion of Peng (Peng et al., 2018:187), as follows:

- The institution-based view concentrates on strategy to analyse and highlight the importance of public policy issues (Whitfield, Staritz and Morris, 2020:1018). The focus is on institutional frameworks with important formal boundaries and informal rules and ways of doing business that are becoming prevalent focal points of determinants of firms' performance and success (Mehta and Tariq, 2020:223).

- A second instance of the growing influence of the institution-based view is seen in the increased importance to investigate how businesses acclimatise to institutional alterations and governing modifications (Peng et al., 2018:187), especially considering the ongoing global financial crisis. A firm's strategic response to international economic conditions and frameworks is increasingly becoming a compelled field for future theory, strategy, and frameworks.

- Third, the institution-based view is prominently being applied as tool to develop robust measurements of the impact of institutions and the consequences of their regulatory frameworks on the performance and success of firms and industries. The institution-based view is signalled as a tool to demonstrate how institutional variables matter (Mehta and Tariq, 2020:223).

In addition, Peng was of the view that strategy becomes more insightful, realistic, and balanced when incorporating the institution-based view as one of the three legs of strategy (Peng et al., 2018:187). It is believed that the institution-based view adds to the RBV and the industry-based view by placing strategy and competitive advantage (Sisay et al., 2021:223) in context with all business performance determinants, both domestically and internationally.

2.7 CONCLUSION

To enhance an understanding of the causes of the Industrial Revolution that took place in eighteenth-century Britain, a growth theory was put forward in academic research (Burnard and Riello, 2020:225). This unified growth theory states that an increase in both consumer varieties and firm size results in the introduction of cost-saving technologies, growth in industries, and take-off of the economy.

Chapter 2 consisted of an in-depth literature review of academic research on growth of industries. The theories, models, and frameworks that were used as the literature foundation of this study was highlighted. In addition, other models and frameworks were examined regarding how engaging in regional value chains and GVCs adds to the technological advantages of business activities flowing from the production of value-added components.

Chapter 3 provides a brief overview of the automotive industry. It explains the international and national (South African and Namibian) automotive industries and details the contribution towards the body of knowledge within this field.

CHAPTER 3:
THE NAMIBIAN AUTOMOTIVE MARKET

3.1 INTRODUCTION

As the Namibian automotive industry was the focus of this study, the focus of this chapter is on the Namibian automotive industry. A detailed description and scope of role-players and stakeholders, as well as the underlying nature of the Namibian automotive industry, are discussed in this chapter.

This chapter includes a description of automotive industries around the globe, including on the African continent and South Africa. Global value chains (GVCs) in both developed and developing economies represent enablers of automotive industry growth, which are pertinent to this study. South Africa represents a substantial role-player in vehicle and component production on the African continent and in Southern Africa. Description of the global automotive industry includes important developments such as the economic impact of the COVID-19 pandemic and NEVs, including EVs.

A substantial part of this chapter covers key drivers for growth of an automotive industry. Country information on Namibia is incorporated into the discussions on key drivers for growth to contextualise a perspective on Namibia more strongly.

The global automotive industry is reviewed first.

3.2 FEATURES OF THE GLOBAL, AFRICAN, AND SOUTH AFRICAN AUTOMOTIVE INDUSTRY

It must be noted that references are made in the next sections to documents and reports other than academic research sources. These industry reports are sources of statistics and marketing information on the current operational state of automotive industries and regions, as drafted by institutions such as commercial banks, asset managers, and other financial services providers. The industry reports add to the rich description of attributes of the global automotive industries.

3.2.1 Vehicle Sales and Production

3.2.1.1 Globally

Globalisation is one of the most controversial phenomena of the modern business world. Over the past couple of decades, the global automotive industry has displayed profound opportunities for offshoring and the international fragmentation of manufacturing and production (Kafel and Ziębicki, 2021:16).

Global vehicle production increased by 3,1% to reach 80,2 million vehicles in 2021. This was up from the 77,7 million units produced in 2020. However, it remains 13,0% below the pre-COVID-19 level of 92,2 million vehicles in 2019 (AIEC, 2022:36).

In 2021, the global new vehicle sales market stabilised. It increased by 5,0% from 78,8 million units in 2020 to 82,7 million units in 2021.

3.2.1.2 Africa

Growth studies for increased production and sales of automotive industries on the African continent formed an essential part of research in this study. Subsequently, this study included collection and analysis of data on growth of the automotive component manufacturing base and employment in Namibia by linking it to the TFTA and AfCFTA. In addition to the AfCFTA, trade between countries on the African continent can be encouraged and diversified further by developing the Pan-African Auto Pact (AIEC, 2022). The Auto Pact aims to connect African regions for the common good and to establish an SSA automotive development plan, or Automotive Pact, built around South Africa, Nigeria, Kenya, Ghana, Egypt, and potentially one or two other larger economies.

The bulk of new vehicle sales markets globally recovered slightly in 2021, except for the EU, which reflected a year-on-year decline of 5,0% (AIEC, 2022:36). Significant double-digit growth was experienced in major markets such as India, Australia, and Africa. The recovery incurred despite threats of COVID-19 and the global shortage of semi-conductors. Global new vehicle sales in Africa increased by 23,9% from 924 046 units in 2020 to 1 145 007 units in 2020 (AIEC, 2022:38).

Global vehicle production increased in all major regions around the world in 2021. South Africa remained the dominant automotive producer on the African continent. It

accounted for 499 087 vehicles, 53,6% of the total African vehicle production of 931 056 vehicles in 2021.

3.2.1.3 South Africa

It is crucial to highlight that, in South Africa, nine of the top ten selling passenger and LCV models sold in South Africa are locally manufactured (AIEC, 2022:16). It is believed that South Africa will have a critical role as a demand engine and gateway for the automotive industry growth in the region (World Bank Group, 2022a). In this regard, regional integration as incorporated, analysed, and evaluated in this study will likely be the key to successful export-orientated growth in the SACU region, of which Namibia is a member state (Knight et al., 2020:591).

South Africa's global vehicle production ranking improved to 21st in 2021 (AIEC, 2022:36). South African vehicle production increased from 446 215 units in 2020 to 499 087 units produced in 2021, representing an 11,8% increase. It exceeded the global year-on-year increase in global vehicle production of 3,1% in 2021. Total South African new vehicle sales increased from 380 207 units in 2020 to 464 493 units in 2021, representing an increase of 22.2%.

Global sales and production of components and parts are discussed next.

3.2.2 Automotive Parts and Components Sales and Production

3.2.2.1 Globally

For this study, it was pertinent that engagement in GVCs be included as a crucial element to grow the component manufacturing sector of the automotive industry in Namibia. The purpose was to evaluate Namibia's access to global markets and taking part in GVCs that have been enhanced through bilateral agreements with most of South Africa's major trading partners.

Black et al., (2019) underlined the current difficulties and major technological changes that are transforming the global automotive industry, including GVC drivers (KPMG, 2017:11; PricewaterhouseCoopers [PwC], 2017). Gereffi (2019) gave strong evidence that suggests automotive parts and components account for an increasing share of the global manufacturing trade. Automotive parts and components are significantly

less sensitive to changes in the relative prices of the final goods or vehicles (Gereffi, 2019). It should also be emphasised that the increased range of vehicle models and more complex technologies globally have led to more aftermarket parts and components in the automotive industry.

The global automotive parts manufacturing market attained a value of US$380 billion in 2020, driven by the rising demand for passenger vehicles (Expertmarketresearch, 2022). The industry is further expected to grow at 3% in the forecast period of 2022-2027.

3.2.2.2 Africa

According to KPMG (2017:43), the manufacturing of automotive parts and components on the African continent in SSA countries has decreased further since the global economic decline from 1980 onwards. It is indicated that the large range of used vehicles imported into SSA countries is an additional challenge to the development of the SSA parts manufacturing industry. A wide range of parts are consumed and in demand, although the limited manufacturing capacity and scale of production in SSA countries cannot cater for the whole spectrum due to high input costs (Black et al., 2019).

The automotive aftermarket sales value in Africa is estimated to have reached US$10 billion in 2017 (TechSciResearch, 2018). According to forecasts, the value of automotive aftermarket sales was expected to rise to almost US$48 billion in 2024 in Africa (Statista, 2022).

3.2.2.3 South Africa

The South African automotive industry and market is not large enough to ensure adequate economies of scale for domestic component manufacturers (Deloitte, 2019). Exports of parts and components are seen as enabler requirements for international competitiveness (Teece, 2019:17). Total automotive parts and components to the amount of R51,0 billion were exported in 2021 (AIEC, 2022:82). For the year to February 2022, manufacturing sales of parts and accessories in South Africa at current prices reached R57,0 billion (Statssa, 2022).

Catalytic converters (control devices that convert toxic gases in exhaust gases to fewer toxic pollutants) (Whitfield, Staritz and Morris, 2020) remained the highest-ranked component category exported by South Africa in 2021, followed by engine parts, tyres, engines, and radiators, making up the top five ranked categories (AIEC, 2022:6). Views on which automotive component categories can be manufactured in Namibia with the largest potential to take part in the supply chain of the automotive industry of South Africa were collected, described, analysed, and evaluated in this study. The purpose was to evaluate most effective manner and means to increase engagement in the South African automotive supply chain.

Automotive parts and components imported by South Africa's domestic OEM factories amounted to R110.1 billion in 2021, with a 33.8% increase from 2020 (AIEC, 2022:104). South Africa's imported components consist mainly of intricate expensive components such as automotive tools, tyres, engine parts, transmission shafts, cranks, gauges, instruments, and other parts. These imports originate mainly from Germany, Thailand, and Japan in 2021, as below in Table 3.1.

Table 3.1: Top countries for import of components to South Africa

Country	2020	2021
Total (R billion)	**82.3**	**110.1**
Germany	34%	30%
Thailand	19%	20%
Japan	10%	11%
USA	6%	6%
China	4%	4%
Sweden	3%	3%
Brazil	2%	3%
Spain	3%	3%
Czech Republic	3%	3%
UK	2%	2%
Other	14%	15%

Source: AIEC (2022:104)

3.2.3 The Economic Impact of COVID-19 Since 2020

The impact of the pandemic is covered in the next section under the headings of global, Africa, and South Africa.

3.2.3.1 Global

The global economic compression marked a decline in 2019 of almost 5% in world automotive production and ended 10 years of growth. Thereafter, the world automotive industry faced a new, unparalleled challenge in 2020 due to the COVID-19 pandemic (International Organization of Motor Vehicle Manufacturers [OICA], 2020).

The COVID-19 pandemic began in November 2019 in Wuhan, China (Gray, 2022). Factories around the world were shut down, hitting the global automotive industry especially hard. While China is a major supplier of automotive parts, global automotive supply chains were disrupted, causing production slowdowns in Europe and North America. It was accompanied by a huge drop in consumer demand due to COVID-19 restrictions and the economic slowdown.

Overall, the global market for all types of vehicles was significantly affected by the economic aftermaths of the COVID-19 pandemic. During the first part of 2020, new car registrations around the world dropped about one-third from the preceding year (IEA, 2021). In September 2020, analysts revised their 2020 annual outlook of global automotive sales to a nearly 20% decline over the previous year (Counterpointresearch, 2022) while indicating a risk of a second wave of the COVID-19 pandemic.

3.2.3.2 Africa

Production in 2020 on the African continent also declined sharply by more than 35% on account of the pandemic (OICA, 2020). In addition, strict government-led social and economic shutdowns on account of the COVID-19 pandemic restrictions resulted in most OEMs closing their manufacturing plants across Europe, North America, and Africa (Mordorintelligence, 2021).

Likewise, the COVID-19 pandemic impacted the automotive sales market on the African continent very badly. Most markets on the continent have not recovered. It is believed that it may take months or years before trade in automotive parts and motor

vehicles returns to pre-pandemic levels (International Labour Organisation [ILO], 2020).

3.2.3.3 South Africa

Vehicle exports from South Africa, an indication of domestic production levels, declined to 271 819 vehicles in 2020, representing a 29.8% drop from the 387 092 vehicles exported in 2019. It is contributed to the fall in global vehicle demand because of the outbreak of the COVID-19 pandemic (Timeslive, 2021).

The incapacitating effects of the COVID-19 pandemic saw new vehicle sales in South Africa nosedived by 29.1% to 380 449 units in 2020, from 536 612 sales in 2019 (Timeslive, 2021). Because of not knowing how COVID-19 was going to impact the economy, new-car sales in South Africa remained under pressure in 2021 because of subdued demand from both the retail and corporate sectors, as well as from the government.

3.2.4 New Energy Vehicle Challenges in the Global Automotive Industry

New energy vehicles (NEVs), of which EVs are a part, are the future driving technology adopted by the global automotive industry (AIEC, 2022:17). As vehicle emission regulations are tightened globally, the global motor industry is shifting towards eco-friendly vehicles.

After previous decades of fast growth, the global electric-car stock reached the 10 million milestone in 2020, a 43% increase from 2019 (IEA, 2021). It represented a 1% stock share of the global vehicle stock. After more rapid increases in 2021, global sales of EVs accounted for 9% of all vehicle sales (Bloomberg, 2022). In addition, on account of climate-spending measures in all major industrialised countries, it is expected that NEVs will surpass sales of combustion vehicles by 2030 (Bloomberg, 2022).

With a similar trend in South Africa, traditional and plug-in hybrid-vehicle sales increased to 678 units in 2021, an increase of 292% from the 232 units sold in 2020. Electric-vehicle (EV) sales in South Africa increased from 92 units in 2020 to 218 units in 2021 (AIEC, 2022).

There are numerous factors that contributed to increased EV registrations in 2020 (IEA, 2021). Governments around the globe are implementing climate-friendly

measures and requirements. In addition, notably, prices of EVs are gradually becoming more competitive in some countries on a total-cost-of-ownership basis (Teece, 2019:17). Several governments provide or extend fiscal incentives that buffered EV purchases from the downturn in car markets.

The automotive industry in Namibia is discussed next.

3.3 ATTRIBUTES OF THE NAMIBIAN AUTOMOTIVE INDUSTRY

In this chapter, features unique to and affecting the Namibian automotive industry are discussed. These country attributes were explored and their role in adding to growth of the automotive industry was analysed and evaluated.

3.3.1 Economic Outlook

The domestic economy in Namibia is estimated to have grown by 1.5% in 2021, an improvement on the negative growth of 8.5% in 2020 (Bank of Namibia, 2021:7). Domestic growth depends largely on the economic recovery of the country's trading partners and the recovery of international commodity prices. Volatility of the South African rand and adverse weather conditions could dampen economic growth in the short term (Bank of Namibia, 2018b:14). The Namibian dollar is pegged one-to-one to the rand.

3.3.2 Automotive Policy Regime

South Africa's APDP and policy regime also apply to Namibia. A set of common external import and export tariffs applies to all the member countries of SACU (Whitfield, Staritz and Morris, 2020).

The Namibian Government is steadfast and determined to stimulate growth and increased employment in Namibia (Ministry of Industrialisation, Trade and SME Development, 2018). The aim is to establish the country as a gateway location in the Southern African region. This study aimed to explore the government's policy framework with special incentives for manufacturers and exporters. The purpose was to ascertain whether these incentives are largely focused to stimulate manufacturing and production in the country. The incentives, in addition, target the promotion of exports into the region and to the rest of the world.

3.3.3 New Vehicle Sales and Production

New vehicles are mainly imported from South Africa. It is reported that the country had its highest number and record for new vehicles sold per month in October 2014, when sales reached 1 670 passenger and LCVs for that month (Autotstats, 2022). Since 2014, new-vehicle sales have continued to decline (IJG Securities Namibia, 2018b). Lower government spending, especially on capital assets such as motor vehicles, continued to have a direct detrimental effect on the number of vehicles sold. Table 3.2 below reflects Namibia's new vehicles sales units since 2012.

Table 3.2: New vehicle Sales (units)

Year	Passenger vehicles	Light commercial	Heavy commercial	Total vehicles	Increase year-on- year
2012	7 130	7 148	985	15 263	13.4%
2013	7 772	8 240	854	16 866	10.5%
2014	9 584	11 149	1 154	21 887	29.7%
2015	8 925	10 976	1 294	21 195	-3.1%
2016	6 842	8 923	797	16 562	-21.8%
2017	5 522	6 847	680	13 049	-21.2%
2018	5 095	6 155	656	11 906	-8.7%
2019	4 564	5 103	748	10 415	-12.5%
2020	3 210	3 869	533	7 612	-26.9%
2021	4 484	4 178	766	9 428	+23.8%

Source: Autostats (2022)

3.3.4 Electric Vehicles

Availability and accessibility of electric charging stations directly influence the adoption rate of EVs in Namibia (Electric vehicles Namibia, 2022). Little to zero EVs have been sold in Namibia to date. To address the non-existent charging infrastructure for EVs, various enterprises, some in partnerships with South African companies, are developing business models for rolling out solar-powered charging stations. Some of the projects are expected to start operating in the second quarter of 2022 (The Namibian, 2022b). It is believed that the uptake of EVs in Namibia will remain slow,

with adoption mainly seen among upper-middle to high-income customers for now (The Namibian, 2022b).

3.3.5 Automotive Parts and Components Sales and Production Around the Globe

The trend of importing aftermarket parts, components, and accessories to complement parts that are not produced locally in South Africa is of essence to grow the automotive manufacturing industry in Namibia. This study collected information on how the current motor vehicle manufacturing in South Africa, under the South African Automotive Masterplan (SAAM) 2021-2035, will allow for increased SA component imports from Namibia to grow the automotive industry in Namibia.

The government in Namibia indicates, however, the existence of a few local suppliers of metal fabrication products (Ministry of Industrialisation, Trade and SME Development, 2018). Manufacturing enterprises for automotive parts and components are limited. Other features of the Namibian automotive industry are discussed next.

3.3.6 The Economic Impact of COVID-19 Since 2020

The Namibian vehicle sales market has equivalently been affected severely in 2020 by the global COVID-19 pandemic (Focus2move, 2021). In 2019 a total of 10 415 units have been sold, reporting a 12.5% decrease compared to 2018. The units sold decreased substantially in 2020 amid the pandemic to 7 612 units, representing a 26.9% decrease.

3.3.7 Used Car Sales and Grey Imports

Most new vehicles brands present in South Africa also have a presence in the used-car sales industry in Namibia with used departments in local branches and franchised dealerships locally. Numerous dedicated used-vehicle enterprises are in existence in Namibia. NamCars.net listed 52 used-car dealerships (NamCars, 2018). A major used-car dealership, selling Japanese imported used vehicles (grey imports), is a local subsidiary of Jan Japan Motors International. It entered the country in 1991 after Namibia gained independence from South Africa on 21 March 2020 (Jan Japan Motors, 2018).

As a point of reference, despite increasing pricing trends for new and used vehicles, Namibian consumers continue to buy more used than new vehicles. The used-to-new ratio for 2022 stayed consistent year-on-year, with 2.31 used vehicles sold for every new vehicle (TransUnion, 2022).

Factors that adversely affect the growth of the Namibian automotive industry were analysed and described in this study. It was noted, in Chapter 1, that the popular view in South Africa is that the regional automotive industry can only expand if the import of used vehicles is prohibited (Black et al., 2019). If this is achieved, the regional market would be opened for increased new vehicles sales. Subsequently, industrialisation and the opportunities for economies of scale in the automotive market in Southern Africa can be extended.

According to the International Trade Organisation (2021) 'grey' products or parallel imported goods are genuine and manufactured by or for or under licence from the brand owner. However, grey imports are not being sold through the official channels of the OEM unless they are resold (Black et al., 2019). Imported used vehicles into the region are sourced mainly from Japan and the Middle East. South Africa has, however, banned the import of used vehicles, including those driven through South Africa. According to the SACU agreement of 2002, the member states of South Africa, Botswana, Lesotho, Namibia, and Swaziland are prohibited from the import of used vehicles from third-party countries outside SACU (SACU, 2021b). Namibia obtained special exemption in 2004 to import used vehicles.

3.3.8 Vehicle Purchases by the Government, State-Owned Enterprises, and Non-Governmental Organisations

For the financial year 2017/2018, the government budgeted a mere R45 million or 150 units for vehicle purchases (Deloitte, 2018), which represents a decrease of R382 million from the previous year. Strategies and policies in the past and present, such as procurement of vehicles, initiated by the government in Namibia to grow automotive industry were analysed and evaluated in this study. The aim was to ascertain and evaluate strategies the government followed to grow the automotive industry. In the earlier years of past decades (up to 2016), the government continued to spend extensively on vehicle purchases. It was reported that pressure of this nature on the

country's balance of payments could not be sustained on the long-term (IJG Securities Namibia, 2018a). For the fiscal year of 2022/2023, the government included in the budget revision for expenditure and acquisitions of vehicles of N$52m (Cirrus Capital, 2022). Although this is significantly less that what the government spent on vehicles up to 2016, the increased allocations going forward will benefit vehicle dealerships and add to increased new vehicle sales.

3.3.9 Existing Automotive Assembly and Component Manufacturing

The scope of the manufacturing base in the automotive industry in Namibia formed a focal point and factor of growth of the automotive industry in this study. This was included with the goal of evaluating the potential of manufacturing of vehicles and components to add to growth of the domestic automotive industry.

Manufacturing in the Namibian automotive sector can be described as the first stages of development (Ministry of Industrialisation, Trade and SME Development, 2018). There is little manufacturing of parts and accessories of scale in the country. The assembly of motor vehicles is limited in Namibia to the recently launched factory of Groupe PSA (Peugeot and Opel) at Walvis Bay (Engineering News, 2018b; F&T Weekly, 2017:1). The Namibian Government owns a 49% stake in the Namibian assembly operation while the French automaker Groupe PSA owns 51%. The factory is currently idle because of its inability to export vehicles out of the country (Namibian Sun, 2022). Only 30 units have been sold since inception until 2022.

Apart from automotive dealerships, most automotive firms in Namibia are active in the automotive aftermarket retail sector. These include businesses such as automotive repair services, engine refurbishing, automotive body repair shops, tooling, automotive outdoor accessories, and tyre services.

3.3.10 Existing Automotive Dealerships with Parts Outlets and Service Facilities

Most global OEMs, by way of their South African subsidiaries, have a presence in Namibia. Automotive franchised dealerships sell new vehicles as well as used vehicles (all passenger and LCVs) as discussed in Section 3.3.3 above. Other franchised dealerships in Namibia also distribute heavy commercial vehicles, trucks, and busses.

A relatively large number of distributors and suppliers of automotive products and parts are found, spread across the country. Automotive services such as fitment of parts and accessories, wheel alignment, wheel balancing, and servicing vehicles are available at outlets across the country. In the next section, the theory on key drivers for growth of an automotive industry is discussed with reference to developing countries. Special references are made to the Namibian automotive industry.

3.4 KEY DRIVERS FOR GROWTH OF AN AUTOMOTIVE INDUSTRY

This study investigated key drivers for specific successful growth strategies that can be implemented effectively in Namibia. The measuring instruments collected data from respondents and participants on key drivers such as Namibia's skills development and training, incentives measures and other government encouragements, as well as top factors to increase engagement by Namibia in the automotive supply chain in South Africa.

The key drivers were assessed with reference to the benchmark, as was the enhancement of the effect of these drivers, as listed in Table 3.3 below (Black et al., 2019). These are discussed in more detail thereafter. It must be noted that the theoretical foundation of this study is highlighted in the next sections, with references to current trends in academic research and to the literature review for this specific study on this topic.

Table 3.3: Key drivers for growth of an automotive industry

Driver Specified	Benchmark	Enhancement
Sufficient Market Area	Self-sustaining automotive industry	Large regional market
Regional Integration	Extended trade between diversified economies	Attract across border manufacturing companies
Cost-Effective Infrastructure	Reliable and efficient logistics	Access for foreign investors to local and regional markets
Economies of Scale Capabilities	Increased amount of manufacturing industries	Access for foreign investors to local and regional markets
Appropriate Public Industrial Policy	Priority and focus on industrialisation	Incentives for local manufacturing and to attract FDI
Low-Cost Manufacturing Location	Manufacturing subsidies and tax incentives	Finance options and support for costs of operations and for capital expenditure
Policies: Consistency, Implementation, and Enforcement	Regional and uniform trade policies and common trade rules apply	Complete compliance to all customs duty agreements and avoidance of arbitrary use of only specific standards
Public policies for local procurement	Local procurement of public and government automotive needs	Transparent tender board requirements, preferential procurement programmes, support of local suppliers and manufacturers, a centralised tender board, and strict corporate governance requirements as a prerequisite
Increased ability to manufacture to deepen the supply chain	Immediate access to technological advancements.	Prompt upgrading in infrastructure and ease of government regulatory constraints.
Government's industry protection policies	Restriction of import of used vehicles.	Strict government country access control and regional uniform positions on import bans and restrictions.
Constructive collaboration between industry stakeholders	Critical mass in collaboration across related industries.	Collaboration to address common challenges, to govern the industry, and to ensure mutually beneficial outcomes for the government, institutions, and related industries.
Regional trade agreements and links	Automotive manufacturers and governments drive a strong regionalisation strategy.	Close links with automotive industry and national development plans of other countries and regions.

Driver Specified	Benchmark	Enhancement
Public-private partnerships (PPPs) supporting infrastructure development	PPP development of regional transportation and infrastructure networks.	Partnership development and connection of regional transportation networks to ports with avoidance of protection of domestic transportation markets.
Cost of doing business	Lower cost of production to boost the automotive industry's ability to manufacture.	Implement economic processing zones, clusters of economic activity, areas of concentration of business activities, tax and manufacturing incentives, access to a developed infrastructure, stable electricity supply, and a relatively skilled labour supply.
Competitive labour force	Availability of a skilled and efficient labour force at competitive rates.	Lower cost of labour and increased productivity adds to the ability to manufacture.
Resource-based competitive advantage	Abundant natural resources represent resource-based comparative advantage to develop the automotive industry.	Ensure strategies and incentives to source, as well as process raw materials locally for manufacturing in the automotive industry.
Skills development and training	Adequate access to skills development and training affect production and ability to manufacture positively.	Improved access to skills development and training, as well as disposal of redundant technologies, old equipment, and ancient machinery, in conjunction with increased formal employment ensure higher levels of production and productivity.
Growth of youth in the population	Growth in the section of the population of younger consumers who are purchasing vehicles.	Focus on the growing youth segment of the increased population in the region.
Growth of the economy and purchasing power	Purchasing power of consumers rises with economic growth and increased GDP.	Vehicles sales increase with increased purchasing power of consumers on the back of economic growth of the economy.
Satisfactory rates of inflation, interest, and foreign currency	Little effect on the prices of consumer items by satisfactory foreign currency reserves, inflation rates, and levels of interest rates.	Consumer confidence increases where consumers have more disposable income to spend on expensive items such as motor vehicles.
Growth of the population's middle class	Rapidly growing middle class of more households who can afford more expensive items such as vehicles.	Automotive manufacturers focus on consumers in the upper region of the middle class, earning US$40 to US$70 per day.
Affordability of vehicle purchases	Growth of an automotive industry boosted by the increased affordability of motor vehicles.	Increased access to finance at lower interest rates, as well as

Driver Specified	Benchmark	Enhancement
		more affordable debt and improved credit facilities.
Political stable and secure countries	Politically stable and secure locations are less costly and preferred by automotive manufacturing companies.	Politically stable environments with no labour unrest, nor personnel strikes ensure investment attraction and economic growth.
Access to key export markets	With efficient access to key export markets, the automotive industry develops beyond the limits of the domestic demand or consumer market.	With a well-developed regional logistics infrastructure, automotive manufacturing industries can grow and reap the benefits of economies of scale.

Source: Black et al. (2019)

3.4.1 Market Area and Feasible Automotive Space

Automotive markets should have sufficient scale for complete self-sustaining automotive industries. 'Automotive space' can be defined as being any or all of the following (Black et al., 2019):

- A large emerging market area;
- An area adjacent to a large emerging market;
- A large regional market with easy access to the market for member states.

The largest automotive markets in Africa are Nigeria and South Africa. Even in these markets, sufficient scale for self-sustaining industries is lacking (Black et al., 2019). Africa represents a substantial role-player in vehicle and component production in the SADC region.

For Namibia, engagement in the automotive value chain of the manufacturing industry in South Africa highlights the favourable automotive space Namibia occupies.

3.4.2 Regional Integration

It was indicated in recent studies that increased regional integration can facilitate a large regional market with extended trade between diversified economies (Whitfield, Staritz and Morris, 2020). One example is the Southern African region of SADC countries, Namibia included. This current study investigated the importance and reasons of why it is essential for countries to optimise regional integration to ensure

growth in their industries. This can be made possible by attracting manufacturing industries across borders.

The need for automotive manufacturers and governments to drive a strong regionalisation strategy in Africa is emphasised in this specific study (Engineering News, 2017h). Comparator countries such as Thailand, Morocco, and Turkey are all characterised by strong regional markets and regional market strategies.

3.4.2.1 Cost-effective infrastructure

Industry growth studies, like this study, analyse elements that act as beneficiation factors for growth, such as a well-developed infrastructure. Connectivity and intra-regional trade can benefit greatly from reliable and efficient infrastructure. It includes well-organised transport by road, port, and rail, as well as telecommunications (Awamleh and Ertugan, 2021). Improved infrastructure ensures access for foreign investors to local and regional markets. Efficient infrastructure can be coupled with favourable investment and tax incentives, as well as economic stability and favourable trade agreements.

This study analysed and evaluated, in addition to the above, other socio-economic challenges**,** inhibiting cost-effective infrastructure, and dampening growth of the automotive industry, including the following (Black et al., 2019):

- Excessive production costs;
- Inefficient logistics networks;
- Slow pace of implementation and impact of technological advances;
- Lack of focus on the green revolution and the environmental impact of trade;
- Chaotic vehicle compliance and standards;
- Substantial skills shortage; and
- Parallel used car imports, as in the case of grey imports.

Identifying factors that constrain the growth of the automotive industry in Namibia was the essence of the research problem for this study. In the measuring instruments of this study, data were collected on adverse factors such as incentives measurements of the government in Namibia, current low economic growth, and Namibia's lack of skills.

3.4.3 Economies of Scale Capabilities

To a large degree, the automotive industry remains scale intensive (Black et al., 2019). Growth in a local automotive industry ensures economies of scale, with more manufacturing industries being established (NamBizOne, 2018:1).

In the SADC region, other than in South Africa, assembly operations are on a small scale with little component production (Black et al., 2019). This study aimed to analyse and evaluate manufacturing in the Namibian automotive sector that are in very early stages of development. The small-scale component manufacturing, primarily for the aftermarket sector, was likewise described and evaluated in this study.

Efforts of some SSA countries to promote their automotive industry are premature with small, protected investments. Recent research has included deliberations that high costs of production with no beneficial significances are imposed in this way (Whitfield, Staritz and Morris, 2020). Small-scale vehicle assembly increases costs and limits value-adding. With low-volume vehicle assembly, any investment in component production would be uneconomical. Vehicle assembly would, in addition, be limited to a low level of local content (Ettmayr and Lloyd, 2017). In this study, the scale of establishment of the Peugeot assembly factory at Walvis Bay in Namibia was analysed, debated, and evaluated.

3.4.4 Appropriate Public Industrial Policy

It was described in this study that the government in Namibia is steadfast and determined to stimulate growth and increased employment in Namibia (Ministry of Industrialisation, Trade and SME Development, 2018). The government's policy framework, with special incentives for manufacturers and exporters, is largely focused to stimulate manufacturing and production in the country.

It is indicated in industry research that some countries on the African continent present attractive investment and manufacturing opportunities that are supported by their governments (Black et al., 2019). Governments should be committed to sustainable and clear policy support measures related to industrialisation. Players in the automotive industry can use these as the foundation to develop the industry (Whitfield, Staritz and Morris, 2020).

3.4.5 Low-Cost Manufacturing Location

Fiscal policies of governments may include various tax and manufacturing incentives and schemes. It ensures that the country represents a favourable investment solution with a low-cost manufacturing foundation. Research by PWC (2018:8) indicated that these potential incentives may include the following:

- Provision of locations for export processing zones (EPZ);
- Tax holidays;
- Tax-deductible R&D expenses;
- Tax concessions for utilisation of local raw material; and
- Employment of local citizens.

The investment and promotion policy framework of the World Bank (2017) lists the following support measures to ensure a low-cost manufacturing location:

- Cash grants to establish manufacturing operations;
- Tax credits;
- Tariff exemptions or abatements;
- Free or discounted land and buildings;
- Employment training assistance; and
- Other arrangements to reduce operating costs and risks for investment in automotive manufacturing.

The public sector and the government, as well as financial institutions such as development banks, can also provide additional financing and investment options (World Bank, 2017). Potential local manufacturers and assemblers in the automotive industry need support to reduce the costs of operations and capital expenditure (NamBizOne, 2018:1).

Automotive industries in SSA countries are subject to various factors that contribute to higher domestic production costs when compared to competitors in the global automotive industry. This study investigated factors that inhibit growth of an automotive industry based on, among others, high costs of manufacturing. These factors include the following (Whitfield, Staritz and Morris, 2020):

- Vast distances for transportation of goods to regional markets;

- High costs to provide energy, such as electricity;
- Higher inadequacies of the logistics infrastructure;
- Corruption;
- Delayed processes or procedures at borders; and
- Labour costs.

For this study, appropriate public policies as well as current policy regimes and manufacturing incentive measurements in Namibia were analysed and evaluated. The purpose was to formulate practical proposals and encouragement schemes to enlarge opportunities for growth of the automotive industry in Namibia.

3.4.6 Government Policies: Consistency, Implementation, and Enforcement

Automotive industries can grow in geographical areas where uniform trade policies and common trade rules are strictly and consistently applied (Whitfield, Staritz and Morris, 2020). Within the common market of SACU and the SADC, Namibia's compliance to SACU customs duties, and avoidance of the arbitrary use of certain standards and taxes were addressed in the empirical survey, forming part of this study (SACU, 2021).

For this study, aspects of government policy that affect the growth of the automotive industry on the African continent were evaluated. These included the following:

- In 2018, the World Bank rated Namibia in 106th place of 190 countries as listed in their report of ease of doing business (World Bank, 2018b). The report compared business regulations for domestic firms in countries around the globe.
- Trade bureaucracy on the African continent, as well as high duties and tariff rates, increase trade restrictions and hamper the development of an automotive industry (Black et al., 2019).

3.4.7 Public Policies for Local Procurement

According to the World Bank (2018a), the government and public-sector procurement procedures can add to the growth of the local automotive industry through the enforced local procurement of public automotive needs. Preferential procurement programmes

must be extensive to optimise the support of local suppliers and manufacturers in the automotive industry.

For this study, the government's drive and encouragement of local content measurements applicable to the automotive manufacturing industry were analysed and evaluated.

3.4.8 Increased Ability to Manufacture and Deepen the Supply Chain

In the automotive industry in Namibia, participation in regional value chains is confined to retail sales of accessories and spare parts, as was analysed and discussed in this study. This study also explored whether this can be ascribed to delayed technological advancements in the country (Whitfield, Staritz and Morris, 2020). The purpose was to ascertain if increased access to new technology and innovation would allow the increase of Namibia's engagement in regional supply chains.

Awamleh and Ertugan (2021) emphasised that the automotive industry represents a sector which is substantially dependent on innovation and technology development. In this way, the country can become a competitive role-player in the automotive industry, regionally and globally (Teece, 2019:17). However, automotive assembly and the manufacturing of basic parts or components do not necessarily represent industries with unattainable high technology needs (Awamleh and Ertugan, 2021). A few examples exist where automotive industries have developed in countries with lower levels of development and less advanced technology, which were required. These countries include some SSA countries as well as India and Asia (Black et al., 2019).

Increases in the ability to manufacture go hand-in-hand with infrastructure development and the easing of government regulatory constraints (Moos and Sambo, 2018:467). With growing domestic supplier networks, special economic zones, and forth-flowing lowering production costs, countries can increase their ability to manufacture (NamBizOne, 2018:1). Industrial clusters or economic processing zones expand the backward and forward linkages of manufacturing in countries. The supply chain is subsequently deepened, especially in the automotive industry.

3.4.9 Government's Industry Protection Policies

In this study, focus was placed on the extent the substantial trade in imported used vehicles (grey imports) is impeding the assembly of new vehicles on the continent (Black et al., 2019). The purpose was to describe government policies in Namibia on grey imports that could inhibit growth of the domestic automotive industry. According to Black et al. (2019), large-scale automotive assembly will not be able to develop with the high import of used vehicles. The ultimate objective of governments should be to establish a controlled and structured import environment. This will support automotive manufacturing and domestic vehicle assembly operations.

The import of used vehicles is continually considered by the regional trade and industry development initiatives of the SADC (Whitfield, Staritz and Morris, 2020). However, grey imports are not accurately documented and controlled. The demand for locally assembled vehicles can be amplified if purchasing power can be directed to new locally assembled vehicles.

Most manufacturing industries started with substantial initial tariff protection and other forms of government support (Whitfield, Staritz and Morris, 2020). The automotive industries of Thailand, Brazil, and Turkey have continued with substantial or large-scale state support (Black et al., 2019). Tariff protection measurements are considered within clear pre-set limits. It is done to ensure that the costs of motor vehicles in a country are not increased as this will negatively impact consumers in the automotive industry in the country (Whitfield, Staritz and Morris, 2020). Protection for businesses within the regional trade network increases with increased regional integration.

3.4.10 Constructive Collaboration Amongst Industry Stakeholders

Recent studies in South Africa indicated that the partnership between government and the automotive sector has a long and productive history. Certainty and stability in the official automotive policy regime over the past two decades in South Africa contributed to several significant achievements by the vehicle manufacturing and associated industries (AIEC, 2022:108). The Automotive Supply Chain Competitiveness Initiative (ASCCI) plays the role of national automotive industry support in South Africa. The role is summarised in the following nine categories (ASCCI, 2018):

- Collaboration to address common challenges;
- Strong institutional structures to govern the industry;
- Mutually beneficial outcomes for the government, institutions, and the industry;
- Demand-side influence to ensure OEM participation;
- Government partnership for development of the supply chain and integration of SMEs;
- Specific tangible government support to provide certainty and accountability of collaborative initiatives;
- Cost/benefit initiatives and analysis to highlight mutual benefit;
- Meaningful incentives as drivers for required behaviour, such as locating to supplier parks; and
- Critical mass in collaboration on a regional scale.

This study aimed to analyse and evaluate government partnerships to grow the local automotive industry. In this study, no reference could be made to collaboration amongst industry stakeholders as the automotive manufacturing industry in Namibia is still in its infancy.

Recent studies indicated that, on account of the multiplier effect, regional support mechanisms and constructive collaboration amongst industry stakeholders have the following implications that flow to all sectors of the economy (World Bank, 2018a):

- Increased economies of scale;
- Increased regional integration;
- Job creation opportunities; and
- Transfer of skills and global best practices.

3.4.11 Regional Trade Agreements and Links

Additional to SACU membership, Namibia forms part of the 15-country SADC (SACU, 2021). The SADC operates as a free trade area and allows access to a market of approximately 300 million people. This study explored and analysed the government's support and public policy structures to focus on the national development plans of the automotive industry that are aligned to that of countries in the region (World Bank, 2018a). In Namibia, the development of automotive assembly in regional supply chains is one of five targeted sectors under the industrialisation drive, Growth at Home,

of the government of Namibia (Ministry of Industrialisation, Trade and SME Development, 2018).

The literature review for this study indicated that it is crucial for a local automotive industry to forge close links with the automotive industry development plans of other regions. There is enormous potential for automotive industry integration in Africa (World Bank Group, 2022a). Such industrial partnerships in the regional automotive industry are the norm rather than the exception, as is the case in South-East Asia.

3.4.12 Public-Private Partnerships Supporting Infrastructure Development

This research aimed to explore elements of importance for the local automotive industry in Namibia to forge and increase closer PPP links with the automotive industry development plans of other regions. With measuring instruments in this study, data were collected on the government's role to encourage PPPs.

Some studies indicated that projects for the development of regional and international competitiveness are undermined by a poor and inadequate transportation network in neighbouring countries (Whitfield, Staritz and Morris, 2020). These projects include business and investment promotion drives, and social and economic development initiatives. Deficiencies in the infrastructure cause delays and higher costs of operating businesses (Moos and Sambo, 2018:467). Deficiencies include poor linkages between various transportation modes. Some landlocked countries lack efficient connection of regional transportation networks to ports. The development and efficiencies of regional transportation networks may likewise be affected by a protected domestic transportation market (Whitfield, Staritz and Morris, 2020).

3.4.13 Cost of Doing Business

With relatively high trade costs, local companies in Namibia and Botswana must participate in much higher value-added segments in the regional value chains. For example, companies based in Lesotho or Swaziland are much closer to the larger regional automotive industry of South Africa (World Bank, 2018a). The degree of participation in regional value chains, types of value chains being participated in, and the nature of production activities are substantially influenced by trade costs (World

Bank Group, 2018d). The trade costs for producers based in SSA countries are substantially higher due to the vast distances and time to the market.

For this study, participants were invited to share perspectives on opportunities for automotive component suppliers and manufacturers outside South Africa to take part in the supply chain of the South African automotive industry. The purpose was to ascertain how participation is impacted by aspects such as logistics costs and costs competitiveness.

In addition, recent studies indicated that the cost of doing business in the automotive industry on the African continent is hampered by the following macro-economic factors (Black et al., 2019):

- Low levels of infrastructure development;
- Lack of skills and under-developed human capital;
- Low employment rates;
- Fluctuating levels of income of the population;
- Inadequate and constrained access to finance for all sectors of the population;
- Low levels of regional trade on the continent;
- Less industrialised and diversified economies in most countries;
- Less developed infrastructure regarding the logistics network of road, rail, air, and water ways;
- Lack of infrastructure and capacity to produce energy efficiently;
- Ineffective regional FTAs on account of political compliance and lengthy paperwork issues.

3.4.14 Competitive Labour Force

Multinational corporations (MNCs) have been attracted to some SSA countries on account of the lower costs of labour. Skilled labour in many African countries, including Namibia, remains a major constraint to their ability to manufacture (NamBizOne, 2018:1). However, productivity tends to decrease in the informal sector.

For this study, the factors that adversely affect a competitive labour force were explored and evaluated. The purpose was to ascertain whether it can be described that government programmes and policy lead to the efficient allocation of resources to

ensure a competitive labour force. Efficiency costs can be substantially affected by the following factors (Harvard University, 2018):

- Lack of locally available skilled labour;
- Labour disputes;
- High labour costs.

3.4.15 Resource-Based Comparative Advantage

Namibia has abundant reserves of natural resources, and the economy relies heavily on the primary sector with its exports of raw materials (Ministry of Industrialisation, Trade and SME Development, 2018). Most of the natural resources, however, leave the country in their raw form, and this has an adverse effect on domestic value addition and employment creation. In this study, the country's low levels of industrialisation and limited local manufacturing were analysed and described, with the aim to establish the basis of comparative advantage.

The global automotive industry is heralded as the largest manufacturing sector in the world (PWC, 2018:8) and is a major consumer of raw materials. On the African continent, substantial amounts of raw materials are exported, only to be re-imported as finished products (PWC, 2018:8). These products are rather processed, and value added in more developed countries in East Asia. However, these products can be processed and manufactured locally with increased support from local governments (NamBizOne, 2018:1). The economies of SSA countries are largely dependent on its mining and natural resources sector as the main contributors to their GDP (IJG Securities Namibia, 2018a:2). The vast natural resources represent substantial resource-based comparative advantages. It should constitute a large motivation factor in the government's consideration to develop the automotive industry.

3.4.16 Skills Development and Training

It was described in this study that Namibia's unemployment reached an alarmingly high level of 36.8% in 2021 together with substantial decline in economic growth for the same period (Namibian Sun, 2021). The purpose was to discuss whether the lack of access to skills development and training in Namibia, as in most SSA countries, has an adverse effect on production and the ability to manufacture (IJG Securities

Namibia, 2018b:2). Low levels of formal employment correlate with low levels of production and productivity.

Recent research indicated that the development of an automotive industry can result in skills upliftment on a national scale. The Volvo Group in South Africa has already invested more than R86 million in apprenticeship training, automotive industry learnerships, disabled person learnerships, and internships (Engineering News, 2018d).

3.4.17 Growth of Youth in the Population

A high rate of population growth with a substantial youthful category in the population bodes well for any automotive industry. This means that there is an increasing number of younger consumers who are purchasing vehicles. A youthful population occurs when most of the population falls below the age of 25 years (Mo Ibrahim Foundation, 2018). In general, the African continent has a growing youthful population.

This study explored whether Namibia's significant youthful population (ages 15 to 34) of 36.7% in 2016 (Namibia Statistics Agency, 2018b) contribute to factors that lead to increased sales and growth of the automotive industry.

3.4.18 Growth of the Economy and Purchasing Power

An increase in GDP per capita coincides with a growing economy and subsiding inflationary pressures. A strong correlation between economic growth and the purchasing power of consumers is evident where vehicles sales increase as consumers can purchase more expensive items.

However, trade opportunities and industry growth on the African continent are adversely affected by the general low purchasing power of the population (World Bank Group, 2018d). In addition, purchasing power is increasingly affected by the non-availability of consumer products, which in turn is linked to the lack of industrialisation and local manufacturing industries.

In this study, participants were invited to share their opinions on whether new environmental taxes and levies in Namibia contribute to increases in the purchase prices of vehicles. This study investigated whether it was believed that higher vehicle

prices continue to shrink consumer income (The Namibian, 2018a) and if it likewise represents a contribution to the slowdown of vehicles sales and slowdown in the domestic economy.

3.4.19 Satisfactory Inflation, Interest, and Foreign Currency Rates

Affordability of vehicles became a substantial factor in many countries on the African continent. This study explored whether consumers in Namibia continue to feel the pressure of rising interest rates, food-price inflation, and high prices of new vehicles because of the poor rand exchange rate (IJG Securities Namibia, 2018b:13; Fin24, 2018:1). The aim was to describe those shortages of foreign currency reserves, high inflation rates, and high interest rates that result in vehicles becoming less affordable and expensive, and whether under these circumstances consumer confidence decreases. Consumers have less disposable income to spend on expensive items such as motor vehicles.

The current exchange rate level of the South African rand has reasserted its status as one of the most volatile currencies (Business Day, 2018). The weaker rand coincides with increased oil prices, and this combination poses the threat of increased inflation.

3.4.20 Growth in the Population's Middleclass

Economic growth on the African continent has led to more households moving into the income bracket that can afford expensive items such as vehicles. Africa is home to the largest number of developing countries (World Bank Group, 2018d). It can be said that Africa offers emerging market vivacity and vast opportunities to the global market (KPMG, 2017:43). This is especially evident in the rapidly growing middleclass. Automotive manufacturers can target consumers in the upper region of the middleclass that earn US$40 to US$70 per day. This category, although a small part of the population, is expected to increase with the possible rate of economic development and urbanisation.

The literature review for this study indicated, however, in the period since April 2017, the ratio of household indebtedness and disposable income in Namibia has decreased (Bank of Namibia, 2018a:15). On an annual basis, growth of private sector credit extension in Namibia reflected a continued slowdown, as at the end of the first quarter

of 2018. It is attributed to the slow growth in mortgages and shrinkage in instalment credit on vehicle purchases

3.4.21 Affordability of Vehicle Purchases

Further to the previous paragraph, it can be added that the poor domestic economic conditions in Namibia since 2018 were intensified by amendments to the Credit Agreement Act regarding increased deposits on mortgage bonds and vehicle finance terms (Bank of Namibia, 2018a:17). This resulted in decreased affordability of motor vehicles.

Studies indicated that increased affordability of motor vehicles will boost the growth of an automotive industry. Increased access to debt at lower interest rates (affordable credit finance) enables consumers to buy items that would otherwise not have been possible. Vehicle manufacturers and financial institutions enter into constructive collaboration and support mechanisms to offer improved credit facilities to consumers. However, adequate laws and regulations in terms of financial transactions should be implemented to allow financiers to reclaim or repossess assets in case of defaulting consumers. The laws should also provide remedies and protection to these defaulters.

3.4.22 Politically Stable and Secure Countries

A politically stable and secure location is less costly and therefore preferred by automotive companies. Namibia is heralded as one of the most politically stable and secure countries on the African continent (BBC, 2018). The country has a history of relatively little labour unrest in the past decades and general elections are usually conducted peacefully. These are sure signs of political stability.

In this study, participants in the empirical research were approached and data were collected, on their agreement, to the notion of Namibia being a stable and secure country. The aim was to establish whether this variable acted as a growth factor for the automotive industry and whether economic growth of a country is directly and adversely affected by a politically unstable environment. Industry growth is stagnant when labour unrest and countrywide production strikes occur.

Political stability remains a challenge on the African continent (United Nations, 2018), although the development policies of SSA countries play a critical role in reducing

conflict (World Bank Group, 2018d). Government intervention is required in specific areas, including:

- Support for lagging regions;
- Strengthening local governance;
- Improving land management; and
- Spurring job creation.

3.4.23 Access to Key Export Markets

Recent studies indicated that a national automotive industry with efficient access to key export markets can develop beyond the limits of the domestic demand (Black et al., 2019). The market for vehicles in SSA countries is growing at an increasing pace. The African continent is expected to become a substantial global market in the next decade. The growing demand is currently being met by imports, especially imports of used vehicles. There are substantial prospects on how to meet the demand for expanded production on the continent (Black et al., 2019). On the African continent, especially in SSA countries, South Africa continues to be a major source of automotive sales and regional automotive trade patterns (KPMG, 2017:43), with trade agreements concluded as part of SACU (Whitfield, Staritz and Morris, 2020).

For this study, Namibia's access to this key export market, where Namibia was ranked as South Africa's top export destination in Africa in 2020 for new vehicles (AIEC, 2021:57), was explored and evaluated. The purpose was to ascertain whether the degree of close proximity to key export markets could represent comparative advantage.

3.5 CONCLUSION

This chapter highlighted introductory information on the global, African, South African, and Namibian automotive industries. In addition, key drivers for growth of an automotive industry were discussed. These discussions indicated the pertinence of inclusion of growth strategies, theories, models, and frameworks in the literature research for this study, as discussed in the previous chapter.

In this chapter, factors such as regional economic integration and links to the regional supply chains of the automotive industry in South Africa, which cannot be underestimated, were discussed. The comparative advantage that Namibia has due to its proximity to vehicle manufacturing facilities in South Africa was described. It was discussed that it should be ascertained where in the regional value chain the products of a Namibian automotive industry can be pitched.

The next chapter, Chapter 4, describes the research methodology employed in the study and how the required information was collated. A comprehensive discussion of the methods used in collecting the primary research data is provided. The research population and unit of analysis are defined. The next chapter covers methods in the process of data analysis and reflects on trustworthiness of the data-collection instruments.

CHAPTER 4:
RESEARCH METHODOLOGY

4.1 INTRODUCTION

The research methodology of this research study is explained in this chapter. Chapter 4 outlines the primary research process and provides justification for the use of specific steps in the quantitative and qualitative research process. It is described that the design of the research methodology, using diverse methodologies, enabled the researcher to achieve greater insight on the research problem.

The chapter commences with a revisit of the research objectives, indicating what the research in this study hoped to achieve. Discussions follow thereafter on the research process, research design, and dimensions. The research terminology, sampling design, and data collection are discussed. Data analysis methodologies are also covered.

To bring the chapter to a close, measures to ensure methodological integrity are described. It is pertinent that reliability, validity, and trustworthiness of the data are closely recorded to increase the strength of the methodology employed in this study.

Lastly, implementation of ethical considerations in the research process is covered, whereafter a conclusion to this chapter is presented.

4.2 RESEARCH OBJECTIVES OVERVIEW

Primary and secondary research objectives discussed in Chapter 1 are reviewed in Table 4.1 below.

Table 4.1: Primary and secondary research objectives

Primary Objective
To ascertain how to grow the automotive industry in Namibia
Secondary Objectives
To identify which variables constrain the growth of the automotive industry in Namibia, being upstream for original equipment component manufacturers and aftermarket component manufacturers, as well as downstream in expanding existing dealerships or establishing new franchise dealerships.
To examine how the automotive component manufacturing base and employment in Namibia can grow by linking it to the automotive supply chain in South Africa, as the dominant vehicle manufacturing and consumption country in the region.
To examine how the automotive component manufacturing base and employment in Namibia can grow by linking it to regional integration in SACU, the SADC, the Tripartite Free Trade Area (TFTA), and African Continental Free Trade Area (AfCFTA).
To examine how the automotive component manufacturing base and employment in Namibia can grow via free trade agreements (FTAs) with SACU in respect of the USA's African Growth and Opportunity Act (AGOA) and the EU's SADC-Economic Partnership Agreement (EPA).
To identify specific successful growth strategies and incentive schemes of policy regimes that govern automotive industries in other countries and that can be implemented effectively in Namibia.
To determine if an association exists between the most promising motor industry sectors to grow (perceived) and business characteristics.
To determine if an association exists between the extent of the automotive industry in Namibia to grow and the top three inherent strengths, opportunities, areas to embark on, and strategies to be implemented for growth in the Namibian automotive industry respectively, as well as the automotive component categories that can be manufactured in Namibia with the largest potential, as perceived by stakeholders in the automotive industry.
To determine if constraints to growth, incentive measures, government encouragements, or support factors that add to growth, growth in the automotive industry of South Africa, and growth in the automotive industry globally are perceived differently by: (i) different extent levels of the capability of the Namibian automotive manufacturing industry to grow, as indicated by the stakeholders in the automotive industry. (ii) the motor industry sector in Namibia with the most promising opportunity to grow, as indicated by the stakeholders in the automotive industry.

Source: Author generated

In the next section, the research process followed to achieve the set research objectives, is explained.

4.3 THE RESEARCH PROCESS

In Chapter 1, the research question and problem of this study were identified. The research process used to debate the research problem and research questions is described next.

This research process represents clearly-defined steps that should be followed during a research study (Schindler, 2019:27). Any research project, as with this study, consists of two distinct phases, namely the conceptualisation phase and the investigation phase (Wiid and Diggines, 2017:36). The research process followed in this study consists of the following steps, described in Table 4.2 below. The steps as listed in the table are discussed in the next sections.

Table 4.2: The research Process

Step 1:	Problem discovery and definition
Step 2:	Review the literature, including conceptualisation (the meaning of the concepts and variables) and operationalisation (how variables will be measured in the study)
Step 3:	Select specific research problem, questions, or hypotheses
Step 4:	Planning and selecting the research design (the research method and sampling)
Step 5:	Data collection
Step 6:	Data coding and editing
Step 7:	Data analysis and drawing conclusions
Step 8:	Present research findings
Step 9:	Refine model

Source: Adapted from Wiid and Diggines (2017:45)

4.3.1 Steps in the Research Process

In the research process, the following steps were performed for both quantitative and qualitative research:

- Step 1 of the research process addresses **problem discovery and problem definition**. Research objectives and research questions to address the research problem are formulated. The essence of the research problem, as described in Chapter 1 of this study, can be summarised as follows:

- No substantial information and specialised knowledge are domestically available on factors constraining the growth of the motor industry in Namibia.
- There is a lack of knowledge regarding how and to what extent a developing automotive industry in Namibia can benefit by being part of the South African automotive supply chain.
- It was essential to determine how Namibia can become a prominent secondary supplier of automotive components and accessories to the South African motor industry (Whitfield, Staritz and Morris, 2020:7).

- In Step 2, **the literature is reviewed** (see Chapters 2 and 3). A literature review is a written support of the research topic with credible evidence of previous research. A literature review includes two aspects of conceptualisation and operationalisation (Wiid and Diggines, 2017:45). With conceptualisation, previous research is reviewed while exploring key concepts, such as industry growth theories (Demir, Wennberg and McKelvie, 2017:3; Riasanow, Galic and Böhm, 2017:3192) in this study. With operationalisation the key variables that constrain growth of the Namibian automotive industry are referenced. It was indicated how these variables were measured.
- In Step 3, the research process focuses on **selecting the specific research problem, research questions, and hypotheses**. The nature of the research, whether qualitative or quantitative, is determined by the stated research problem. This was described in Sections 1.8, 1.10, and 1.11. The research problem was identified in Chapter 1 and was justified in the literature review in Chapters 2 and 3. Testing of relationships, associations, and hypothesis pertaining to variables that constrain industry growth strategies (Demir, Wennberg and McKelvie, 2017:3; Riasanow, Galic and Böhm, 2017:3192) necessitated statistical analysis.
- **The planning and selecting of the research design** are executed in Step 4 (see Sections 4.4 to 4.8). It involves the research methods and the selection of the population and sampling methods to be used for the research (Saunders, Lewis and Thornhill, 2019:249). For this study, the research design chosen

consisted of a sequential mixed (multiple) method design, using the quantitative method of a questionnaire (Nardi, 2018:104) as well as the qualitative method of face-to-face in-depth interviews. The target population of this study for both the empirical survey (Pavlínek, 2020:513) as well as the face-to-face in-depth interviews were individuals with expertise and notable experience of the automotive industry in Namibia and in South Africa, described in detail in Section 4.8.2 below. In addition, Section 4.8.3 highlights that a non-probability sample of a judgmental nature was used based on the expertise and knowledge of specific representatives in two different groups (Bacher et al., 2019:6).

- Step 5 describes the **data collection** steps. This is elaborated upon in Section 4.9 and Section 4.10.
- **Data coding and editing** is contained in Step 6. Section 4.13.4 describes central editing and coding.
- Step 7 on **data analysis** is included in Chapter 5 on descriptive data analysis and Chapter 6 on inferential data analysis.
- In Step 8, the **research findings are presented**. Chapter 7 elaborates on findings, conclusions, and recommendations.
- In Step 9, **refinement of a model** is done. However, this step falls outside the scope of this dissertation. Development of a model was not included in the research objectives. Hypotheses tested in the inferential data analysis chapter (Chapter 6), however, can be seen as refinement of key variables pertaining to constraints as well as to opportunities for growth of the automotive industry in Namibia.

The next section contains a discussion of the research design used in this study.

4.4 RESEARCH DESIGN

The main functions of the research design consist of the selection of research methods, population, and sampling methods used for the research (Saunders, Lewis and Thornhill, 2019:249). Secondly, it warrants that research procedures are adequate

for valid, objective, and accurate answers to research questions and research objectives.

According to Schindler (2019:71), a research design consists of certain components, namely the research methodology, data collection methods, data analysis techniques, and instrument development. These components are illustrated in Table 4.3 below.

Table 4.3: Components of the research design

The research design strategy	The research type, purpose, time frame, scope, and environment.
The data collection design	The collection of secondary and primary data with qualitative and/or quantitative methods and techniques.
The sampling design	Steps in the sampling process, the population, the sampling frame, sampling methods, and sample size.
Instrument development and pilot testing	Specification of information needed as well as the type, method, and question content of the questionnaire and interview schedule/guide. Pre-test of the questionnaire and interview schedule/guide is essential.

Source: Adapted from Schindler (2019:71)

The research design also includes key subjects of validity, reliability, duplication, generalisability, and authentication (Bryman and Bell, 2018:208). These subjects are detailed in the remainder of this chapter.

Important research terminology of the research design and research process are explained in the following section.

4.5 RESEARCH TERMINOLOGY

Terminology used in this thesis to describe the research process used are discussed below.

4.5.1 Research Paradigm: Ontology, Epistemology, and Axiology

The philosophy of looking at the world is contained in a paradigm (Bryman and Bell, 2018:19). It consists of unique philosophical theories that direct or lead thinking and actions of the researcher (De Vos et al., 2018;41; Trigeorgis and Reuer, 2017:44). Ontology, epistemology, and axiology are the philosophical conventions that describe

a research paradigm (Bryman and Bell, 2018:7). This is illustrated in Table 4.4 below and discussed thereafter.

Table 4.4: Comparison between research paradigms

	Post-Positivism	Constuctivism	Pragmatism	Realism
Ontology	Reality is objective. It is independent of social actors	Reality is socially constructed. It might change with multiple realities	Multiple realities exist. The research question is answered based on the best options selected	Reality is objective. It exists independently from human thoughts. Interpretation takes place through social conditioning
Epistemology	Only observable phenomena provide credible data Focus is placed on causality and law-like generalisations Phenomena are reduced to simplest elements	Subjective meanings Focus is placed on the details of a situation Reality behind these details Subjective meanings motivate the actions	Observable phenomena and subjective meanings provide knowledge Focus is placed on practical applied research Different perspectives integrated to assist in interpreting the data	Observable phenomena provide credible facts Insufficient data may result in inaccuracies in sensations Focus is placed on explaining within the context or contexts
Axiology	Research is undertaken in an unbiased way The researcher acts independently of the data The researcher always maintains an objective stance	Research is value bound The researcher is part of the research	Ethics, independence, and non-bias play a crucial role in interpreting results The researcher is objective and acknowledges diverse points of view during data interpretation	The research is value laden as the researcher is biased by world views, experiences, and upbringings, which have an impact on the research

Source: Adapted from Saunders, Lewis and Thornhill (2019:144-145)

Philosophical conventions include the following:

- Social ontology describes the nature of social phenomena, with the theory of, first, objectivism, where social phenomena are regarded as independent from social actors (Trigeorgis and Reuer, 2017:49; Picciano, 2017:166). Second, the

theory of constructionism maintains that social phenomena develop from the actions of social actors.

- Epistemology has a central question as to whether the social world should be studied according to the same principles as the natural sciences (Trigeorgis and Reuer, 2017:44), including:
    - Positivism places emphasis on using methods of natural sciences.
    - As far as constructivism in research projects is concerned, participants become active and involved in all phases of the process and become partners in the total project. Participants influence the course of the process of the research.
    - Realism, like positivism, focuses on the belief that the same approaches for collection of data in the natural and social science should apply.
    - Interpretivism is based on the view that people and institutions in the social sciences are fundamentally different from those in the natural sciences.
- The study of ethics in research involves axiology (De Vos et al., 2018:117). This is a fundamental part of the research planning and implementation process. The ethics and value procedures in a study are indicated by axiology.

The various research paradigms are discussed next.

4.5.1.1 Post-positivism

According to De Vos et al. (2018:7), positivism places emphasis on using methods of natural sciences. It promotes an objective, patterned, and identifiable reality. It can be said that post-positivists hold deterministic philosophies, where causes lead to outcomes. The positivism approach has, as its foundation, the following elements (Bell and Bryman, 2018:12):

- Phenomena observed by senses can be warranted as sources of knowledge (Picciano, 2017:166).

- The purpose of theory gathering is to generate hypotheses that are tested (Teece, 2019:17). In general, quantitative research starts with testing a theory (Trigeorgis and Reuer, 2017:49).
- Knowledge that provides the basis for comprehensive propositions is gathered.
- In science, research methods and conclusions should not be prejudiced or biased.
- Scientific statements should be formed. There should be a clear distinction between scientific statements and normative statements. With senses observations, standardising or normative statements cannot be confirmed.

Post-positivism paradigms are generally found in quantitative research (Bryman and Bell, 2018:7).

4.5.1.2 Constructivism

A constructivist view in studies associates with open-ended interviews, observations, and narrative documents or reports. The constructivism (also called interpretivism) approach is used in qualitative research (De Vos et al., 2018:7). Constructivism highlights that social actors live and assess a worldview of experience.

The paradigm of constructivism is not applicable in this specific study. Constructivism implies, in addition, that social beliefs and categories are constantly being revised. These are not only produced through social interaction with once-off face-to-face in-depth interviews, such as in this specific study. The notion that several realities are produced and exist, and are based on social interactions and subjective meanings, is emphasised by this paradigm (Bryman and Bell, 2018:19).

4.5.1.3 Realism

According to Bryman and Bell (2018:13), a realism approach is followed when the researcher assumes objects exist independent from the human factor. A natural sciences approach towards developing knowledge is taken.

Two major forms of realism consist of empirical, or direct realism, and critical realism (Bryman and Bell, 2018:13; Pavlínek, 2020:513). Empirical or direct realism believes that reality can be understood by using the appropriate methods and that experience

through senses represents the world accurately. On the contrary, critical realism implies that the researcher's experiences are only images or representations of the real world and may not represent reality (Bryman and Bell, 2018:19). Realism was not used as a paradigm in this study.

4.5.1.4 Pragmatism

The pragmatism approach recognises the many ways to conduct research and interpret the worldview. The approach involves the mixing of quantitative and qualitative methods (Schindler, 2019:143). Researchers with a pragmatism approach as a research paradigm focus on the 'what' and the 'how' of the research problem (Bryman and Bell, 2018:19). A practical and applied research philosophy towards action is an integral part of the pragmatism approach.

4.5.2 Deduction and Induction

Deduction and induction are two research approaches followed in all research processes (Wiid and Diggines, 2017:4). Deduction is a process that proceeds from theory to empirical data. It is an approach to develop hypotheses based on general theory. A new theory is not developed (Trigeorgis and Reuer, 2017:49). Steps in the deductive approach of this study consisted of the following (Bryman and Bell, 2018:344):

- Information on the theoretical topic was collected to develop the hypotheses;
- Data were collected on concepts and variables of the hypotheses; and
- Hypotheses were supported or not supported, based on the findings

An inductive approach is associated with qualitative research. With an inductive approach, the researcher works from the data to theory or a general conclusion (Wiid and Diggines, 2017:4, Teece, 2019:17). Conclusions are generated from facts or parts of the evidence in an inductive approach, with the aim that the conclusions explain the facts (Schindler, 2019:17).

This study followed a deductive approach in the quantitative research stage and a mainly inductive approach in the qualitative research phase, as follows:

- Qualitative data for this study was guided by the specific concepts that were probed in face-to-face interviews. Afterwards, in the analysis phase, inductive

coding from the qualitative data was used where conclusions were formed from facts.

- A deductive approach was followed in this study in the process to obtain quantitative empirical data. The deductive approach was employed as hypotheses were developed based on general theory and then confirmatory evidence was established.

4.5.3 Empirical Research, Primary Data, and Secondary Data

Schindler (2019:8) explained empirical research as the process of collecting data (through observations or experiments) and analysis of primary and secondary data. The primary data are based on observations or experiments and are used to test a hypothesis. Effects, causes, or the testing of hypotheses are done in empirical research (Pavlínek, 2020:513). Its evidence is expressed in generalisations, laws, and propositions.

Primary data are raw or fresh data, collected for the first time for a specific purpose, which is to achieve the research objectives of a study (Wiid and Diggines, 2017:70). Primary data can consist in a qualitative or a quantitative form (Schindler, 2019:128). Both types were collected in this study, in an empirical survey and in interviews.

Secondary data are collected by persons other than the researcher for purposes other than the current research study (De Vos et al., 2018:383). It consists of both quantitative and qualitative data. However, at least one level of interpretation has already developed between the first time of data collection and record thereof in a subsequent research study (Schindler, 2019:322; Vithal and Jansen, 2019:21).

4.6 DESCRIPTORS OF THE OVERALL RESEARCH DESIGN OF THE STUDY

Emanating from the business research approaches and terminology discussed above, the different design dimensions of this study are highlighted. Table 4.5 below depicts design dimensions applicable to this specific study. These dimensions are discussed thereafter.

Table 4.5: Research design dimensions

Category	Options	
The use of research (Section 4.6.1)	Applied	
The method of data collection (Section 4.6.2)	Monitoring and communication	
The purpose of the study (Section 4.6.3) and the degree to which the research question has been formed (Section 4.6.4)	Reporting and descriptive study	
The formulation of research questions (Section 4.6.4)	Exploratory and descriptive study	
The research paradigm (Section 4.5.1)	Pragmatism	
The time dimension (Section 4.6.5)	Cross-sectional	
The power of the researcher to produce effects in the variables under study (Section 4.6.6)	Ex post facto study	
The topical scope of the study (Section 4.6.7)	Statistical study	
The research environment (Section 4.6.8)	Field setting	
Methods and techniques for collecting data (Section 4.6.2)	Qualitative data	Interviews
	Quantitative data	Field research and historical comparative research

Source: Adapted from Schindler (2019:75)

4.6.1 Use of Research

Knowledge production for this study was driven by applied knowledge where theoretical insights were translated into practice. Findings were closely related to context and knowledge production involved academics, policymakers, and practitioners who apply a wide range of skills and experience to solve a problem and disseminate knowledge and findings rapidly (Bryman and Bell, 2018:6).

In the next section, the data collection method will be discussed.

4.6.2 The Method of Data Collection

The research questions and objectives of this study were addressed in a communication process, where data collected and captured were represented by participants' responses. The sequential mixed (multiple) methods data collection approach of this study can be summarised as data were collected through a web-based survey in the first phase of the research. Respondents were invited to complete an online self-administered questionnaire (see Appendix C). The first phase was followed by face-to-face in-depth interviews and discussions of open-ended questions with participants. The interview guide is attached as Appendix D.

The purpose of the study is explained in the next section.

4.6.3 The Purpose of the Study

The purpose of this study was of both a reporting and a descriptive nature. Since the primary and secondary objectives of this study aim to determine the who, what, where, when, or how much, this research was a descriptive study. As in the case for example of type of ownerships of business entities, comparisons contribute to understand factors constraining growth of the automotive industry in Namibia.

4.6.4 The Degree to which the Research Questions Have Been Formed

Research questions are the basis of the research objectives. It contains the key questions which the research process will address. The basic types of research questions are exploratory, descriptive, and causal research questions (Schindler, 2019:28), as discussed next.

Exploratory research questions are qualitative in nature. These questions explore and develop hypotheses or questions for further research. For example, this type of research clarifies unclear situations and determines potential for new business opportunities.

Research questions can be founded on descriptive and causal types of research objectives. Descriptive research questions collect data that describe characteristics of subjects. They can be quantitative or qualitative in nature and describe objects, people, groups, organisations, or environments. For example, they can be used to

help describe the perception of growth for the Namibian automotive industry, as in this study.

Causal research objectives outline factors that are the cause of a problem. For example, a causal research question is “how does the import of used vehicles affect automotive manufacturing industries?”.

Research in this study was of a descriptive nature. This research aimed to determine opportunities for growth in the Namibian automotive industry strategies.

4.6.5 The Time Dimension

Schindler (2019:79) argued that, in research, a cross-sectional study or a longitudinal study determines the time dimension of a study. When data of a study are gathered once over a period of days, weeks, or months, it represents a cross-sectional study.

For this study, a cross-sectional method was used, where data were collected once with an empirical survey to ascertain opportunities for the growth of the Namibian automotive industry (Demir, Wennberg and McKelvie, 2017:3; Riasanow, Galic and Böhm, 2017:3192).

It must be added that data collection with the empirical survey and the interviews took place at different points in time. The empirical survey was followed up at a later stage when qualitative research was conducted in the form of in-depth interviews with participants. A period of approximately one year lapsed between the two data collection processes. Data in interviews were collected once over a period of one month in 2021. New information such as data on the impact of the COVID-19 pandemic and the scope of NEVs came to the forefront in face-to-face interviews. No other changes in opinions of participants could be noticed. Descriptive statistics derived from the empirical survey were largely complemented by thematic analysis of the qualitative open-ended components in the interview guide.

4.6.6 The Researcher’s Control Over Variables in this Study

In research studies, the control and manipulation of the variables in the study may occur as certain variables create effects in other variables (Schindler, 2019:76). The possibility of manipulation depends on whether an experimental or ex post facto

design is followed in the study. In studies with an experimental design, predictions rather than research questions are used (Saunders, Lewis and Thornhill, 2019:190). With the ex post facto design, no manipulation of the variables takes place as the researcher has no control over it. The researcher can only report on what happened and what is occurring.

In this study, no attempts to manipulate or control variables of the study occurred. The decision-making process and status quo were merely reported. This study followed an ex post facto design with descriptive statistical analysis of findings and use of strict sampling procedures in order to ensure no bias was introduced (Saunders, Lewis and Thornhill, 2019:249).

The topical scope of this study is covered in the next section.

4.6.7 The Topical Scope

Statistical studies are designed for breadth rather than depth, extracting the data from multiple cases (Schindler, 2019:76). In a statistical study, conclusions are drawn from a sample's characteristics. In addition, with statistical research, hypotheses are tested and generalisation formulated from findings, according to the representativeness and validity design of the sample (Schindler, 2019:358). The topical scope of this study was statistical with the aim to determine the constraints to and opportunities for the growth of the Namibian automotive industry.

The next section elaborates on the research environment of this study.

4.6.8 The Research Environment

In the research environment of a field study, the same natural environment in which the participants normally function is used by the researcher (Schindler, 2019:177). Studies are conducted in a contrived or non-contrived setting (Bryman and Bell, 2018:244). A contrived setting occurs under staged, manipulated, or artificial conditions. A field study is performed in a non-contrived setting. This study was conducted in a field setting. No conditions were manipulated or simulated.

The research approach of this study is discussed in the next section.

4.7 RESEARCH APPROACH

Section 4.5.1 discussed the linkage of research paradigms, research design, and research methods. All of these contribute to the research approach, as is discussed next.

Main research approaches consist of three approaches, namely qualitative, quantitative, and mixed (multiple) methods (Bryman and Bell, 2018:55). Table 4.6 below exemplifies differences in key associations between the three research approaches. These are discussed in detail thereafter.

Table 4.6: Key associations of qualitative, quantitative, and mixed (multiple) methods approaches

Key Associations	Qualitative Approaches	Quantitative Approaches	Mixed (Multiple) Methods Approaches
Research Philosophy	Constructivist knowledge claims	Post-positivist knowledge claims	Pragmatic or critical realist knowledge claims Sequential, concurrent, and transformative
Methods	Inductive Open-ended questions Emerging approaches Non-standardised, text, or image data Likely to use non-probability sampling methods	Deductive Close-ended questions Predetermined approaches Numeric data Probability and non-probability sampling methods can be used Statistical techniques used to analyse data	Inductive or deductive Both open- and closed-ended questions Both emerging and predetermined approaches Both quantitative and qualitative data analysis Probability and non-probability sampling methods can be used
Research Strategies	A variety of strategies Each strategy has specific emphasis or scope Strategies consist of action research, case study research, ethnography, grounded theory, and narrative research	Examines relationships between variables Research strategies are experimental and surveys (questionnaire or structured interviews or structured observation)	Collects both quantitative and qualitative data Develops a rationale for mixing quantitative and qualitative data Integrates data at distinct stages of inquiry Use research strategies of both qualitative and quantitative research

Source: Saunders, Lewis and Thornhill (2019:176-183)

4.7.1 Qualitative Research

According to De Vos et al. (2018:22), a qualitative research approach is used to explore and understand the substance of individuals and groups to address a social or human problem. This approach is less structured than quantitative study approaches. The generation of new insights and understanding of in-depth meanings are sought. Non-numeric data (i.e., words, images, and video clips) are collected with qualitative research. Techniques consist mainly of interviews (Saunders, Lewis and Thornhill, 2019:179). Qualitative research approaches attempt to provide answers to the "how" (process) and "why" (meaning) things happen. Table 4.7 below highlights characteristics of qualitative research.

Table 4.7: Main attributes of qualitative research

Research Aspect	Attribute
Focus	Understand and interpret the problem and phenomenon
Purpose	Discover ideas, to be used in exploratory research, with general research objectives
Approach	Observe and interpret data
Data Collection Approach	Unstructured and free form
Researcher's Independence	Researcher is intimately involved; therefore, the results are subjective
Sample Design	Non-probability and purposive sampling usually used
Sample Size	Small samples used, often in natural settings
Research Design	Most often used: exploratory research designs
Data Type and Preparation	Verbal or pictorial descriptions that are reduced to verbal codes
Data Analysis	Human analysis following computer or human coding

Source: Adapted from Schindler (2019:128)

In considering attributes of qualitative research provided in Table 4.7 above, this approach was followed in this study. However, it was combined with quantitative research, as explained in section 4.7.2 below. Data collection with a qualitative research approach is discussed in detail in Section 4.10.

In the next section, the quantitative research approach is discussed.

4.7.2 Quantitative Research

Quantitative studies answer questions in relation to how much, how often, how many, when, and the who (Schindler, 2019:128). Characteristics of quantitative research are depicted in Table 4.8 below.

Table 4.8: Main attributes of quantitative research

Research Aspect	Attribute
Focus	Describe, explain, or predict
Purpose	Test hypotheses or answer specific research questions
Approach	Measure and test data
Data Collection Approach	A structured approach and categories are provided
Researcher's Independence	The researcher acts as an observer; therefore, the results are objective and free from bias
Sample Design	Probability sampling is used
Sample Size	Large sample sizes are used to produce generalised results
Research Design	Descriptive and casual research designs are most often used
Data Type and Preparation	Verbal descriptions reduced to numerical coces for computerised analysis
Data Analysis	Computerised analysis (statistical and mathematical analysis) that upholds a clear distinction between facts and judgements

Source: Adapted from Schindler (2019:128)

A quantitative approach is used to test hypotheses and answer specific research questions. Quantitative research is used to verify the theories in the research study by focusing on gathering the facts to establish valid deductions. Numeric data are collected with quantitative research (Saunders, Lewis and Thornhill, 2019:176). With numerous statistical techniques, quantitative research assesses relationships between numerically measured variables (Saunders, Lewis and Thornhill, 2019:178). Quantitative research follows a deductive research approach with attempts to make precise measurements (Bryman and Bell, 2018:63). It measures consumer behaviour, knowledge, opinions, or attitudes (Schindler, 2019:128).

In the primary research stage of this study, a quantitative design was followed on the basis that research questions and objectives were deductive and certain variables were investigated.

As mentioned above, this quantitative research was combined with qualitative research, which is then classified as mixed (multiple) method research.

4.7.3 Mixed (Multiple) Methods Research

Main research approaches consist of three approaches, namely qualitative, quantitative, and mixed (multiple) methods (a combination of the aforementioned) (Bryman and Bell, 2018:151). As mentioned, this study followed a mixed (multiple) methods approach where the foundation for additional consequential qualitative data analysis in this study was to provide a more in-depth understanding of the descriptive and inferential statistics derived from the empirical survey.

The sampling design and approach followed in this study are explained in the following section.

4.8 SAMPLING DESIGN

In this section, the concepts regarding the sampling design are defined and the specific method selected for this study, as well as the target population of the study, are explained. In the next sections, the sampling design of the quantitative and qualitative research parts of this study is discussed.

4.8.1 Target Population Defined

A **target population** is the essential aspect of the population about which the researcher intends to make some inferences (Schindler, 2019:36). It includes selecting the sample if a complete census of the whole population is not possible (Wiid and Diggines, 2017:132).

Schindler (2019:36) indicated that the target population are those people, events, or records that possess the desired information to answer the research question.

The target population for both the quantitative research part as well as the qualitative research part of this study were individuals with expertise and notable experience as representatives of the role-players of the automotive industry in Namibia and in South Africa. Table 1.3 in the introductory chapter indicated institutions that individuals represented, such as automotive dealerships, auto industry research institutions,

component manufacturers, logistics providers, automotive associations, automotive industry engineering, automotive asset finance institutions, the government, and OEMs.

Role-players from the South African automotive industry were included, as well as role-players of the automotive industries in Botswana and Lesotho, although this study focused on the automotive industry in Namibia. It must be emphasised that the automotive industry in Namibia is intricately linked with that of South Africa, where Namibia was ranked as South Africa's top export destination in Africa in 2020 for new vehicles (AIEC, 2021:57). The automotive supply chain in South Africa includes suppliers of parts and components from Botswana and Lesotho (Wilhelm and Dolfsma, 2018:44).

In both the quantitative and qualitative data research of this study, the size of the target population is unknown. With a subjective approach like non-probability sampling, the probability of selecting population cases is unknown (Schindler, 2019:106). Bryman and Bell (2018:186) indicated that, with a non-probability form of sampling, the researcher does not seek to generalise to a population.

The sample sizes for both qualitative and quantitative research of this study are discussed in Section 4.8.4 below.

4.8.2 Sample Frame

The sample frame refers to the list or database from which a planned sample is drawn (Schindler, 2019:86). Schindler (2019:90) stated that it is a matter of judgment on the amount of inaccuracy the researcher is prepared to accept in choosing a sampling frame. It is however imperative that the researcher first find out which sample frames are available for drawing a full, accurate, and suitable sample from the population (Bryman and Bell, 2018:188). Thereafter, the researcher investigates the sample frame for any shortcomings and weak points. A reliable sample frame must meet the requirements as follows (Bryman and Bell, 2018:188):

- All elements, such as sex and age of the population, are represented.
- The sampling frame must be as up to date as possible.
- The details of each entry must be complete and correct.
- There must not be any duplication of entries in the sample frame.

- The sample frame must be accessible.

The sample frame for the empirical survey is made up of a list of the 34 role-players of the local automotive industries, as listed below. Local was described in the empirical survey as to have reference to both South Africa and Namibia. These were discussed in Chapter 1 in section 1.12.1 and are reviewed here as being:

- Seven (7) OEMs with assembly operations in South Africa;
- One (1) OEM with assembly operations in Namibia;
- An estimated number of four (4) associations in the automotive industry in South Africa and Namibia;
- Seven (7) major independent importers that import motor vehicles into South Africa and Namibia;
- Component manufacturers in Botswana (1) and Lesotho (2), supplying the value chain of the South African automotive manufacturing industry;
- An estimated number of four (4) component manufacturers in Namibia;
- Three (3) governmental and non-governmental stakeholders in Namibia; and
- Five (5) main automotive dealerships in Namibia.

Additional role-players were added to the sample frame of the qualitative research part of this study. Personal in-depth interviews were conducted with participants other than respondents in the empirical survey. Focus was placed on a broader spectrum of participants across all sectors of the automotive industry specifically located in Namibia. This was done on the foundation of expectations that thematic analysis of the qualitative open-ended components in the interview guide would complement descriptive statistics derived from the empirical survey.

The sample frame for the qualitative research part in this research is made up of representatives of the following role-players of the automotive industry in Namibia:

- Automotive dealerships
- Automotive industry research institutions
- Component manufacturers
- Logistics providers
- Automotive associations or councils
- Government departments

- Automotive industry engineering firms
- Automotive asset finance houses

Employment positions of these individuals are indicated in Table 4.9 below:

Table 4.9: Nature of the target population of the research

Economic Sector	Business Activities	Employment Position
Automotive dealerships	Franchised automotive dealerships consisting of vehicle and parts sales as well as aftersales services	Dealer principals and departmental managers
Auto industry research institutions	Stockbrokers and asset management firms	Economists and researchers
Component manufacturers	Business producing components used in the automotive manufacturing industry	Departmental and production managers
Logistics providers	Firms providing logistics and transport solutions	Departmental managers
Automotive associations and/or councils	Associations representing role-players in the automotive and manufacturing industry	Chairperson and executive directors of associations and councils
Auto industry engineering	Firms providing engineering services and support to the automotive industry	Owners and departmental managers
Automotive asset finance institutions	Commercial bank and registered financial services providers	Vehicle and asset finance managers
Government	Government institutions and departments with interest and bearing on the automotive industry	Executive directors of ministries, committee members, and policymakers
Original equipment manufacturers (OEMs)	Automotive manufacturing corporations with operations in South Africa and Namibia	Regional sales and network management managers

Source: Author generated

The planned sample size for the quantitative part of this study consisted of a total of 136 questionnaires, sent to 4 participants of each of the 34 role-players of the local automotive industries as listed above.

For the qualitative data analysis part of this study, the planned sample size consisted of 20 face-to-face in-depth interviews conducted with role-players representing various sectors of the economy linked to the automotive industry in Namibia.

The realised sample sizes are discussed in Section 4.8.4 below.

4.8.3 Sampling Method

A sample and sample units represent a subset of the population, whereas a census refers to the total number of individual participants in the population (Saunders, Lewis and Thornhill, 2019:292). Sampling was used in both the quantitative and qualitative research parts of this study. As the size of certain populations was too large or unknown, a sample within the entire population was selected.

With sampling, conclusions are drawn based on measurements of a fragment of the entire population. The manner of the process of sampling must be meaningful and justifiable (Schindler, 2019:93). Sampling consists of two main sampling types, namely probability and non-probability sampling (Bryman and Bell, 2018:168; Bacher et al., 2019:6). With probability sampling, techniques based on random sampling procedures are used. Non-probability sampling relies on the judgement of the researcher (Saunders, Lewis and Thornhill, 2019:249; Murtagh, Orlov and Mirkin, 2018:24). In Table 4.10 below, attributes and methods of these two sampling procedures are presented.

Table 4.10: Attributes and methods of main sampling methods

Probability Sampling	Non-Probability Sampling
Attributes	
Controlled random selection Every individual has an equal chance to be selected Findings can be generalised Sampling biases are eliminated	Arbitrary sample selection process Probability of individual being selected unknown Used if generalisation is not the goal Easier to conduct Less time and money are required Seen as the most feasible method
Methods	
Simple random sampling Systematic sampling Stratified sampling Cluster sampling Multistage sampling	Convenience sampling Purposive (judgement) sampling Quota sampling Snowball sampling

Source: Adapted from Schindler (2019:97)

In the qualitative and quantitative research parts of the study, non-probability sampling was employed (Wiid and Diggines, 2017:191; Bacher et al., 2019:6). With this type of sampling, the probability of selecting sample units or cases is unknown (Saunders, Lewis and Thornhill, 2019:249). However, non-probability sampling may be deliberately followed because they satisfactorily meet sampling objectives, as is the case where that is no desire to generalise a population parameter (Bacher et al., 2019:6). Purposive sampling, the sampling method used for this study, is discussed next.

4.8.3.1 Purposive sampling

Purposive sampling represents a non-probability sample that uses certain criteria to select cases (Schindler, 2019:107; Bacher et al., 2019:6). Judgment sampling and quota sampling are two major types of purposive sampling. Judgement sampling was used in this specific study where sample elements were chosen deliberately and subjectively to be representative of the target population (Saunders, Lewis and Thornhill, 2019:249; Murtagh, Orlov and Mirkin, 2018:24). The various criteria, such as best knowledge and experience of the research subject, was used in the selection process of this study (Murtagh, Orlov and Mirkin, 2018:24; Schindler, 2019:107).

4.8.4 Sample Size

The number of participants included in a study are referred to as the sample size. This is dependent on the following factors (De Vos et al., 2018:224):

- Budgeted expenditure for the research project;
- The overall size of the population;
- The level of precision required;
- The types of questions asked; and
- The type of method used to collect.

The sample size is dependent on the design and nature of the study as no set rules exist on the ideal size of a sample. The sample size of a quantitative study is founded on the following elements (Bryman and Bell, 2018:292):

- The sample size must increase in relation to a larger population size. The size of the sample levels off as the population increases beyond around 100 000 elements.
- The increase in the sample size reduces the margin of error.
- A larger sample is required for an increased level of precision.
- The costs connected with a larger sample size are balanced against the increase in precision obtained from large samples.

In the quantitative part of this study, information on respondents was gathered through emails, telephone calls, and personal approaches to invite them to participate in completing a questionnaire (Appendix D). The realised sample for the study was 35 respondents who fully completed the survey. The response rate was 26,1% of the initial planned sample. The actual realised sample size is discussed in broad detail in Section 4.9.1.

De Vos et al. (2018: 68) mentioned that no clear formula for assessing the required sample size in a qualitative study exists.

In the qualitative research part of this study, the researcher ensured that the sample elements selected shared the same characteristics from the research population regarding origin, legality, and other factors of the research population (Schindler,

2019:97). In this study, a total of 20 face-to-face in-depth interviews were conducted with role-players of the automotive industry in Namibia.

4.9 DATA COLLECTION IN QUANTITATIVE RESEARCH: THE QUESTIONNAIRE

The measuring instrument impacts the reliability or validity of the data (Bryman and Bell, 2018:272). For the quantitative research part of this study, the data-collection tool or measurement device, in the form of a questionnaire, was properly developed to guarantee that the required data from respondents were collected. Two key issues of this data-collection tool are the various measurement concepts and design of the questionnaire (Vithal and Jansen, 2019:21). Measurement concepts are covered in more detail in Chapters 5, 6, and 7. This section focuses on the empirical survey (questionnaire) as measuring instrument.

It was required from the design of the questionnaire that the questionnaire adhered to the following aspects, according to Wiid and Diggines (2017:164):

- Collect data relevant to the research problem;
- Ensure collected data are comparable;
- Minimise bias;
- Motivate respondents to participate in the survey;
- Encourage respondents to be accurate and honest in their answers; and
- Facilitate the interviewer and data-processing activities.

Appendix B to this thesis consists of the cover letter to the questionnaire, as is discussed in detail in Section 4.9.3 below.

Appendix C contains the survey questionnaire used in this study. The design of the questionnaire, the length of the questionnaire, the length of individual questions, the number of alternative responses, the use of different question wording, as well as wording format and answers format were carefully considered by the researcher. These were correlated to the following aspects:

- The research problem;
- Aim of the research;
- The nature of the population;

- Choices of data-collection methods; and
- Analysis of the data.

The questionnaire was constructed with support from specialised UNISA staff and representatives, including professionals from the Bureau of Market Research. The services of an independent statistician were also employed.

In section 4.11.1 on matching survey questions with primary and secondary objectives, the source of items and questions in the survey is discussed in detail.

Questions were not borrowed from existing empirical surveys as it proved difficult to generalise reliability and validity of selected questions that have been taken from their original context (Pavlínek, 2020:513).

The next subsections detail the elements of questionnaire design, such as the sequence and format of questions, questionnaire instructions, the physical features of the questionnaire, and the pre-testing of the questionnaire.

4.9.1 Realised Sample Size

It was indicated in Section 4.8.2 above that, in the quantitative part of this study, a total of 136 questionnaires were sent to 4 participants of each of the 34 role-players of the local automotive industries. In Section 4.8.4, it was indicated that the response rate was 26,1% of the initial planned sample with a realised sample of 35 respondents who fully completed the survey. In this study, a non-probability sample that uses certain criteria to select cases was used as in purposive judgment sampling (Schindler, 2019:107). The population group comprised of experts who were individuals with exceptional knowledge about the issues to be discussed, which in this study was growth strategies to grow the automotive industry in Namibia.

It was emphasised by Schindler (2019:97) that, despite all due care, the actual sample may not match the sample that is originally planned. Some research has shown that participants are research wary (Schindler, 2019:109). Difficulties were experienced in this study to gain compliance and cooperation. Participants had to be encouraged and convinced of the importance of their time and expertise for them to share ideas and experiences. An inducement can take the form of procedures in place to keep in touch with participants and to promise to share results on completion of the research project.

4.9.2 Question Sequence and Format

After deciding which questions to include in the questionnaire and how to phrase them, the next step involves planning the sequence and format of questions. The following guidelines were implemented in this study's empirical survey (Nardi, 2018:104; Pavlínek, 2020:513) to plan the sequence of questions (Bryman and Bell, 2018:204):

- Questions were arranged logically and classified according to topics.
- Introductory statements between topics informed respondents what the next set of questions involves.

The various formats of questions were considered. Structured questions are also called closed-ended or fixed alternative questions. The unstructured question format consisted of open-ended questions. A combination of the two formats was used in semi-structured questions. The following different types of structured questions were included in this study (Wiid and Diggines, 2017:170):

- **Multiple-choice questions,** or multichotomous questions, are used to collect data that can logically be divided into fixed categories. Respondents choose alternatives based on the order of the alternative responses listed. The questionnaire contained some multiple-choice questions.

- With **scaled questions**, the respondent is asked to answer questions by marking a certain point on a scale, measured on an attitude continuum. These were included in the questionnaire of this study. The various types of scales, as the foundation of scaled questions, are discussed below. Self-developed Likert-type scaled questions were used. Likert scales are the most widely used scales in research (Bryman and Bell 2018:196; Schindler, 2019:258). The respondent indicates on a five-point scale to what extent he or she agrees or disagrees with a specific statement.

This concludes this section on the format of questions in the empirical survey. Instructions in the survey to complete questions are discussed next.

4.9.3 Questionnaire Instructions

The cover letter in Appendix B contains clear instructions regarding how respondents were to indicate their replies. It is important that online questionnaires contain clear instructions on how to complete the self-administrated questionnaire (De Vos et al., 2018:196). Respondents may refuse to answer questions when questions are misunderstood or when they find questions to be unreasonable, confusing, ambiguous, or leading and biased.

Instructions and explanations of questions, where applicable, were an essential section of the questionnaire used in this study.

4.9.4 Physical Characteristics of the Questionnaire

An effective questionnaire format includes a reasonable and realistic number of items or questions to obtain the required information, enough spacing between items, and a consistent physical layout. Main considerations regarding the physical layout of the questionnaire used in this study (Wiid and Diggines, 2017:173) included the following:

- **Costs and time** of technical presentation and printing to produce the questionnaire was kept as low as possible.
- The questionnaire design and layout were designed to be as **attractive and convenient** as possible to facilitate the efficient completion of the questionnaire by respondents.
- For this study, the questionnaire in Annexure C provided **ample space** for comfortable reading and responses. All the questions were pre-coded. The different parts and sections of the questionnaire allowed structure and ease of completion while simplifying the eventual analysis of the information.

4.9.5 Pre-Testing of the Questionnaire

It is essential for a draft questionnaire to be tested and refined to ensure there are no ambiguities or uncertainties related to the questionnaire (Schindler, 2019:299). This is done by conducting a pilot study before administrating a self-completion questionnaire or a structured interview. The questionnaire for this study was tested on a sample of three persons who represented the investigation group. The group involved individuals

with exceptional knowledge about strategies to grow the automotive industry in Namibia. The participants in the pilot testing process were not respondents in the final stages of data collection with completion of the empirical survey on account that preparation of the participant prior to the research experience would inject unacceptable bias and reduce the value of the data (Schindler, 2019:127).

Recommendations of De Vos et al. (2018:195) were followed where members of the investigation group completed the questionnaire in full, while looking for errors. Errors could have been overseen by just reading through it. Questions may seem to make sense on first reading but prove impossible to answer.

Space was left on the questionnaire for comments and evaluation of the questionnaire by the members of the investigation group. In this way the researcher attained a general impression of the viability of the questionnaire and the feasibility of the data from the investigation group that was obtained (Schindler, 2019:299).

Questionnaires were completed by the investigation group and recommendations for changes sent to the researcher. In turn, the researcher conducted face-to-face in-depth interviews with members of the investigation group to assess and analyse proposed changes and complications experienced with completion of the questionnaires.

Changes that were made included clarification of ambiguous questions which could lead to non-comparable responses (Bryman and Bell, 2018:209). Modifications were also made to avoid questions that could lead to biased responses. Vague questions indicated by members of the investigation group were adjusted and modified as to avoid vague answers.

The investigation group were not incorporated in the larger realised sample group for the empirical survey (Nardi, 2018:104). In quantitative research, preparation of the participant prior to the research experience would inject unacceptable bias and reduce the value of the data (Schindler, 2019:127).

Additional extensive pre-testing of the questionnaire was not required as the questionnaire was drafted in accordance with inputs from experienced and professional staff of UNISA's Department of Business Management and the independent statistician. Staff of the Department of Business Management of UNISA

consisted of the study leaders of this study, being a professor of business management as well as a UNISA doctoral graduate in business management who is an executive director of NAAMSA. In addition, the independent statistician for the quantitative data analysis part as well as a qualitative methods expert for the qualitative data analysis part are both doctoral graduates with extensive practical, academic, and lecturing experience.

Pre-testing of the questionnaire that was done enabled the researcher to determine the following (Bryman and Bell, 2018:209):

- The **time** respondents will take to complete the questionnaire;
- Any issues regarding **completion** of the questionnaire;
- **Clarity and ability** of respondents to understand the instructions;
- Respondents' **capability** to follow the format of the questionnaire; and
- Natural and conversational flow of the questionnaire.

Feedback and critique on the questionnaire were positive in all aspects. Changes were incorporated in the finally approved questionnaire, before being administrated on respondents.

4.10 DATA COLLECTION IN QUALITATIVE DATA RESEARCH: THE PERSONAL INTERVIEW

For the qualitative part of this study, the communication content was that of collected data from face-to-face in-depth interviews with individual respondents. Vithal and Jansen (2019:21) proposed that the researcher prepare a data-collection plan for qualitative research that provides in-depth details on the strategy to be followed to obtain the qualitative data for the specific study. The data collection plan is illustrated in Table 4.11 below and discussed in greater detail in this section.

Table 4.11: The data collection plan – qualitative data research

Questions for Developing a Data-Collection Plan	The Data-Collection Plan
1. WHY were the data collected?	The primary objective of the research is to ascertain how to grow the automotive industry in Namibia.
2. WHAT was the research strategy	Mixed methods (of which interviews formed the qualitative component).
3. WHERE were the data collected?	Qualitative: Face-to-face in-depth interviews at participants' workplaces.
4. WHAT were the sources of data?	User-generated content (opinions, sentiments, and viewpoints) related to factors of growth of the Namibian automotive industry.
5. HOW were the data collected?	Questions of the interview guide were discussed with participants, responses were captured in Microsoft Word and PDF and imported to ATLAS.ti for thematic data analysis.
6. HOW were the data analysed?	Thematic analysis.
7. HOW OFTEN were the data collected?	Data were collected in face-to-face in-depth interviews stretched out over a period of one month.
8. HOW MANY of the data sources were accessed?	A total of 20 face-to-face in-depth interviews were conducted.
9. JUSTIFY why this was the best way for collecting the data.	The use of face-to-face in-depth interviews fitted the researcher's theoretical position that people's views, knowledge, experiences, and interpretations are valuable insights into the social reality that this research wanted to explore.

Source: Adapted from Vithal and Jansen (2019:21)

4.10.1 Why Were the Data Collected?

Data are collected in consideration of the primary and secondary research questions and objectives as well as to resolve the research problem identified as part of the research process.

4.10.2 What Was the Research Strategy?

The search for themes is evident in most qualitative data analysis methods. Thematic data analysis as 1 research strategy in this specific study had the goal to identify, analyse, and describe patterns or themes across that dataset (Bryman and Bell,

2018:350). Often, thematic analysis extends to interpreting features of the research topic. This is discussed in Section 4.12 below.

4.10.3 Where Were the Data Collected?

The communication process in the qualitative thematic data analysis process for this study involved the use of face-to-face in-depth interviews. Interviews were conducted at a venue preferred by the participant, mostly workplaces of participants.

4.10.4 What Were the Sources of Data?

Sources of data consisted of user-generated content (opinions, sentiments, and viewpoints) related to factors of growth of the Namibian automotive industry collected in the face-to-face in-depth interviews. These perspectives of participants were in the form of text, which strengthens the use of the qualitative thematic analysis strategy of this study. The sources of data can further be demarcated to perceptions of participants specifically addressed to questions in the interview guide.

4.10.5 How Were the Data Collected?

Several information exchanges took place between the researcher and participants before the actual face-to-face in-depth interviews. These exchanges are summarised as follows (De Vos et al., 2018:343):

- Telephonic conversations were conducted to convey information about the researcher and the research itself. They were also used to enquire about willingness and availability of potential participants.
- In the event the participant agreed to participate, an e-mail message was sent with more information and a request for an appointment.
- Thereafter, a participant information sheet providing full details of the research was sent to individuals in accordance with requirements for the UNISA ethical application process. This information sheet provided full details on the research, such as the nature of the research, the participant's involvement, and some research ethics information.

The communication before the actual face-to-face in-depth interviews was done to confirm to participants that the researcher intended to learn from participants and therefore sharing their experiences would be extremely valuable. Eventually, when the researcher met with a participant for the first formal interview, more exchanges of information between participants and the researcher eliminated potential uneasiness that could occur between individuals in such a setting (De Vos et al., 2018:345).

The face-to-face in-depth interviews were recorded and transcribed afterwards to provide the researcher with the rich detail for which the methodology was used. Participants were also questioned after completion of interviews, to get their attitudes, insights, and personal reactions to the quality of the face-to-face in-depth interviews (Schindler, 2019:137). These insights were valuable in assessment and interpretation of data collected from participants.

4.10.6 How Were the Data Analysed?

The data analysis method employed in this specific study was inductive thematic data analysis (Schindler, 2019:327) (see Section 4.12).

4.10.7 How Often Were Data Collected?

Bryman and Bell (2018:187) professed that the amount of content and time associated with collecting the content for qualitative research is usually difficult to define. It is stated that, in grounded theory (Teece, 2019:17; Trigeorgis and Reuer, 2017:49) and qualitative research, it is the norm that one carries on collecting data until you achieve theoretical saturation. Saturation has been described to occur when successive interviews have formed the basis for creation of codes and categories (Saldaña, 2016:15). Once the importance of both have been confirmed, there is no need to continue with data collection (Vithal and Jansen, 2019:21) but to move on to coding and theming. Interviews for this specific study were concluded in a timespan of one month.

4.10.8 How Many of the Data Sources Were Accessed?

A total number of 20 user-generated content were collected and analysed. The user-generated content can further be delineated to opinions, views, and insights of participants who are role-players in the automotive industry of Namibia.

4.10.9 Justify Why This Was the Best Way for Collecting the Data

It is stated that the use of face-to-face in-depth interviews fitted the researcher's theoretical position that people's views, knowledge, experiences, and interpretations are valuable insights into the social reality that this research wanted to explore.

Bryman and Bell (2018:223) describes the process as a data-generating process as the qualitative researcher can never be a completely neutral collector of data in such an intimate setting. However, people (in this instance, the role-players of the automotive industry in Namibia) were considered the most appropriate data source for the objectives of this research.

The decision to have face-to-face in-depth interviews instead of telephonic or video interviews was motivated by the openness created between the researcher and the participant when facing a participant (Schindler, 2019:134). The researcher also selected to do the interviews personally. It was believed that another format such as a mediated, telephonic, or electronic interview would be deficient in the personal context, the depth, and the non-verbal cues associated with personal interaction during interviews.

Participants for the face-to-face in-depth interviews were chosen on the basis that participants' experiences and attitudes reflected the full scope of the issue under study (Schindler, 2019:137). It was required that participants be verbally articulate to provide the researcher with richness of desired detail (Bryman and Bell, 2018:217).

The data analysis methodology, as followed in the quantitative data analysis part of this study, is described in Section 4.11. Qualitative data analysis, taking the form of thematic data analysis, is discussed in Section 4.12.

4.11 DATA ANALYSIS METHODOLOGY: QUANTITATIVE DATA ANALYSIS

The quantitative data research approach in this study contained an empirical survey with questionnaires sent to respondents involved in the automotive industry in Namibia and South Africa. The empirical survey instrument was discussed in Section 4.9 above.

4.11.1 Matching Survey Questions to Primary and Secondary Research Objectives

Specific questions in the survey, as well as questions on demographic details of automotive stakeholders in Namibia, addressed the research problem. All questions were matched against the primary and secondary objectives to formulate the hypotheses that needed to be tested in this study.

4.11.2 Data Analysis Tools

The purpose of data analysis is to enable the researcher to draw conclusions and interpret the collected data. The Statistical Package for Social Sciences (the IBM® SPSS® software platform offering advanced statistical analysis) (SPSS) and Excel were used for the statistical analyses and tabulation of the collected data (Bryman and Bell, 2018:312).

4.11.3 Criterion of Quantitative Data Analysis

In a discussion of the data analysis methodology, it is imperative to note the following as part of the sampling process as described in step 3 under Section 4.3.1 above.

A non-probability purposive sampling technique was used in this study where knowledgeable experts of the automotive industry formed part of the population of the sample. This technique is, however, inherently biased. The data were subsequently not interpreted and analysed beyond the sampled population.

For the sampled population of this study, less strict non-parametric techniques were used. Non-parametric tests and techniques are used on ordinal and nominal data or when the dataset is small, or both.

Hypothesis testing was used in this study to test research objectives. A hypothesis is an unproven statement or proposition about a factor or a phenomenon of interest to the researcher (De Vos et al., 2018:34; Picciano, 2017:166). A null hypothesis is indicated by **H_0** and represents the status quo. It is tested against some alternative hypothesis (**H_a**). **H_a** indicates the direction of change, if **H_0** is rejected. Hypotheses were portrayed in Section 1.8 of the introductory chapter.

The main techniques used in the testing of hypotheses and the analysis of the findings of the empirical survey consist of inferential statistical tests such as the Pearson's Chi-Square Test for Independence, Fisher's Exact Tests, Cramér's V Tests for statistically significant association, Mann-Whitney, and the Kruskal-Wallis one-way analysis of variance by ranks test for identification of trends (Wiid and Diggines, 2017:278). These are discussed in Section 4.11.4.3 below. The application of the techniques is highlighted in Chapter 6 on inferential data analysis.

4.11.4 Data Analysis and Interpretation

Inferential statistics and descriptive statistics are the two major categories of statistical procedures (Schindler, 2019:359), as are discussed next.

4.11.5 Descriptive Statistical Analysis

Descriptive statistics refer to the display of characteristics regarding the location, range, and profile of a collection of data (De Vos et al., 2018:251; Vithal and Jansen, 2019:21). In essence, descriptive analysis refers to the basic transformation of research data, which describes the essential characteristics such as the central tendency, distribution, and variability (De Vos et al., 2018:251). Descriptive statistics can be defined as statistics that are usually associated with a frequency distribution and assist with the summary of the information presented in a frequency table. These types of statistics offer accurate, simple, and meaningful figures by summarising information from a large set of data.

Schindler (2019:353) explains that the mean, median, and mode are measures that are used to describe the location of a distribution (central tendency) of a continuous variable. Variance, range, and standard deviation are measures which are used to describe the spread of a distribution (dispersion) of a continuous variable. According

to Schindler (2019:353), the most used descriptive statistics are means and percentages. In certain situations, it is necessary to use a single number to explain the responses to a question. In these situations, the sample mean or percentages from frequency tables are generally used. The mean value rating, which represents the value obtained as the sum of all the values in a set divided by the number of elements, was used in this study.

4.11.6 Frequency Tables for Ordinal and Nominal Data

Frequency tables are a tool which can be used to report the percentage of respondents who selected an option (Schindler, 2019:333). A percentage from a frequency table can be explained as the proportion of the total number of respondents who have chosen a specific option in a question, multiplied by 100. Frequency tables show the different response categories of the variable, as well as the number (frequency) of respondents for every category in the variable (De Vos et al., 2018:255).

4.11.7 Inferential Statistical Tests

When using inferential statistics, the researcher can perform statistical tests which will determine if responses from the sample can be used to draw conclusions in relation to the entire population. Schindler (2019:359) described inferential statistics as statistics that are used to project characteristics from a sample to an entire population. Testing statistical hypothesis is the foundation of inferential statistics (Schindler, 2019:359).

Inferential statistics and testing of hypothesis were important for this study as the researcher evaluated accuracy of the hypotheses by determining the statistical likelihood that the sample data revealed true differences and not random sampling error (De Vos et al., 2018:510).

It must be emphasised that this study used several inferential statistical tests to test the hypotheses, namely the Kruskal-Wallis Test, the Pearson’s Chi-Square Test, the Mann-Whitney U Test, the Fisher's Exact Test, and Cramér’s V as measure of association. Each one of these tests is explained below.

Kruskal-Wallis Test: The Kruskal-Wallis Test is a one-way analysis of variance by ranks. Data are prepared by means of converting ratings and scores to ranks for each

one of the observations that is being evaluated. This test is a non-parametric test and is used to compare the distribution of three or more independent samples (Schindler, 2019:545).

Pearson's Chi-Square Test: This test is useful for the testing of nominal data (Bryman and Bell, 2018:322). It must be calculated according to actual counts rather than percentages (Schindler, 2019:387). The Pearson's Chi-Square Test for Independence is used to determine whether two categorical variables, which can be nominal or ordinal variables, are related or not (Wiid and Diggines, 2017:277) and is based on a cross-tabulation of the variables. Cross-tabulations describes two or more variables simultaneously. The result is tables reflecting a joint distribution of two or more variables that have a limited number of categories. Wiid and Diggines (2017:260) defined a cross-tabulation as the analytical tool that examines the responses to one question relative to the responses to one or more other questions. Furthermore, a cross-tabulation is a method which can be used to address research questions that include the relationship between two nominal or ordinal variables.

Cramér's V: Cramér's V can be employed with nominal variables (Bryman and Bell**,** 2018:324). This statistic takes on a positive value between 0 and 1 so that it can give an indication of the strength of the association between two variables. In the case of a 2x2 table, Cramér's V can be negative as it equals the Pearson correlation coefficient. Cramér's V is normally not reported on its own; it is usually accompanied by a contingency table and a Pearson's Chi-Square Test (see above).

Mann-Whitney U Test: The Kruskal-Wallis one-way analysis of variance by ranks is an extension of the Mann-Whitney U Test to three or more groups (Schindler, 2019:556). This is a non-parametric test that can be used to test two independent groups that are required to be compared for differences regarding a single variable. The Mann-Whitney U Test is useful to apply when the samples of the populations are small. This test uses the ranks of a study variable rather than the actual values; therefore, the extreme values have minimum influence on the outcome (Wiid and Diggines, 2017:287).

Fisher's Exact Test: The Fisher's Exact Test is classically used as an alternative to the Pearson's Chi-Square Test of Independence (Schindler, 2019:419). This test is used when more than 20% of the cells have an expected frequency count of less than

5 in a 2x2 table (Statology, 2020). In these cases, the p value associated with the Pearson's Chi-Square Test for Independence is considered too liberal. The Fisher Test is "exact" because no large-sample approximations are used, and it provides an exact p value that is valid regardless of the sample size. If the contingency tables are not 2x2, the Fisher Freeman Halton (FFH) Test is used. The FFH Test is an extension of Fisher's Exact Test for any r x c contingency table.

The test is employed to establish whether there is a statistically significant association between two categorical variables. The Fisher's Exact Test uses a null and alternative hypothesis as follows:

H_0: (null hypothesis) - The two variables are independent.

H_a: (alternative hypothesis) - The two variables are not independent.

Significance and p values: Significance levels and p values were applicable and used in this study, as discussed in Chapter 6 on inferential data analysis. A significance level is a statement of probability (Bacher et al., 2019:6), which is associated with a statistical hypothesis test. The p value is calculated to indicate the probability that the difference is due to chance and is known as the probability of a Type 1 Error. For most applications, the chosen significance level is 0.05. However, in certain situations the acceptable amount of Type 1 Error is specified at 0.1 or 0.01. A Type 1 Error means *rejecting the null hypothesis when it is true*. In the situation where the p value is less than the pre-specified level, then a hypothesis about differences/relationships is supported. A statistical test's significance level is the key indicator of whether a hypothesis can be supported (Schindler, 2019:368).

This concludes the overview on methodology of quantitative data analysis. Descriptive statistics (Chapter 5) as well as inferential statistics (Chapter 6) were employed in this study.

In the following section, thematic data analysis and interpretation are discussed.

4.12 DATA ANALYSIS METHODOLOGY: QUALITATIVE DATA (THEMATIC DATA ANALYSIS AND INTERPRETATION)

It is stated that the purpose of qualitative data analysis is to make sense of rich text with the building of patterns, themes, and categories from within the data into more abstract units of information as to draw certain conclusions in the data analysis (Creswell and Creswell, 2018:374).

4.12.1 Thematic Analysis

Thematic analysis is suited to investigate meaning in context (Schindler, 2019:327). In thematic analysis, a theme is not necessarily more important and consequential when it is more prevalent in the dataset. In addition, determining the theme and the prominence of the theme relating to the capturing of important meaning with reference to the research question is the essence.

4.12.2 The Process in Thematic Analysis

To conduct thematic analysis, an inductive or deductive method can be used (Bryman and Bell, 2018:351). With an inductive approach, the researcher develops a bottom-up method directly from the data without trying to fit them into a pre-conceptualised theoretical frame. The researcher's theoretical framework informs deductive or theoretical thematic analysis in a top-down method (Schlager, 2017:293). In deductive thematic analysis the researcher's analysis is guided by themes identified in previous research on the same topic.

In this study, a primarily inductive thematic analysis approach was followed. The researcher developed themes in a bottom-up method directly from the data and did not use themes identified in similar studies, nor did the researcher fit codes into pre-determined theoretical themes. However, the researcher had some background to central concepts in this field and this created some deductive thinking.

According to Creswell and Creswell (2018:374), the qualitative data analysis process follows a series of steps, as indicated in Figure 4.1 below and elaborated upon in the next sections.

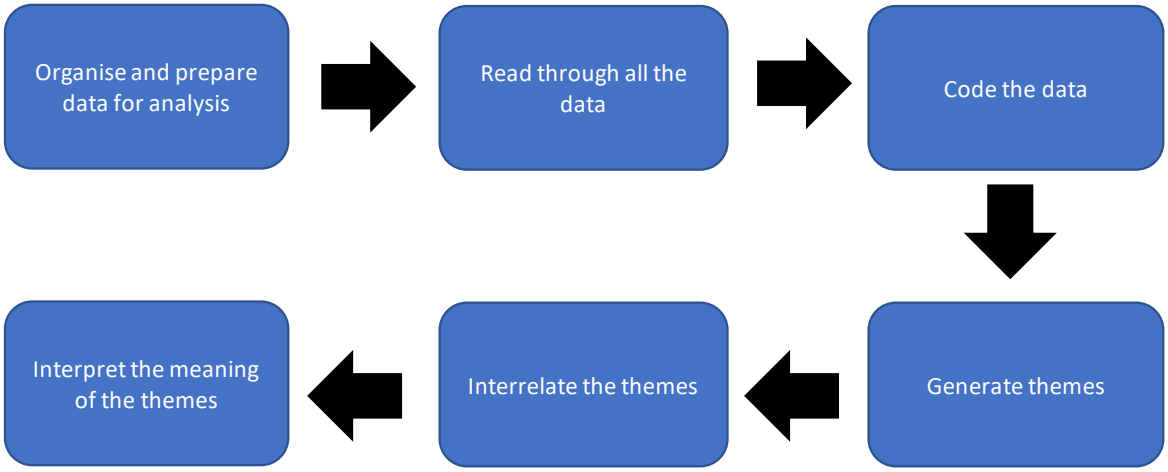

Figure 4.1: Qualitative data analysis process
Source: Adapted from Creswell and Creswell (2018:374)

Step 1: Organise and prepare data for analysis

This step involves finding the data and preparing the data in such a way that the analysis thereof is possible (Creswell and Creswell, 2018:374). Personal interviews were electronically recorded and transcribed afterwards. The researcher also kept and wrote general rough notes and thoughts about the data during this step. Initially, data were collected and recorded in Microsoft Word. A Word document was saved for each of the participants. After all the data were recorded on separate documents, and saved under a specific data set, the researcher ensured confidentiality and anonymity of the process with assurance that names of institutions and other information could not be identified in the content.

Next, the researcher had to ensure the upload of each data set to ATLAS.ti™22 to facilitate the qualitative data analysis process. ATLAS.ti is software that facilitates the analysis of written texts. This software assists to compare and extract meaningful segments of substantial amounts of data in a systematic but flexible way (Atlasti.com, 2022). This was done by the employment of an external statistician and expert on the software ATLAS.ti. The report of the independent codes is attached as Appendix G.

The data reached a suitable format to be able to do the analysis once each data set was created and uploaded onto ATLAS.ti.

Step 2: Read through all the data

In the second step of the process, the researcher had to read through all the data. Before analysis of the data, the researcher became familiar with all the data. In that way, an overall picture of the data and a general sense of the information was gained.

While reading the data, the researcher observed several significant aspects of the data. The researcher created a reflection journal to note general observations in the process of reading through the data. The reflection journal was kept up to date as several of the observations made could not be analysed by looking at the interview comments in isolation. These notes were instrumental as a point of departure in the process of coding the data.

Step 3: Code the data

The next step in the qualitative data analysis process consists of the coding of the data. Coding can be described as the organising of data in a meaningful and systematic way (Bryman and Bell, 2018:339). This is done by reducing the rich text of data into meaningful units. These codes can be used to generate themes and categories to be used in later analysis. It is argued that coding is an exploratory problem-solving technique (Saldaña, 2016).

Coding of data follows an inductive or deductive approach (Bryman and Bell, 2018:351). Although previous research had been done on automotive industries in other countries, no such studies had been conducted specifically within the Namibian automotive industry. For this reason, the inductive research reasoning and coding process was followed in the qualitative approach.

In addition, two specific approaches, the manifest approach and the latent approach, can be followed with the coding of the data (Bryman and Bell, 2018:299). In the manifest approach, coding focuses on describing what was directly observable from the data and keeps close to the original words and texts from the data. In contrast, in the latent approach, focus is placed on the interpretive level where underlying meanings of the texts are determined. In this study, a manifest approach of coding was followed. The research aimed to report, as closely as possible, to the original content of opinions, comments, and insights of participants raised in face-to-face in-depth interviews.

It was indicated by Saldaña (2016) that coding for qualitative data includes a two-cycle coding process. The generic coding methods employed in the first and second cycle are depicted in Table 4.12 below.

Table 4.12: First and second cycle coding

First-Cycle Coding Methods	Method Description
1. Attribute coding	Initial descriptive notetaking of the data without deeper meaning of the data. Mostly used with multiple participants and a wide variety of data forms.
2. Structural coding	Also called utilitarian coding. Initial codes categorised to determine relationship between categories. Suitable for interview transcripts and open-ended survey responses.
3. Descriptive coding	Data summarised into a word or a phrase with basic description or topic of the data. Appropriate for researchers starting with qualitative research to learn how to code. Useful for document analysis, journals, and field notes.
4. In-vivo coding	Also called literal or inductive coding. Codes refer to actual words or phrases found in the data content. Appropriate for researchers starting with qualitative research to learn how to code. Allows to keep true to the original text. closely related to the manifest approach above.
Second-Cycle Coding Methods	**Method Description**
1. Eclectic coding	Used to refine the codes generated during first-cycle coding.
2. Pattern coding	Using code generated in first-cycle coding. Create patterns, categories, or themes.

Source: Adapted from Saldaña (2016)

It was highlighted by Creswell and Creswell (2018:374) that the codes developed from the data generally fall within three categories. This is illustrated in Table 4.13 below.

Table 4.13: Categories of developed codes

Categories of Codes Developed	Description
1. Expected codes	Codes the researcher expected to find within the data, based on previous literature.
2. Surprising codes	Codes not anticipated by the researcher before the study took place.
3. Codes of unusual or conceptual interest	Codes not usual to be found within the data. Ultimately forms an important code of interest for the study.

Source: Adapted from Cresswell and Creswell (2018:374) and Saldaña (2016:15)

It can be deduced from the information provided in the tables above that the qualitative part of this study followed a combination of descriptive coding, in-vivo coding, eclectic coding, and pattern coding.

Descriptive coding was used as the initial first-cycle data coding method. During this process, each one of the transcripts of the face-to-face in-depth interviews was coded by summarising the content into a phrase that presented the major topic of each data unit (descriptive coding) (Saldaña, 2016:15). For example, the fourth question in the interview guide (Annexure F) which probed "*factors to increase Namibia's partaking in the automotive supply chain in South Africa*" was coded into phrases such as "*import bureaucracy and related negative factors affect industry success*", "*African poor track record contextual factors negatively affect political economy*", and "*FDI important stimulus-various factors*".

In-vivo coding was also employed in the first-cycle coding based on the inductive and manifest approach to coding. Specific words or phrases used within the data were taken as specific codes. Examples are "*unionised*", "*infrastructure*", and "*dumping*".

On completion of the first-cycle coding methods, the researcher was left with a list of more than 137 codes across the seven data sets. For purposes of code refinement, a second cycle of coding was initiated to retain meaning but reduce the voluminous 137. Qualitatively, a benchmark of about 50 refined codes is advised (Saldaña, 2016:14). In the second cycle of coding, eclectic coding was applied, as depicted in Table 4.12 above. This was done to revisit the existing lists of codes to do refinement and ensure the initial coding process was done correctly. In addition, pattern coding was employed to cluster the codes together (Saldaña, 2016:15). This was done to create meaningful units to be represented within certain themes and categories. After the second-cycle coding process, the list of codes was reduced to approximately 56 codes.

It must be noted that various expected codes were identified. A few surprising codes also emerged from the data. These are discussed in more detail in Chapter 5.

It must be highlighted that researchers are increasingly expected to consider computer-assisted qualitative data analysis software (De Vos et al., 2018:401). Coding can be done manually or with the use of a computer program or computer-aided text analysis. For the qualitative data analysis part of this study, the researcher used

manual and computer-aided coding. Manual coding was applicable with codes generated from the text as interpreted by the researcher (Saldaña, 2016:15). Computer-aided coding was used with the assistance of the computer software ATLAS.ti. The aim was to search for various words and phrases within the data sets, in a process of triangulation as discussed in Section 1.12.5 (Bryman and Bell, 2018: 44). ATLAS.ti was used to classify the data according to broad themes and categories.

Step 4: Generate themes

In this phase, the researcher generated initial themes and content categories. De Vos et al. (2018:410) described category formation as the heart of qualitative data analysis. Categories are formed when similar codes are merged to get a broader sense of the data (Saldaña, 2016:15). It should be added that a category is descriptive and explicit (De Vos et al., 2018:410) and is used in the final development of the themes. Categories are also described as sub-themes (Bryman and Bell, 2018:351).

In the next step, the grouping of categories needs clarification, suggesting conceptualisation of a group of categories on a higher level of abstraction (Bryman and Bell, 2018:415). Naming, comparing, and writing memos were used to develop a group of categories and their potential relationships. Through this process, themes were identified and conceptualised, which the researcher believed provided a presentation of factors for growth of the automotive industry in Namibia (Demir, Wennberg and McKelvie, 2017:3; Riasanow, Galic and Böhm, 2017:3192).

During the step of theming, the researcher created a set of categories based on the codes generated in the previous step (Saldaña, 2016:15). This was done by scrutinising categories to develop an initial set of themes. Themes were created by converging similarities amongst the different codes and categories. Some codes were grouped to more than one theme when they had significant impact in other themes as well.

Themes identified during this stage included, for example, "*some government stimulus for economy not sufficient*", "*lack of investments due to various factors*", and "*harness regional comparative and competitive benefits*".

These themes, however, consisted of first-draft themes. Themes were refined during step 5, as discussed next.

Step 5: Interrelate the themes

After themes were created, revision, refinement, and finalisation were required. Themes needed finalisation to provide structure to the manner they are delivered in the research. Saldaña (2016:15) argued that a theme is the outcome of coding, categorisation, or analytic reflection.

In step 5, to interrelate themes, the researcher ensured that the themes created, as well as the codes grouped to specific themes, were suitable (Saldaña, 2016:15). To this effect, codes were interchanged to ensure themes and corresponding codes represented cohesive units.

Where codes appeared in more than one theme, codes were reconceptualised to apply to one central theme. In other instances, themes were rephrased to be more descriptive and specific with clear meaning. With themes finalised, the researcher continued to develop the structure for the research report.

The themes form the headings of the report in Chapter 5 on descriptive data analysis.

Step 6: Interpret the meaning of the themes

To conclude the analysis process, the researcher interpreted the meaning of the themes and reported on the findings. The goal was to provide the reader with a rich in-depth narration on the meaning of the data.

Reliability, validity, and trustworthiness of the data to increase the strength of the methodology employed in this study is discussed in the next section.

4.13 RELIABILITY AND VALIDITY OF THE RESEARCH

Schindler (2019:182) described that a study is valid when it measures what it should measure. A reliable study means that, if the study is repeated, the same results will be obtained.

The researcher of this study acknowledged that quality of the research depends on reliability and validity, as defined below (Bryman and Bell, 2018:208).

- The consistency of the measurement instrument indicates **reliability,** where the same result is produced again a second time and numerous times thereafter.

- **Validity** determines whether the measurement instrument measures what it is required to measure and performs according to designed standards. Validity can be described as the extent to which the scale scores on the measurement instrument reflect actual differences among the characteristics measured.

Validation and reliability in this study are described in more detail next.

4.13.1 Reliability

With quantitative data analysis, reliability is concerned with estimating the degree to which a measurement is free of random error. The distinction of time and condition is often the basis for determining reliability (Schindler, 2019:36,181). Three reliability estimates exist.

- Stability is tested by using the test-retest method, which involves re-administering the same test to the same participants at different periods in time
- Internal consistency measures the homogeneity of the instrument. Each indicator of a concept relates to, and tests, the same concept. The split-half method, Cronbach's alpha, or the coefficient alpha are all methods that can be used to measure internal consistency, as discussed hereunder in more detail.
- Equivalence (test-retest) relates to the degree to which alternative forms of the same measure produce the same or similar results. These tests, in the form of parallel forms, can be administered simultaneously or after a period of delay.

In quantitative data analysis, the Cronbach's alpha coefficient is the most widely used measure for internal consistency and is based on the inter-item correlations (De Vos et al., 2018:177). Although Cronbach's alpha coefficient requires a sample size of at least 200 to be considered an unbiased estimator of internal consistency, Cronbach's alpha coefficients were calculated for Question 6 to Question 14 in the empirical survey to obtain an indication of the extent to which the items correlate with each other. The other two types of reliability measurement were not feasible to conduct, given the cross-sectional nature of the study.

Reliability in the qualitative data analysis was discussed in detail in Section 1.12.5 in the introductory chapter. It consists of external reliability that describes the degree to which a study can be reproduced. It was stated that, although difficult, researchers

who repeat similar qualitative studies should adopt a similar social role as the original researcher. Internal reliability consists of the agreement or disagreement of the collection of data (Vithal and Jansen, 2019:21) when more than one observer is involved.

4.13.2 Validation

The different types of validity are face validity, content validity, criterion validity, construct validity, convergent validity, and discriminant validity (Bryman and Bell, 2018:38). The relevant validity measures are discussed below. Reference is made to the quantitative data analysis part of this study first.

- A scale is said to have face validity when an inspection of the test items proves to experts that the items match the definition.
- Content validity refers to the degree to which the items in the questionnaire should capture the entire scope about the concept that is being measured. The items in the questionnaire should not go beyond the study. Content validity was relevant to this study as the items in the questionnaire described the entire scope about the concept that was being measured. The questionnaire was validated by experts in the field, as elaborated upon in Section 4.9.5 above.
- Construct validity is present when a measure reliably measures and truthfully represents a unique concept. Construct validity was applicable to Question 6 to Question 14 and was confirmed using PCA.

For this study, as discussed in Section 1.12.5, validation is covered twice in the qualitative data analysis process: external validity and internal validity. External validity defines the degree to which the findings of the study can be generalised across other research. Internal validity is defined as the strength of qualitative research. Internal validity refers to the match between the researcher's observations and the theoretical ideas that are developed.

4.13.3 Central Editing

Validation of gathered data is the process of ensuring that data are valid and accurate (De Vos et al., 2018:186). In the quantitative data analysis part of this study,

questionnaires were edited and examined to determine if they could be included in the survey analysis or needed to be discarded. Accordingly, the 35 responses in the empirical survey were checked for errors and/or missing values. Only one missing value associated with question 6.4 (a Likert scale type response format question) was found. This value was replaced with the mean value of the other 34 responses for this question. The completeness and reliability of collected questionnaire data can be ensured when completed questionnaires are carefully edited.

Two stages were included in the process of control and adjustment of questionnaires in this study. These consisted of a field-editing step where preliminary editing of the gathered data was done by the researcher. The central editing of completed questionnaires and questionnaire data for this study was done by a qualified and experienced statistician.

4.13.4 Coding

Coding of qualitative data in a thematic data analysis process was covered in Section 4.12.2 above. Coding is an important tool to validate data for the various forms of qualitative and quantitative data analysis (Schindler, 2019:324). The main criterion used for evaluating qualitative research is trustworthiness. Trustworthiness is discussed in the next section.

In the data categorising process, or quantitative data coding, code numbers are allocated to categories or classes into which responses are placed (Wiid and Diggines, 2017:229). Raw data are converted into numbers. These are captured with computer software and tabulated, as was done in this study and discussed in Section 4.11.2 above. The process of coding facilitated data processing and calculation. In the quantitative data analysis part of this study, coding of data in a pre-coded questionnaire was employed (Schindler, 2019:324).

4.13.5 Trustworthiness

Trustworthiness can be taken as the primary criterion for assessing a qualitative study (Bryman and Bell, 2018:44). Trustworthiness is made up of four criteria, all of which have an equivalent criterion used in quantitative research, as indicated in Table 4.14 below.

The equivalent criterion used in quantitative research was discussed in Section 4.13.2 above. Aspects of trustworthiness is discussed after Table 4.14 below (Bryman and Bell, 2018:44).

Table 4.14: Trustworthiness criteria and equivalent quantitative criteria

Trustworthiness	Equivalent Quantitative Criterion
Credibility	Internal validity
Transferability	External validity
Dependability	Reliability
Confirmability	objectivity

Source: Adapted from Bryman and Bell (2018:44)

Credibility: Credibility in qualitative data analysis is established when research is carried out according to good practice. In addition, research findings are presented to study leaders who can confirm the researcher understood the social world surrounding the study topic.

Transferability: Transferability is reached when a thick description provides others with a database to make judgements about possible transferability of findings to other contexts and milieux.

Dependability: Dependability involves an auditing approach to research. Peers must be able to act as auditors during the research and review process to ensure best practices were followed.

Confirmability: The researcher must prove confirmability that he or she has not knowingly allowed personal values or theoretical inclinations to influence the research.

Tabulation as another aspect of reliability and validity of the research is discussed next.

4.13.6 TABULATION

In the process of tabulation in the quantitative data analysis part of this study, the codes from each questionnaire were entered into an electronic format or data file that a computer can read and analyse (De Vos et al., 2018:410). Methods used in this study for entering and capturing data include the following:

- Text data files in word-processing software of MS Word;
- Spreadsheet software of MS Excel; and
- SPSS.

To enable the discussion of the research results, numerous statistical analyses were completed on the data for this study.

4.14 PRESENTATION OF DATA FINDINGS

In the last step of the research process, the data findings must be presented and interpreted, and conclusions must be drawn. This is done in Chapter 7 of this thesis, where recommendations are also given.

In the next section, the ethical considerations of the study are discussed.

4.15 RESEARCH ETHICS

Any human interface, which includes human research, has ethical proportions. Accountability for the ethical design, review, and human research should be coordinated centrally. Ethics in research refers to the code of conduct and moral rules in planning, conducting, and reporting on the research (Bryman and Bell, 2018:120). This set of rules or principles, as norms of conduct for correct behaviour, forms the foundation of ethics. Ethical principles are classified into four main areas (De Vos et al., 2018:117; Trigeorgis and Reuer, 2017:44):

- Possible harm to participants;
- Possible lack of informed consent;
- Possible invasion of privacy; and
- Possible deception.

Ethical considerations in both quantitative data analysis (Section 4.15.1) and qualitative data analysis (Section 4.15.2) applicable to this research is discussed next.

4.15.1 Ethical Considerations in Quantitative Data Analysis

UNISA's guidelines, under whose auspices this study and thesis were completed, included the following (UNISA, 2019):

- The final version of the survey instrument or questionnaire for the quantitative data analysis part was submitted to the Department of Business Management Ethics Review Committee for ethical clearance. This was done before fieldwork could commence.
- Corrections requested by the Committee were applied, after which the questionnaire was approved. The respondents were contacted only after ethical clearance was received (see Appendix A).

In this study, the collection of data and the analysis of the data were completed in accordance with UNISA's Ethical Policies and Procedures. These included comprehensive guidelines on ethical principles, code of conduct, and moral rules in business research. An ethical clearance certificate had to be obtained prior to the survey instrument's pilot test and data-collection phases (see Annexure A).

The researcher, in addition, had to ensure that ethical research, specifically during the data-collection and data-analysis phases of this study, was conducted in line with ethical requirements of UNISA's Ethical Policies and Procedures. These ethical considerations are discussed below.

4.15.1.1 Voluntary participation

In the quantitative data analysis part of this study, in the cover letter to the questionnaire (see Annexure C), participants were reminded that participation in this study WAS voluntary. Participants were also assured that they could withdraw their submission of the questionnaire at any point.

4.15.1.2 No harm to participants

The quantitative data analysis part of this study had a low risk as participants were asked to complete an anonymous online self-administrated questionnaire. There was no risk of physical, psychological, social, or any other harm to any of the participants. In addition, the questionnaire did not include any sensitive questions. Participants were assured that there were no right or wrong answers in the questionnaire. Participants were informed that completion of the survey would take no more than 40 minutes. This was done to address any potential inconvenience or discomfort to the participants to complete the questionnaire.

4.15.1.3 Anonymity and confidentiality

In this study, anonymity and confidentiality were ensured by informing participants in the quantitative data analysis part of this study in the cover letter to the questionnaire (see Annexure C) that this survey was developed to be anonymous (Nardi, 2018:104). Participants were assured that it would not be possible to connect the information provided to any participant personally. It was emphasised, in addition, that the answers participants provided would be used for research purposes only, including in a doctoral dissertation, shared in conference presentations, and used in the publication of academic articles and other communication.

4.15.1.4 Informed consent

Conformation to informed consent is reached when participants receive sufficient information about the research study in order to make informed decisions whether to partake in the study (Saunders, Lewis and Thornhill, 2019:260). In the quantitative data analysis part of this study, informed consent was requested when participants were asked to click on the "*next*" button to participate in this study. In the cover letter to the questionnaire (see Annexure C), the information about the study and instructions was provided, as well as the informed consent that, with participation in the questionnaire, participants agree that the information provided may be used for purposes of this research.

4.15.2 Ethical Considerations in Qualitative Data Analysis

In the qualitative data analysis part of this study, standard ethical stipulations were followed during the research. These included consent from participants, voluntary participation, anonymity, and confidentiality of responses.

Section 4.10.5 included a description of information exchanges between the researcher and interview participants prior to final face-to-face in-depth interviews regarding ethical considerations. It was stated that the purpose of these exchanges was to convey information about the researcher and the research itself. It was also used to enquire about willingness and availability of potential participants. A participant information sheet, providing full details of the research, was sent to individuals in accordance with requirements for the UNISA ethical application process. The

information sheet provided full details on the research, such as the nature of the research, the participant's involvement, and other research ethics information.

The qualitative data analysis part of this study was also guided by the ethical standards set by UNISA. It is stated in the previous section that initial ethical clearance for this study was obtained from the Research Ethics Committee of the Business Management Department at UNISA, prior to the data collection (the ethical clearance certificate is included as Appendix A).

A summary to conclude this chapter is provided in the next section.

4.16 CONCLUSION

Chapter 4 discussed the research methodology of this study. In this chapter, research objectives with the foundation of identification of opportunities for growth of the Namibian automotive industry were reviewed. The phases involved in the design processes of the research in this study were highlighted. The research approach as the linkage of research paradigms, the research design, and the research methods were reviewed (Bryman and Bell, 2018:19).

It was emphasised that the research in this study was of a mixed (multiple) methods approach in nature. It consisted of qualitative analysis of non-numeric data collected in face-to-face in-depth interviews with participants, as is discussed next in Chapter 5 on descriptive data analysis. The research approach also included a quantitative analysis part of data collected in an empirical survey to other respondents (Pavlínek, 2020:513), as discussed in Chapter 6 on inferential data analysis.

Chapter 4 also covered concepts regarding the sampling design, target population, and sample sizes of the study. Subsequently, the data-collection tools or measurement devices, being an empirical survey and face-to-face in-depth interviews, were introduced (Pavlínek, 2020:513).

Reliability and validity of the research were discussed. These concepts were explained for both the quantitative data research process and the qualitative data part.

To conclude this chapter, the data analysis methodology was highlighted, whereafter research ethics were covered.

The research results based on descriptive and inferential data analysis are systematically reflected upon in Chapter 5 and Chapter 6. A didactic foundation for this study to translate the philosophy into actual practice follows (Schlager, 2017:293). The essence of the research and dissertation is covered in Chapter 7 with recommendations based on the results of the research on how to expand the automotive industry in Namibia.

CHAPTER 5:
DESCRIPTIVE DATA ANALYSIS AND INTERPRETATION OF SURVEY FINDINGS

5.1 INTRODUCTION

In the previous chapter, the research methodology, as used to explore opportunities to grow the automotive industry in Namibia, was covered. A structured questionnaire completed by 35 respondents was applied to collect the data (Appendix C). The descriptive statistics derived from the empirical survey were complemented by the analysis of the open-ended components of the 20 face-to-face interviews with a second group of participants. The participants interviewed were different persons from contributors of the questionnaire. The face-to-face interviews with managers in the automotive industry and associated sectors were performed to validate findings of the empirical survey. The interview guide is portrayed in Appendix F.

Primary and secondary objectives of the study are listed in Table 5.1 below.

Descriptive and inferential data analysis were employed to assess respondents' data (Wiid and Diggines, 2017: 252). This chapter covers descriptive data analysis and presentation of research results of the empirical survey. The themes which were discovered in the thematic analysis of the open-ended questions of the face-to-face interviews are included in this chapter to provide the discussion and interpretation of the findings. The descriptive statistics are linked with frequency distribution where summaries of variables are presented in frequency tables (Appendix D). In this way accurate, simple, and meaningful figures are presented by summarising information from a large set of data (De Vos et al., 2018: 255).

The participants in the face-to-face interviews were not the same 35 persons who completed the questionnaire in the empirical survey. The open-ended responses were coded using attribute coding and thereafter themed in line with the code-to-theory model of Saldaña (2016). The model has been provided in the methodology chapter, Chapter 4, to indicate how the qualitative, open-ended components of the study were analysed.

To provide comprehensive responses as well as to illuminate the enumerative data of the questionnaire, the thematic analysis, gained from using Saldaña's model (Saldaña, 2016) model, is integrated in the next sections with the descriptive statistics under the relevant headings. The findings of the questionnaire and themes discovered in the thematic analysis of the open-ended questions are then integrated with the literature in Chapter 7 to provide the discussion and interpretation of the findings.

The next chapter deals with inferential statistics and the testing of hypotheses. Inferential statistical tests are performed to ascertain which responses from a sample are used for conclusions relative to the entire population (Kolb, 2008:257). This type of statistics intends to determine significant relationships or differences between variables. Various cross-tabulations, as part of inferential statistics, will be covered in Chapter 6 (Bryman and Bell, 2018:106).

Table 5.1: Primary and secondary research objectives overview

Primary Objective
To ascertain how to grow the automotive industry in Namibia
Secondary Objectives
To identify which variables constrain the growth of the automotive industry in Namibia, being upstream for original equipment component manufacturers and aftermarket component manufacturers, as well as downstream in expanding existing dealerships or establishing new franchise dealerships.
To examine how the automotive component manufacturing base and employment in Namibia can grow by linking it to the automotive supply chain in South Africa, as the dominant vehicle manufacturing and consumption country in the region.
To examine how the automotive component manufacturing base and employment in Namibia can grow by linking it to regional integration in SACU, the SADC, the Tripartite Free Trade Area (TFTA), and African Continental Free Trade Area (AfCFTA).
To examine how the automotive component manufacturing base and employment in Namibia can grow via free trade agreements (FTAs) with SACU in respect of the USA's African Growth and Opportunity Act (AGOA) and the EU's SADC-Economic Partnership Agreement (EPA).
To identify specific successful growth strategies and incentive schemes of policy regimes that govern automotive industries in other countries and that can be implemented effectively in Namibia.
To determine if an association exists between the most promising motor industry sectors to grow (perceived) and business characteristics.
To determine if an association exists between the extent of the automotive industry in Namibia to grow and the top three inherent strengths, opportunities, areas to embark on, and strategies to be implemented for growth in the Namibian automotive industry respectively, as well as the automotive component categories that can be manufactured in Namibia with the largest potential, as perceived by stakeholders in the automotive industry.

To determine if constraints to growth, incentive measures, government encouragements, or support factors that add to growth, growth in the automotive industry of South Africa, and growth in the automotive industry globally are perceived differently by:

(iii) different extent levels of the capability of the Namibian automotive manufacturing industry to grow, as indicated by the stakeholders in the automotive industry.

(iv) the motor industry sector in Namibia with the most promising opportunity to grow, as indicated by the stakeholders in the automotive industry.

Source: Author generated

In Chapter 7, the assessment of research findings, conclusions, and recommendations relating to the primary and secondary objectives of the study are also presented. Descriptive statistics and thematic analysis are discussed in the next section.

5.2 ANALYSIS OF RESEARCH FINDINGS BASED ON DESCRIPTIVE STATISTICS

Descriptive analysis of data includes statistical measures such as mean, median, mode, and variance (Bryman and Bell, 2018:319). Data collected for this study consists of a mixture of nominal, ordinal, and continuous data (Mishra et al., 2018:419). Subsequently, different types of descriptive statistics apply.

- For categorical data (i.e., nominal and ordinal data), frequency tables are used (De Vos et al., 2018:255).
- Ordinal data represents non-parametric ordered variables. Although nominal and ordinal data are both non-parametric variables, ordinal data are ranked in order of their position (Wiid and Diggines, 2017:153).
- Statistical measures such as mean, median (a measure of location), standard deviation (a measure of spread), and range are used for continuous data (Bryman and Bell, 2018:319).

In dealing with scale variables, mean is defined as the most used measure of central tendency (De Vos et al., 2018: 261). The mean is the sum of measurements divided by the number of measurements. The median is a simple measure of central tendency. It represents the value separating the higher half from the lower half of a measurement sample. Variance and standard deviation are measures of dispersions for scale

variables. The standard deviation indicates the average spread of measurements from the mean.

The SPSS v26 was applied in the analyses of the data (Bryman and Bell, 2018:320). The SPSS package was employed to generate frequency tables (De Vos et al., 2018:255). The percentage of respondents who selected a specific option are covered in frequency tables. Information from SPSS (Appendix D) was exported to Microsoft Excel for graphical representation.

Descriptive statistics will be covered in sections hereunder according to the sequence of structured questions in the survey.

The descriptive statistics are complemented by the outcomes of the thematic analyses that are the themed findings from the open-ended components of the questionnaire. The qualitative components follow Saldaña's model (see Section 4.7.1). Questions conveyed to participants in face-to-face interviews were limited to the open-ended questions in the empirical survey. In the empirical survey, contributors were invited to elaborate, in their own words in electronic format, their responses and perceptions on open-ended questions. These questions were included in face-to-face interviews to provide and deliver more comprehensive examination responses than the written accounts in the empirical survey.

The most significant findings obtained from the analysis will be emphasised and described in the integrated findings below.

5.3 QUESTIONNAIRE: BUSINESS CHARACTERISTICS OF THE RESPONDENTS

Question 1, included in Part A of the survey, recorded information on ownership, employment, and business activities of the respondent. For this question, the term 'local' described the geographical areas of South Africa and Namibia.

In Section 4.10 on data collection, the face-to-face interviews with managers in the automotive industry and associated sectors that were performed to validate findings of the empirical survey were described. It was illustrated that the contributors in face-to-face interviews, which differed from participants of the empirical survey, consisted of representatives from automotive dealerships, auto industry research, component

manufacturers, logistics providers, government decision makers, auto industry engineering, and automotive asset finance.

The first two subsections of the question registered the degree of local business ownership and the level of employment of local population. Most shareholding and employment of local origin indicated unique responses of participants located in South Africa and Namibia.

The third subsection of this question collected the extent of current business activities of automotive dealerships and automotive component manufacturing. Most respondents involved in the automotive industry indicated well-informed, incisive perceptions on the automotive industry.

The fourth subsection documented future business activities of automotive dealerships and automotive component manufacturing. The extent of respondents' involvement in the regional automotive industry as foundation of their opinions and responses were recorded. Perceptions of respondents on the importance of activities as vehicle exporter and automotive component exporter were also documented. Responses of Question 1 are presented in figures below and in Table D1 to D6 in Appendix D.

5.3.1 Percentage of Local Ownership of Respondents' Business Entities

In Figure 5.1 below, the percentages of local ownership indicated by all respondents were 0%, 49%, 95%, and 100%. Most respondents, 68%, indicated 100% local ownership. The associated percentages of respondents who chose each of these options are presented in Figure 5.1 below.

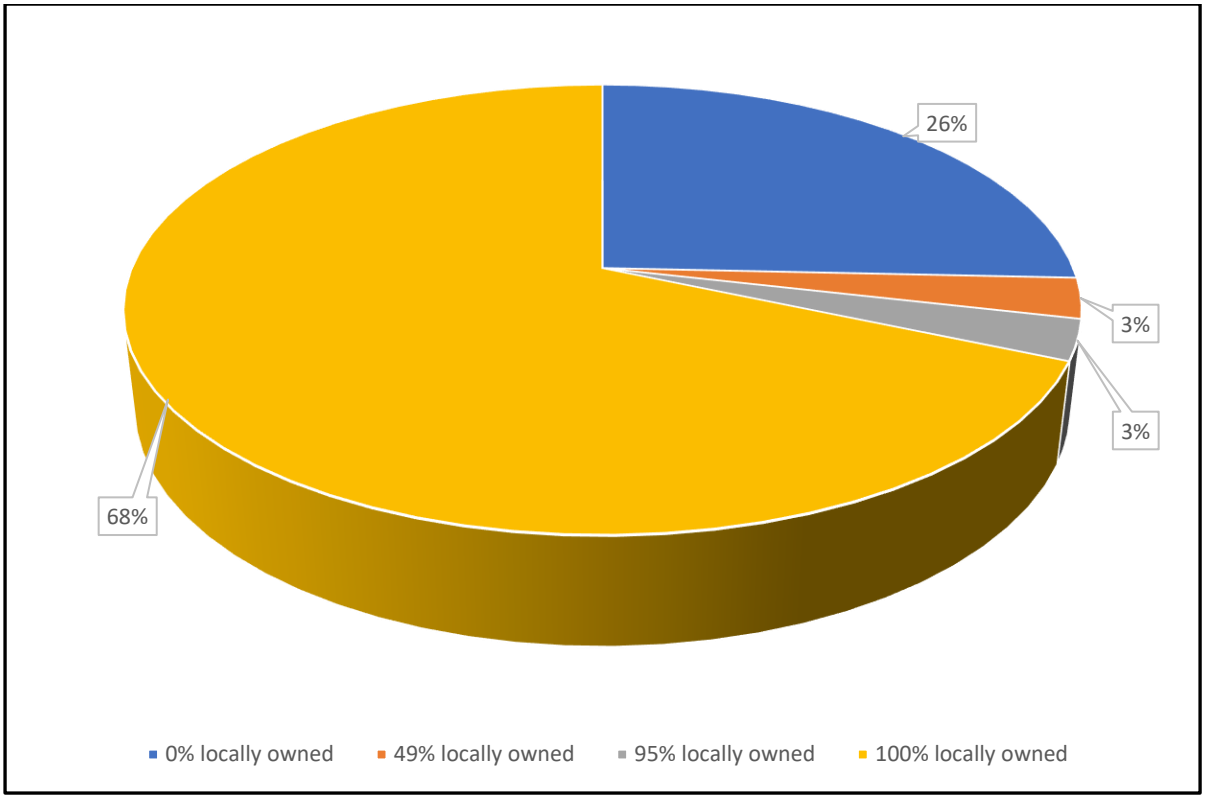

Figure 5.1: Percentage of local ownership
Source: Author generated

The fact that most respondents indicated 100% local ownership is an indication that perceptions and views of respondents are unique and representative of the business environment in South Africa and Namibia.

Findings of **Question 1.1** recorded that a high percentage of respondents (over a quarter at 26%) indicated 0% local ownership. It can be deduced from the 0% local ownership that foreign investors or OEMs have ownership of local dealerships and business entities to a moderate to high extent. The foreign investors and OEMs have subsequently a moderate to high influence on decisions in the automotive supply chain.

5.3.2 Percentage of Local Employment of Respondents' Business Entities

Most of the respondents (nearly three quarters at 72%) specified that their workforce was 100% locally recruited. This figure increases to 86% if respondents who indicated local employment of 90% or more are included.

For illustration and analysis, the responses of 0% to 16% as well as 90% to 99% were respectively grouped together in the blue and brown areas in Figure 5.2 below. For each group, a low percentage of 14% of respondents indicated local employment of the company. The grey area represented 100% local employment.

No respondent indicated a percentage outside these ranges.

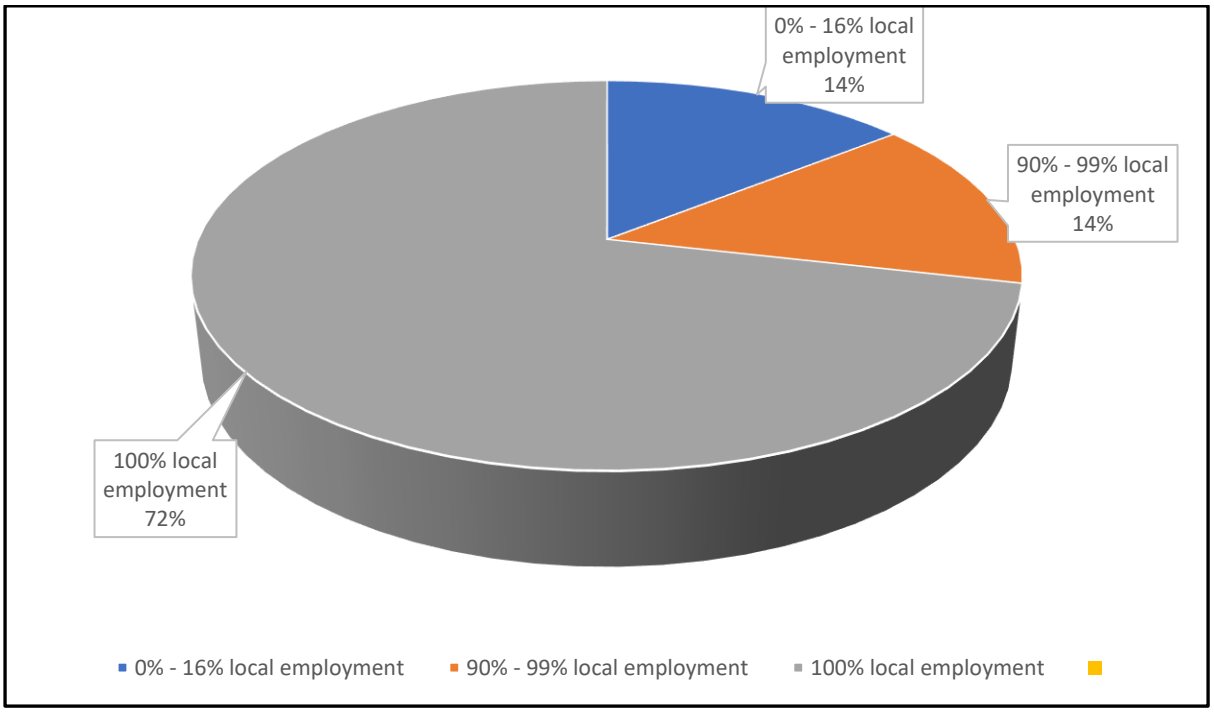

Figure 5.2: Percentage of local employment

Source: Author generated

The large percentage of local employment strengthens the notion that perceptions and opinions of respondents are distinctive to the business environment in South Africa and Namibia.

5.3.3 Percentage of Activities of Respondents' Business Entities as Automotive Dealerships

Just over half (54%) of the respondents indicated their business entity's activities to operate fully (100%) as automotive dealerships. It is recorded that, in addition, 17% of respondents indicated a percentage of 80% to 95% business activities as automotive dealerships. In total, 71% of respondents indicated activities of their business entities to be 80% or more focused as automotive dealerships.

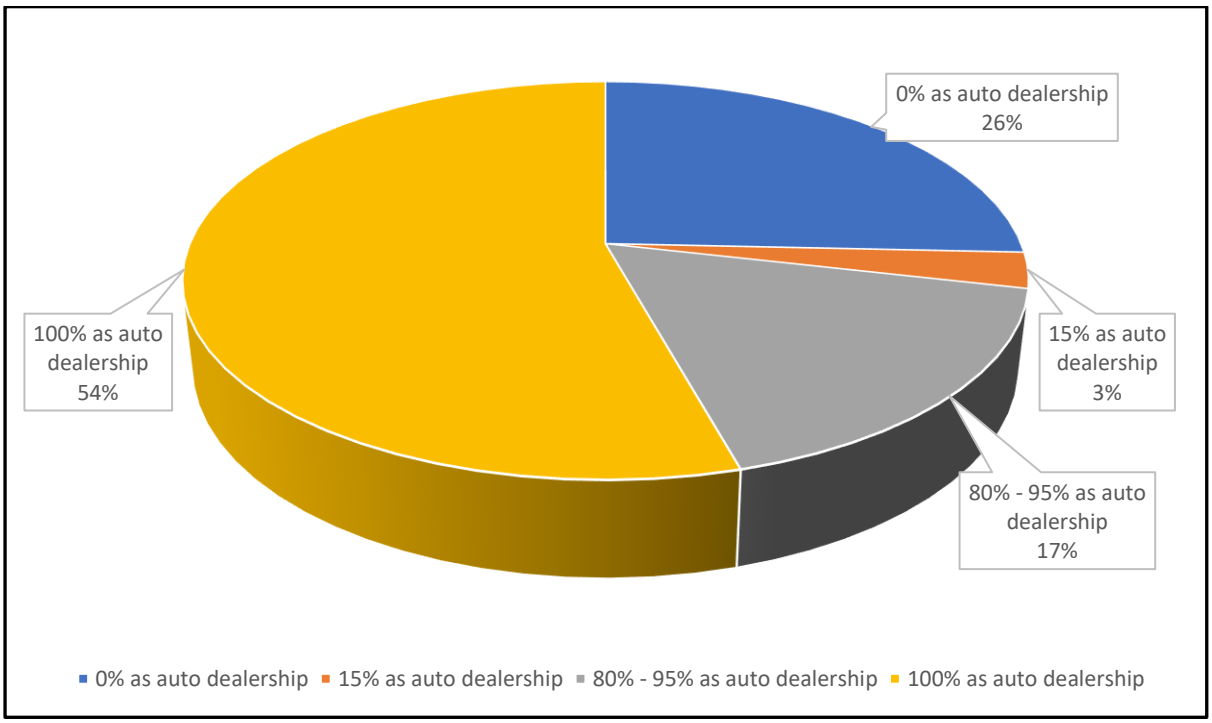

Figure 5.3: Percentage of business activities as automotive dealership

Source: Author generated

Most respondents involved in automotive dealerships indicated well-informed, insightful perceptions of the automotive industry. Automotive dealerships have franchise agreements in place with OEMs that allow distribution within authorised manufacturer channels. The amount of business entities that are franchised dealerships highlights the key role OEMs play in decisions on the automotive supply chain.

5.3.4 Percentage of Activities of Respondents' Business Entities as Automotive Component Manufacturers

Statistics portrayed in Figure 5.4 below correlated closely with statistics of Figure 5.3 above: Figure 5.3 indicated 71% of respondents indicated activities of their business entities to be 80% to 100% focused as automotive dealerships. Figure 5.4 below shows 83% of respondents indicated that activities of their business entities did not include manufacturing of automotive components at all.

Looking at this profile from **Question 1.3b**, it is evident that perceptions and opinions of respondents can be taken as based on business activities where automotive component manufacturing has no or minimal presence currently.

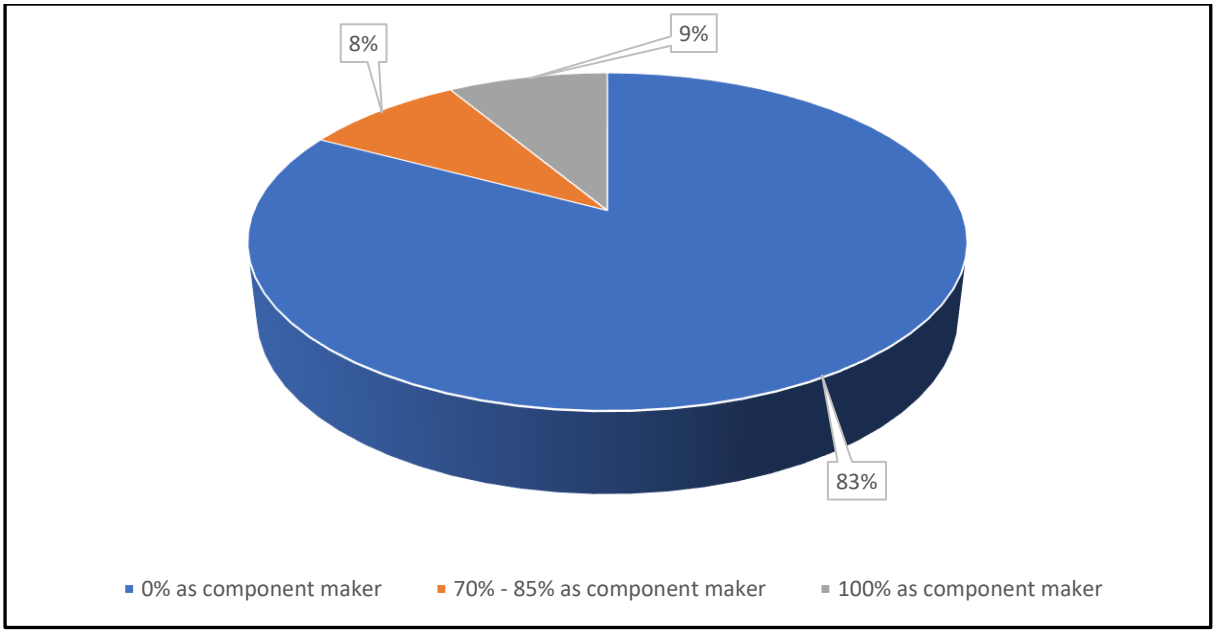

Figure 5.4: Percentage of business activities as automotive component manufacturer
Source: Author generated

5.3.5 Percentage of Future Activities of Respondents' Business Entities as Automotive Vehicle Exporters

The respondents were asked to indicate planned or future activities of their business entity regarding export of vehicles.

As illustrated in Figure 5.3 above, 71% of respondents indicated activities of their business entities to be 80% to 100% focused as automotive dealerships.

The figure below shows that most respondents (88%) indicated that they do not foresee exports of vehicles in the near future. It can be deduced that export of vehicles is not viewed as a crucial element for growth in the automotive industry in Namibia.

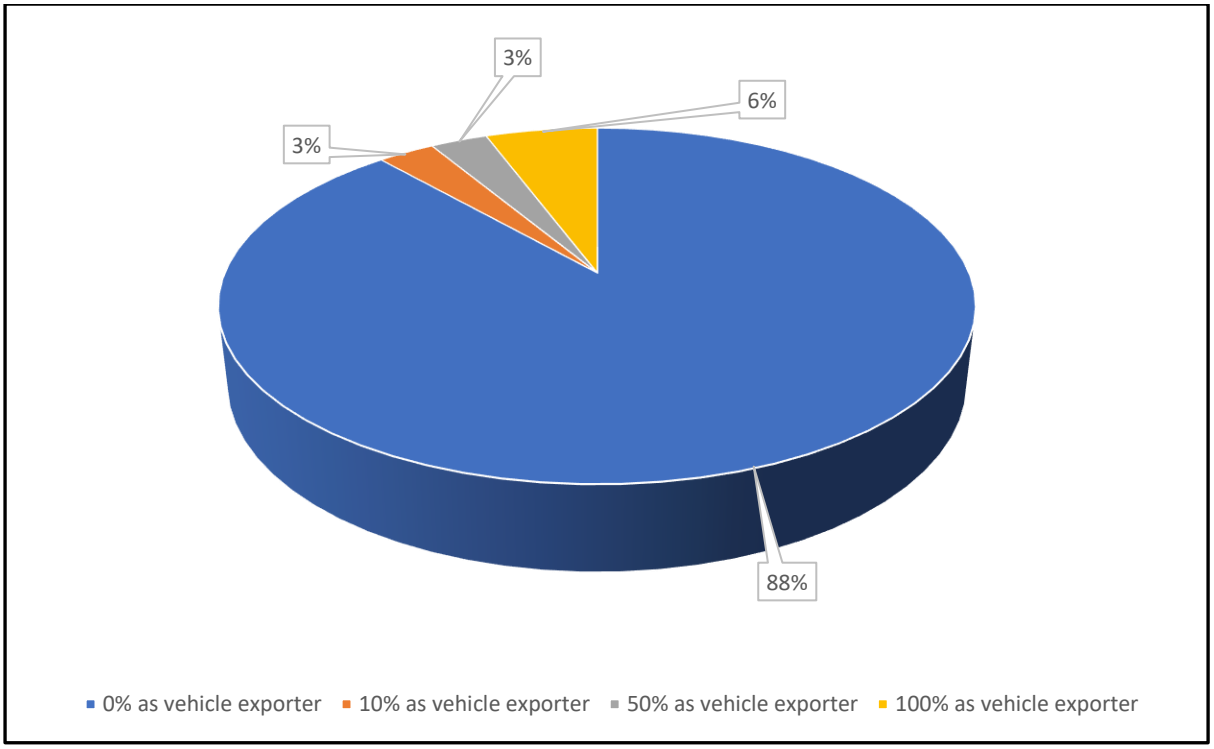

Figure 5.5: Percentage of future business activities as automotive vehicle exporter
Source: Author generated

5.3.6 Percentage of Future Activities of Respondents' Business Entities As Automotive Component Exporters

Question 1.4b recorded that 88% of respondents indicated that their automotive dealerships do not plan any automotive component exports in future (Figure 5.6 below).

In addition, in Figure 5.4 above, a mere 17% of respondents indicated their current business activities consisted of 70% to 100% as automotive component manufacturers. However, in Figure 5.6 below, 6% of respondents indicated their future business activities will consist of 90% to 100% as automotive component manufacturers. From this figure, it is evident that respondents presenting automotive component manufacturers foresee future automotive component manufacturing to be part of business activities to a lesser degree. A decrease from 17%, being current automotive component manufacturing activities, to 6%, as foreseen for the future, is illustrated.

It is deduced that current component manufacturers do not foresee a significant increase in countrywide levels of component manufacturing in future.

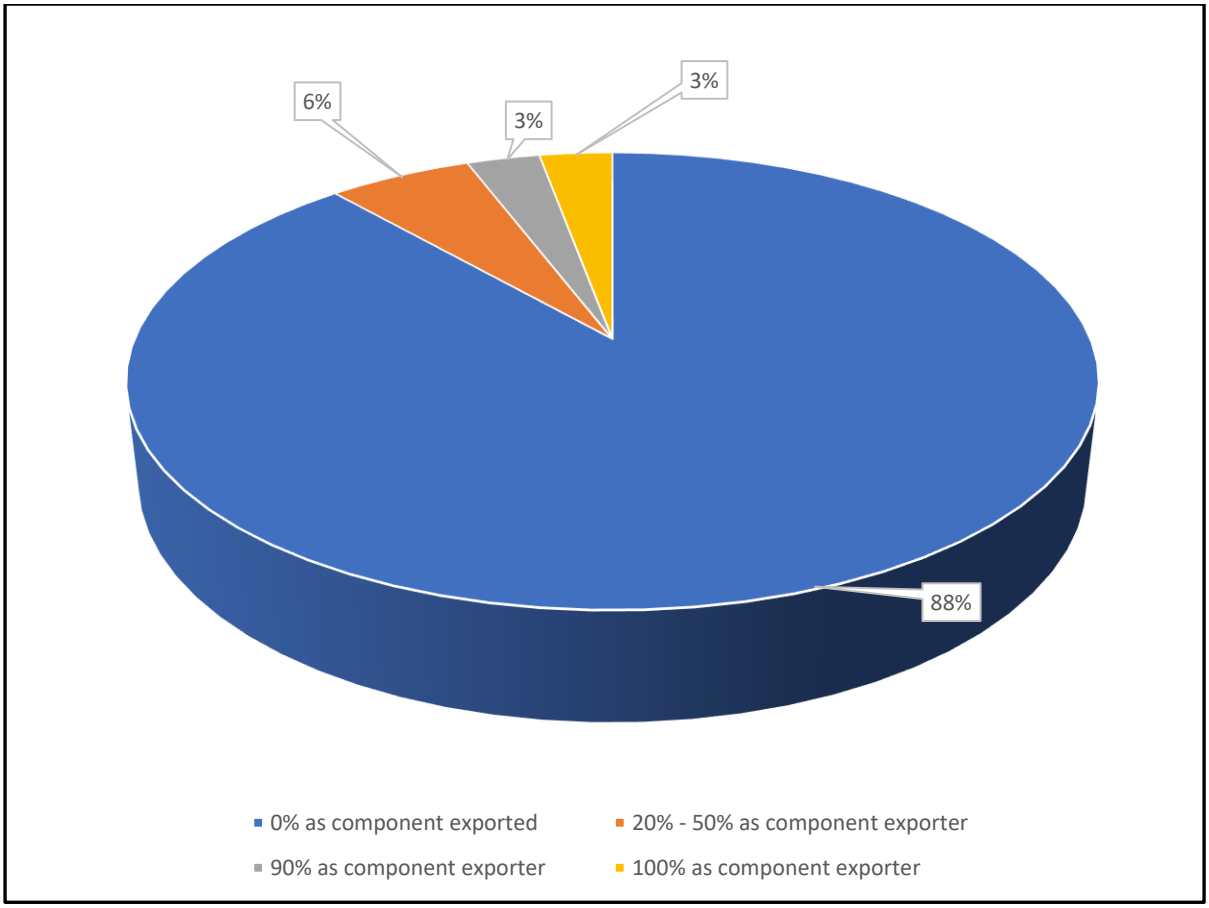

Figure 5.6: Percentage of future business activities as automotive component exporter
Source: Author generated

5.4 QUESTIONNAIRE: GENERAL

Part B consisted of Questions 2 to 5. Respondents' general information and perceptions on scope and growth opportunities of the Namibian automotive industry were recorded. The results are represented in the figures below and in Tables D7 – D10 (Appendix D).

5.4.1 Respondents' Representation of the Automotive Industry in South Africa and Namibia

Respondents were asked in **Question 2** to indicate how they represented the automotive industry. The following answers were recorded and collated by the researcher.

It is evident from Figure 5.7 below that many respondents (65%) indicated their involvement as automotive dealerships. Respondents also indicated representation as auto industry research (14%), automotive component manufacturers (6%), or logistics providers (6%). Figure 5.3 above illustrated 71% of respondents indicated activities of their business entity to be 80% to 100% focused as automotive dealerships. Looking at this profile, it is evident that most respondents represent automotive dealerships. It is deduced that responses for all questions of the survey largely represent opinions from the perspective of automotive dealerships and franchises.

Respondents who indicated "*other*" on the survey in **Question 2** on representation of the automotive industry included the following institutions:

- Audit firms, auditors in the automotive industry, coaching staff, support services engineering, the financial service industry, research, vehicle leasing, and logistics support services

The eight responses indicated under "*other*" on the survey are categorised as follows (with the number of responses per category in brackets) and illustrated in Figure 5.7 hereunder:

- Automotive industry research (5)
- Logistical services providers (2)
- Automotive industry engineering services (1)

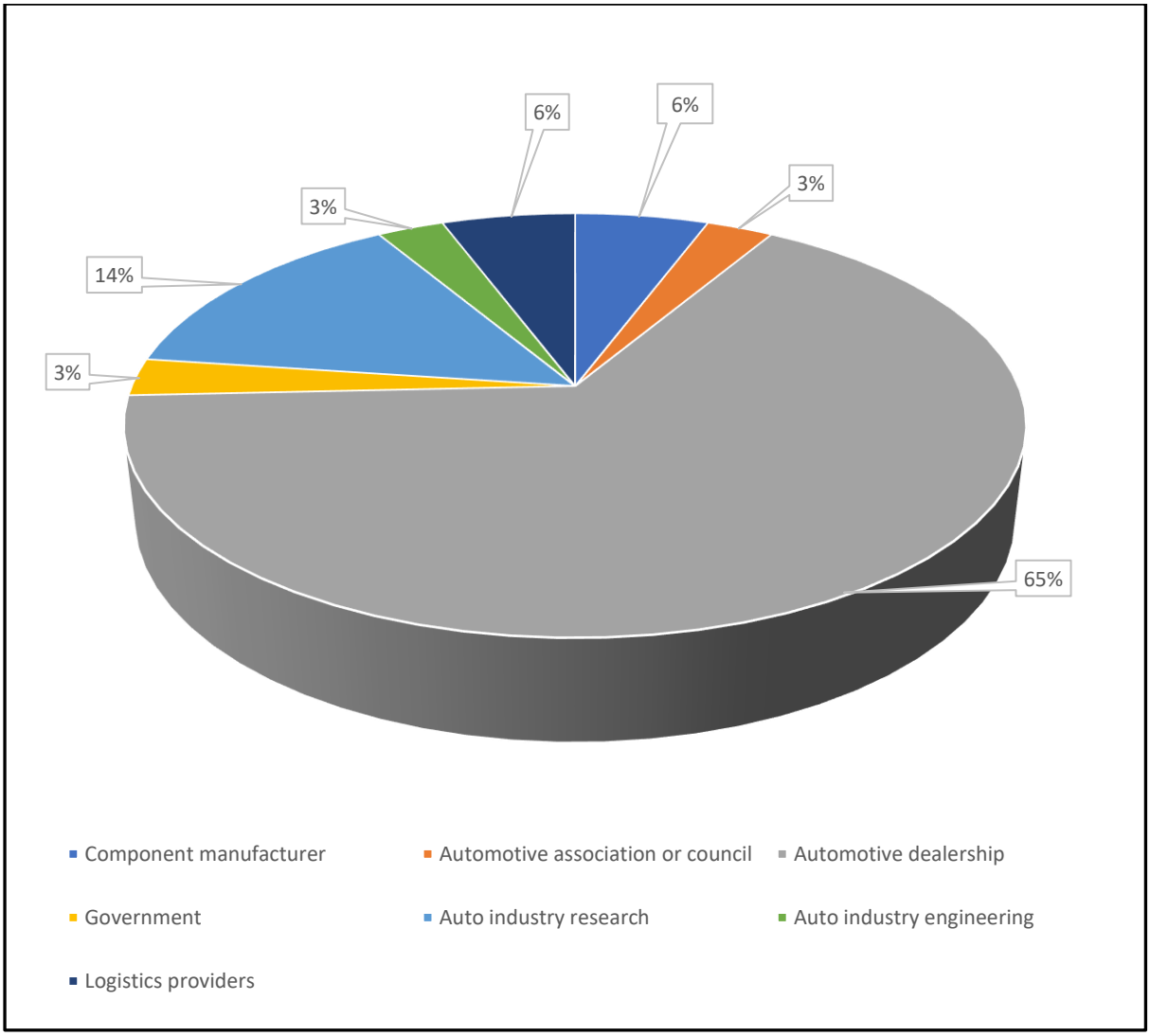

Figure 5.7: Respondents' representation of the automotive industry

Source: Author generated

The demographic information above is purely represented by pie-chart graphics. However, the following section includes graphics which demonstrate the descriptive statistics followed by the reporting on the thematic analysis and theming of the data, following Saldaña's data analysis model (Saldaña, 2016).

5.4.2 Growth Potential of the Namibian Automotive Industry

In **Question 3** respondents were asked to indicate their opinion on the extent of growth of the Namibian automotive industry.

From Figure 5.8 below, it can be deduced that almost two-thirds (65%) of respondents had a confident opinion that the automotive industry has a capability to grow

moderately (34%) and to a large extent (31%). The figure clearly shows that less than one-third (29%) of the respondents believe the industry will grow to a small extent. It thus seems that most respondents (65%) have a fair and optimistic outlook on the growth capability of the automotive industry in Namibia.

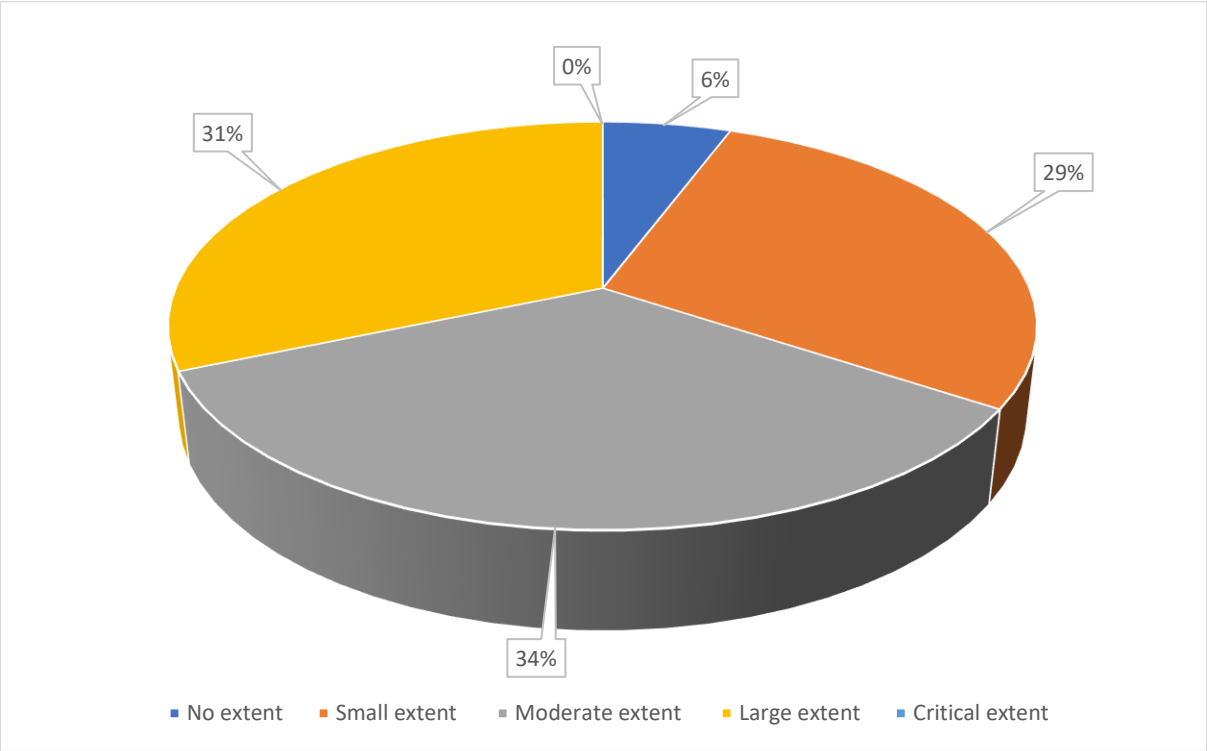

Figure 5.8: Capability of the Namibian automotive industry to grow
Source: Author generated

Question 2, as presented in face-to-face interviews to 20 additional participants, collected data of participants' views on the extent of the capability of the Namibia automotive manufacturing industry to grow. In reporting on the thematic analysis and theming of the data, following Saldaña's data analysis model (Saldaña, 2016) as described in Section 5.1 and Section 5.2, codes were generated. These included codes, examples of which are provided below, while noted that a full list of codes is provided as Appendix G in this thesis. Central codes were:

- *Namibia's economic growth through regional and/or global supply chain demand*
- *South Africa and Namibia entwined with interdependent economies*
- *Namibia remaining competitive and benchmarked through international best practice*

- *South Africa and Namibia not favoured for intensive investment due to negative sentiments*
- *Namibia with an excellent skilled-labour force*
- *Namibia with quite high unemployment*
- *Namibia's growth potential strong but undermined by poor infrastructure*
- *In Namibia, with value-adding opportunities, the market still expanding*
- *Namibia's green potential high due to resources and size and space of Namibia*
- *In Namibia, some areas geographically not suited for automotive industry*
- *Namibia's industrial infrastructure well developed and efficient*
- *Namibia's policy and political systems proactively pushing for ease of doing business*
- *Namibia not competitive; with a sluggish economy and no economies of scale in existence*
- *Namibia lacking strategies for skills and the pipeline for technical and required acumen under pressure*
- *In Namibia, the cost of business driving down competitive advantages*
- *When comparing South Africa and Namibia, South Africa with the leading edge with the Fourth Industrial Revolution (4IR), while Namibia lacking behind*
- *In Namibia, an unsophisticated investment infrastructure impeding investment*
- *Namibia characterised as a small sector-focused, hyper competitive, no market share growth*
- *In Namibia COVID-19 and the accompanied supply chain disruptions affect growth*
- *In Namibia, the costs of living and doing business remarkably high*

The above-mentioned codes were integrated into the following themes associated with this finding on opinions on the extent of growth of the Namibian automotive industry:

5.4.2.1 Theme 1: Promising, nuanced potential for the Namibian automotive manufacturing industry

Participants reflected that Namibia is proximate to an existing strong best practice exemplar of automotive manufacturing industry, namely South Africa. There is a level of entwinement (interdependency) with South Africa and the economies of these exemplars are comparable.

While the participants indicated reservations about Southern Africa as an investment destination, owing to current affairs and Afro-negativity, they reflected that a strong export-driven strategy will place Namibia in a promising position to grow its automotive industry, if it harnesses best practice lessons or co-operative opportunities that would grow its ability to respond to global supply chain demand.

Although participants indicated reservations on account of the high unemployment rate in Namibia, they reflected that Namibia has an excellent skilled-labour force, which assists in the growth of the automotive manufacturing industry.

Theme 1 described above agrees mostly with the depiction of respondents' replies on Question 3 in the empirical survey, as discussed in Section 5.4.2, where respondents were asked to indicate their opinion on the extent of growth of the Namibian automotive industry. As depicted in Figure 5.8 above, many (65%) questionnaire respondents had a fair and optimistic outlook on growth capability of the automotive industry in Namibia. Theme 1, associated with the topic as was put forward in face-to-face interviews, suggests strong nuances of conditions favourable to the potential for and extent of growth of the Namibian automotive industry, such as a strong export-driven strategy, best practice lessons, or co-operative opportunities that would grow its ability to respond to global supply chain demand. The qualitative data provides illumination for the quantitative data, giving substance to the 65% response of the quantitative data.

5.4.2.2 Theme 2: The potential for the Namibian automotive manufacturing industry assisted by country-unique attributes

A theme related to country-unique attributes that can benefit growth of the automotive industry appeared from the data. Namibia as a country owns unique environmental-friendly properties to aid the automotive manufacturing industry, as manifested in the abundant national resources like base metals and renewable energy sources like solar and wind power generation that has a much smaller impact on the environment.

Building on countrywide attributes, participants claimed that some geographical areas, such as coastal areas with high rust factors, are not suitable for assembly factories. However, most participants indicated Namibia's industrial infrastructure is well-developed and efficient. It is aided by Namibia's policy and political systems that proactively push for ease of doing business.

This theme, integrated from codes generated from face-to-face interviews, largely coincide with Question 3 in the empirical survey as discussed in Section 5.4.2. Almost two-thirds (65%) of respondents had a confident opinion that the automotive industry has the capability to grow moderately and to a large extent. Participants in face-to-face interviews based their positive views on the growth of the Namibian automotive industry on countrywide attributes such as the well-developed infrastructure, the details of which are discussed above in Theme 2. Both data sets indicate some degree of confidence and align the findings.

5.4.2.3 Theme 3: The potential for the Namibian automotive manufacturing industry is inhibited by socio-economic drawbacks

Another theme that was analysed based on the data relates to socio-economic characteristics that may inhibit the growth potential of the automotive industry in Namibia.

Participants indicated strong reservations on factors that inhibit automotive manufacturing capabilities such as that the economy lacks economies of scale, the economy is sluggish, Namibia fares badly on levels of country competitiveness, prevalent high costs of living, and high costs of doing business, shortage of technical-skills development, an unsophisticated investment infrastructure, and the fact that Namibia is lacking far behind South Africa in respect of the Fourth Industrial Revolution (4IR). The COVID-19 pandemic, which changed the essence of normal living since 2020, was mentioned as a major detrimental socio-economic factor, impairing growth of the economy and establishment of an automotive manufacturing industry. The pandemic is discussed in more details in Section 5.7.1.8 hereunder.

As discussed in Section 5.4.2, data from the questionnaire reflected that around 29% of the respondents believe the automotive industry in Namibia will grow to a small extent. This theme, generated from codes from face-to-face interviews as given in exemplar codes above and Appendix G, highlighted drawbacks such as the sluggish economy. Hence, the qualitative data ‘sluggish economy’ has explanatory value in terms of the low percentage of response from the quantitative data.

5.4.3 Most Promising Sector in the Automotive Industry in Namibia

In **Question 4** participants were asked which section of the automotive industry in Namibia has the most potential to grow.

From the figure below, the category chosen by most respondents was more vehicle assembly (40%). This was followed by respondents who selected automotive dealerships as the most promising sector (26%).

Responses of Question 4 in Figure 5.9 below corresponded with responses in Figure 5.5 and Figure 5.6 above, where respondents indicated that it is not planned to increase automotive component exports or automotive vehicle exporting. A mere 17% indicated that component manufacturing as a standalone sector had the most promising opportunity to grow the Namibian automotive industry.

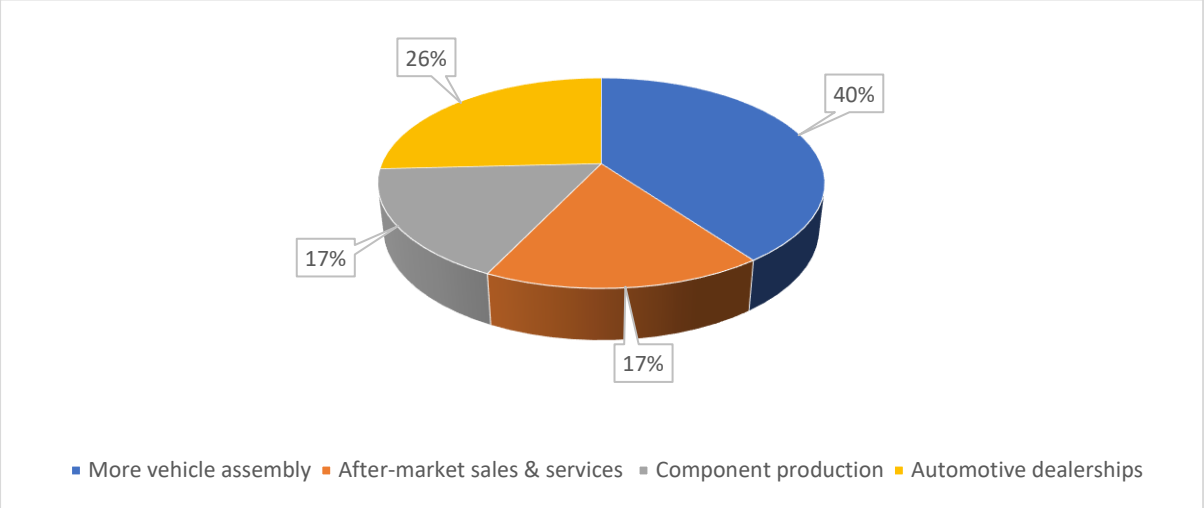

Figure 5.9: Sector of the Namibian automotive industry with the most promising opportunity to grow

Source: Author generated

Question 3, in the face-to-face interviews discussed in Section 5.1 above, was linked to the most promising automotive sector to grow the automotive industry in Namibia. The open-ended responses collected in face-to-face interviews with the second group of participants were coded using attribute (characteristic) coding and themed in line with Saldaña's code-to-theory model (Saldaña, 2016). The open-ended questionnaire component of the participants' views regarding the most promising automotive sector to grow the automotive industry in Namibia included the following coded components (see Appendix G):

- *In Namibia assembly plants representing positive stimulus for employment-growth*
- *In Namibia ample human capital willing and able to develop skills or learn from insourcing*
- *Namibia with positive national working culture in favour of building an automotive industry*
- *Namibian people with positive skills but pipeline for building more skills lacking*
- *Namibia mostly stimulating a climate for investment and / or export benefits*
- *For Namibia assembly plants mostly detrimental, such as the non-performance of the current Peugeot / Opel plant*
- *In Namibia local industry minimal and not of quality on the back of decline in local markets*
- *Assembly plants in Namibia facing shortage of labour and skills*
- *Assembly plants when changed / optimised to be considered for Namibia*
- *South Africa owning an existing developed industry, Namibia comparing negatively*
- *Southern Africa representing a success story for an export-driven industry*
- *Assembly plants to be compliant in Namibia to the legal regulatory environment for success*
- *In Namibia assembly plants positively stimulated by low labour costs and other savings*
- *Assembly plants to harness international expertise and experience also in Namibia*

These codes were integrated into the following themes associated with the findings of Section 5.4.3.

5.4.3.1 Theme 1: Existing elements conducive for motor vehicle assembly

While most of the participants agreed that motor vehicle assembly represented lucrative growth propositions for Namibia, participants shared the fact that these prospects need to be stimulated by ingredients such as suitable investors and a suitable climate for export-driven markets. Participants mentioned a sense that human capital in Namibia owned the will and the ability to develop skills as can be learnt from insourcing. Insourcing is becoming an important means for automotive worker unions

to secure work and investment by the practice of using an organisation's own personnel to accomplish a task that was previously outsourced. The impression, however, existed that the pipeline for developing more skills required by an assembly industry was not advanced enough. The labour force with low labour costs could also positively add to stimulation of assembly plants in Namibia.

In what was discussed in Section 5.4.3, flowing from data collected in the questionnaire, the category chosen by most respondents was more vehicle assembly (40%). The theme of this section derived from face-to-face interviews set forth that most of the participants agreed that motor vehicle assembly represented lucrative growth propositions for Namibia. The qualitative and quantitative data therefore concur.

5.4.3.2 Theme 2: Detrimental elements for a motor vehicle assembly

Participants expressed disappointment with the reputed failures of the recently established assembly plant of Groupe PSA that was established at Walvis Bay, as discussed in Section 3.3.9. In addition, participants in the face-to-face interviews opined that the capacity of the local industry lacked the capabilities to facilitate assembly plants on the back of decline in the local economy in Namibia. In addition, it was foreseen that future assembly plants would face shortage of skilled labour locally and that Namibia compared negatively with existing automotive assembly industries such as in South Africa.

This section's Theme 2, generated from codes from face-to-face interviews on detrimental effects that inhibit motor vehicle assembly as most lucrative channel to grow the Namibian automotive industry, coincides with data from the questionnaire, discussed in Section 5.4.3, where 60% of respondents chose other options such as automotive dealerships, component manufacturing, and aftermarket sales and services. Therefore, there is confirmatory alignment with the data analysed from the two different approaches.

5.4.3.3 Theme 3: Elements conducive for motor vehicle assembly

Participants elaborated that the failure of the assembly plant of Peugeot and Opel models at Walvis Bay, discussed in Section 3.3.9, highlighted the requirement that assembly plants in Namibia should adhere to the legal regulatory environment of

SACU, of which Namibia is a participating member, to successfully compete in the SADC regional markets. It was further discussed by participants that, for assembly plants in Namibia to succeed, internal expertise and experience had to be harnessed and employed.

The category chosen by most respondents was more vehicle assembly, as discussed in Section 5.4.3, flowing from data collected in the questionnaire. The theme of this section, derived from face-to-face interviews, collaborated with these findings in Section 5.4.3, and indicated foundations of success of motor vehicle assembly to be that Namibia is a participating member of SACU as enabler to successfully compete in the SADC regional markets.

5.4.4 Most Promising Market Outside Namibia to Add to Growth

In **Question 5** of the empirical survey**,** respondents were asked which market outside Namibia has the most promising opportunities to grow the automotive industry.

It was recorded that a total of 69% of respondents indicated that South Africa (35%) and the SADC (34%) were the regions with the most promising opportunities in this regard. A few respondents (17%) indicated the Rest of Africa to be more promising than the EU (14%) and the Americas (0%) together.

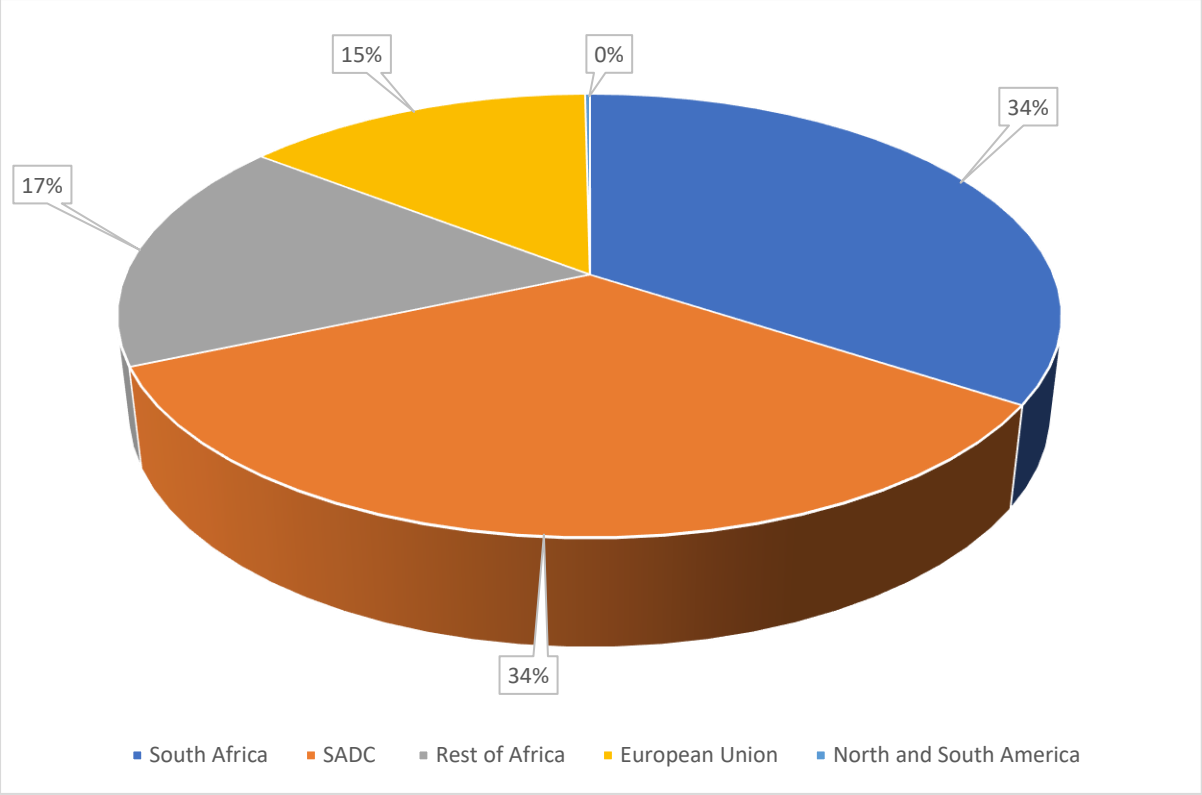

Figure 5.10: Region outside Namibia with the most promising opportunity to add to growth in the automotive industry in Namibia

Source: Author generated

5.5 QUESTIONNAIRE: THE AUTOMOTIVE INDUSTRY OF SOUTH AFRICA

Part C of the questionnaire included questions on perceptions of the respondents on the potential of opportunities in the South African automotive industry to grow the Namibian industry. Questions 6 to 10 of this section were measured on a five-point Likert-type scale, with 1 being ‘of no extent’ to 5 being ‘of a critical extent’.

Stacked bar charts are used in this section to present findings of each question graphically (Bryman and Bell, 2018:318). Stacked bar charts use the length of more than two stacked bars to represent components of the total quantitative value across a range of different categorical values from ‘no extent’ to ‘a critical extent’ (Seeingdata.org). Results are also listed statistically in Table D11 to Table D15 in Appendix D.

5.5.1 Factors Impacted by the Current Motor Production of South Africa Under the South African Automotive Masterplan 2021-2035

As indicated in the figure below, increased component and vehicle manufacturing in South Africa are rated by most (88.6% and 85.0% respectively) of the respondents to be impacted to a moderate or large extent.

In contrast, utilisation of global automotive overcapacity was rated to be impacted by a moderate or large extent by only 60% of respondents, increased regional integration in the SADC by 58.8%, and increased employment creation in the SADC region by 54.3% of respondents.

Lastly, as in Figure 5.11 hereunder, more than two thirds (67.7%) of respondents perceived that the impact of the current South African automotive industry under SAAM 2021-2035 on increased SA component imports from Namibia is to no extent or to a small extent.

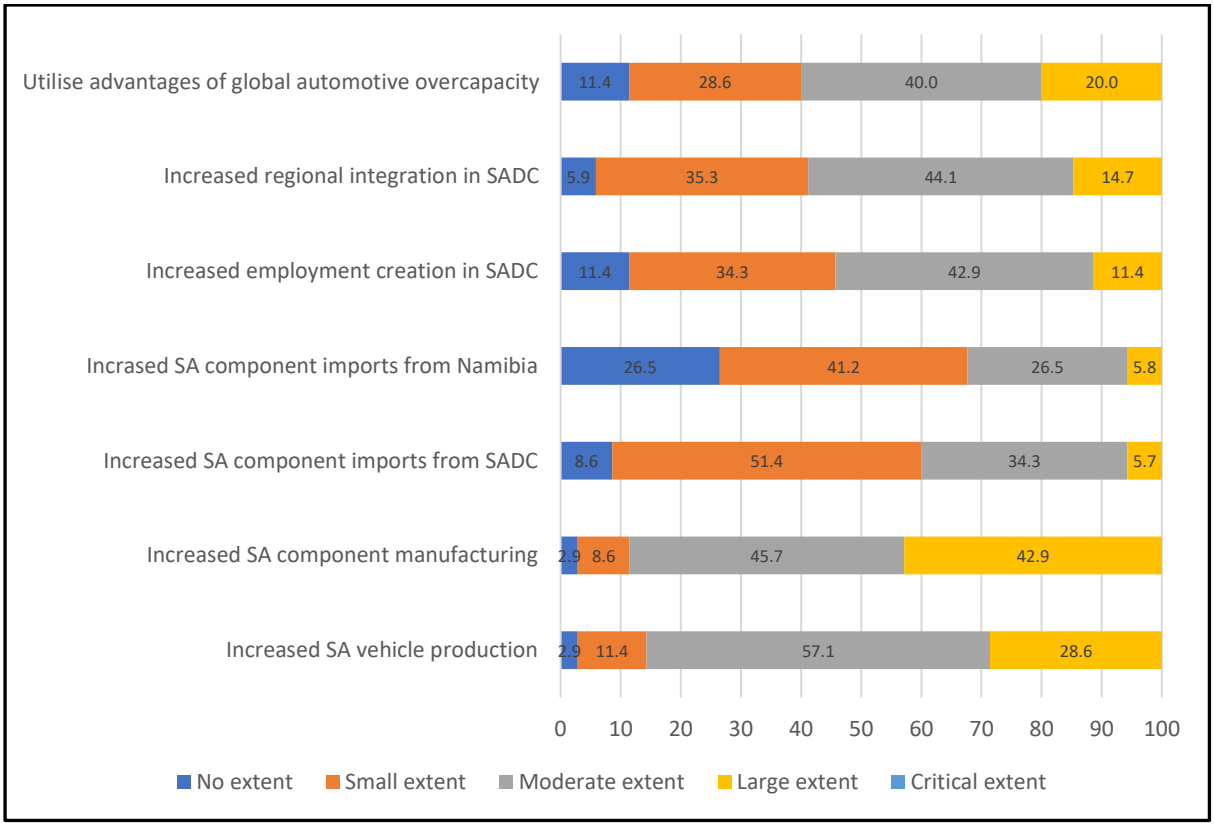

Figure 5.11: Impact of the current SA automotive industry under SAAM 2021-2035
Source: Author generated

5.5.2 Factors Impacted by Future Opportunities to Grow Motor Production of South Africa Under the South African Automotive Masterplan 2021-2035

In **Question 7** respondents were asked to indicate the perceived extent of future opportunities for growth of the South African automotive industry.

Findings of Question 7 indicated the following variables as being to a moderate, large, and critical extent by most (88.6%) respondents:

- Increased financial performance and profitability in the automotive industry
- Increased access to new technology and innovation
- Increased export of manufactured vehicles

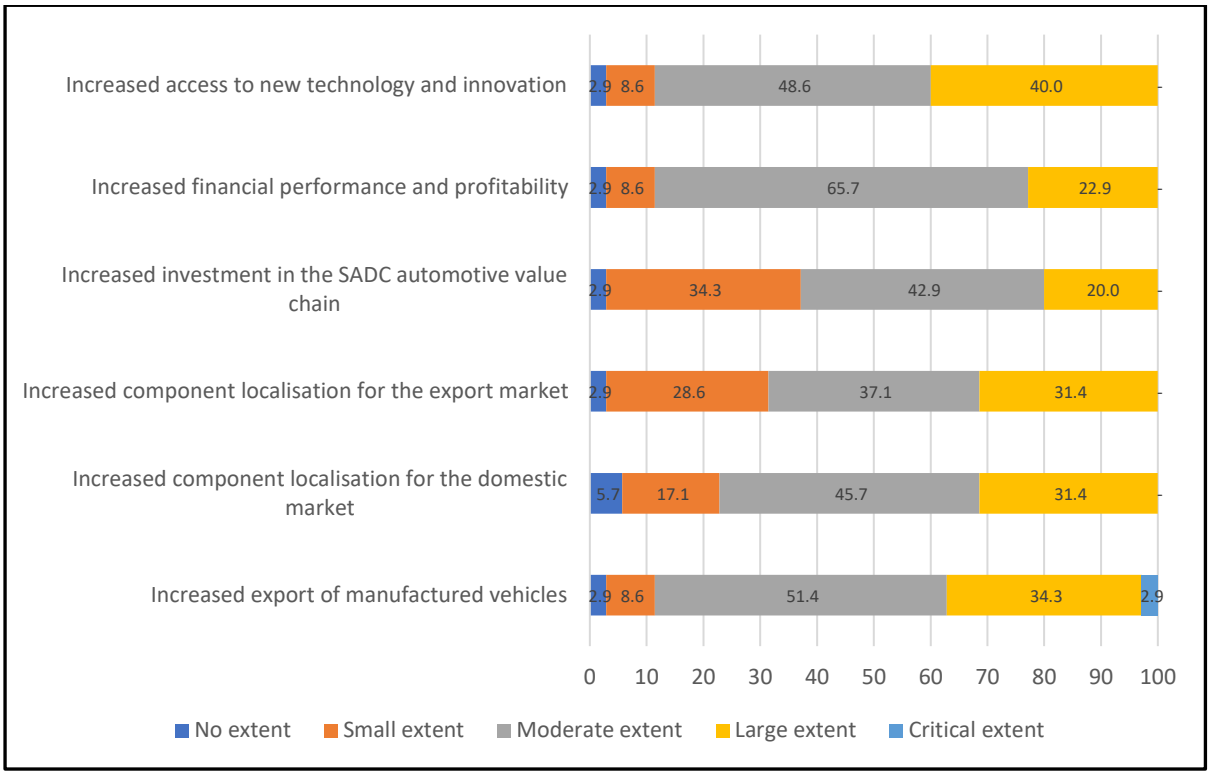

Figure 5.12: Future impact of the current SA automotive industry under SAAM 2021-2035

Source: Author generated

However, with respect to increased investment in the SADC automotive value chain, more than a third of the respondents (37.2%) indicated to no extent or to a small extent.

5.5.3 Factors Impacted by the Dominance of Vehicle Production of South Africa in the Southern African Development Community Region

Findings of **Question 8** indicated that the dominance of vehicle production of South Africa in the SADC region adds to increased component exports to South Africa and the SADC region. It also provides an extended value chain into the SADC region. Both statements were rated as being to a moderate or large extent by almost three quarters of the respondents (74.3%) for each aspect.

It must be noted that South Africa at present is a net importer of automotive components. Vehicle production is set to increase in future under SAAM 2021-2035 (AIEC, 2022:7). Therefore, more components will be exported to South Africa. The SADC is the main export region in Africa for the South African automotive industry (AIEC, 2022:23). Hence, component exports to the SADC are also expected to increase in future.

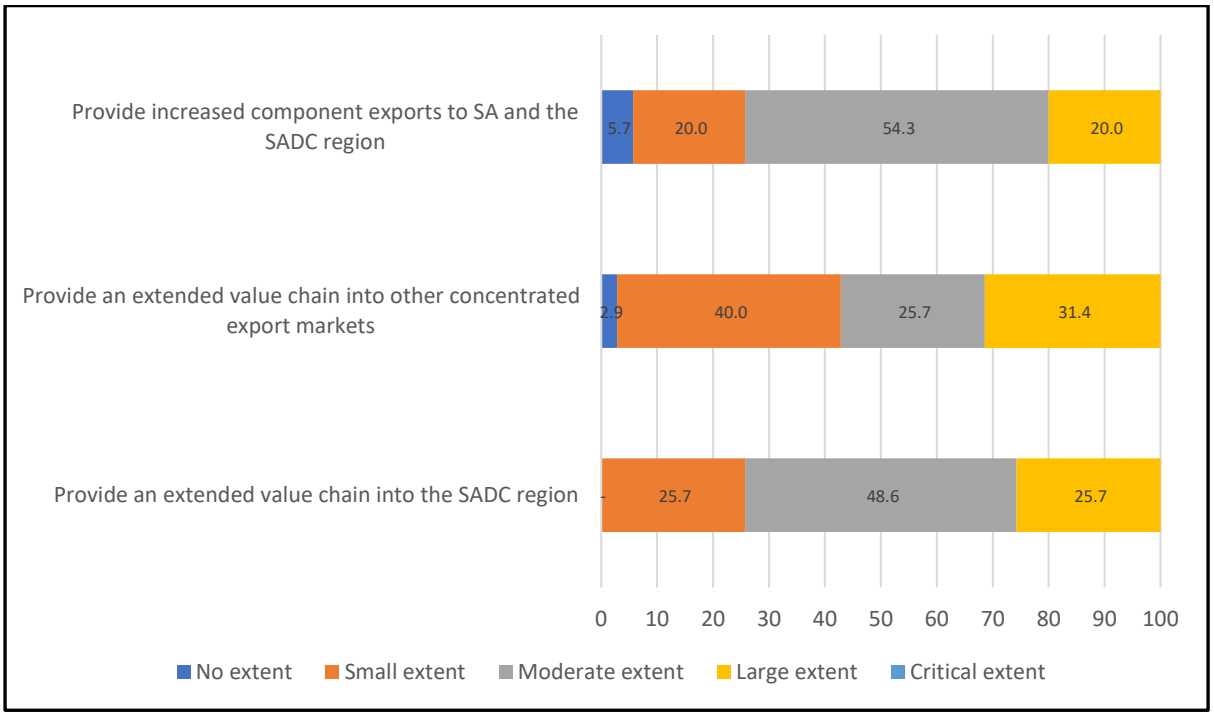

Figure 5.13: Impact of the dominance of vehicle production of SA in the SADC region
Source: Author generated

Figure 5.13 above also illustrates that just over half of the respondents (57.1%) regard the impact on providing an extended value chain into other concentrated export markets as to a moderate or large extent.

5.5.4 Factors Impacted by the Dominance of Vehicle Production of South Africa in Sub-Saharan Africa

In **Question 9** respondents' opinions were recorded regarding the perceived impact of dominance of South African vehicle production on automotive industry activity in SSA.

Findings of Question 9 indicate more than 70% of the respondents rated factors as being to a moderate or large extent in terms of each of the following aspects:

- Provide an extended value chain into multiple African export markets (77.2%)
- Allow export of vehicles locally (71.5%)
- Allow for engagement in international automotive value chains (71.4%)

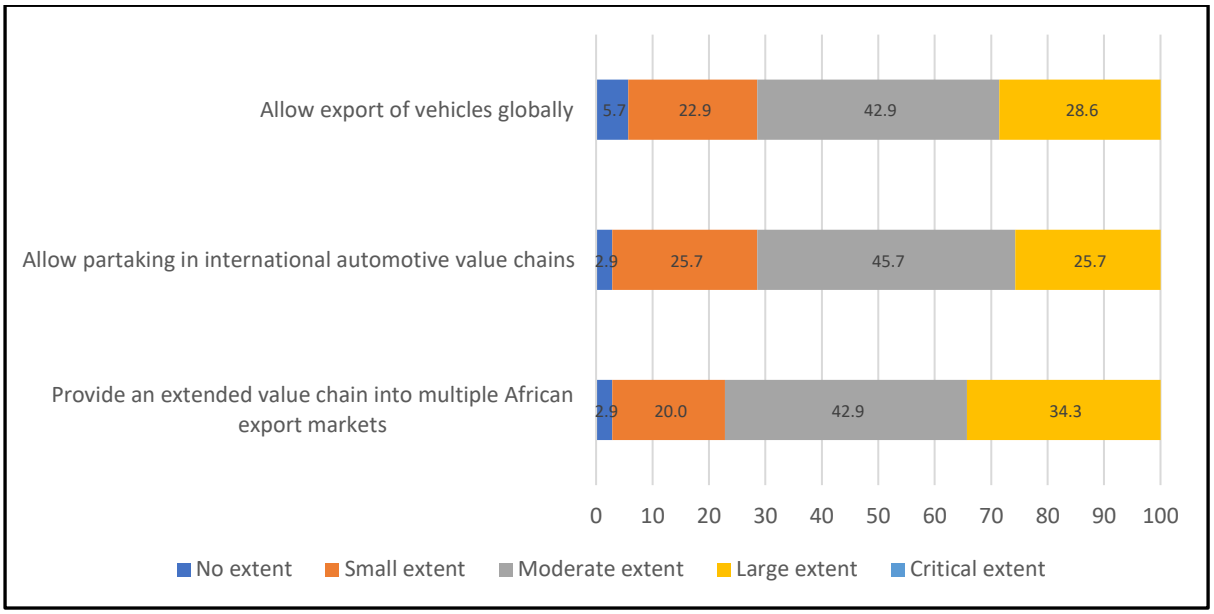

Figure 5.14: Impact of the dominance of vehicle production of SA in SSA

Source: Author generated

It is noted that the role of the African Association of Automotive Manufacturers (AAAM) and the potential African Auto Pact, as described in Chapter 2, would be important in the context of the opinions provided. The AIEC (2022:14) had the opinion that increased African automotive industry-wide promotion initiatives can emerge soon.

5.5.5 Impact of Government Influence on Growth of the South African Automotive Industry

Findings of **Question 10** indicate increased component manufacturing as being to a moderate, large, and critical extent by most (79.9%) respondents. It is followed by increased motor vehicle manufacturing (74.3%) and attracting investments in local vehicle manufacturing plants (74.2%).

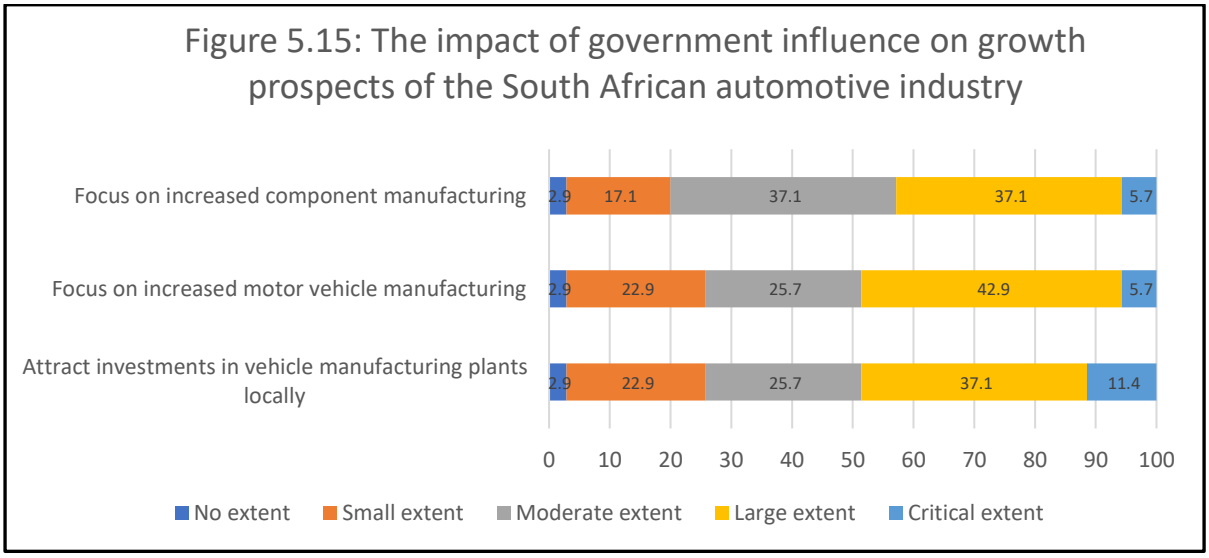

Figure 5.15: Impact of government influence on growth prospects of the SA automotive industry

Source: Author generated

In Chapter 2, the link between the success of the South African automotive industry and the partnership with government in providing long term policy certainty has been reiterate (AIEC, 2022:14).

5.6 QUESTIONNAIRE: THE AUTOMOTIVE SUPPLY CHAIN IN SOUTHERN AFRICA

In Part D of the empirical survey, Questions 11 to 14 recorded perspectives of respondents on the automotive supply chain in Southern Africa. Questions were measured on a five-point Likert-type scale from 1 being 'no extent' to 5 being 'a critical extent'. Results are statistically listed in Table D11 to Table D15 in Appendix D. Stacked bar charts are used to display findings of each question graphically.

5.6.1 Elements Adding to the Dominance of the Supply Chain of South Africa in the Southern African Development Community Region

In **Question 11** responses were recorded on dominance of the South African automotive industry supply chain in the SADC region.

Responses indicated that consensus was reached that quality is the prevailing variable that impacts dominance in the SADC region of the supply chain of South Africa. Quality as variable is indicated to a large and critical extent by 82.9% of respondents. Quality is followed by reliability of supply (77.2%) and costs competitiveness (68.5%) as variables indicated to a large and critical extent.

It is noted that global sourcing principles apply. Component suppliers must adhere to strict international quality requirements, just-in-time delivery, and competing with world-best prices, as highlighted in Chapter 2.

In contrast, almost half of respondents rated the following two variables to no, small, or moderate extent: complexity of components (45.8%) and range of components (45.7%).

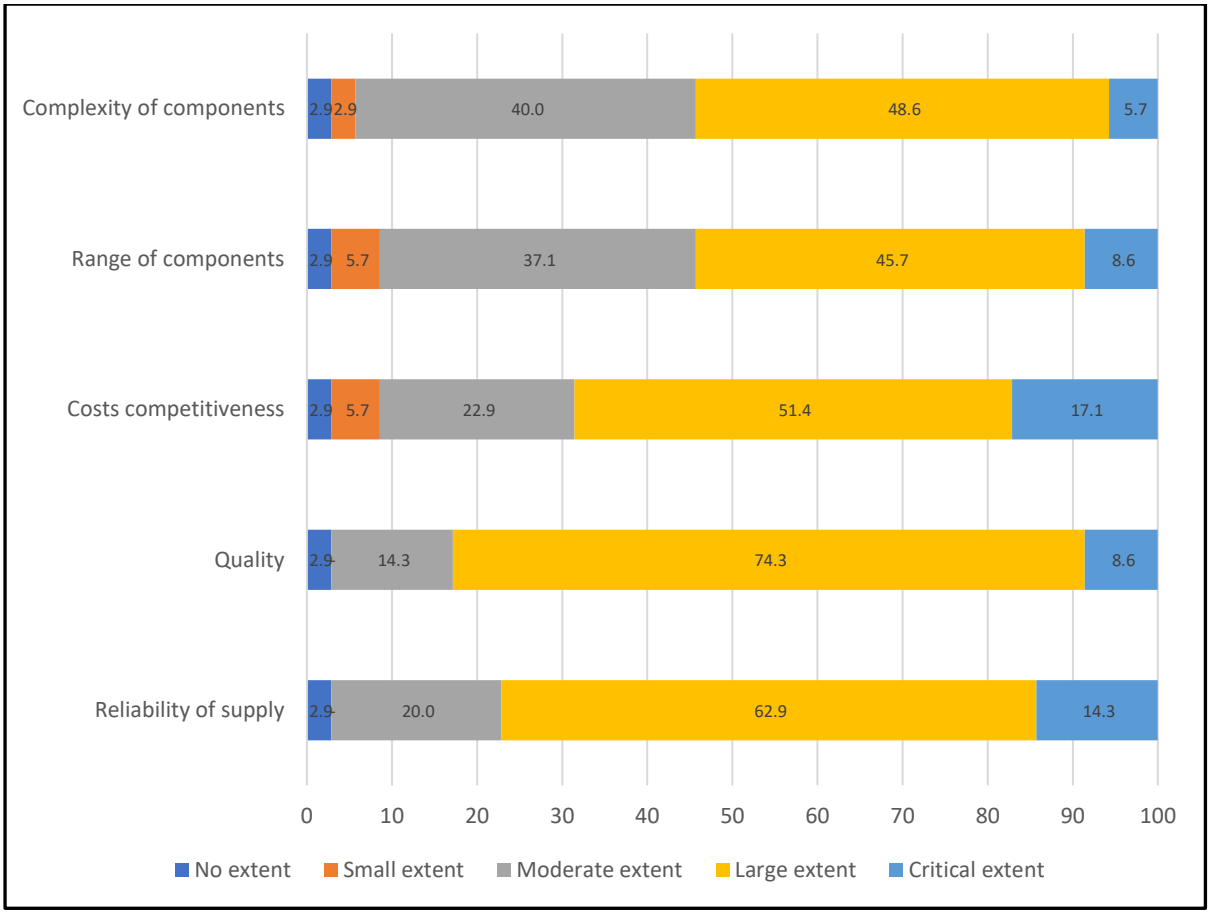

Figure 5.16: Factors of the supply chain of the SA automotive industry impacting dominance in the SADC region

Source: Author generated

5.6.2 Factors Adding to the Impact of Component Manufacturers, Located Outside South Africa, on the Automotive Value Chain of South Africa

Findings of **Question 12** revealed that complementary components and products for integration into the South African automotive value chain represent the most dominant variable. Its impact was rated to a moderate, large, and critical extent by 77.2% of respondents. To grow the revenue of component manufacturers located outside the RSA was rated to a moderate, large, and critical extent by 74.4% of respondents.

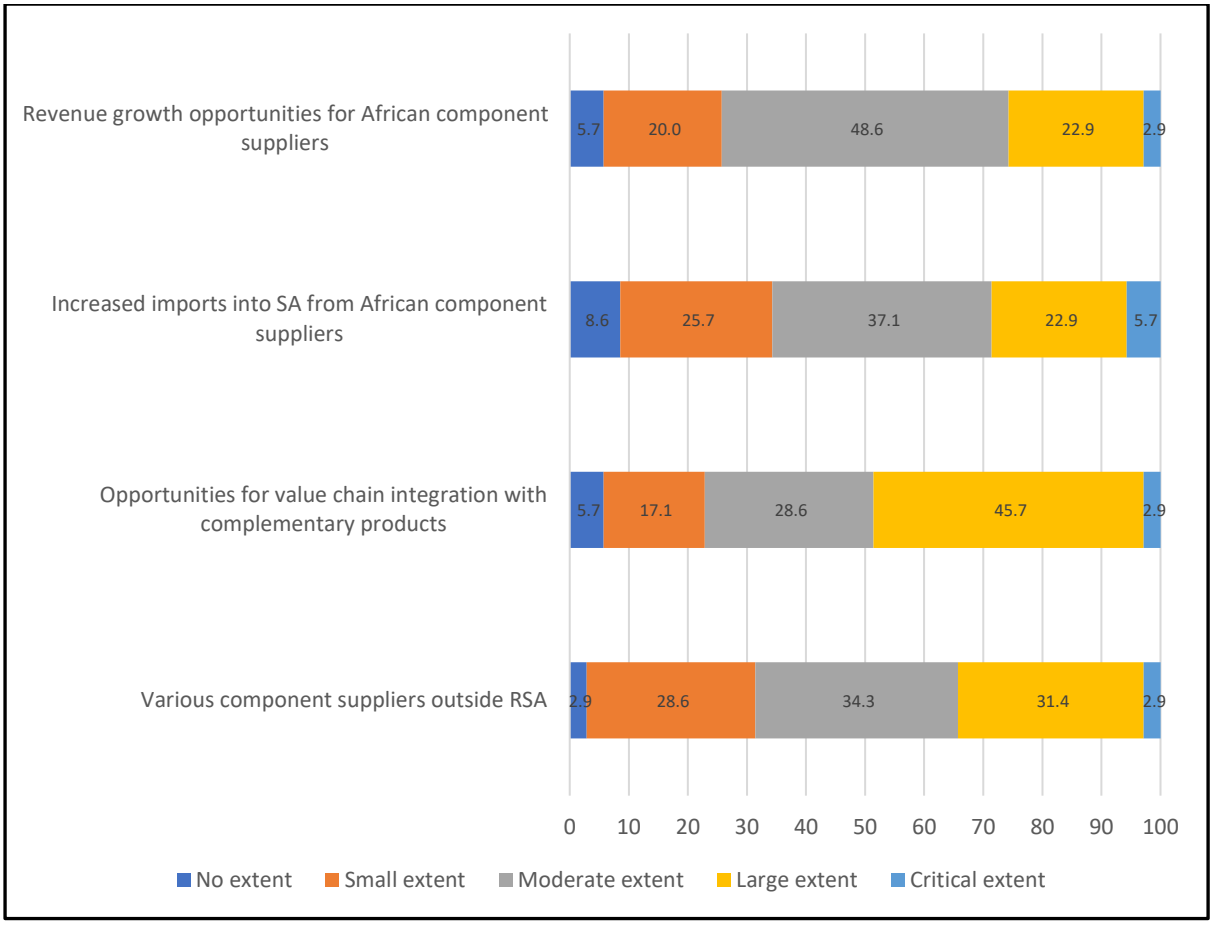

Figure 5.17: Factors adding to the impact of component manufacturers, located outside SA, on the automotive value chain of SA

Source: Author generated

In contrast, variables which were indicated by roughly one third of respondents as being 'to no extent' or 'to a small extent' were increased imports into the RSA from component suppliers on the African continent (34.3%) and the amount of various component supplies located outside the RSA (31.5%).

It is noted that original equipment components as well as replacement parts are mainly linked to the head office countries of the OEM subsidiaries in South Africa, namely Germany, Japan, and the USA, as highlighted in Chapter 3.

5.6.3 Factors Impacting the Automotive Component Manufacturers Located Outside South Africa

Question 13 collected perspectives on the degree of openness, the ease of doing business, and opportunities for automotive component suppliers located outside South Africa.

Findings of Question 13 indicated that both logistics costs and costs competitiveness were each rated to a large and critical extent by 71.4% of respondents. These two variables were followed by employment in the component manufacturing sector (62.9%) and profitability in the component manufacturing sector (62.9%).

Interestingly, almost all (91.4%) respondents rated understanding of the South African policy regime and its benefits to a moderate, large, and critical extent.

It is noted, as discussed in Chapter 3, that the benefits of the South African APDP relate to import duty rebates rolling up to the OEMs based on local value addition in South Africa/SACU. Hence, the relevance of a good understanding of the programme by all role-players.

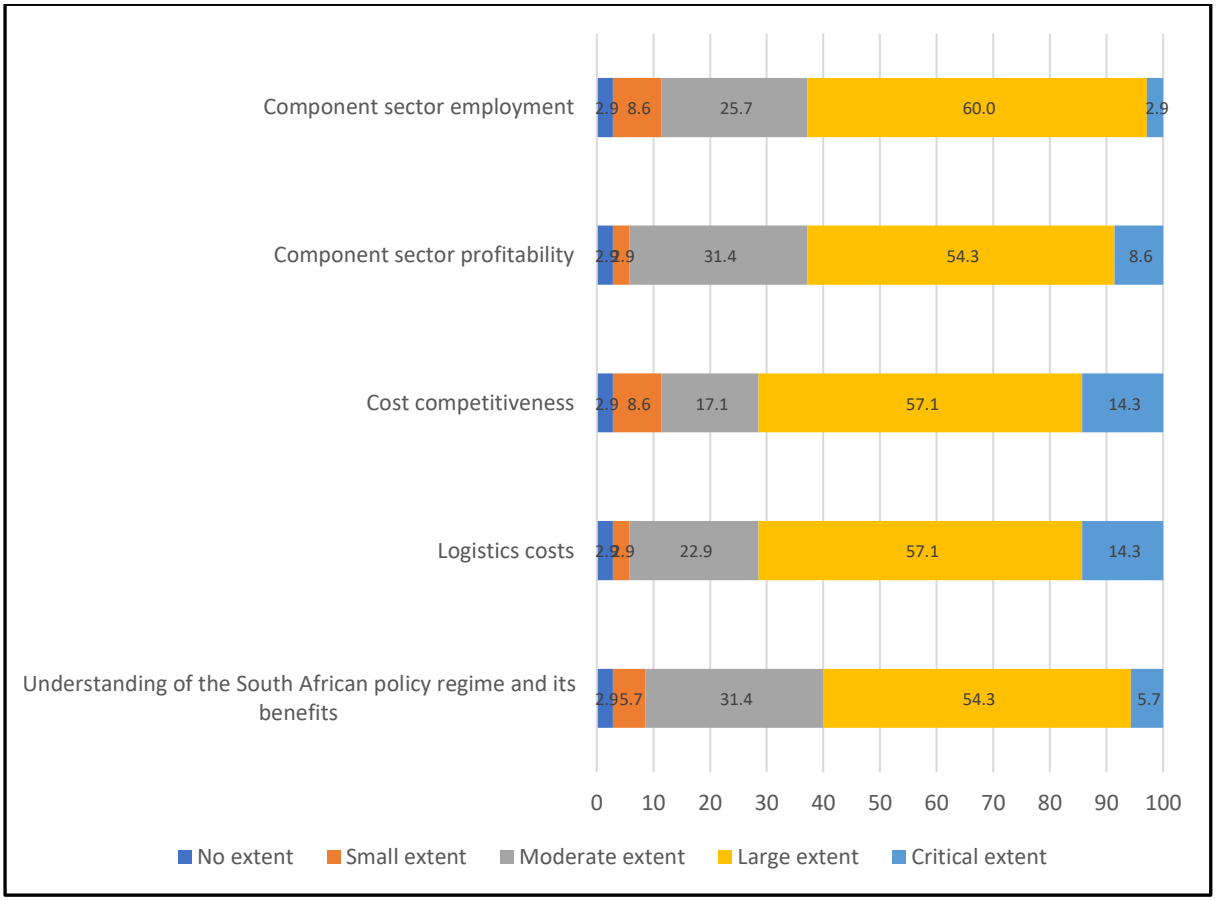

Figure 5.18: Factors impacting the degree of openness, ease of doing business, and opportunities for outside component suppliers for engagement in the SA automotive industry

Source: Author generated

5.6.4 Importance of Incentives Measures and Other Government Encouragements

Findings of **Question 14** indicated that more than 65% of all respondents rated the following three variables to a large and critical extent:

- Increased trade over borders by improving custom control issues (71.4%)
- Development of infrastructure for improved logistics (68.6%)
- Investment incentives to boost and market the automotive industry in South Africa (68.6%)

It must be emphasised that efficient customs procedures and effective logistics arrangements are imperative for just-in-time delivery to the OEMs. The Automotive Investment Scheme (AIS), as described in Chapter 3, is a South African investment incentive. At present, no automotive investment scheme is available in Namibia to encourage automotive related investments.

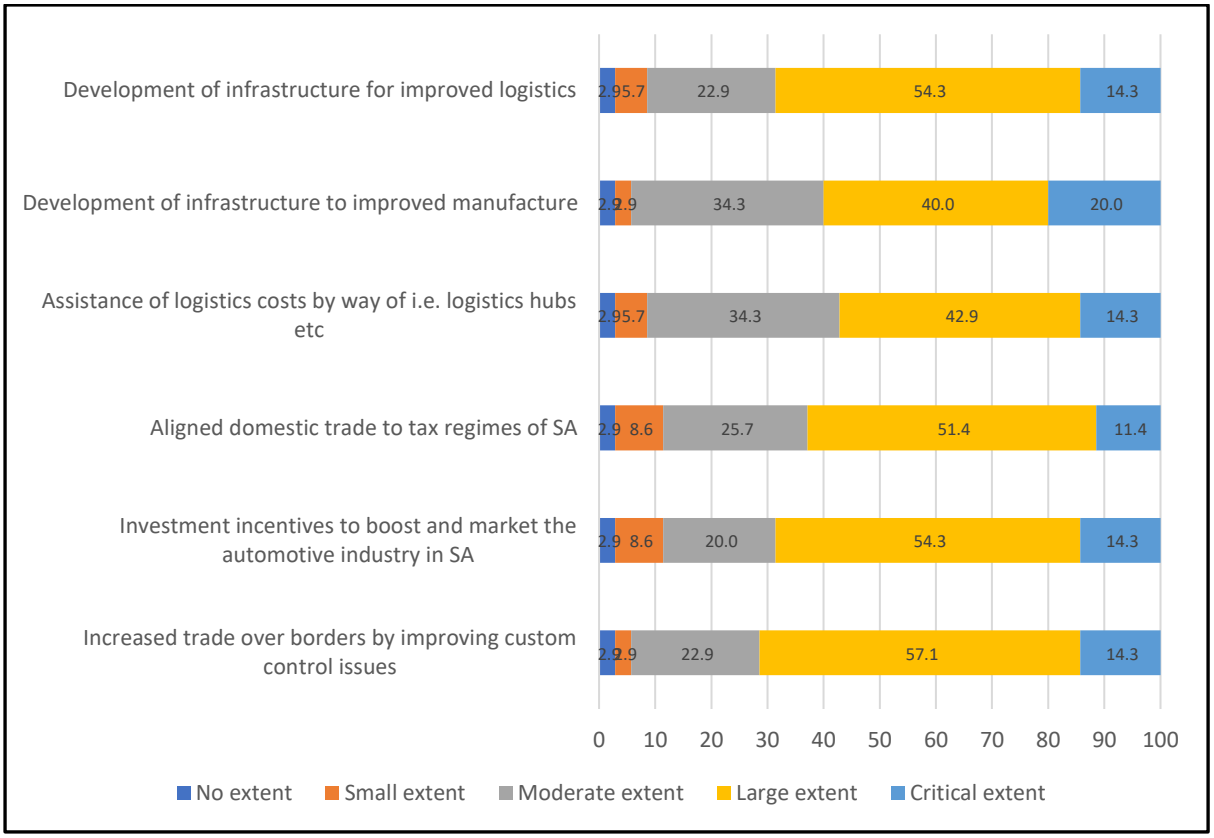

Figure 5.19: Extent of incentive measures and government encouragements in the SADC region required for Namibian automotive component manufacturers to take part in the SA automotive supply chain

Source: Author generated

The three most important variables discussed above were followed by variables rated to a large and critical extent. They consist of:

- Alignment of domestic trade in the SADC region to tax regimes of South Africa (62.8%)
- Development of infrastructure for improved manufacturing (60%)
- Government assistance for logistics hubs to reduce logistics costs (57.2%)

5.6.5 Top Factors to Increase Engagement by Namibia in the Automotive Supply Chain in South Africa

Question 4 posed in the face-to-face interviews with the second group of participants recorded perspectives and synopsis of respondents on top factors to increase engagement in the automotive supply chain in Southern Africa. The specific questions in the face-to-face interviews were deliberately designed on a broad base to collect the perspectives of respondents on the automotive supply chain in Southern Africa, representing Part D of Questions 11 to 14 in the empirical survey sent out to participants, as discussed in Section 5.6 in the above. The open-ended question in the face-to-face interview was coded using attribute coding. The open-ended component of the participants' views included the following coded components for this question (see Appendix G):

- *In Namibia import bureaucracy and related factors negatively affecting industry success*
- *The African poor track record of contextual factors, negatively affecting the political economy landscape applying to Namibia also*
- *Namibia's unionised labour force detrimental*
- *Namibia however having competitive and comparative advantages*
- *For Namibia improvements in transport infrastructure positive*
- *Namibia to benefit from harnessing regional strengths*
- *Namibia however with strong financial systems for global trading*
- *Namibia to focus on local demand and growth*
- *For Namibia FDI representing crucial important stimulus consisting of various factors*

- *Similar in Namibia, African countries requiring massive investment, representing not always attractive investment destinations*
- *Namibia lacking 4IR benefits to advance industry*
- *Contrary to Namibia, SA commandeering a more competitive position due to various positive factors*
- *In Namibia cost of living high with wage levels low, while the economy not growing*

These codes were integrated into the following themes associated with the findings of Section 5.6 on dominance of South Africa and engagement in the South African automotive industry supply chain in the SADC region.

5.6.5.1 Theme 1: Barriers to ease of doing business

Participants expressed disappointment with import and export bureaucracy at Namibian borders and trading posts of the country with South Africa, as well as related factors negatively affecting industry success. A theme that was interpreted from the data, and also applicable to Namibia, is that of a poor track record of Africa in relation to contextual factors such as the ease of doing business negatively affecting the political economy landscape and engaging in the supply chain of the large automotive industry in neighbouring South Africa. Participants reflected that, like South Africa, Namibia's unionised labour force represent a substantial detrimental impediment for economic activity, investment, and trade.

Participants elaborated that escalated FDI exhibits crucial stimulus consisting of various factors to grow domestic production and manufacturing to engage in the South African automotive supply chain. Disappointment was expressed by participants that it was unfortunate that African countries are not always the embodiment of most attractive investment destinations and that Namibia, like other African countries, was requiring massive investment to unlock economic potential and development opportunities.

In Section 5.6 above, it was elaborated on that, in Part D of the empirical survey, Questions 11 to 14 recorded perspectives of respondents for Namibia's engagement in the automotive supply chain in Southern Africa. Quality of products as variable was indicated to a large and critical extent by respondents in questionnaires, discussed in

Section 5.6.1. Flowing from the theme in this section, participants in face-to-face interviews pointed out that substantial investment was required to unlock development opportunities. Quality of complementary components and products for integration into the South African automotive value chain represent the most dominant variable indicated by respondents discussed in Section 5.6.2. In the questionnaires, it was indicated both logistics costs and costs competitiveness were rated to a large and critical extent by respondents, discussed in Section 5.6.3. Coincidentally, in the qualitative data, participants reflected that Namibia's unionised labour force represent a substantial detrimental impediment for economic activity, investment, and trade as it increases cost of doing business. In Section 5.6.4, it was illustrated that most respondents rated the variables for engaging in the supply chain of South Africa to a large and critical extent to be increased trade over borders by improving custom control issues. In the theme generated from codes from face-to-face interviews on this topic, as discussed in this section, participants expressed disappointment with import and export bureaucracy at Namibian borders and trading posts of the country with South Africa. The data here show that views expressed in the qualitative data was less optimistic than the views expressed in the quantitative data.

5.6.5.2 Theme 2: Features inducing ease of doing business

The cost of doing business in the automotive industry on the African continent is hampered by several macro-economic factors. Most of the participants agreed that Namibia owns a variety of features that induce the ease of doing business in the country and rejuvenate engagement of the local economy in the automotive supply chain of the region. It consists of the benefits of being a member of SACU, which include the opportunities to expand the contribution to the upstream and downstream supply chain of the expanding South African automotive industry.

While the participants indicated reservations about Namibia maintaining and having competitive and comparative advantages, Namibia's improvements in its transport infrastructure, like development of the container depot at the Walvis Bay harbour and continual upgrading of the railway network, characterise most positive efficiency improvements.

Most of the participants agreed that Namibia will benefit substantially from harnessing regional strengths such as preserving strong, developed financial systems for global

trading. However, while reflecting on engagement in the regional automotive supply chain of South Africa, most of the participants agreed that Namibia should first focus on local demand and growth domestically before attempting to challenge growth pains of competing internationally.

In Section 5.6.3, it was conveyed that Question 13 in the questionnaire collected perspectives on the degree of openness and the ease of doing business, among others. Quantitative findings indicated both logistics costs and costs competitiveness were rated to a large and critical extent by many of the respondents. The theme generated by the qualitative data collaborates the views of the quantitative data. Participants discussed that Namibia is maintaining both competitive and comparative advantages through its improvements in its transport infrastructure.

5.6.5.3 Theme 3: Lack of competitive edge compared with South Africa

Another theme grounded in the qualitative data is that Namibia lacks the Fourth Industrial Revolution (4IR) benefits, compared to that of South Africa, to advance an automotive manufacturing industry.

Contrary to Namibia, participants elaborated that South Africa commandeers a substantially more competitive position due to various positive factors embedded in the economy such as the policy framework, overall strategic approach, and the legislative environment in South Africa, conducive for inducement of local production or manufacturing. Evident from this theme is the incidence of Namibia's high cost of living with concurrence of low wage levels and a stagnating economy.

Findings of Question 13, discussed in Section 5.6.3, indicate both logistics costs and costs competitiveness were rated to a large and critical extent by most respondents, as perspectives of respondents, on engagement in the automotive supply chain in Southern Africa. The finding of the theme in this section, generated from codes of face-to-face interviews with participants, concurs that Namibia lacks the Fourth Industrial Revolution (4IR) costs benefits compared to that of South Africa. Qualitative and quantitative findings are therefore mutually reinforcing.

5.7 QUESTIONNAIRE: FACTORS INHIBITING GROWTH OF THE NAMIBIAN AUTOMOTIVE INDUSTRY

Part E of the questionnaire consisted of Questions 15 to 17. These covered variables impacting automotive industry growth in Namibia. Respondents were asked to rate variables in each question on a scale of 0% (of no importance) to 100% (of large importance). A specific percentage had to be inserted for each variable.

The basis of analysis of responses in this question is founded on calculations to ascertain the average percentage of importance (mean) affixed to each variable. The variables are subsequently ranked based on the mean.

An opportunity was also given at the end of each question for the respondent to mention any other variable inhibiting growth of the Namibian automotive industry. Respondents were asked to specify and explain the variable. Respondents also had to rate the variable on the scale of 0% (of no importance) to 100% (of large importance).

Line graphs were used for questions 15 to 17. The mean of responses from respondents for each subsection in each question is a numerical value. The scales in these graphs are expanded to see differences in mean more clearly. Data tables with values for mean, the median, and the standard deviation are presented statistically in Tables D15 to D17 in Appendix D.

With data tables, distribution of scores for each question is clearly indicated. Variables are sorted in order of importance from highest rated on top to the lowest, based on the mean.

5.7.1 Impact of Constraints on Growth of the Namibian Automotive Industry

Consensus was reached by respondents that growth of the automotive industry is adversely affected by the government policy regime in Namibia. Three of the top four constraints have direct relation to the role the government plays:

- Incentives measurements of the government (77.1%), the most important
- Current low economic growth (76.7%), the second most important
- Government's investment incentives (75.7%), the fourth most important

Findings of this question also indicate that constraints related to the human variable are among the top five constraints:

- Lack of skills (76.6%), the third most important
- Labour force productivity (75.4%), the fifth most important

It must be highlighted that respondents rated grey imports as being the seventh most important variable of constraints (73%). Grey imports are vehicles that are traded in a country outside authorised manufacturer channels as allowed by government legislation in that country (Black et al., 2019).

One respondent noted in the space for "*other*" the lack of presence of political will to develop and implement investment incentives. This relates to the discussion in Chapter 3 where it was indicated that there is no incentive scheme to encourage automotive related investments exist in Namibia at present.

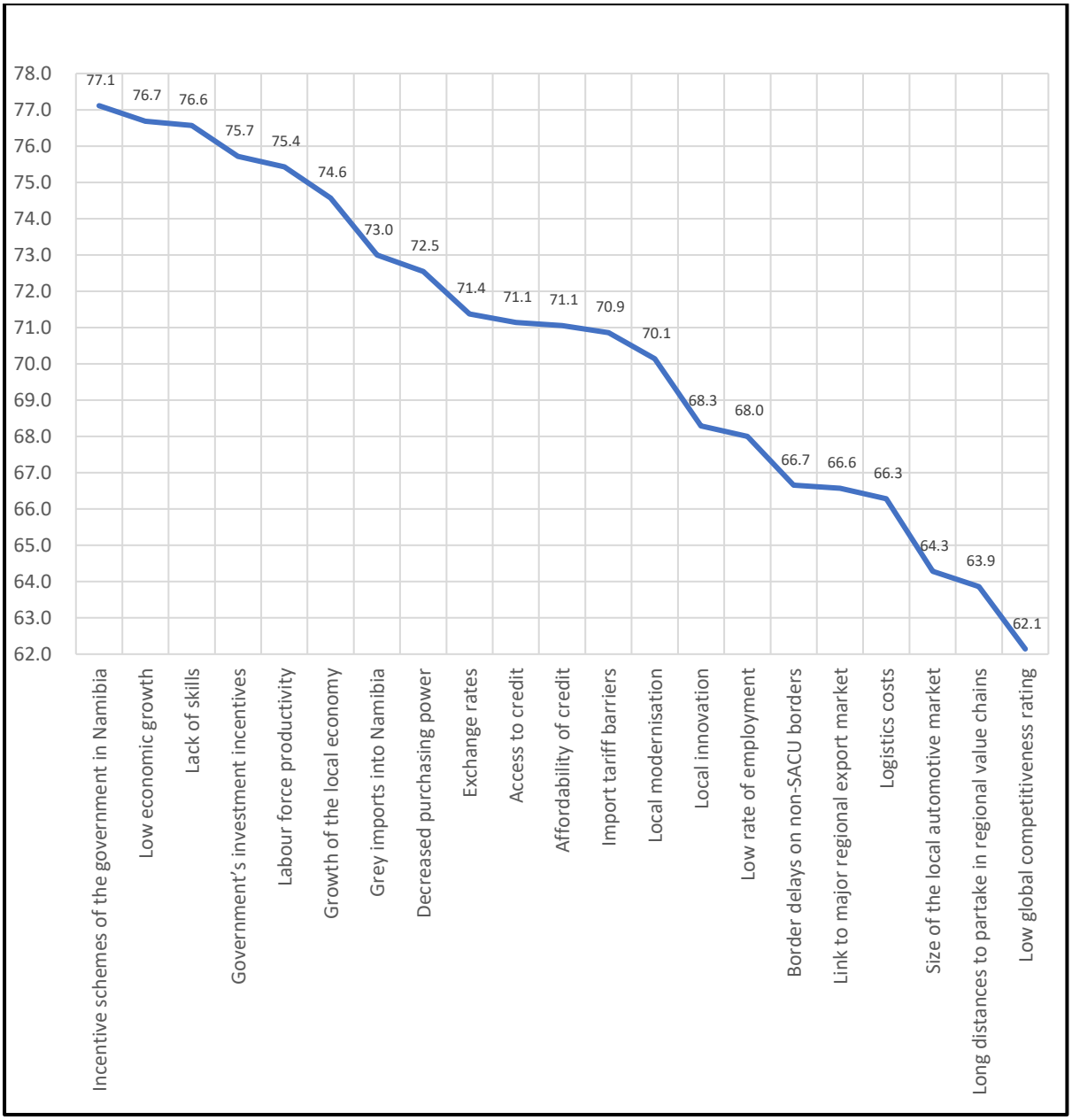

Figure 5.20: Constraints affecting growth of the Namibian automotive industry (mean of responses)

Source: Author generated

With Question 5 in the face-to-face interviews, the open-ended responses recorded perspectives and synopsis of respondents on top factors that inhibit or limit growth of Namibia's automotive industry, in accordance with Section 5.7. Section 5.7 covers factors negatively impacting growth of the automotive industry in Namibia. As mentioned in Section 5.1, the open-ended responses were coded using attribute coding and themed thereafter in line with Saldaña's code-to-theory model (Saldaña, 2016).

The following complete list of coded components for this question were included (see Appendix G):

- *The productivity culture in Namibia a negative impact, needing better management*
- *Government investment incentives of Namibia drastically in need to meet demands for assembly value chains*
- *For Namibia most important the reprioritisation of government incentives*
- *Various areas of political economy not astutely applied by Namibian government*
- *The government leadership lacking capability while undermining of good governance and grow corruption*
- *Government's poor implementation of policies creating delays and uncertainties*
- *Namibia's regulatory environment bureaucratic and overly regulated*
- *The government's fiscal policy problematic*
- *Corruption and greed undermining and promoting negative labour force behaviours*
- *Tenders and supply to government commanded representing major sales, but due to economic downturn huge decline experiencing*
- *The government not appreciative of private sector stimulus to economy*
- *Presence of counterproductive levies and negative green track record*
- *The private sector to be proactive, not only rely on government*
- *In Namibia EPZs created, but not increasing the economic base*
- *The Namibian government not acting responsible in respect of green economy*
- *Sometimes excellent policies defeated by implementation gaps*
- *Government mostly insourcing expertise for strategic outcomes*
- *The government to safe-guard natural resources for Namibia's own economic stimulation*
- *A lack of industry representative bodies to balance government mandates*
- *Government to attract international OEMs for local assembly lines*
- *Namibia with substantive shortage of skilled workforce which affects pipeline and a current skills pool*
- *Work permits and immigration issues inhibiting to attract skills to Namibia*

- *Namibia with expert skills for growth of industry*
- *Namibia's labour force positives mediated by uneven productivity*
- *The labour force's productivity of a laid-back culture negative*
- *Namibia's labour force productivity lacking hard-working and expertise*
- *The local skills shortage intricately linked to the government and political will*
- *Namibia using foreign labour instead of local skills pool*
- *Local facilities for pipeline of technical skills lacking*
- *However, technical skills and their pipeline still strong in Namibia*
- *Presence of a networking culture of high value for economic growth*
- *Namibia's diaspora (dispersion of people from their original homeland) to support return to Namibia with specific sectors to attract the diaspora*
- *Grey imports with too many disadvantages and negative for regulated industry*
- *Grey imports with a role to play when positioned correctly in industry*
- *Grey imports crowding out local initiatives and economy*
- *COVID-19 supply chain problems in Namibia as well as grey vehicles carrying high risk*
- *Negatives of the economy worsen by COVID-19 and economic stagnation and decline*
- *Namibia economic activity at historic negative milestone of low levels due to various reasons*
- *Namibia's economy recovery process affected by national macro and micro trends*
- *Namibia to follow best case examples for export intensity*
- *For Namibia product offering to be relevant to stimulate domestic market*
- *Locally, unhealthy business practices and unfair competition impeding growth*
- *Namibia lacking comparative and competitive advantages in 4IR areas*
- *In Namibia, the 4IR and ease of doing business not evident*
- *Namibia's dependence and interlinkages with South Africa with negative consequences*

These codes were integrated into the following themes associated with the findings of Section 5.7 on factors inhibiting growth of the Namibian automotive industry.

5.7.1.1 Theme 1: Negative productivity culture

A theme that was prominent in the data is that participants expressed disappointment with the laid-back attitude in respect of productivity in Namibia. Skilled labour in many African countries remains a major constraint to their ability to manufacture. Most of the participants agreed that, in addition, wide-spread corruption and greed undermine productivity and promote negative labour force behaviours. The automotive industries in SSA countries are subject to various factors that contribute to higher domestic production costs if compared to competitors in the global automotive industry. These factors include corruption among others.

In Section 5.7, it was stated that Part E of the questionnaire covered variables with a detrimental impact on the automotive industry growth in Namibia. Labour force productivity was indicated as the fifth most important variable. The finding of the qualitative theme highlighted in this section matches the findings of the quantitative questionnaire, where most respondents expressed disappointment with the laid-back attitude in respect of productivity in Namibia.

5.7.1.2 Theme 2: Inadequate government incentive schemes

Most of the participants indicated reservations on the government investment incentives of Namibia which drastically need enhancement, for instance to meet instrumentalities of OEMs for establishing assembly value chains. Participants agreed the reprioritisation of government investment and manufacturing incentives is crucial in Namibia.

Participants related that, in addition, government's poor implementation of investment incentive policies create delays and uncertainties to attract investors.

The presence of counterproductive levies and the negative green track record of governing institutions in Namibia also side-track lucrative investment opportunities in the automotive manufacturing industry. While most of the participants agreed admirable investment policies are drafted and signed into law, these atonements are sometimes defeated by implementation gaps both in timing and technical effectuating.

As discussed in Section 5.7.1, consensus was reached by respondents in questionnaires that the growth of the automotive industry is adversely affected by

government's investment incentives is the fourth most important variable. Concurring qualitative findings show agreement that the reprioritisation of government investment and manufacturing incentives is crucial in Namibia for growth of the automotive industry.

5.7.1.3 Theme 3: Portrayal of the private sector

While many participants observed that the government tends to not be fully appreciative of private sector stimulus to the economy and the automotive industry, the participants offered views that the private sector should be more proactive and not rely entirely on government to grab opportunities to invest in the automotive industry. In addition, participants reflected that a lack of industry representative bodies to balance government mandates is predominant.

In Section 5.3.3, it was highlighted that respondents partaking in the empirical survey mostly indicated activities of their business entities to be 80% or more focused as automotive dealerships, which are in the remit of the private sector. The findings of this theme, discussed here in Section 5.7.1.4, underscore that those participants in face-to-face interviews believe the private sector stimulus to the economy and the automotive industry by the government should increase. Therefore, the two data approaches and their findings mutually reinforce this finding.

5.7.1.4 Theme 4: Inconsistent political and policy regime realm

Participants expressed disappointment and reflected that various areas of healthy political economy principles are not astutely applied by Namibian government. A theme that emerged from the data of participants gathered in face-to-face interviews is that it seems the government leadership sometimes lacks capability while corruption is growing, which undermines good governance. The cost of doing business is hampered by macro-economic factors such as political, compliance, and lengthy paperwork issues. Most of the participants agreed that Namibia's regulatory environment tends to be largely bureaucratic and overly regulated. In this regard, an investor-friendly destination should be amplified where government attracts international OEMs for local assembly lines and growing the automotive industry.

Governments should be committed to sustainable and clear policy support measures related to industrialisation. It was claimed that the government's fiscal policy was

largely problematic, for instance tenders and supply to government commanded major vehicle sales in the previous decade, but due to economic downturn huge decline in government spending is experienced. Another example is EPZs which were created and established but did not increase the economic base in the country. In addition, participants reflected that the Namibian government was not acting responsible in respect of green economy and care for the environment. In this regard it was observed that much more needed to be done by the government to safe-guard natural resources for Namibia's own economic stimulation.

In Chapter 2, the link between the success of the South African automotive industry and the partnership with government in providing long-term policy has been reiterated (AIEC, 2022:14). Findings of the theme discussed here in Section 5.7.1.4 concur with opinions of respondents of the empirical survey, as discussed in Section 5.5.5, on the impact of government influence on growth of the automotive industry where attracting investments in local vehicle manufacturing plants was indicated as an important variable by most of the participants. The data from two approaches therefore again provide mutually reinforcing evidence.

5.7.1.5 Theme 5: Severe skills shortage

While most of the participants agreed work permits and immigration issues inhibit attracting skills to Namibia, participants reflected that the local skills shortage was intricately linked to the government policy regime and political will. It was proclaimed that government mostly insource expertise for strategic outcomes and largely ignore Namibia's diaspora (dispersion of people from their original homeland). Participants discussed that Namibia often uses foreign labour instead of the local skills pool. It was agreed that government can do much more to support the return of skilled labour to Namibia for specific economic sectors. Participants maintained that Namibia has a substantive shortage of skilled workforce which is detrimental to the skills pipeline and the current skills pool.

Most of the participants agreed, in some instances and career fields, Namibia has expert skills for growth of an automotive industry, such as engineering professionals. Participants advised that technical skills and their pipeline are still healthy and strong in Namibia. However, these Namibia labour-force positives are mediated by uneven

productivity as well as the labour force's laid-back productivity negative culture and Namibia's labour-force productivity that lacks hard work and technical knowledge.

The empirical survey contained Part E, with Question 15 to 17, on constraints on growth of the automotive industry, discussed in Section 5.7.1. A substantial number of respondents indicated constraints related to the human variable, including lack of skills, as the third most important variable. Findings of this theme, discussed in Section 5.7.1.5, coincide with those of the participants in face-to-face interviews declaring Namibia's shortage of a skilled workforce detrimentally affects the growth of the automotive industry, showing a mutually reinforcing conclusion from the two data approaches and analyses.

5.7.1.6 Theme 6: Grey import inexpedient

Another theme grounded in the qualitative data collected on top factors that inhibit or limit the growth of Namibia's automotive industry was that grey imports have too many disadvantages and are negative for the regulated automotive industry. Sales and parallel imports of used vehicles other than through OEM approved channels, or so-called 'grey imports', were highlighted as being prevalent in Namibia. Most of the participants agreed that, in low-income economies, grey imports have a role to play when positioned correctly in industry. However, participants proclaimed strongly that grey imports mostly crowd out local initiatives and encumber economic growth and development.

This qualitative finding coincides with the views of respondents of the questionnaire, as discussed in Section 5.7.1, where it was highlighted that many respondents rated grey imports as being the seventh most important variable of constraints.

5.7.1.7 Theme 7: Dire straits rooted in the economy are worsened

Most participants indicated concerns and reservations on Namibia's economy recovery process that was slow and effectuated by national macro- and micro-economic trends such as the COVID-19 pandemic's repercussions on supply chain problems in Namibia as well as risk to economic growth presented by grey imports, as discussed in the previous paragraph. (Additional reflections of participants on the COVID-19 pandemic's effect in Namibia are discussed in detail in Section 5.7.1.8). Economic stagnation and decline since the global credit crunch in 2008 were

worsened in Namibia and participants maintained that Namibia's economic activity was at historic negative milestones of low levels due to reasons such as unhealthy business practices, unfair competition that impeded economic growth, as well as Namibia lacking comparative and competitive advantages on the back of lagging in respect of the Forth Industrial Revolution (4IR) development areas. Some participants mentioned that Namibia's dependence and interlinkages with South Africa on the economic front may also have negative consequences. It was orated that Namibia is lagging far behind South Africa when it comes to economic developments of the Forth Industrial Revolution (4IR). While most of the participants agreed Namibia should rather follow best-case examples for export intensity and producing for the global market, it is imperative for Namibia that the local product offering be relevant to stimulate domestic market.

In Section 5.4.2, it was indicated that data from respondents of the questionnaire reflected that around 29% of the respondents believed the automotive industry will grow to a small extent. This theme in this Section 5.7.1.7, generated from codes from face-to-face interviews highlights, coincides with these outcomes from the questionnaire, with qualitative insights that demonstrate drawbacks resulting in, and impacting on, the stagnant economy.

5.7.1.8 Theme 8: COVID-19 pandemic impediments

In addition to the open-ended responses recorded in face-to-face interviews with the second group of participants on perspectives and synopsis of respondents on top factors that inhibit or limit growth of Namibia's automotive industry, as discussed in Section 5.7 above, a question was postured to participants in face-to-face interviews on their views of detrimental effects attributed to the COVID-19 pandemic.

The initial empirical survey to 35 respondents was concluded in early 2020, before the COVID-19 pandemic became prevalent as a worldwide threat. The subsequent face-to-face interviews with another 20 participants, as discussed in Section 5.1, addressed the impact of the COVID-19 pandemic on the growth of the automotive industry in Namibia.

The open-ended responses in the face-to-face interviews were coded using attribute coding and themed thereafter in line with Saldaña's code-to-theory model (Saldaña,

2016). The open-ended component of the participants' views put in Question 8 in the face-to-face interviews regarding factors inhibiting growth of the Namibian automotive industry with special references to the COVID-19 pandemic included the following coded components for this question (see Appendix G):

- *COVID-19 creating new opportunities and innovative pivoting in doing business*
- *COVID-19 with uneven outcomes that mainly negatively effecting the economy and loss of employment*
- *As result, severe economic downturn in major economic strength areas experienced*
- *However, human resilience evident in Namibia*
- *COVID-19 also having positive benefits*
- *Responsible public health to remain globally integrated evident*
- *The automotive industry suffering severe ramifications and impacts*
- *With COVID-19 the stagnant economy worsening and the economy shrinking*
- *COVID-19 effecting supply chains and supply problems*
- *Shortages and hardships of COVID-19 affecting spirit of Namibia's way of doing business*
- *COVID-19 forcing different business models, surviving through pivoting*
- *Other countries responding more positively*
- *The COVID-19 pandemic misused to mask existing fault lines*
- *In Namibia historically the business model personal and not virtual, impeded by the pivoting to virtual dealings*
- *Also, in Namibia COVID-19 deaths affecting businesses largely, a loss of people and talent*

The above-mentioned codes were integrated into the following themes, associated with the findings of Section 5.7, on factors inhibiting growth of the Namibian automotive industry with special reference to detrimental effects of the COVID-19 pandemic.

5.7.1.8.1 Theme 1: COVID-19 new beginnings

Most of the participants agreed that COVID-19 created new opportunities and innovative pivoting as businesses were impelled to find niche opportunities to stay afloat. It was reflected that human resilience was evident in Namibia and that COVID-19 also had positive benefits in new ways of doing business. However, participants

expressed disappointment that in some instances in Namibia the COVID-19 pandemic was misused to mask existing fault lines and structural issues in the policy regime pertaining to economic growth.

5.7.1.8.2 Theme 2: COVID-19 as contributor of economic anguish

Most of the participants agreed that the already stagnant economy was worsening and the economy shrinking even more with COVID-19. It was reflected that COVID-19 was directly affecting supply chains and causing supply problems. The automotive industry suffered severe ramifications and impacts on its global supply lines. Participants maintained COVID-19, with its uneven and unpredictable outcomes, affected the economy negatively as, for instance, loss of lives and loss of employment also impacted Namibia. As consequence, severe economic downturn was to be expected in major economic strength areas. COVID-19 affected the economic workforce that these participants were part of and, hence, their sense of economic pain (and social pain – see next theme) that is experienced when a workforce is depleted through a grand societal challenge such as a pandemic.

5.7.1.8.3 Theme 3: COVID-19 as contributor to human anguish

While most of the participants agreed that, in Namibia historically, the business model was personalised and interactive based on human-centred engagements, these networking ways of doing business were impeded by the pivoting to virtual dealings and social distancing. Participants reflected that the shortages and hardships of COVID-19 affected the spirit of Namibia's way of doing business. It was proclaimed that the COVID-19 pandemic in Namibia forced introduction of new business models as the only way of facing challenges to maintain economic growth. The collegiality elements that many find in workforce social engagements were thus severely constrained and this meant that much of the social bonds that make business 'gel' was lost, which impacted business ethos negatively.

5.7.1.8.4 Theme 4: Reflecting on Namibia's COVID-19 drive

Participants expressed disappointment and maintained that some other countries worldwide responded more positively to the COVID-19 pandemic. It is noted that the lack of testing equipment, personal protective equipment (PPE), intensive care unit beds, and ventilators was a concern across Africa, specifically in initial stages of the

pandemic. This was confirmed by media coverage of COVID-19 and vaccine ‘nationalism’, and the divide between North and South. It became evident that a more responsible public health drive was required in Namibia to remain globally integrated with campaigns to eliminate the pandemic. As in other countries, Namibia suffered a severe toll of COVID-19 deaths, which affected businesses as result of the loss of people and talent.

5.7.2 Impact of Factors Adding to Growth of the Namibian Automotive Industry

In **Question 16** respondents were asked to rate variables that add to the growth of the automotive industry in Namibia.

Findings of this question indicated the human variable plays a crucial role in this growth. Skills development and training (79.7%) was rated as the most important.

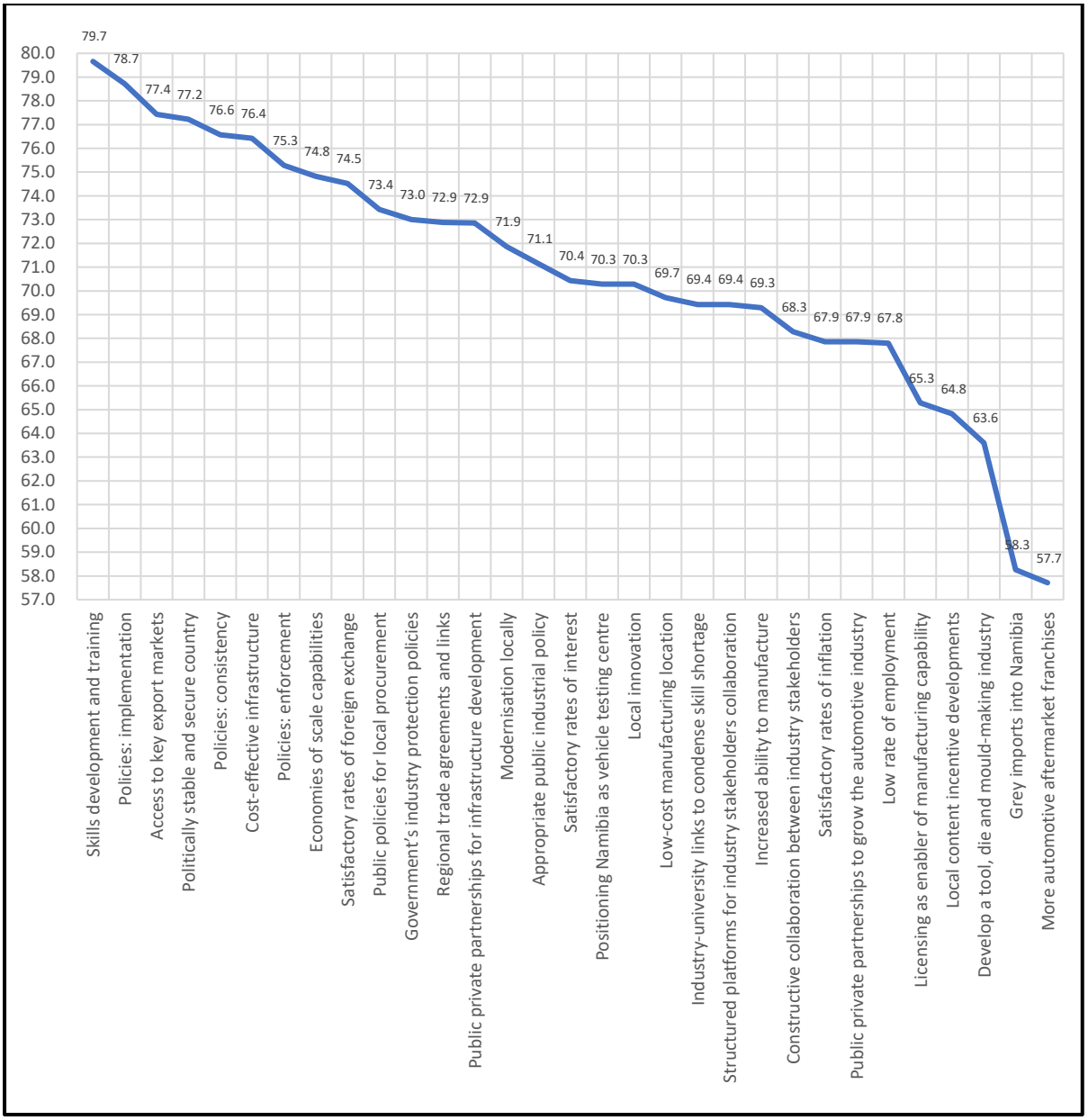

Figure 5.21: Factors with the most potential of adding to growth of the Namibian automotive industry (mean of responses)

Source: Author generated

It can be seen in figure 5.12 above that the second most important variable includes policy and strategy execution and implementation by the government (78.7%).

Respondents rated access to key markets (77.4%) in third place of important growth factors, politically stable and secure country (77.2%) fourth, consistent strategies developed by government (76.6%) fifth, cost effective infrastructure (76.4%) sixth, and government's enforcement of policies (75.3%) as the seventh most important.

Responses from respondents therefore indicated the consensus was that most of the top seven variables of growth factors flow from intervention of the government and variables that make up policy and strategy execution by the government. This includes government's implementation of strategies (78.7%), rated second most important, consistent strategies developed by government (76.6%) in fifth place, and government's enforcement of policies (75.3%) as the seventh most important.

In the space for "*other*" for the question in the survey, no other variables of importance were indicated by respondents.

In face-to-face interviews with the second group of participants, open-ended responses recorded the top factors that add to growth of Namibia's automotive industry in Question 6 in accordance with this in the above. Section 5.7.2 covers variables that add to growth of the automotive industry. As mentioned in Section 5.1, the open-ended responses were coded using attribute coding and themed in line with Saldaña's code-to-theory model (Saldaña, 2016). The following complete list of coded components for this question were included (see Appendix G).

- *Namibia's transport infrastructure of an uneven range with differentiated sectoral strengths and weaknesses*
- *A transport infrastructure superior in region, stimulating growth in Namibia*
- *Namibia with attractive potential as economic and transport hub*
- *Various strong potential for growth in Namibia to be optimised*
- *Namibia to harness regional comparative and competitive benefits*
- *Some government stimuli for the economy in existence but not sufficient*
- *Lack of investments in Namibia due to various factors*
- *Namibia lacking competitive and comparative advantage in the region*
- *In respect of competition in the region, South Africa remaining attractive and a better positioned market*
- *Namibia with strengths of local manufacturing and infrastructure*
- *The Southern Africa region unstable and affecting Namibia's economy*
- *Governance on a strong foundation needed to address political economy in Namibia*
- *Regional and global geo-politics (effects of Earth's geography (human and physical) on politics and international relations) currently in Namibia favour*

- *In Namibia, the 4IR and other investment domains requiring stimulation*
- *Government legislation and strategies providing stimulate package currently*
- *Corruption creating negative conditions, to fight corruption*
- *A lack of business-driven culture due to various factors*
- *Prevalent that foreign labour crowding out local employment*

The above-mentioned codes were integrated into the following themes of top factors that add to growth of Namibia's automotive industry, associated with this finding as discussed in Section 5.7.2 above.

5.7.2.1 Theme 1: Superior regional logistics infrastructure

A theme elicited from the data, was that although most of the participants agreed Namibia's transport infrastructure was superior in region and continues to stimulate growth in Namibia, the transport infrastructure consisted of an uneven range with differentiated sectoral strengths and weaknesses. In this regard the failing railway network was reflected upon.

Participants elaborated that Namibia represented a destination with most attractive potential as an economic and transport hub in the region. Participants declared that as result of existence of the various areas of strong potential for growth in Namibia, these should be optimised to facilitate growth of the economy and an automotive industry.

Findings of the theme discussed here coincides with outcome and opinions of respondents in the questionnaire where findings of Question 14 of the questionnaire indicate that most respondents rated to a large and critical extent the development of infrastructure for improved logistics as most important role of government to simulate growth of the automotive industry. Qualitative findings triangulate with quantitative findings, again, in this instance.

5.7.2.2 Theme 2: Benefactions of government investment incentives

While most of the participants agreed that current government legislation and strategies provide stimulation packages to attract investment, these government stimuli for the economy in existence are not sufficient. Participants reflected that the

lack of investments in Namibia are due to various global macro-economic factors such as inflation and energy costs.

In Section 5.6.4 replies of questionnaire respondents on importance of incentives measures and other government encouragements were highlighted. Findings of Question 14 of the questionnaire indicate that most respondents rated to a large and critical extent, that of investment incentives to boost and market the automotive industry. The theme discussed in this Section 5.7.2.2 concurs to a large degree. Qualitative and quantitative data again integrated well in this finding.

5.7.2.3 Theme 3: Competitive advantage

While participants indicated reservations that Namibia lacks competitive and comparative advantage in the region, participants proclaimed that Namibia owned properties of strengths of substantial local manufacturing and a well-developed infrastructure.

However, the absence, largely, of focus on a business-driven culture required stimulation in opinion of participants. It was agreed by participants that more focus be placed on 4IR development and prioritizing of other investment domains.

Findings of this theme largely agree with views of respondents in the questionnaire as in the following: In Section 5.6.1 it was noted that elements adding to dominance of the supply chain of South Africa in the SADC region were put to respondents. Qualitative data sources found that quality is followed by reliability of supply as well as notably costs competitiveness as variables that were indicated to a large and critical extent.

5.7.2.4 Theme 4: Regional proliferation

Another theme focused on competition in the region, was that participants agreed that South Africa remains the most attractive and better positioned market in the region. That being proclaimed by participants, it was added that the Southern African region lately remains alarmingly unstable on a socio-economic political level, which also affects investments for Namibia’s economy. Participants agreed in addition that regional and global geo-politics (effects of Earth's geography (human and physical) on

politics and international relations) are however currently in Namibia's favour and that Namibia is to focus to harness regional comparative and competitive benefits.

In Section 5.4.4 respondents replied in the questionnaire on the most promising market outside Namibia to add to growth. It was recorded that many respondents indicated that South Africa and the SADC were the regions with the most promising opportunities in this regard. Findings of the theme flowing from face-to-face interviews discussed here in Section 5.7.2.4 concur to a large extent. The qualitative and quantitative data points again integrate well for this finding.

5.7.2.5 Theme 5: Political and policy regime locally

While participants indicated reservations on wide-spread corruption that creates negative conditions for economic growth, participants agreed that governance in Namibia existed on a strong foundation, and that the political economy of production, trade, and their relationship with the law and the government needed only fractional improvements. It was however reflected upon that it was prevalent that foreign labour was crowding out local employment.

Findings of this theme coincide closely with views of respondents in the questionnaire as in the following. Part E of the questionnaire includes references to the impact of constraints on growth of the Namibian automotive industry where respondents indicated that growth of the automotive industry is adversely affected by the government policy regime in Namibia. Three of the top four constraints have direct relation to the role the government plays, namely incentives measurements of the government, current low economic growth, and government's investment incentives.

5.7.3 Impact of Role-Players on the Namibian Automotive Industry

In **Question 17** of the empirical survey respondents were asked about the impact of the various role-players on growth of the Namibian automotive industry.

Like the findings in Question 16 above, responses in Question 17 indicated importance of the role of the government: Government's trade and policy regime was rated the top variable (80.4%). Findings of this question also indicated that respondents recognised the role of the international automotive manufacturers (OEMs) as an important variable (ranked second at 77.1%). Automotive dealerships in the region (franchise holders of

OEMs) were ranked as the third most important role-player (73.8%). Importers of new vehicle into the region as part of OEM-authorised distribution channels followed in fourth place (73.7%).

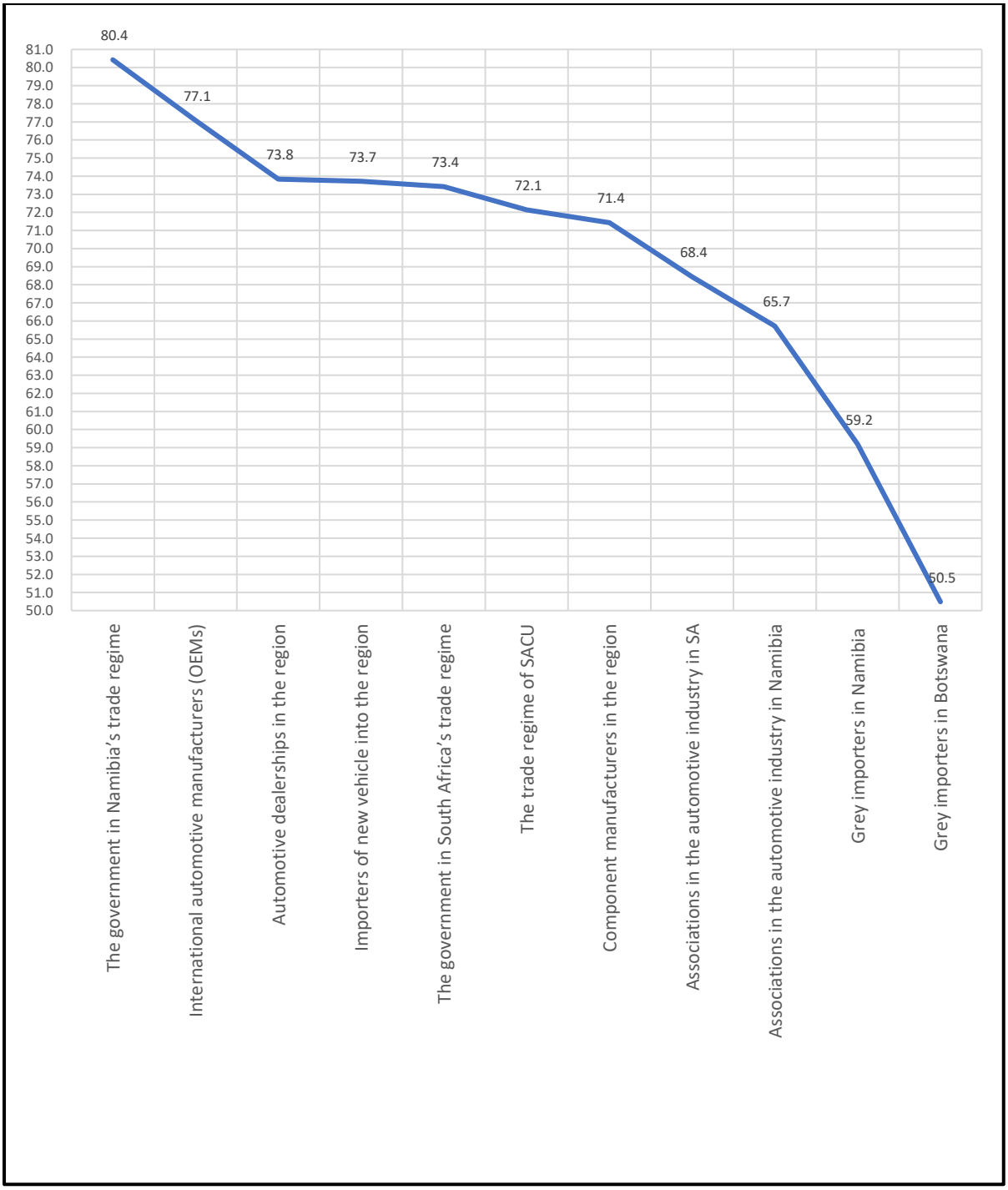

Figure 5.22: Importance of role-players impacting on growth of the Namibian automotive industry (mean of responses)

Source: Author generated

Responses illustrated in the figure above, indicate governments in the SADC region with their trade, policy, and tax regimes, represented crucial role-players to grow the automotive industry in Namibia:

- South Africa's trade regime (73.4%), the fifth most important
- Trade regimes of SACU member-states (72.1%), the sixth most important

From findings of this question, it seems that grey imports into Namibia in tenth place (59.2%) and grey imports into Botswana in the eleventh place (50.5%) were not seen as important variables. In Chapter 2 the opinions on the detrimental influence of grey imports on growth of the automotive industry, as it appeared in local press, was discussed.

In the space for "*other*" for the question in the survey, no other variables of importance were indicated by respondents.

5.8 QUESTIONNAIRE: PART F: GROWTH OPPORTUNITIES FOR THE AUTOMOTIVE MANUFACTURING INDUSTRY IN NAMIBIA

Towards the end of the survey, open-ended questions to respondents in Question 18 to 22 were included in Part F. Respondents were asked to express their views in their own words. No options or alternative responses were provided.

Responses are presented hereunder in order of frequency of variables mentioned by respondents. The top four themes of responses were identified in analysis of the survey information received. Repetition of variables are indicated with reference to the frequency raised.

It is noted that exact words of respondents are stated verbatim in Tables D23 – D26 in Appendix D. No variables in the responses were omitted. This is done to emphasise perceptions and opinions.

Results of the frequency of variables are presented graphically in the figures below. Responses are discussed briefly hereunder.

5.8.1 Top Inherent Country Strengths of Namibia to Add to Growth of Their Automotive Industry

In **Question 18** respondents were asked for the top three inherent strengths that Namibia as a country owned that may contribute to growth of a local automotive manufacturing industry. It is reiterated that responses are presented hereunder in order of frequency of variables as mentioned by respondents and not as a percentage of responses or otherwise.

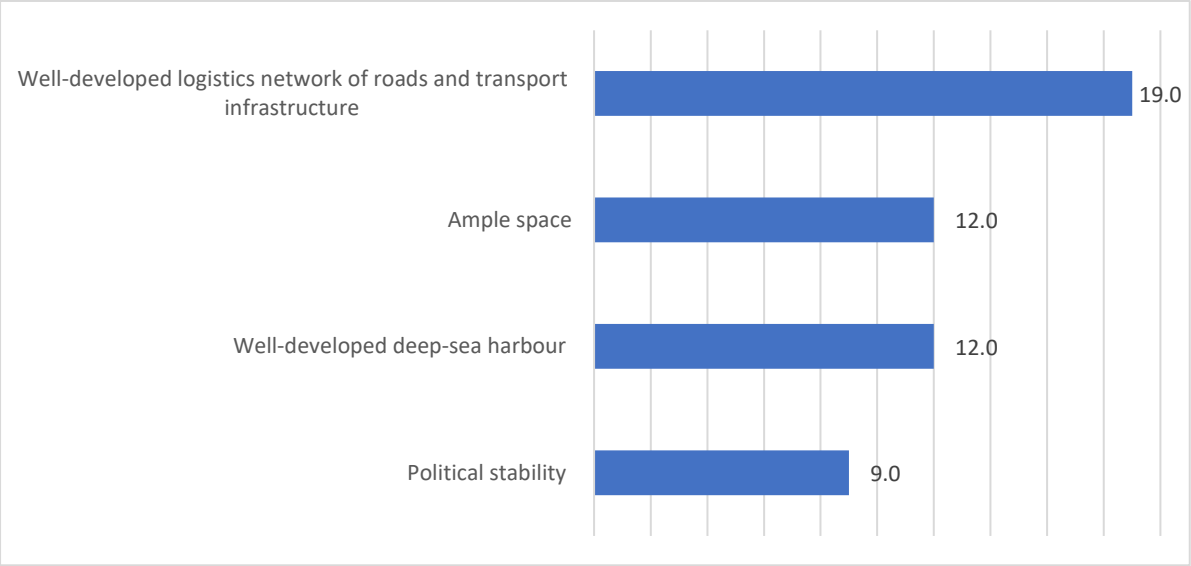

Figure 5.23: Top inherent strengths Namibia as a country owns
Source: Author generated

The well-developed logistics network of roads and transport infrastructure were mentioned 19 times by respondents, as the most mentioned variable by far. In Chapter 3 it was noted that according to Black et al. (2019), inefficient logistics networks were part of other socio-economic challenges, inhibiting a cost-effective infrastructure and dampening growth of an automotive industry.

Ample space in Namibia as well as the well-developed deep-sea harbour at Walvis Bay were both mentioned twelve times in responses. The country is described as a land of wide-open spaces. The opinion was raised by respondents that ample space is available across the country to establish industrial parks and factories. Respondents commented that the harbor provides access to automotive markets around the world, in the SADC as well as for South Africa. The large harbor also allows for ease of imports and exports of automotive products.

In third place, respondents mentioned political stability nine times. Responses reflected that political stability is at the order of the day since Namibia gained independence in 1990. Namibia has a politically stable environment for development of an automotive industry.

Other themes mentioned by respondents consist of the following (in no particular order of frequency of variables mentioned by respondents):

- An abundant labour force
- An adaptable labour force
- A well-established motor dealership network
- An ideal testing location
- A natural attraction for foreign visitors
- A developing country economy
- A growing demand for motor vehicles
- Opportunities for future export of automobile products
- Extensive solar power potential
- Various economic sectors representing massive automobile buyers
- Regulated financial institutions
- Low income-tax rate
- Location close to South Africa's large automotive market
- Advantageous legislative and fiscal environment
- Part of SACU
- Rule of Law in place
- Easy access to markets in Africa

5.8.2 Top Three Strategies for the Government of Namibia to Implement

Question 19 collected responses on top three strategies that the government in Namibia should implement to grow the Namibian automotive industry. As illustrated in the figure below, the top variable (mentioned 28 times) was indicated as being increased manufacturing and sales incentives schemes. The South African Automotive Investment Scheme (AIS) was described in Chapter 3. It was mentioned in paragraph 5.4.4 above that at present, no automotive investment scheme is available in Namibia to encourage automotive related investments.

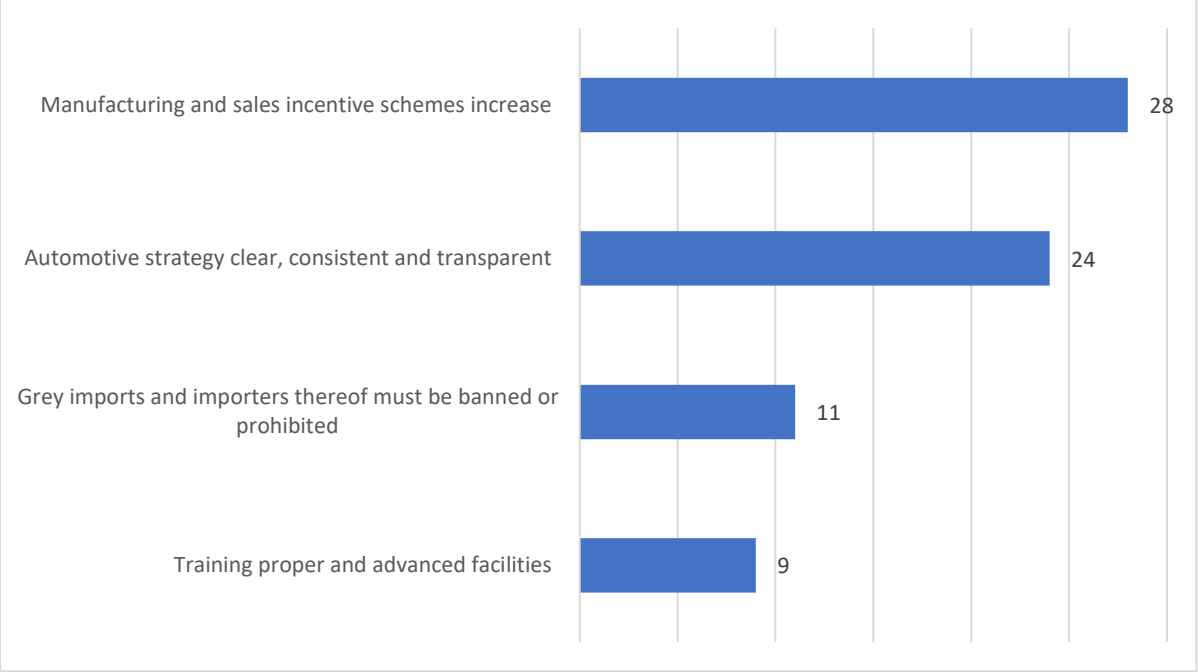

Figure 5.24: Top strategies for the government of Namibia to implement
Source: Author generated

A clear, consistent, and transparent automotive strategy was mentioned 24 times by respondents, representing the second most mentioned variable. Respondents commented that the automotive plan of the government should stamp out corruption and leave no space for bribery and fraudulent actions.

The government in Namibia should clarify import of vehicles as in the case of grey imports. Prohibition of grey imports was mentioned 11 times, making up the third most mentioned variable.

In face-to-face interviews with the second group of participants, open-ended responses recorded in Question 7 top strategies and priorities the government in Namibia should implement for growth of the Namibian automotive industry in accordance with Section 5.8.2 in the above. Section 5.8.2 covers variables in the empirical survey of top three strategies that the government in Namibia should implement to grow the Namibian automotive industry. As mentioned previously in Section 5.1, the open-ended responses were coded using attribute coding and themed thereafter in line with Saldaña's code-to-theory model (Saldaña, 2016). The following complete list of coded components for this question are included (see Appendix G):

- *The Namibian government to stimulate the private sector, various strategies available*
- *Closer alignment needed of the government with best practices in international trends*
- *The government in Namibia to be more energised and export driven as well as bolstering an incentive attractive economy*
- *The Namibian government to increasingly appreciate green economy potential and the positive for growth*
- *To be confirmed by government that grey imports being extremely negative for Namibia's local production*
- *Deduced that the government bureaucratically heavy with insufficient incentives*
- *In Namibia corruption and greed to be proactively addressed*
- *Improved public transport systems needed for mature and efficient system*
- *Deduced that grey imports remaining here to stay. Responsible policies from government required.*
- *Government to simplify work permits for talented foreign labour and face bureaucracy*
- *Namibia part of the regional stability, as affected by SA policy climate*

The above-mentioned codes were integrated into the following themes associated with this finding, discussed in 5.8.2 on top strategies for the government of Namibia is to implement.

5.8.2.1 Theme 1: Encourage and endorse the private sector

A theme on top strategies and priorities the government in Namibia should implement for growth of the Namibian automotive industry consisted thereof that participants proclaimed that the government in Namibia should increase encouragement of the private sector.

The participants maintained that various strategies were available to achieve this enhancement of the private sector, for example government must simplify obtaining of work permits for talented foreign labour to enter the country. Another strategy to bolster the private sector, as mentioned by participants, consists of government campaigns to face officialdom delays head-on and eliminate the same.

This theme converges closely with views of respondents in the questionnaire. In Section 5.5.2 it was discussed that, in Question 7 of the questionnaire, respondents were asked to indicate the perceived extent of future opportunities for growth of automotive industry. Findings of Question 7 indicated and reflected on the importance to encourage the private sector. The following variables were indicated to a moderate, large, and critical extent by most respondents, namely increased financial performance and profitability in the automotive industry and increased access to new technology and innovation, representing essential elements of private sector business activities.

5.8.2.2 Theme 2: Harmonise governance with international best practices

Participants expressed disappointment that, in their opinion, corruption and greed are not proactively addressed in Namibia. Most participants agreed that closer alignment is needed of the government on levels of best practices of public governance as these appear in international trends. It was proclaimed by participants that government bureaucracy is still heavily burdening healthy governance practices in Namibia.

Findings of this theme can be linked to the outcome of data analysis of views of respondents in the questionnaire as in the following. The qualitative approach provides specific insights to the quantitative result. In Section 5.6.3, factors impacting automotive component manufacturers located outside South Africa were covered. Question 13 collected perspectives on the degree of openness, the ease of doing business, and opportunities for automotive component suppliers located outside South Africa. Almost all respondents rated understanding of the South African policy regime and its benefits to a moderate, large, and critical extent. The impact of governments on the ease of doing business, healthy governance, and international best practises were highlighted in Section 5.7.1 on the impact of constraints on growth of the Namibian automotive industry, where it was stated that one respondent noted in the space for "*other*" the lack of presence of political will to develop and implement investment incentives.

5.8.2.3 Theme 3: Reinforcing an export driven economy

Most of the participants agreed that regional stability in the SADC region is an integral part of the trading milieu of the Namibian economy. In this regard participants

proclaimed that Namibia is largely affected by turmoil of the South African political and policy climate. However, participants agree that the Namibian government should proactively focus on an energised drive to reinforce an export driven economy by among others widen their incentive-attractive economy. Another feature of an export driven company suggested by participants is the crusade for improved public transport systems as needed for a mature and an efficient system of a developed logistics infrastructure catering for exports.

In addition, participants expressed disappointment with prevalent bureaucracy and inadequate investment incentives to encourage the export driven economy.

Another theme showed that with respect to the government course of action to accelerate an export driven economy, in opinion of participants, was that the government increases focus and increasingly appreciates the green economy potential and the positive outcome for growth of the economy once focus is placed on environmentally friendly investment incentive measurements.

Findings of this theme agrees closely with outcome of data analyzed from questionnaires. Strong views of respondents in questionnaires on government's bureaucracy and custom control issues impacting an export-driven economy were highlighted in Section 5.6.4 in the above. Integration between qualitative and quantitative data points is again noted.

5.8.2.4 Theme 4: Mitigate detrimental ramifications of grey imports

Some participants in face-to-face interviews with the second group of participants (as elaborated in Section 5.1) expressed disappointment that in their opinion government does not favour the notion commonly accepted in developed automotive manufacturing industries that grey imports are extremely negative for local production. However, participants agreed that grey imports were here to stay. The participants indicated reservations on existence of responsible policies from government in respect of grey imports.

This theme's findings concur closely with respondents' views in questionnaires as in the following. Section 5.7.1 highlighted impact of constraints on growth of the Namibian automotive industry. Consensus was reached by respondents that growth of the automotive industry is adversely affected by the government policy regime in

Namibia. Top constraints have direct relation to the role the government plays where it is highlighted that respondents rated grey imports as being one of the most important variables of constraints.

5.8.2.5 Other themes: Possible top strategies and priorities the government in Namibia should implement for growth of the Namibian automotive industry

In Sections 5.8.2.1 to Section 5.8.2.4 the major themes were integrated from codes in data as collected in face-to-face interviews with participants in the second group as discussed in Section 5.1 on top strategies and priorities the government in Namibia should implement for growth of the Namibian automotive industry. Other themes mentioned by respondents consist of the following (in no particular order of frequency of variables mentioned by respondents). These themes are merely listed as observed by participants, and not discussed in any detail.

- Expand export contracts
- Ensure more friendly business travel policies
- Warrant quality standards in automotive manufacturing
- Implement a local content credit scheme
- Abandon the policy on economic empowerment
- Stabilise the government budget for spent
- Safeguard assets of investors
- Invest more in assembly plants
- Increase licensing fees for older automobile models
- Encourage PPPs
- Effect efficient procurement processes
- Increase available industrial land, property, and space
- Improve access to finance
- Expand financial assistance for franchise dealerships
- Ensure ease of doing business
- Increase financial assistance for setup of factories

5.8.3 Top Three Opportunities in Namibia to Grow the Automotive Industry

In **Question 20** respondents were asked to list the top three inherent opportunities that exist for Namibia that can add to the growth of the automotive industry in the country.

The variable of economic growth and recovery in Namibia was mentioned 23 times. In the opinion of respondents, Namibia's current dire economic conditions represents an opportunity for establishment of new industries.

Namibia's potential to develop as a logistics and infrastructure hub was mentioned 13 times. The view was expressed that the country possesses a well-developed infrastructure with high standard roads, airports, and harbours providing access to the region.

Substantial levels of inland production and export thereof is required to attend to the large trading account deficit of Namibia. This variable was mentioned 10 times, representing the third most mentioned opportunity.

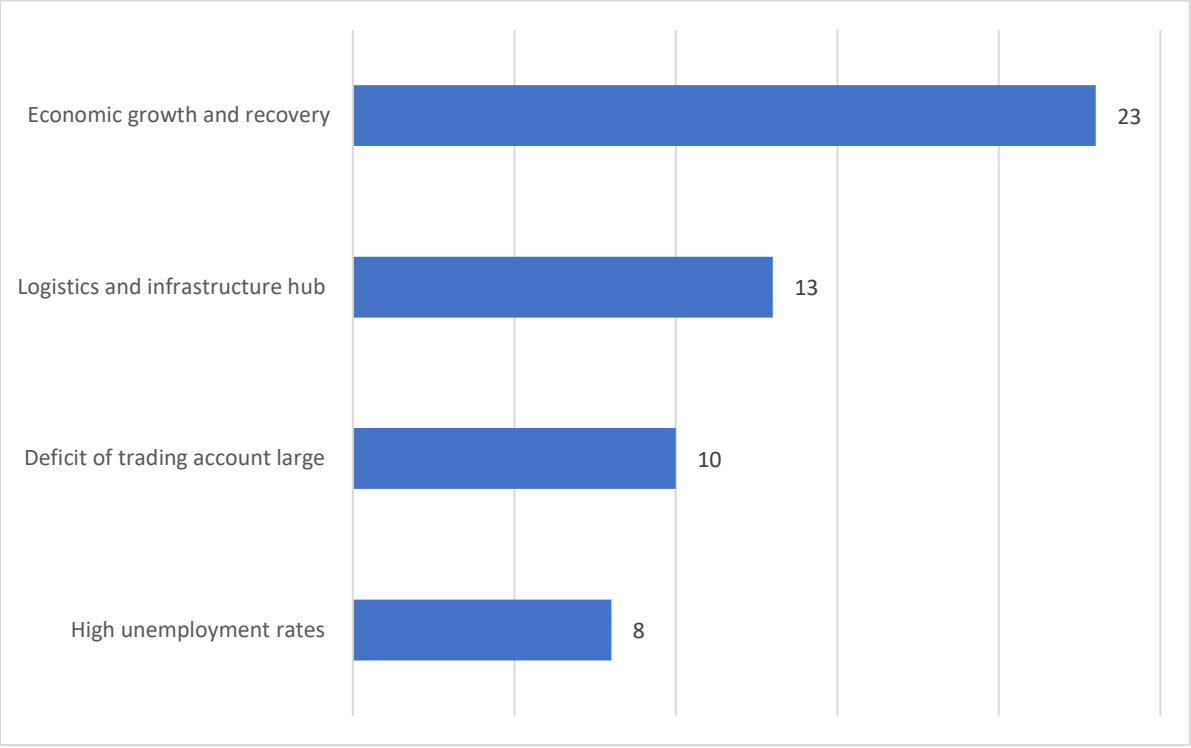

Figure 5.25: Top opportunities in Namibia to grow the automotive industry

Source: Author generated

In Section 5.7.2 the major themes deduced from codes in data as collected in face-to-face interviews with participants in the second group and as discussed in Section 5.1 on top variables for growth of the Namibian automotive industry were discussed. Other themes mentioned by participants in these face-to-face interviews in respect of top opportunities in Namibia to grow the automotive industry consist of the following (in no particular order of frequency of variables mentioned by respondents). As in the above, these themes are merely listed as reflected upon by participants, and not discussed in any detail.

- The mining sector representing large consumers for boost of the automotive industry
- Better ease of doing business, competitiveness, corruption, and productivity
- Supply of renewable energy
- A solid financial sector
- An ever-growing tourism sector
- Ample space
- Training and development of skills
- Political stability and little crime
- Grow the automotive manufacturing industry

5.8.4 Top Focus Areas for Role-Players

Question 21 collected views on the top three areas that role-players can embark upon to grow the automotive manufacturing industry in Namibia. As in Figure 5.26 below, the variable manufacturing and tax incentives schemes to grow manufacturing was mentioned the most (24 times).

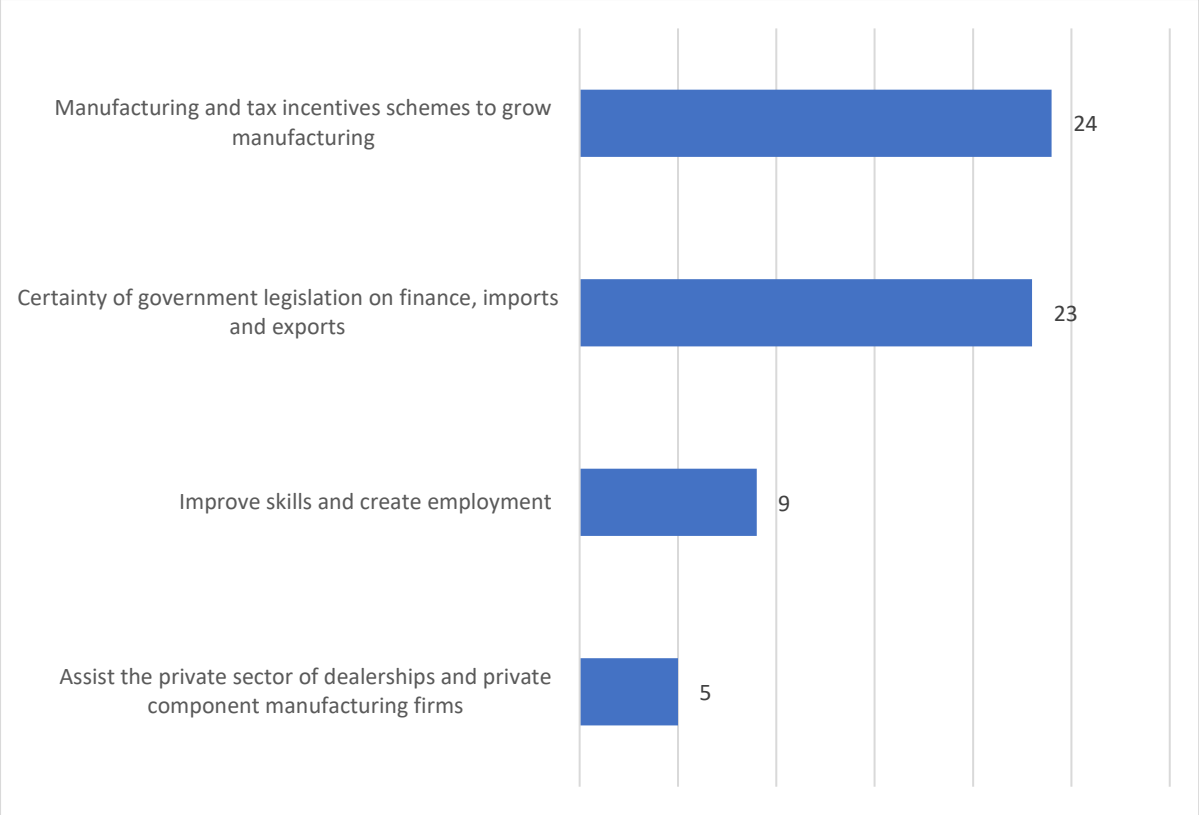

Figure 5.26: Top areas for role-players

Source: Author generated

In the words of the respondents, improved incentive schemes will give much needed assistance to local manufacturers of components and parts, apart from attraction of new foreign investors. Incentive scheme regimes, as in South Africa and other SADC member-states, should be implemented to the same extent in Namibia.

The variable of certainty of government legislation on finance, imports, and exports was mentioned 23 times, the second most important focus area, close to the leading variable discussed in the above. Responses indicated that the government should draft and implement transparent, well-established plans to grow the automotive manufacturing industry.

The variable mentioned the third most times (9 times) placed focus on skilled and qualified employees that are needed in the automotive manufacturing industry. Employment and skills creation must be a focal area for the public and private sector.

The other themes mentioned by respondents in face-to-face interviews with the second group of participants (as elaborated in Section 5.1) consist of the following (in

no particular order of frequency of variables mentioned by respondents). These are not discussed in any detail.

- Increased assistance from OEMs to grow the local automotive industry
- The government to ban grey imports
- Increased government funding to grow the automotive industry
- Government to increase ease of doing business

5.8.5 Top Automotive Component Categories

In the last question of the questionnaire, **Question 22,** respondents were asked which automotive component categories owned the largest potential for Namibia to increase engagement in the supply chain of the automotive industry in South Africa.

Responses are presented hereunder in order of frequency of variables mentioned by respondents.

Illustrated in Figure 5.27 below, respondents rated engines and engine components to be the top component, mentioned 12 times. Body panels came in second (9 times).

It must be noted that not only components categories were recorded in survey responses. In Figure 5.27 below, new vehicle assembly plants to grow the automotive industry were mentioned 6 times, which puts this in third place. Assembly plants are part of the sectors that make up the automotive industry. Sectors of the automotive industry such as vehicle assembly, aftermarket sales and services, component production, and motor dealerships were covered in Question 4 and discussed in section 5.4.3 above.

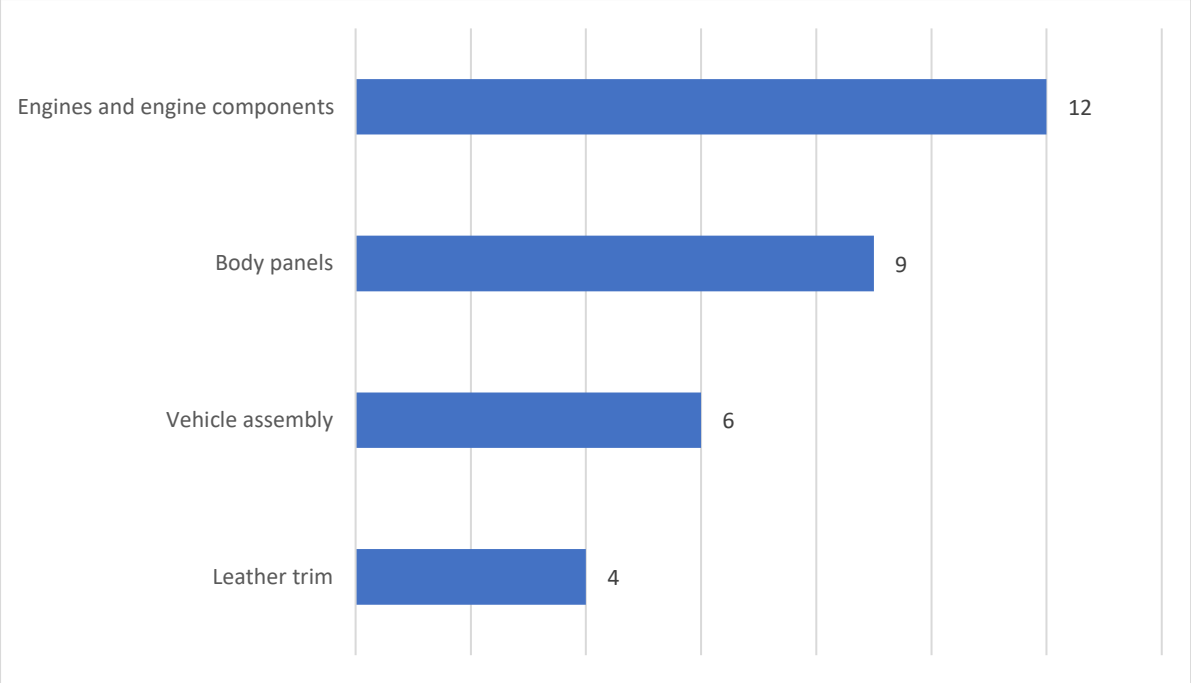

Figure 5.27: Top automotive component categories to focus on for automotive industry growth

Source: Author generated

Other themes mentioned by respondents in face-to-face interviews in relation to automotive component categories which had the largest potential for Namibia to increase engagement in the supply chain of the automotive industry in South Africa, that emerged from coding of data of participants, using attribute coding and thereafter themed in line with Saldaña's code-to-theory model (Saldaña, 2016), discussed in Section 5.1, consist of the following (in no particular order of frequency of variables mentioned by respondents). Once again, these themes are simply listed as pronounced by participants and not discussed in any detail.

- Door handles
- Lights
- Wipers
- Isolating materials
- Gaskets
- Filters
- Automotive tooling
- Batteries
- Drive trains

- Tires
- Water containers
- Brake fluid containers
- Sun-visors
- Paints
- Tool & Dyeing industry
- Bolts
- Windows
- Aftermarket accessories
- Labour intensive processes such as fitting kits and trimming
- Electrical
- Frame and chassis
- Components from minerals
- Seats

5.9 QUESTIONNAIRE: PART G: CONTACT DETAILS

In the last section of the questionnaire, contact details of respondents in respect of name, position, organisation, telephone number, and email address were asked. Contact details were requested to ascertain authenticity of responses. The relevance of work experience and job profiles to the survey questions were established.

Demographic information that participants provided are kept confidential and safeguarded. For audit purposes, records will be permanently destroyed after five years, according to the ethics principals of UNISA as discussed in Section 4.15 of Chapter 4

5.10 CONCLUSION

Responses to the survey and interviews used as measuring and integration instruments were described in this chapter. A structured questionnaire completed by 35 respondents was applied to collect the data. The descriptive statistics derived from the empirical survey were supported by analysis of the open-ended questions discussed in 20 face-to-face interviews with a second group of participants.

The primary and secondary objectives of the study were highlighted in Section 5.1.

In this chapter, frequency tables were employed to determine more detailed variable relationships, founded on the breakdown of responses. Descriptive statistics were applied for description of the business environment of respondents, their assessment of the strengths of, potential of, opportunities for, and threats to the growth of the automotive industry in Namibia.

For more comprehensive responses, as well as to illuminate the enumerative data of the questionnaire, thematic analysis was integrated into the discussions, with the descriptive statistics under the relevant headings. The findings of the questionnaire and themes discovered in the thematic analysis of the open-ended questions were then integrated with the literature, which is discussed in Chapter 7, to provide the discussion and interpretation of the findings.

Opinions of respondents and participants on incentive measures of governments in Namibia, South Africa, the SADC region, and SSA were collated and described. Focus was placed to identify and accumulate opinions and sentiments of respondents and participants on stakeholders that can ensure the growth of the automotive industry in Namibia.

Significant correlations between the variables in different questions are discussed in the Chapter 6 as part of inferential data analysis. The survey as well as the thematic analysis of open-ended questions as measuring (quantitative) and integration (qualitative) instruments were used as the foundation to test hypothesis flowing from the research objectives (De Vos et al., 2018:134; Bryman and Bell, 2018:325; Wiid and Diggines, 2017:57). Hypotheses were tabled in Chapter 1 in Table 1.2.

CHAPTER 6:
INFERENTIAL DATA ANALYSIS

6.1 INTRODUCTION

Chapter 5 included discussions on the descriptive data analysis of the empirical survey, combined with findings and themes coded from face-to-face interviews as part of thematic data analysis on open-ended questions in the empirical survey. This chapter, Chapter 6, presents the inferential data analysis of this study.

Inferential data analysis was employed as a statistical tool to test several hypotheses based on the primary and secondary objectives of the study (Bryman and Bell, 2018:325). Hypotheses were stipulated in Section 1.11 in Chapter 1 and were drafted to be directly related to the research objectives, as illustrated in Table 6.1 hereunder. The inferential data analyses determine statistically significant associations and differences between the variables, as determined by the hypotheses included in the measuring instrument. Open-ended questions were completed by 35 respondents (see Section 4.9) and based on their responses, discussed in face-to-face interviews with an additional 20 participants as part of the thematic data analysis (see Section 4.10).

The Pearson's Chi-Square Test of Independence, the Kruskal-Wallis (or Kruskal-Wallis H) Test, Fisher's Exact Test, and Cramér's V Tests, among others, were used to test the hypotheses using the SPSS v26. Data tables, cross-tabulations, and mean ranks from the SPSS output files, as used in this chapter, are provided in Appendix E.

Table 6.1: Primary and secondary research objectives overview

Primary Objective
To ascertain how to grow the automotive industry in Namibia
Secondary Objectives
To identify which variables constrain the growth of the automotive industry in Namibia, being upstream for original equipment component manufacturers and aftermarket component manufacturers, as well as downstream in expanding existing dealerships or establishing new franchise dealerships.
To examine how the automotive component manufacturing base and employment in Namibia can grow by linking it to the automotive supply chain in South Africa, as the dominant vehicle manufacturing and consumption country in the region.
To examine how the automotive component manufacturing base and employment in Namibia can grow by linking it to regional integration in SACU, the SADC, the Tripartite Free Trade Area (TFTA), and African Continental Free Trade Area (AfCFTA).
To examine how the automotive component manufacturing base and employment in Namibia can grow via free trade agreements (FTAs) with SACU in respect of the USA's African Growth and Opportunity Act (AGOA) and the EU's SADC-Economic Partnership Agreement (EPA).
To identify specific successful growth strategies and incentive schemes of policy regimes that govern automotive industries in other countries and that can be implemented effectively in Namibia.
To determine if an association exists between the most promising motor industry sectors to grow (perceived) and business characteristics.
To determine if an association exists between the extent of the automotive industry in Namibia to grow and the top three inherent strengths, opportunities, areas to embark on, and strategies to be implemented for growth in the Namibian automotive industry respectively, as well as the automotive component categories that can be manufactured in Namibia with the largest potential, as perceived by stakeholders in the automotive industry.
To determine if constraints to growth, incentive measures, government encouragements, or support factors that add to growth, growth in the automotive industry of South Africa, and growth in the automotive industry globally are perceived differently by: (v) different extent levels of the capability of the Namibian automotive manufacturing industry to grow, as indicated by the stakeholders in the automotive industry. (vi) the motor industry sector in Namibia with the most promising opportunity to grow, as indicated by the stakeholders in the automotive industry.

Source: Author generated

6.2 TESTING OF DIFFERENCES AND ASSOCIATIONS

The hypotheses tested in the inferential data analysis phase of this study are summarised furthermore in Table 6.2 below and discussed thereafter. Table 6.2 indicates the description of each hypothesis, the research objectives, the different statistical tests employed, and the nature of the tests. The inferential statistical testing of the hypotheses listed in Table 6.2 follows thereafter.

It must be noted that the word ‘factor’, as used for example in Question 18 in the questionnaire, refers to factors in the general sense and the meaning of the word, i.e. as “*one of the elements contributing to a particular result or situation*”.

However, in Questions 6 to 14 of the questionnaire, PCA was applied where specific components were identified, and linear composite measures employed applicable in the hypotheses in Table 6.2 for Hypothesis D and Hypothesis E, also referred to as factors.

Table 6.2: Summary of hypotheses tested

No	Details of Alternative Hypothesis	Relation to Research Objectives	Variables Used	Statistical Test Application	Nature of Test
A	There is an association between the motor industry sectors perceived by respondents to present the most promising opportunity to grow the Namibian automotive industry and business characteristics of respondent's organisation (Q4 with Q1.1 to Q1.6).	To draft a foundation of driving instruments of growth to assist the Namibian Government and industry stakeholders with options to expand the automotive industry in Namibia. To determine if an association exists between the most promising motor industry sectors to grow perceived and business activities.	Respondent's perceived motor industry sector with the most promising opportunity to grow the Namibian automotive industry. Business characteristics of respondents, including ownership, employment, and business activities of the respondent's organisation.	Pearson's Chi-Square Test for Independence and Fisher's Exact Test. Cramér's V Tests.	Test for statistically significant association. Test for effective size.
B	There is a difference between the groups identified by the perceived extent of the capability of the automotive industry in Namibia to grow in terms of various constraints affecting the growth of the Namibian automotive industry, as listed in the empirical survey (Q3 with Q15).	By understanding how the different groups perceived the challenges and where they differ, contribute to the analysis that aims to identify which variables constrain the growth of the automotive industry in Namibia, being upstream for original equipment component manufacturers and aftermarket component manufacturers, as well as downstream in expanding existing dealerships or establishing new franchise dealerships.	Respondent's perceived extent of the capability of the automotive industry in Namibia to grow. All constraints affecting growth listed in the questionnaire, including logistics costs, productivity, innovation, modernisation, import barriers, investment incentives, and others.	Kruskal-Wallis One-Way Analysis of Variance by Rank Tests.	Test for statistically significant difference and analysis of mean ranks for identification of trends.
C	There is a difference between the groups identified by the perceived extent of the capability of the automotive industry in Namibia to grow in terms of factors adding to the growth of the Namibian automotive	By understanding how the different groups perceive the factors that will contribute to growth and where they differ, contribute to identifying specific successful growth strategies and incentive schemes of policy regimes that govern automotive industries in	Respondent's perceived extent of the capability of the automotive industry in Namibia to grow. Respondent's ratings of factors adding to the growth of the Namibian automotive industry.	Kruskal-Wallis One-Way Analysis of Variance by Rank Tests.	Test for statistically significant differences and analysis of mean ranks for

No	Details of Alternative Hypothesis	Relation to Research Objectives	Variables Used	Statistical Test Application	Nature of Test
	industry, as listed in the empirical survey (Q3 with factors in Q16).	other countries, which can be implemented effectively in Namibia.	Growth factors listed in the questionnaires, such as infrastructure, public-private partnerships (PPPs), and others.		identification of trends.
D	There are differences between the groups as identified by the perceived extent of the capability of the Namibian automotive manufacturing industry to grow in terms of each of the 10 components identified from Question 6 to Question 14 in the empirical survey (Q3 with factors in Q6 to Q14).	By understanding how the different groups perceived the 10 identified components and where they differ contribute to: (i) examining how the automotive component manufacturing base and employment in Namibia can grow by linking it to the automotive supply chain in South Africa, as the dominant vehicle manufacturing and consumption country in the region.	Respondent's perceived extent of the capability of the automotive industry in Namibia to grow in terms of each of the following 10 components: 1) Growth in the automotive industry of South Africa 2) Growth in the automotive industry in the SADC region and globally 3) The extent of opportunities in South Africa to grow motor vehicle manufacturing under the SAAM 2021-2035 4) The extent of dominance of vehicle production of South Africa in the SADC region 5) The extent of dominance of vehicle production of South Africa in SSA 6) The extent of government's influence for growth prospects of the automotive industry in South Africa 7) Aspects that add to dominance of the supply chain of the automotive industry of South Africa in the SADC region	Kruskal-Wallis One-Way Analysis of Variance by Ranks Tests.	Test for statistically significant difference and analysis of mean ranks for identification of trends.

No	Details of Alternative Hypothesis	Relation to Research Objectives	Variables Used	Statistical Test Application	Nature of Test
			8) Factors that add to the impact of automotive component manufacturers, located outside the borders of South Africa, on the South African automotive value chain 9) The degree of openness, ease of doing business, and opportunities for automotive component suppliers and manufacturers outside South Africa to take part in the supply chain of the South African automotive industry are impacted 10) The extent of aspects of incentive measures and government encouragements in the SADC region required for Namibian component manufacturers to take part in the South African automotive supply chain		
		(ii) examining how the automotive component manufacturing base and employment in Namibia can grow by linking it to regional integration in SACU, the SADC, the Tripartite Free Trade Area (TFTA), and African Continental Free Trade Area (AfCFTA).			
		(iii) examining how the automotive component manufacturing base			

No	Details of Alternative Hypothesis	Relation to Research Objectives	Variables Used	Statistical Test Application	Nature of Test
		and employment in Namibia can grow via tree trade agreements (FTAs) with SACU in respect of the USA's African Growth and Opportunity Act (AGOA) and the EU's SADC-Economic Partnership Agreement (EPA).			
		To determine if constraints to growth, incentive measures, government encouragements, or support factors that add to growth, growth in the automotive industry of South Africa, and growth in the automotive industry globally are perceived differently by: (i) different extent levels of the capability of the Namibian automotive manufacturing industry to grow as indicated by the stakeholders in the automotive industry.	Respondent's perceived extent of the capability of the automotive industry in Namibia to grow.		
E	There are differences between the groups representing the perceived motor industry sector in Namibia that have the most promising opportunity to grow in terms of each of the 10 components identified from Question 6 to Question 14 in the empirical survey	By understanding how the different groups perceive the 10 identified components and where they differ contribute to examining how the automotive component manufacturing base and employment in Namibia can grow by linking it to the automotive supply chain in South Africa as the dominant vehicle manufacturing and consumption country in the region.	Respondent's perceived motor industry sector with the most promising opportunity to grow the Namibian automotive industry in terms of each of the following 10 components: 1) Growth in the automotive industry of South Africa 2) Growth in the automotive industry in the SADC region and globally 3) The extent of opportunities in South Africa to grow motor vehicle	Kruskal-Wallis One-Way Analysis of Variance by Ranks Tests.	Test for statistically significant difference and analysis of mean ranks for identification of trends.

No	Details of Alternative Hypothesis	Relation to Research Objectives	Variables Used	Statistical Test Application	Nature of Test
	(Q4 with factors in Q6 to Q14).		manufacturing under the SAAM 2021-2035 4) The extent of dominance of vehicle production of South Africa in the SADC region 5) The extent of dominance of vehicle production of South Africa in SSA 6) The extent of government's influence for growth prospects of the automotive industry in South Africa 7) Aspects that add to the dominance of the supply chain of the automotive industry of South Africa in the SADC region 8) Factors that add to the impact of automotive component manufacturers, located outside the borders of South Africa, on the South African automotive value chain 9) The degree of openness, ease of doing business, and opportunities for automotive component suppliers and manufacturers outside South Africa to take part in the supply chain of the South African automotive industry are impacted 10) The extent of aspects of incentive measures and government		

No	Details of Alternative Hypothesis	Relation to Research Objectives	Variables Used	Statistical Test Application	Nature of Test
			encouragements in the SADC, required for Namibian component manufacturers to take part in the South African automotive supply chain		
		To determine if constraints to growth, incentive measures, government encouragements, or support factors that add to growth, growth in the automotive industry of South Africa, and growth in the automotive industry globally are perceived differently by: (ii) the motor industry sector in Namibia with the most promising opportunity to grow, as indicated by the stakeholders in the automotive industry.			
F	There is an association between the perceived extent of the automotive manufacturing industry in Namibia's capability to grow and each of the themes identified per open-ended question (Q3 with open-ended Q18 to Q22).	To identify specific successful growth strategies and incentive schemes of policy regimes that govern automotive industries in other countries, considering the association with the perceived extent of the capability to grow, which can be implemented effectively in Namibia.	Respondent's perceived extent of the capability of the automotive industry in Namibia to grow. Respondent's rating of factors adding to the growth of the Namibian automotive industry.	Pearson's Chi-Square Test for Independence and Fisher's Exact Test. Cramér's V Tests.	Test for statistically significant association. Test for effective size.

Source: Author generated

6.2.1 Testing for Associations Between the Most Promising Motor Industry Sectors to Grow Perceived by Respondents (Q4) And Respondents' Business Characteristics (Q1)

Question 4 in the survey dealt with which motor industry sector was perceived by respondents to present the most promising opportunity to grow the Namibian automotive industry. Associations with the different characteristics of the business, to which respondents are linked, are analysed hereunder separately. It must be noted that each statistical test represents a hypothesis. The options listed in Question 4 were more vehicle assembly, aftermarket sales and services, component production, and automotive dealerships.

The business characteristics that were tested were:

- Q1.1 The ownership of the company: % locally owned;
- Q1.2 The total employment of the company: % locally;
- Q1.3 Business activities of the company: % of activities as automotive dealership;
- Q1.4 Business activities of the company: % of activities as automotive component manufacturer;
- Q1.5 Future business prospects of the company: % of future activities as automotive vehicle exporter; and
- Q1.6 Future business prospects of the company: % of future activities as automotive component exporter.

The responses received from the respondents in respect of the six questions listed above were classified in two groups, namely percentages from 0% to 49% as one group and from 50% and above as group 2. This classification provided a clear threshold. The hypothesis tested in relation to the association described above is stated as:

A. **Hypothesis H_1: There is an association** between the motor industry sector perceived to present the most promising opportunity to grow the Namibian automotive industry and the business characteristics of respondents.

Since both variables were nominal, the Pearson's Chi-Square Test for Independence was used to test the hypotheses. In cases where the Pearson's Chi-Square Test could not be used (where more than 20% of the cells had an expected frequency of less than 5), the Fisher's Exact Test was used.

A summary of the association results is depicted in Table 6.3 below.

Table 6.3: Associations between the perceived motor industry sector in Namibia with the most promising opportunity to grow (Q4) and business characteristics of respondents (Q1)

Cross-Tabulation Variables	Pearson's Chi-Square Test Value (not applicable)	Fisher's Exact Test Value (applicable)	Exact Significance (p value)	Cramér's V Effective Size	Effect
Q4 by Q1.1		4.485	0.200*	0.386	Large
Q4 by Q1.2		3.442	0.283*	0.331	Large
Q4 by Q1.3		2.826	0.489*	0.281	Moderate
Q4 by Q1.4		2.281	0.667*	0.281	Moderate
Q4 by Q1.5		1.418	1.000*	0.226	Moderate
Q4 by Q1.6		1.578	0.875*	0.183	Moderate

Source: Author generated

Denotes statistical significance *** at the 1% level, ** at the 5% level, and * at the 10% level

In the table above, if the p value (Exact Significance) is more than 0.1, it is not statistically significant. If the p value is:

<0.1 - a 10% level of significance is indicated;

<0.05 - a 5% level of significance is indicated; and

<0.01 - a 1% level of significance is indicated.

Test associations, as depicted in Table 6.3 above, indicate no statistically significant association was found between the perceived motor industry sector in Namibia with the most promising opportunity to grow the Namibian automotive industry (Q4) and the separate business characteristics questions (all p values are larger than 0.1). Distinction is made between different elements of the business characteristics in

subcategories Q1.1 to Q1.6, as illustrated in Table 6.3, where all p values are larger than 0.1.

However, as the realised sample was small, the power to detect a statistical significance is low. Therefore, the effect size, as indicated by Cramér's V and the patterns evident in the cross-tabulations, are discussed below.

The degrees of freedom (df) for the comparison of Q3 with Q18 to Q22 is 3, calculated as the (number of columns-1=4-1) times the (number of rows-1=2-1).

The degrees of freedom (df) for the comparison of Q4 with Q1.1 to Q1.6 is 3, calculated as the (number of columns-1=4-1) times the (number of rows-1=2-1).

This is depicted in Table 6.3 above. Where the effect size for Cramér's V was larger than 0.06 but smaller than 0.17, a weak association between the variables exists. For effect size for Cramér's V larger than 0.17, a medium association exists between the variables. A Cramér's V effect size of larger than 0.29 indicates a strong association between the variables (Kim, 2017:154).

It is summarised that no statistically significant association was found. The effect size can display the magnitude of the effect. The Cramér's V effect size depicted in Table 6.3 above for each subsection of business characteristics of respondents is discussed next.

Q4 by Q1.1 The ownership of the company: percentage locally owned

The Cramér's V effect size of 0.386 for the association between Q4 and Q1.1, as in Table 6.3 above, indicated a **large effect.**

From patterns in the cross-tabulations table, the following observations were made:

- Only 30% of the respondents where the ownership was less than 50% locally owned indicated more vehicle assembly as the perceived motor industry sector in Namibia with the most promising opportunity to grow the Namibian automotive industry. Furthermore, 44% of those where the ownership was more than 50% locally owned indicated more vehicle assembly.
- Furthermore, 40% of the respondents where the ownership was less than 50% locally owned indicated component production as the perceived motor industry

sector in Namibia with the most promising opportunity to grow the Namibian automotive industry. However, only 8% of those where the ownership was more than 50% locally owned indicated component production.

Q4 by Q1.2 The total employment of the company: percentage locally

The Cramér's V effect size of 0.331 for the association between Q4 and Q1.2, as in Table 6.3 above, indicated a **large effect.**

From patterns in the cross-tabulations table, the following observations were made:

- Only 20% of the respondents where total employment of the company was less than 50% locally indicated more vehicle assembly as the perceived motor industry sector in Namibia with the most promising opportunity to grow the Namibian automotive industry. However, almost half (43.3%) of those where employment of the company was more than 50% locally indicated more vehicle assembly.
- Furthermore, 40% of the respondents where total employment of the company was less than 50% locally indicated component production as the perceived motor industry sector in Namibia with the most promising opportunity to grow the Namibian automotive industry. However, only 13.3% of those where employment of the company was more than 50% locally indicated component production.

Q4 by Q1.3 Business activities of the company: percentage of activities as automotive dealership

The Cramér's V effect size of 0.281 for the association between Q4 and Q1.3, as in Table 6.3 above, indicated a **medium effect.**

From patterns in the cross-tabulations table, indicated by statistical tables of the SPSS, the following observations were made:

- A total of 30% of the respondents where the percentage of current activities as automotive dealership was less than 50% as automotive dealership indicated component production as the perceived motor industry sector in Namibia with the most promising opportunity to grow the Namibian automotive industry. However, only 12% of the respondents where the percentage of current

activities as automotive dealership was more than 50% indicated component production.

- In contrast, 10% of the respondents where the percentage of current activities as automotive dealership was less than 50% as automotive dealership indicated automotive dealership as the perceived motor industry sector in Namibia with the most promising opportunity to grow the Namibian automotive industry. However, 32% of the respondents where the percentage of current activities as automotive dealership was more than 50% indicated automotive dealerships.

Q4 by Q1.4 Business activities of the company: percentage of activities as automotive component manufacturer

The Cramér's V effect size of 0.281 for the association between Q4 and Q1.4, as in Table 6.3 above, indicated a **medium effect.**

From patterns in the cross-tabulations table, indicated by statistical tables of the SPSS, the following observations were made:

- Only 34.5% of the respondents where the percentage of current activities as automotive component manufacturer was less than 50% indicated more vehicle assembly as the motor industry sector in Namibia they perceived to have the most promising opportunity to grow the Namibian automotive industry. However, 66.7% of the respondents where the percentage of current activities as automotive component manufacturer was more than 50% indicated more vehicle assembly.

- Furthermore, 20.7% of the respondents where the percentage of current activities as automotive component manufacturer was less than 50% indicated aftermarket sales and service as the motor industry sector in Namibia they perceived to have the most promising opportunity to grow the Namibian automotive industry. None (0%) of the respondents where the percentage of current activities as automotive component manufacturer was more than 50% indicated aftermarket sales and service.

Q4 by Q1.5 Future business prospects of the company: percentage of future activities as automotive vehicle exporter

The Cramér's V effect size of 0.226 for the association between Q4 and Q1.5, as in Table 6.3 above, indicated a **medium effect.**

From patterns in the cross-tabulations table, indicated by statistical tables of the SPSS, the following observations were made:

- More than two thirds (66.7%) of the respondents where the percentage of future activities as automotive component manufacturer was more than 50% indicated more vehicle assembly as the motor industry sector in Namibia which they perceived to have the most promising opportunity to grow the Namibian automotive industry. However, just over one third (37.5%) of the respondents where the percentage of future activities as automotive component manufacturer was less than 50% indicated more vehicle assembly.
- In addition, one third (33.3%) of the respondents where the percentage of future activities as automotive component manufacturer was more than 50% indicated automotive dealerships as the motor industry sector in Namibia which they perceived to have the most promising opportunity to grow the Namibian automotive industry. However, one quarter (25%) of the respondents where the percentage of future activities as automotive component manufacturer was less than 50% indicated automotive dealerships.

Q4 by Q1.6 Future business prospects of the company: percentage of future activities as automotive component exporter

The Cramér's V effect size of 0.183 for the association between Q4 and Q1.6, as in Table 6.3 above, indicated a **medium effect.** Once again, patterns were very similar without any distinguishable tendencies.

From patterns in the cross-tabulations table, indicated by statistical tables of the SPSS, the following observations were made:

- A total of 40.6% of the respondents where the percentage of future activities as automotive component exporter was less than 50% indicated more vehicle assembly as the motor industry sector in Namibia which they perceived to have

the most promising opportunity to grow the Namibian automotive industry. This is in contrast with one third (33.3%) of the respondents where the percentage of future activities as automotive component exporter was more than 50%.

- Similarly, one quarter (25%) of the respondents where the percentage of future activities as automotive component exporter was less than 50% indicated automotive dealerships as the motor industry sector in Namibia they perceived to have the most promising opportunity to grow the Namibian automotive industry. This is in contrast with one third (33.3%) of the respondents where the percentage of future activities as automotive component exporter was more than 50%.

In conclusion to this section, it was noted that, regarding all six business characteristics discussed above, the null hypotheses were not rejected as this was a direct outcome of the statistical results.

Differences with constraints to growth are tested in the next section.

6.2.2 Testing for Differences Between the Perceived Extent of the Capability of the Namibian Automotive Manufacturing Industry to Grow (Q3) and Specific Constraints to Growth (Q15) – Kruskal-Wallis Test

Question 3 of the survey dealt with to which extent, in the opinion of the participant, the automotive industry in Namibia has the capability to grow. The options given were ‘no extent’, ‘small extent’, ‘moderate extent’, ‘large extent’, or ‘critical extent’.

In Question 15 the respondents were requested to rate the importance of various constraints affecting the growth of the Namibian automotive industry.

The Kruskal-Wallis one-way analysis of variance by ranks test was also used to test for statistically significant differences between the perceived extent of the capability of the automotive manufacturing industry in Namibia to grow regarding specific constraints affecting growth of the Namibian automotive industry.

With the primary and secondary objectives in mind, the following hypothesis was drafted for this section:

A. Hypothesis H_1: There is a difference between the perceived extent of the 'capability of the automotive industry in Namibia to grow' groups as related to the following constraints affecting the growth of the Namibian automotive industry:

1. Logistics costs;
2. Labour force productivity;
3. Local innovation;
4. Local modernisation;
5. Import tariff barriers;
6. Government's investment incentives;
7. Exchange rates;
8. Size of the local automotive market;
9. Growth of the local economy;
10. Link to major regional export markets;
11. Long distances to engage in regional automotive value chains;
12. The government in Namibia's investment incentive schemes;
13. Lack of skills;
14. Grey imports into Namibia (grey imports are vehicles traded outside authorised manufacturer channels);
15. Low global competitiveness rating;
16. Border delays on non-SACU borders;
17. Low economic growth;
18. Decreased purchasing power;
19. Low rate of employment;
20. Affordability of credit; and
21. Access to credit.

Test statistics are indicated in Table 6.4 below with the mean ranks in Table E1 in Appendix E.

It must be noted that, on account of the small realised-sample, PCA could not be conducted in respect of the various constraints listed above to determine if meaningful linear combinations of the constraints exist. Each constraint was subsequently analysed separately.

Table 6.4: Test statistics – perceived extent of the capability of the Namibian automotive manufacturing industry to grow (Q3) and specific constraints to growth (Q15)

	Test Statistics[a,b] Differences Between Perceived Extent of the Capability of the Namibian Automotive Manufacturing Industry to Grow and Specific Constraints to Growth					
	1.1 Logistics Costs	1.2 Labour Force Productivity	1.3 Local Innovation	1.4 Local Modernisation	1.5 Import Tarrif Barriers	1.6 Government's Investment Incentives
Kruskal-Wallis H	1.567	.678	1.046	1.619	2.297	.497
df (degree of freedom)	2	2	2	2	2	2
Asymp. Sig. (Asymptotic Significance or p values)	.457	.712	.593	.445	.317	.780

a. Kruskal-Wallis H Test
b. Grouping variable: Q3: The extent of the capability of the Namibian automotive industry to grow

	1.7 Exchange Rate	1.8 Size of the local automotive market	1.9 Growth of the local economy	1.10 Link to major regional export markets	1.11 Long distances to engage in regional automotive value chains	1.12 Government in Namibia's investment incentive schemes
Kruskal-Wallis H	.575	.084	3.093	1.884	4.321	4.367
df (degree of freedom)	2	2	2	2	2	2
Asymp. Sig. (Asymptotic Significance or p values)	.750	.959	.213	.390	.115	.113

	1.13 Lack of skills	1.14 Grey imports* into Namibia	1.15 Low global competitiveness rating	1.16 Border delays on non-SACU borders	1.17 Low economic growth	1.18 Decreased purchasing power
Kruskal-Wallis H	.747	8.223	1.424	3.897	1.932	4.451
df (degree of freedom)	2	2	2	2	2	2
Asymp. Sig. (Asymptotic Significance or p values)	.688	.016	.491	.142	.381	.108

* Grey imports are vehicles traded outside authorised manufacturer channels

	1.19 Low rate of employment	1.20 Affordability of credit	1.21 Access to credit
Kruskal-Wallis H	5.503	1.491	1.844
df (degree of freedom)	2	2	2
Asymp. Sig. (Asymptotic Significance or p values)	.064	.474	.398

Source: Author generated

Constraints affecting growth of the Namibian automotive industry

The results presented in Table 6.4 above indicate that there is no statistically significant difference, at the 5% level of significance, between the perceived extent of the 'capability of the automotive industry in Namibia to grow' groups regarding 19 of the 21 specific constraints affecting growth of the Namibian automotive industry (all p values are larger than 0.05).

However, the results indicate that there is a statistically significant difference between the perceived extent of the capability of the automotive industry in Namibia to grow, groups at the 5% level of significance, regarding the constraint of number 14, Grey Imports into Namibia (grey imports are vehicles traded outside authorised manufacturer channels). A statistically significant difference between the perceived extent of the 'capability of the automotive industry in Namibia to grow' groups was also found for the constraint of number 19, Low Rate of Employment, at the 10% level of significance. As mentioned in Section 6.2, outcome of the hypothesis, whether supported or not supported, is stated in Section 7.4.1 in the next chapter on conclusions and recommendations. It is summarised and stated the hypothesis is supported for two of the constraints, namely grey imports into Namibia and the long distances to engage in the regional automotive supply chain.

Furthermore, the mean ranks (depicted in Table E1 in Appendix E) indicate that respondents who have chosen the capability of the automotive manufacturing industry in Namibia to grow to a large extent (group 4), tend to rate the effect of the constraint of number 14, Grey Imports into Namibia (mean rank = 23.68), and the effect of the constraint of number 11, Long Distances to engage in Regional Automotive Value Chains (mean rank = 21.77), as more important than the other groups.

Furthermore, although not statistically significant, group 4 tends to rate all the other constraints more important, except for number 2, Labour Force Productivity, where group 3 (capability to grow to a moderate extent) rates this aspect (mean rank = 18.17) more important than the other groups. Group 3 also tends to rate number 5, Import Tariff Barriers (mean rank = 18.25), and number 1, Logistics Costs (mean rank = 18.08), more important than other constraints.

6.2.3 Testing for Differences Between Perceived Extent of the Capability of the Namibian Automotive Manufacturing Industry to Grow (Q3) and Certain Factors that Add to Growth (Q16) as Listed in the Questionnaire – Kruskal-Wallis Tests

The survey included Question 3: to which extent, in the opinion of the participants, does the automotive industry in Namibia have the capability to grow? The options given were 'no extent', 'small extent', 'moderate extent', 'large extent', or 'critical extent'.

In Question 16 the respondents were requested to rate the importance of various factors that can add to the growth of the Namibian automotive industry.

The hypothesis for this section, based on primary and secondary objectives (see Table 6.1), was formulated as follows:

A. Hypothesis H_1: There is a difference between the perceived extent of the 'capability of the automotive industry in Namibia to grow' groups regarding the following factors with the potential of adding to growth of the Namibian automotive industry:

1. Cost-effective infrastructure;
2. Economies of scale capabilities;
3. Appropriate public industrial policy;
4. Low-cost manufacturing location;
5. Policies: consistency;
6. Policies: implementation;
7. Policies: enforcement;
8. Public policies for local procurement;
9. Increased ability to manufacture to deepen the supply chain;
10. Government's industry protection policies;
11. Constructive collaboration between industry stakeholders;
12. Regional trade agreement and links;
13. Public-private partnerships (PPPs) supporting infrastructure development;
14. Skills development and training;
15. Satisfactory rates of inflation;

16. Satisfactory rates of interest;
17. Satisfactory rates of foreign exchange;
18. Politically stable and secure country;
19. Access to key export markets;
20. Low rate of employment;
21. Positioning Namibia as vehicle testing centre;
22. Industry-links to condense skills shortage;
23. Increased automotive aftermarket franchises;
24. Local content developments;
25. Licensing as enabler of manufacturing capability;
26. Develop a tool, die and mould-making industry;
27. Structured platforms for industry stakeholders' collaboration;
28. Public-private partnerships (PPPs) to grow the automotive industry;
29. Grey imports (grey imports are vehicles traded outside authorised manufacturer channels);
30. Local innovation; and
31. Modernisation locally.

Test statistics are indicated in Table 6.5 below and the mean ranks in Table E2 in Appendix E.

As noted previously in Section 6.2.2 that, on account of the small realised sample, the PCA could not be conducted in respect of the various factors listed above.

Table 6.5: Test statistics – perceived extent of the capability of the Namibian automotive manufacturing industry to grow (Q3) and certain factors that add to growth (Q16)

	Test Statistics[a,b] Differences Between Perceived Extent of the Capability of the Namibian Automotive Manufacturing Industry to Grow and Certain Factors that Add to Growth					
	1 Cost-effective infrastructure	2 Economies of scale capabilities	3 Appropriate public industrial policy	4 Low-cost manufacturing location	5 Policies: consistency	6 Policies: implementation
Kruskal-Wallis H	1.061	.079	3.046	.974	.790	1.218
df (degree of freedom)	2	2	2	2	2	2
Asymp. Sig. (Asymptotic Significance or p values)	.588	.961	.218	.615	.674	.544

a. Kruskal-Wallis H Test
b. Grouping variable: Q3: The extent of the capability of the Namibian automotive industry to grow

	7 Policies: enforcement	8 Public policies for local procurement	9 Increased ability to manufacture to deepen the supply chain	10 Government's industry protection policies	11 Constructive collaboration between industry stakeholders	12 Regional trade agreement and links
Kruskal-Wallis H	2.033	1.187	3.651	5.355	2.874	1.817
df (degree of freedom)	2	2	2	2	2	2
Asymp. Sig. (Asymptotic Significance or p values)	.362	.552	.161	.069	.238	.403

	13 PPPs supporting infrastructure development	14 Skills development and training	15 Satisfactory rates of inflation	16 Satisfactory rates of interest	17 Satisfactory rates of foreign exchange	18 Politically stable and secure country
Kruskal-Wallis H	2.299	1.769	1.025	1.727	.145	.728
df (degree of freedom)	2	2	2	2	2	2
Asymp. Sig. (Asymptotic Significance or p values)	.317	.413	.599	.422	.930	.695

	19 Access to key export markets	20 Low rate of employment	21 Positioning Namibia as a vehicle testing centre	22 Industry links to condense skills shortage	23 Increased automotive aftermarket franchises	24 Local content developments
Kruskal-Wallis H	.672	1.082	3.213	.588	3.852	.603
df (degree of freedom)	2	2	2	2	2	2
Asymp. Sig. (Asymptotic Significance or p values)	.715	.582	.201	.745	.146	.740

	25 Licensing as enabler of manufacturing capability	26 Develop a tool, die, and mould-making industry	27 Structured platforms for industry stakeholders' collaboration	28 PPPs to grow the automotive industry	29 Grey imports*	30 Local innovation	31 Modernisation locally
Kruskal-Wallis H	1.692	.637	.267	1.865	1.545	.137	1.538
df (degree of freedom)	2	2	2	2	2		2
Asymp. Sig. (Asymptotic Significance or p values)	.429	.727	.875	.394	.462	.934	.463

* Grey imports are vehicles traded outside authorised manufacturer channels

Source: Author generated

6.2.3.1 Factors adding to the growth of the Namibian automotive industry

The results in Table 6.5 above indicate that there is no statistically significant difference, at the 5% level of significance, between the perceived extent of the 'capability of the automotive industry in Namibia to grow' groups regarding nearly all the listed factors that can add to the growth of the Namibian automotive industry (all p values are larger than 0.05).

However, the results in the above table indicate that there is a statistical difference, at the 10% level of significance, regarding number 10, Government's Industry Protection Policies.

Furthermore, the mean ranks in Table E2 in Appendix E indicate that respondents who have chosen the capability of the automotive manufacturing industry in Namibia to grow to a large extent (group 4) tend to rate the effect of the growth factor of number 23, Increased Automotive Aftermarket Franchises (mean rank = 21.64), and the effect of the growth factor of number 10, Government's Industry Protection Policies (mean rank = 21.32), as more important than the other groups. This group also tends to rate the growth factor of number 11, Constructive Collaboration Between Industry Stakeholders (mean rank = 21.00), as more important than other groups.

Furthermore, although not statistically significant, group 4 rated all the other constraints more important, except for number 7, Policies Enforcement, where group 3 (capability to grow to a moderate extent) rated this aspect (mean rank = 20.08) more important than the other groups. Group 3 also tends to rate number 31, Modernisation Locally (mean rank = 19.54), and number 6, Policies Implementation (mean rank = 19.08), more important than other constraints.

6.3 PRINCIPAL COMPONENT ANALYSIS, COMPONENT-BASED VARIABLES AND CORRELATION THEREOF FOR QUESTION 6 TO QUESTION 14

6.3.1 Principal Component Analysis

Principal component analysis (PCA) was conducted to determine if meaningful data reduction can be achieved for Questions 6 to Question 14 of the survey using Varimax

rotation (Lever, Krzywinski and Altman, 2017). Principal component analysis (PCA) was appropriate to conduct on these questions as the number of items under each question still meet the criteria of at least 5 observations per item (Gorsuch, 1983:332; Hatcher, 1994:73).

Principal component analysis (PCA) represents a dimensionality-reduction method. This is done by transforming a large set of variables into a smaller set, which subsequently still contains most of the information in the large set. This method provides PCA that is based upon correlation or covariance and Cronbach's coefficient alpha for scale reliability (Lever, Krzywinski and Altman, 2017). In addition, the analysis, as described below (and depicted in Table 6.5 below), indicated that PCA was appropriate as the Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) ranged between 0.616 and 0.824, all above the acknowledged threshold of 0.6. The Bartlett's Test of Sphericity was statistically significant ($p<0.001$) for all the sections tested.

In the case of Question 6, by using PCA and Varimax with Kaiser Normalization as rotation method, two components (factors) were identified based on the Eigenvalue criteria of larger than 1, explaining 70.8% of the variance. These are depicted in Table 6.6 below. The two factors are subsequently labelled as Growth in the Automotive Industry of South Africa as factor one and Growth in the Automotive Industry Globally as factor two. **Their measure of internal consistency (reliability)** or Cronbach's Alpha for Question 6 was above 0.6, the acceptable threshold for exploratory research (Hair et al., 2010: 92, 125).

Questions 6, 7, and 10 of the empirical survey had specific reference on motor vehicle manufacturing in South Africa, hence the first factor's name as mentioned in the previous paragraph. The scope of Questions 8, 9, 11, 12, 13, and 14 was broaden to the SADC (South Africa excluded), SSA, and global. The second factor's name indicated reference to motor vehicle manufacture on a global scale.

For Questions 7 to 14 the analyses indicated unidimensionality as only one component was identified, based on the Eigenvalue criteria of larger than 1. The percentage variance explained ranged between 59.2% and 90.4%. The measures of internal consistency (reliability) or Cronbach's Alpha for Questions 7 to 14 were all above 0.6, the acceptable threshold for exploratory research.

Table 6.6: Principal component analysis for Question 6 to Question 14

Q	Item Description	KMO & Bartlett's Test	% Variance Explained	Factor Loadings		Cronback Alpha
				1	2	
6	**The extent to which current motor vehicle manufacturing in South Africa, under the SAAM 2021-2035, will:**	**0.772 (p<0.001)**	**70.8%**			
	6.1 allow for increased SA vehicle production;				.893	.895
	6.2 allow for increased SA component manufacturing;				.941	
	6.3 allow for increased SA component imports from the SADC;			.726		.836
	6.4 allow for increased SA component imports from Namibia;			.677		
	6.5 allow for increased employment creation in the SADC;			.879		
	6.6 allow for increased regional integration in the SADC; and			.854		
	6.7 allow for utilising advantages of the global automotive overcapacity.			.594		
7	**The extent to which opportunities in South Africa to grow motor vehicle manufacturing, under the SAAM 2021-2035, will:**	**.805 (p<0.001)**	**59.2%**			**.854**
	7.1 allow for increased export of manufactured vehicles;			.790		
	7.2 allow for increased component localisation for the domestic market;			.770		
	7.3 allow for increased component localisation for the export market;			.788		
	7.4 allow for increased investment in the SADC automotive value chain;			.648		
	7.5 allow for increased financial performance and profitability; and			.891		
	7.6 allow for increased access to new technology and innovation.			.707		

Q	Item Description	KMO & Bartlett's Test	% Variance Explained	Factor Loadings		Cronback Alpha
				1	2	
8	**The extent to which dominance of vehicle production of South Africa in the SADC region will:**	**.616 (p<0.001)**	**62.6%**			**.697**
	8.1 provide an extended value chain into the SADC region;			.807		
	8.2 provide an extended value chain into other concentrated export markets; and			.863		
	8.3 provide for increased component exports to SA and the SADC.			.695		
9	**The extent to which dominance of vehicle production of South Africa in SSA will:**	**.746 (p<0.001)**	**82.9%**			**.895**
	9.1 provide an extended value chain into multiple African export markets;			.907		
	9.2 allow engagement in international automotive value chains; and			.924		
	9.3 allow to export vehicles globally.			.899		
10	**The extent to which government's influence for growth prospects of the automotive industry in South Africa will:**	**.739 (p<0.001)**	**90.4%**			**.944**
	10.1 attract investments int the vehicle manufacturing plants local;			.932		
	10.2 focus on increased motor vehicle manufacturing; and			.950		
	10.3 focus on increased component manufacturing.			.969		
11	**How the following aspects add to dominance of the supply chain of the automotive industry of South Africa in the SADC region:**	**.824 (p<0.001)**	**73.8%**			**.908**
	11.1 reliability of supply;			.867		
	11.2 quality;			.868		

Q	Item Description	KMO & Bartlett's Test	% Variance Explained	Factor Loadings		Cronback Alpha
				1	2	
	11.3 cost competitiveness;			.845		
	11.4 range of components; and			.879		
	11.5 complexity of components.			.834		
12	**How the following factors add currently to the impact of automotive component manufacturers, located outside the borders of South Africa, on the South African automotive chain:**	**.719 (p<0.001)**	**69.7%**			**.850**
	12.1 various component suppliers outside RSA;			.649		
	12.2 opportunities for value chain integration by complementing each other with different products, i.e. leather, plastics, etc.;			.877		
	12.3 increased imports into SA from African component suppliers; and			.892		
	12.4 revenue growth opportunities for African component suppliers.			.895		
13	**The degree of openness, ease of doing business, and opportunities for automotive component suppliers and manufacturers outside South Africa to take part in the supply chain of the South African automotive industry are impacted by the following aspects:**	**.821 (p<0.001)**	**68.8%**			**.884**
	13.1 understanding the South African policy regime and its benefits;			.732		
	13.2 logistics costs;			.900		
	13.3 costs competitiveness;			.873		
	13.4 component sector profitability; and			.888		
	13.5 component sector employment.			.737		

Q	Item Description	KMO & Bartlett's Test	% Variance Explained	Factor Loadings		Cronback Alpha
				1	2	
14	**The extent of aspets of incentive measures and government encouragements in the SADC required for Namibian component manufacturers to take part in the South African automotive supply chain:**	**.770 (p<0.001)**	**79.7%**			**.948**
	14.1 increased trave over borders by improving custom control issues;			.859		
	14.2 investment incentives to boost and market the automotive industry in SA;			.884		
	14.3 aligned domestic trade to tax regimes of SA;			.811		
	14.4 assistance of logistics costs by way of, i.e., logistics hubs, etc.;			.923		
	14.5 development of infrastructure for improved manufacture; and			.953		
	14.6 development of infrastructure for improved logistics.			.916		

Source: Author generated

Component-based variables were subsequently created. These are discussed below and illustrated in Table 6.7.

6.3.2 Descriptive Statistics: Component-Based Variables for Question 6 to Question 14

The descriptive statistics created for each of the component-based variables in Table 6.7 below indicated that the three highest mean values reflected are related to the following questions:

- Question 11: Dominance aspects of the supply chain of the automotive industry of South Africa in the SADC region (mean = 3.697);
- Question 13: Trade barriers for automotive component manufacturers located outside the borders of South Africa (mean = 3.634); and
- Question 14: Incentive measures and government encouragements for Namibian component manufacturers to take part in the South African automotive supply chain (mean = 3.681).

This indicates a tendency that these variables were rated towards a large extent. It indicates, in addition, that these variables are prominent aspects that need specific consideration when reflecting on factors that can add to the growth of the automotive industry in Namibia.

Table 6.7: Descriptive statistics of component-based variables for Question 6 to Question 14

	Q6 Growth in the Automotive Industry of South Africa	Q7 Growth in the Automotive Industry in the SADC and Globally	Q7 Opportunity Effects to Grow Motor Vehicle Manufacturing	Q8 Dominance Effect of Vehicle Production of South Africa in the SADC Region	Q9 Dominance Effect of Vehicle Production of South Africa in SSA	Q10 Government's Influence Effect for Growth Prospects of the Automotive Industry in South Africa	Q11 Dominance Aspects of the Supply Chain of the Automotive Industry of South Africa in the SADC Region	Q12 Dominance Aspects on the Impact of Automotive Component Manufacturers Located Outside the Borders of South Africa	Q13 Trade Barriers for Automotive Component Manufacturers Located Outside the Borders of South Africa	Q14 Incentive Measures and Government Encouragements for Namibian Component Manufacturers to Take Part in the South African Automotive Supply Chain
Mean	3.200	2.479	3.067	2.914	2.991	3.276	3.697	3.036	**3.634**	**3.681**
Median	3.000	2.600	3.000	3.000	3.000	3.333	3.800	3.000	3.600	3.833
Standard Deviation	0.699	0.651	0.597	0.643	0.756	0.934	0.690	0.796	0.697	0.806
Kurtosis	1.494	0.136	3.087	-0.794	-0.106	-0.333	6.069	0.381	**5.191**	**2.633**
Skewness	-0.913	0.235	-1.072	0.179	-0.460	-0.332	-1.486	-0.510	-1.762	-1.025

Source: Author generated

The lowest mean value was observed for Question 6, growth in the automotive industry in the SADC and globally (mean value = 2.479). This indicates that this variable was rated, on average, between a small and moderate extent. The deduction can be made that the perceived small extent of growth in the automotive industry in the SADC and globally must be taken into consideration in analysis of growth factors for the automotive industry in Namibia.

The skewness and kurtosis values were assessed to determine if the assumption of a normal distribution can be assumed for the variables in Table 6.7. Normal distribution represents a probability function where values of a variable are distributed with most of the observations clustered around the central peak (symmetric distribution). Skewness is the degree of distortion from the symmetrical bell curve or the normal distribution. Skewness is a measure of the lack of symmetry. A distribution or data set is symmetric if it looks the same to the left and right of the centre point. Kurtosis, as illustrated in Table 6.7 above, is defined as a measure where data are heavy-tailed or light-tailed relative to a normal distribution. Values for asymmetry and kurtosis are considered acceptable to assume a normal univariate distribution for the values between -2 and +2 (George and Mallery, 2010). Hair et al. (2010) and Bryne (2010) argued that data is normal if skewness is between -2 and +2 and kurtosis is between -7 and +7.

A normal distribution can thus not be assumed for these four variables. In the inferential section that follows, where applicable, this aspect will be addressed by either using techniques that are robust to deviations from normality or by using non-parametric tests that do not require this assumption.

6.3.3 Correlation Between Component-Based Variables for Question 6 to Question 14

A Pearson's correlation coefficient was computed to evaluate the relationship between all factors identified for questions 6 to 14 (Gogtay and Thatte, 2017). The Pearson product-moment correlation coefficient, also called Pearson correlation coefficient (r), is a measure of the strength and direction of a linear association between two variables. A range of values from +1 to -1 can be indicated by the Pearson correlation coefficient. A value of 0 indicates no association between the two variables exist. A

value larger than 0 indicates a positive association. A value less than 0 indicates a negative association.

Table 6.8 below provides an overview of the correlation analysis.

The components are labelled as follows:

- Question 6: Growth in the automotive industry of South Africa and Growth in the automotive industry in the SADC and globally (generated from the PCA factors, as in Section 6.3.1 above);
- Question 7: Opportunity effects to grow motor vehicle manufacturing;
- Question 8: Dominance effect of vehicle production of South Africa in the SADC region;
- Question 9: Dominance effect of vehicle production of South Africa in SSA;
- Question 10: Government's influence effect for growth prospects of the automotive industry in South Africa;
- Question 11: Dominance aspects of the supply chain of the automotive industry of South Africa in the SADC region;
- Question 12: Dominance aspects on the impact of automotive component manufacturers located outside the borders of South Africa;
- Question 13: Trade barriers for automotive component manufacturers located outside the borders of South Africa; and
- Question 14: Incentive measures and government encouragements for Namibian component manufacturers to take part in the South African automotive supply chain.

Correlations indicated in Table 6.8 are discussed further after the table.

Table 6.8: Correlation of component-based variables for Question 6 to Question 14

		Q6f1: Growth in the Automotive Industry of South Africa	Q6f2: Growth in the Automotive Industry in the SADC and Globally	Q7: Opportunity effects to grow motor vehicle manufacturing	Q8: Dominance effect of vehicle production of South Africa in the SADC region	Q9: Dominance effect of vehicle production of South Africa in SSA	Q10: Government influence effect for growth prospects of the automotive industry in South Africa	Q11: Dominance aspects of the supply chain of the automotive industry of South Africa in the SADC region	Q12: Dominance aspects on the impact of automotive component manufacturers located outside the borders of South Africa	Q13: Trade barriers for automotive component manufacturers located outside the borders of South Africa	Q14: Incentive measures and government encouragements for Namibian component manufacturers to take part in the South African automotive supply chain
Q6f1: Growth in the Automotive Industry of South Africa	Pearson Correlation	1									
Q6f2: Growth in the Automotive Industry in the SADC and Globally	Pearson Correlation	.506**	1								
Q7: Opportunity effects to grow motor vehicle manufacturing	Pearson Correlation	.666**	.576**	1							
Q8: Dominance effect of vehicle production of South Africa in the SADC region	Pearson Correlation	.345*	.724**	.730**	1						
Q9: Dominance effect of vehicle production of South Africa in SSA	Pearson Correlation	.542**	.675**	.725**	.751**	1					
Q10: Government's influence effect for growth prospects of the automotive industry in South Africa	Pearson Correlation	.476**	.406*	.581**	.410*	.679**	1				

Q11: Dominance aspects of the supply chain of the automotive industry of South Africa in the SADC region	Pearson Correlation	.556**	0.224	.360*	0.077	.441**	.663**	1			
Q12: Dominance aspects on the impact of automotive component manufacturers located outside the borders of South Africa	Pearson Correlation	.483**	.447**	.467**	.370*	.591**	.630**	.588**	1		
Q13: Trade barriers for automotive component manufacturers located outside the borders of South Africa	Pearson Correlation	.438**	0.321	.409*	0.260	.391*	.524**	.734**	.783**	1	
Q14: Incentive measures and government encouragements for Namibian component manufacturers to take part in the South African automotive supply chain	Pearson Correlation	.513**	.350*	.400*	0.255	.470**	.540**	.727**	.710**	.741**	1

* Correlation is significant at the 0.05 level (2-tailed)

** Correlation is significant at the 0.01 level (2-tailed)

Source: Author generated

All the relationships between the identified factors were positive and the value of the correlation coefficient ranged between .077 and .783.

A very weak (almost zero and not statistically significant) relationship was observed between Question 8, dominance effect of vehicle production of South Africa in the SADC region, and Question 11, dominance aspects of the supply chain of the automotive industry of South Africa in the SADC region (r = .077). This indicates that the two variables represented almost no interdependence.

The strongest relationship was between Question 12, dominance aspects on the impact of automotive component manufacturers located outside the borders of South Africa, and Question 13, trade barriers of automotive component manufacturers located outside the borders of South Africa (r = .783). This indicated that a higher level of perceived trade barriers is associated with a higher level of the dominance aspects in terms of automotive component manufacturers located outside the borders of South Africa. A lower level of perceived trade barriers is associated with a lower level of the dominance aspects in terms of automotive component manufacturers located outside the borders of South Africa.

Large positive correlations (relationship was above 0.5) were all statistically significant at the 1% level of significance and were observed between the following questions (as in Table 6.7 above):

- Question 6f1: Growth in the automotive industry of South Africa with the following questions:
    - Question 6f2: Growth in the automotive industry in the SADC and Globally (r = .506);
    - Question 7: Opportunity effects to grow motor vehicle manufacturing (r = .666);
    - Question 9: Dominance effect of vehicle production of South Africa in Sub-Saharan Africa (r = .542);
    - Question 11: Dominance aspects of the supply chain of the automotive industry of South Africa in the SADC region (r = .556); and

- Question 14: Incentive measures and government encouragements for Namibian component manufacturers to take part in the South African automotive supply chain (r = .513).

- Question 6f2: Growth in the automotive industry in the SADC and globally with the following questions:
  - Question 7: Opportunity effects to grow motor vehicle manufacturing (r = .576);
  - Question 8: Dominance effect of vehicle production of South Africa in the SADC region (r = .724); and
  - Question 9: Dominance effect of vehicle production of South Africa in Sub-Saharan Africa (r = .675).
- Question 7: Opportunity effects to grow motor vehicle manufacturing with the following questions:
  - Question 8: Dominance effect of vehicle production of South Africa in the SADC region (r = .730);
  - Question 9: Dominance effect of vehicle production of South Africa in Sub-Saharan Africa (r = .725); and
  - Question 10: Government's influence effect for growth prospects of the automotive industry in South Africa (r = .581).
- Question 8: Dominance effect of vehicle production of South Africa in the SADC region with the following question:
  - Question 9: Dominance effect of vehicle production of South Africa in Sub-Saharan Africa (r = .751).
- Question 9: Dominance effect of vehicle production of South Africa in Sub-Saharan Africa with the following questions:
  - Question 10: Government's influence effect for growth prospects of the automotive industry in South Africa (r = .679); and

- Question 12: Dominance aspects on the impact of automotive component manufacturers located outside the borders of South Africa (r = .591).

- Question 10: Government's influence effect for growth prospects of the automotive industry in South Africa with the following questions:
  - Question 11: Dominance aspects of the supply chain of the automotive industry of South Africa in the SADC region (r = .663);
  - Question 12: Dominance aspects on the impact of automotive component manufacturers located outside the borders of South Africa (r = .630);
  - Question 13: Trade barriers for automotive component manufacturers located outside the borders of South Africa (r = .524); and
  - Question 14: Incentive measures and government encouragements for Namibian component manufacturers to take part in the South African automotive supply chain (r = .540).
- Question 11: Dominance aspects of the supply chain of the automotive industry of South Africa in the SADC region with the following questions:
  - Question 12: Dominance aspects on the impact of automotive component manufacturers located outside the borders of South Africa (r = .588);
  - Question 13: Trade barriers for automotive component manufacturers located outside the borders of South Africa (r = .734); and
  - Question 14: Incentive measures and government encouragements for Namibian component manufacturers to take part in the South African automotive supply chain (r = .727).
- Question 12: Dominance aspects on the impact of automotive component manufacturers located outside the borders of South Africa with the following questions:

    - Question 13: Trade barriers for automotive component manufacturers located outside the borders of South Africa (r = .783); and
    - Question 14: Incentive measures and government encouragements for Namibian component manufacturers to take part in the South African automotive supply chain (r = .710).

- Question 13: Trade barriers for automotive component manufacturers located outside the borders of South Africa with the following question:
    - Question 14: Incentive measures and government encouragements for Namibian component manufacturers to take part in the South African automotive supply chain (r = .741).

6.4 DIFFERENCES BETWEEN FACTORS OF GROWTH OF THE SOUTH AFRICAN AUTOMOTIVE INDUSTRY AND GROWTH IN OTHER AUTOMOTIVE INDUSTRIES

6.4.1 Testing for Differences Between the Perceived Extent of the Capability of Growth Groups of the Automotive Manufacturing Industry in Namibia (Q3) Regarding the 10 Components Identified from Question 6 to Question 14 – Kruskal-Wallis Tests

The Kruskal-Wallis one-way analysis of variance by ranks tests were also used to test for statistically significant differences between groups according to Question 3 on the perceived extent of the capability of the automotive manufacturing industry in Namibia to grow regarding the components identified for Questions 6 to 14, consisting of the following:

- Question 6: Growth in the Automotive Industry of South Africa and Growth in the Automotive Industry in the SADC and Globally (generated from PCA factors in Section 6.3.1 above);
- Question 7: Opportunity effects to grow motor vehicle manufacturing;
- Question 8: Dominance effect of vehicle production of South Africa in the SADC region;

- Question 9: Dominance effect of vehicle production of South Africa in Sub-Saharan Africa;
- Question 10: Government's influence effect for growth prospects of the automotive industry in South Africa;
- Question 11: Dominance aspects of the supply chain of the automotive industry of South Africa in the SADC region;
- Question 12: Dominance aspects on the impact of automotive component manufacturers located outside the borders of South Africa;
- Question 13: Trade barriers for automotive component manufacturers located outside the borders of South Africa; and
- Question 14: Incentive measures and government encouragements for Namibian component manufacturers to take part in the South African automotive supply chain.

Similarly, tests were also done for statistically significant differences between groups according to Question 4 on the motor industry sector in Namibia with the most promising opportunity to grow regarding components identified for Questions 6 to 14, as listed above. These are discussed in Section 6.4.2 below.

The groups for Question 3 on the perceived extent of the capability of the automotive manufacturing industry in Namibia to grow as depicted in mean ranks in Table E3 in Appendix E were group 1 (no extent), group 2 (small extent), group 3 (moderate extent), group 4 (large extent), and group 5 (critical extent). The results are described below.

The hypotheses to be tested were:

A. **Hypothesis H_1: There are differences** between the groups representing the perceived extent of the capability of the Namibian automotive manufacturing industry to grow regarding each of 10 components identified from Question 6 to Question 14 in the empirical survey.

Each of the factors was tested separately. The mean ranks are depicted in Table E3 in Appendix E and the test statistics are illustrated below in Table 6.9.

Table 6.9: Test statistics of the perceived extent of the growth of the automotive manufacturing industry in Namibia (Q3) regarding the 10 factors identified from Question 6 to Question 14

Test Statistics[a,b] Component analysis factors and specified areas of growth in automotive industries										
	Q6f1 Growth in the Automotive Industry of South Africa	Q6f2 Growth in the Automotive industry in the SADC and Globally	Q7 The Extent of Opportunities in South Africa to Grow Motor Vehicle Manufacturing Under the SAAM 2021-2035	Q8 The Extent of Dominance of Vehicle Production of South Africa in the SADC Region	Q9 The Extent of Dominance of Vehicle Production of South African in SSA	Q10 The Extent of Government's Influence for Growth Prospects of the Automotive Industry in South Africa	Q11 Aspects that Add to Dominance of the Supply Chain of the Automotive Industry of South Africa in the SADC Region	Q12 Factors that Add to the Impact of Automotive Component Manufacturers, Located Outside the Borders of South Africa, on the South African Automotive Value Chain	Q13 The Degree of Openness, Ease of Doing Business, and Opportunities for Automotive Component Suppliers and Manufacturers Outside South Africa to Take Part in the Supply Chain of the South African Automotive Industry are Impacted	Q14 The Extent of Aspects of Incentive Measures and Government Encouragements in the SADC Required for Namibian Component Manufacturers to Take Part in the South African Automotive Supply Chain
Kruskal-Wallis H	2.533	2.768	3.742	4.598	1.665	11.956	2.044	4.652	1.965	0.903
df (degree of freedom)	2	2	2	2	2	2	2	2	2	2
Asymp. Sig. (Asymptotic Significance or p value)	0.282	0.251	0.154	0.100	0.435	0.003	0.360	0.098	0.374	0.637

a. Kruskal-Wallis Test

b. Grouping Variable: Q3

Source: Author generated

The results and test statistics illustrated in Table 6.9 above indicate there is no statistically significant difference, at the 10% level of significance, between the perceived extent of the ‘capability of the Namibian automotive manufacturing industry to grow’ groups regarding 9 of the 10 factors (all p values are larger than or equal to 0.1).

However, the results in the above table indicate that there is a statistically significant difference between the perceived extent of the ‘capability of the automotive industry in Namibia to grow’ groups, at the 1% level of significance, regarding Question 10, impact of government’s influence for growth prospects of the automotive industry in South Africa,

Furthermore, from the ranks table in Table E3 in Appendix E, the mean ranks indicate that group 2 (small extent) of the capability of the automotive manufacturing industry in Namibia to grow, tends to agree far less (mean rank of 8.4 vs 20.46 and 21.05) to what Question 10, government’s influence effect for growth prospects of the automotive industry in South Africa, and Question 12, dominance aspects on the impact of automotive component manufacturers located outside the borders of South Africa (mean rank of 11.75 vs 20.42 and 18.05), represented than the other two groups.

The Kruskal-Wallis one-way analysis of variance by ranks tests were also used to test for statistically significant differences between groups, according to Question 4 on the perceived motor industry sector in Namibia that had the most promising opportunity to grow regarding the components identified for Questions 6 to Question 14. This is described in the next section.

6.4.2 Testing for Differences Between the Perceived Motor Industry Sector in Namibia with the Most Promising Opportunity to Grow (Q4) Regarding the 10 Components Identified from Question 6 to Question 14 – Kruskal-Wallis Tests

The groups for Question 4 on the motor industry sector of the automotive manufacturing industry in Namibia with the perceived most opportunity to grow were group 1 (motor assembly), group 2 (aftermarket sales and services), group 3

(component production), and group 4 (automotive dealerships) (see Section 5.8.2). The results are described in the sections below.

The hypothesis for this section, with the primary and secondary objectives as foundation, consisted of the following:

E. Hypothesis H_1: There is a difference between the groups representing the perceived motor industry sector in Namibia with the most promising opportunity to grow regarding each of the 10 components identified from Question 6 to Question 14 in the empirical survey.

Each factor was tested separately. Test statistics are depicted in Table 6.10 below. Discussions are presented after the table.

Table 6.10: Test statistics – the perceived groups of the motor industry sector in Namibia with the most promising opportunity to grow (Q4) regarding the 10 factors identified from Question 6 to Question 14

Test Statistics[a,b] Component analysis factors and specified areas of growth in automotive industries										
	Q6f1 Growth in the Automotive Industry of South Africa	Q6f2 Growth in the Automotive industry in the SADC and Globally	Q7 The Extent of Opportunities in South Africa to Grow Motor Vehicle Manufacturing Under the SAAM 2021-2035	Q8 The Extent of Dominance of Vehicle Production of South Africa in the SADC Region	Q9 The Extent of Dominance of Vehicle Production of South African in SSA	Q10 The Extent of Government's Influence for Growth Prospects of the Automotive Industry in South Africa	Q11 Aspects that Add to Dominance of the Supply Chain of the Automotive Industry of South Africa in the SADC Region	Q12 Factors that Add to the Impact of Automotive Component Manufacturers, Located Outside the Borders of South Africa, on the South African Automotive Value Chain	Q13 The Degree of Openness, Ease of Doing Business, and Opportunities for Automotive Component Suppliers and Manufacturers Outside South Africa to Take Part in the Supply Chain of the South African Automotive Industry are Impacted	Q14 The Extent of Aspects of Incentive Measures and Government Encouragements in the SADC Required for Namibian Component Manufacturers to Take Part in the South African Automotive Supply Chain
Kruskal-Wallis H	2.354	1.836	2.100	2.285	5.549	3.077	3.056	0.593	5.906	2.610
df (degree of freedom)	3	3	3	3	3	3	3	3	3	3
Asymp. Sig. (Asymptotic Significance or p values)	0.502	0.607	0.552	0.515	0.136	0.380	0.383	0.898	0.116	0.456

a. Kruskal-Wallis Test

b. Grouping Variable: Q4

Source: Author generated

The results and test statistics illustrated in Table 6.10 above indicate there is no statistically significant difference, at the 10% level of significance, between the groups of motor industry sector in Namibia with the perceived most promising opportunity to grow regarding all 10 components (all p values are larger than 0.1). Furthermore, a similar pattern of responses regarding the levels of each factor across the groups was observed from the mean ranks.

6.5 ASSOCIATIONS BETWEEN QUESTION 3: THE PERCEIVED EXTENT OF THE AUTOMOTIVE INDUSTRY IN NAMIBIA TO GROW WITH OPEN-ENDED QUESTIONS IN THE SURVEY

Towards the end of the survey, open-ended questions to respondents in Question 18 to Question 22 were included in Part F of the empirical survey. Respondents were asked to express their views in their own words. No options were provided. Responses received from respondents in respect of the five questions as listed below were qualitatively analysed and classified into the top four themes in each question.

Inferential analysis results of open-ended questions were supported and enhanced by conducting further thematic data analysis on open-ended components of the questionnaire, discussed in 20 face-to-face interviews with a second group of participants.

An analysis was conducted to determine the association between Question 3 on the perceived extent of the automotive manufacturing industry in Namibia's capability to grow and the themes identified for each of the questions listed below:

- Q18: Perceived top strengths Namibia as a country owns which can contribute to the growth of an automotive industry in Namibia.
- Q19: Perceived top strategies the government in Namibia should implement to grow the Namibian automotive industry.
- Q20: Perceived top inherent opportunities for Namibia as country which can contribute to the growth of any automotive industry.
- Q21: Perceived top areas role-players can embark upon to grow the automotive industry; and

- Q22: Perceived automotive component categories that can be manufactured in Namibia with the largest potential to take part in the supply chain of the automotive industry of South Africa.

The hypothesis tested is the following:

E. Hypothesis H_1: There is an association between the perceived extent of the automotive manufacturing industry in Namibia's capability to grow (Q3) and each of the themes identified per question for Questions 18 to 22.

Each of the themes were defined as a variable with a value of 1 if a respondent has mentioned a specific theme or a value of 0 if a respondent does not mention the specific theme. The themes were coded as follows:

- If a respondent has mentioned a specific theme, and since both variables in the analysis of the association were nominal, the Pearson's Chi-Square Test for Independence was used.
- In cases where the Pearson's Chi-Square Test could not be used (in cases where more than 20% of the cells had an expected frequency of less than 5), the Fisher's Exact Test was used.

The Pearson's Chi-Square Test is based on an approximation approach and needs an adequate large sample size, generally stated as a minimum of the number of rows times the number of columns times 5. In most instances, the Fisher's Exact Test was used as more than 20% of the cells had expected frequencies of less than 5.

A summary of the association results is represented in Table 6.11 below. Discussions follow thereafter.

Table 6.11: Associations between the perceived extent of the automotive manufacturing industry in Namibia to grow (Q3) and open-ended questions (Q18 – Q22)

Cross-Tabulation Variables	Pearson's Chi-Square Value	Fisher's Exact Test Significance	Asymptotic Significance (p value)	Cramér V	Effect
Q3 with Q18.1: Well-developed logistics network of roads and transport infrastructure	.135	n/a	.713*	0.183	Moderate
Q3 with Q18.2: Well-developed deep-sea harbour		.709		0.234	Moderate
Q3 with Q18.3: Political stability		1		0.337	Large
Q3 with Q18.4: Ample space		.476		0.277	Moderate
Q3 with Q19.1: Increase in manufacturing and sales incentives		.670		0.188	Moderate
Q3 with Q19.2: To ban or prohibit grey imports and importers thereof		.709		0.175	Moderate
Q3 with Q19.3: Proper and advanced training facilities		.685		0.188	Moderate
Q3 with Q19.4: Clear, consistent, and transparent automotive strategy		1		0.270	Moderate
Q3 with Q20.1: logistics and infrastructure hub		1		0.269	Moderate
Q3 with Q20.2: High unemployment rates		1		0.172	Moderate
Q3 with Q20.3: Economic growth and recovery		.709		0.155	Small
Q3 with Q20.4: Large deficit of trading account		1		0.262	Moderate
Q3 with Q21.1: Manufacturing and tax incentive schemes to grow manufacturing		1		0.227	Moderate
Q3 with Q21.2: Certainty of government legislation on finance, imports, and exports		.709		0.155	Small

Cross-Tabulation Variables	Pearson's Chi-Square Value	Fisher's Exact Test Significance	Asymptotic Significance (p value)	Cramér V	Effect
Q3 with Q21.3: Skills improvement and employment creation		1		0.236	Moderate
Q3 with Q21.4: Assist the private sector of dealerships and private component manufacturing firms		1		0.176	Moderate
Q3 with Q22.1: Body panels		.121		0.415	Large
Q3 with Q22.2: Engine components		.709		0.132	Small
Q3 with Q22.3: Vehicle assembly		.391		0.253	Moderate

Denotes significance *** at the 1% level, ** at the 5% level, * at the 10% level

Source: Author generated

No statistically significant association was found between the perceived extent of the capability of the automotive manufacturing industry in Namibia to grow (Question 3) and the separate open-ended questions (all p values are larger than 0.1). This was potentially due to low statistical power because of the small sample size. It was therefore decided to study the patterns in the contingency tables and provide the Cramér V value of effect size.

The degree of freedom (df) indicated by statistical tables generated by the SPSS amounts to 3 in all instances in Table 6.11 above. For df=3, where the effect size for Cramér's V was at least 0.06 but smaller than 0.17, a small association between the variables exists. The variables are only weakly associated. For effect size for Cramér's V larger than 0.17 but smaller than 0.29, a medium association exists. The variables are moderately associated. A Cramér's V effect size equals to and larger than 0.29 indicates a strong association. The variables are strongly associated (Kim, 2017:154).

Patterns in cross-tabulations tables for Question 3, with the subsections of Questions 18 to 22, are depicted in Tables E4 to E22 in Appendix E.

Q.3 with Q18.1: Well-developed logistics network of roads and transport infrastructure

The Cramér's V effect size of 0.183 for the association between Q3 and Q18.1 (as depicted in Table 6.11 above) indicated a **moderate effect.**

From patterns in the cross-tabulations, Table E4 in Appendix E, the following observations were made:

- A similar pattern was observed for the respondent groups associated with 'to no extent', 'to a small extent', and 'to a large extent' regarding whether they selected a well-developed logistic network of roads and transport infrastructure as a strength (±50% vs 50%). Of the respondents, 54.5% selected 'to a large extent' vs 45.5% who did not.
- However, the pattern for the group that is associated with 'to a moderate extent', differs: 66.7% selected well-developed logistic network of roads and transport infrastructure as a strength vs 33.3% who did not mention this choice.

Q.3 with Q18.2: Well-developed deep-sea harbour

The Cramér's V effect size of 0.234 for the association between Q3 and Q18.2 (as depicted in Table 6.11 above) indicated a **moderate effect**.

From patterns in the cross-tabulations, Table E5 in Appendix E, the following observations were made:

- A similar pattern was observed for the respondent groups associated with 'to no extent', 'to a small extent', and 'to a moderate extent' regarding whether they selected a well-developed deep-sea harbour as a strength (50% vs 50% for 'no extent'). For 'to a small extent' and 'to a moderate extent', a slight majority group (60% and 58.3%) did not select this strength vs 40% and 41.7% that did select this strength.
- This pattern differs for the group that is associated with 'to a large extent': The majority (81.8%) did not mention this choice vs 18.2% who selected well-developed deep-sea harbour as a strength.

Q.3 with Q18.3: Political stability

The Cramér's V effect size of 0.337 for the association between Q3 and Q18.3 (as depicted in Table 6.11 above) indicated a **large effect**.

From patterns in the cross-tabulations, Table E6 in Appendix E, the following observations were made:

- A similar pattern was also observed for the respondent groups associated with 'to no extent' and 'to a moderate extent' regarding whether they have selected political stability as a strength. 50% of the group 'to no extent' selected political stability and 50% not. Of the group 'to a moderate extent', 58.3% did not select this choice vs 41.7% who selected this choice.
- This pattern differs for the group that is associated with 'to a small extent': 80% did not mention this choice vs 20.0% who selected political stability to a small extent as a strength.

- Furthermore, for the group that is associated with ‘to a large extent’, 90.9% did not mention this choice vs 9.1% who selected political stability ‘to a large extent’ as a strength.

Q.3 with Q18.4: Ample space

The Cramér’s V effect size of 0.227 for the association between Q3 and Q18.4 (as depicted in Table 6.11 above) indicated a **moderate effect.**

From patterns in the cross-tabulations, Table E7 in Appendix E, the following observations were made:

- A similar pattern was observed for the respondent groups associated with ‘to a small extent’ and ‘to a large extent’ regarding whether they selected ample space as a strength (±70% did not mention this choice vs ±30% who mentioned this choice).
- However, the pattern for the group that is associated with ‘no extent’ differs: None (0%) selected ample space as a strength vs 100% who did not mention this choice.
- Furthermore, for the group that is associated with ‘a moderate extent’, an equal number of respondents (50%/50%) mentioned ample space as strength or did not mention this choice.

Q.3 with Q19.1: Increased manufacturing and sales incentive schemes

The Cramér’s V effect size of 0.188 for the association between Q3 and Q19.1 (as depicted in Table 6.11 above) indicated a **moderate effect.**

From patterns in the cross-tabulations, Table E8 in Appendix E, the following observations were made:

- A similar pattern was observed for the respondent groups associated with ‘to a small extent’, ‘a moderate extent’, and ‘to a large extent’ regarding whether they selected increased manufacturing and sales incentive schemes as a top strategy for the government of Namibia to implement (±20% did not mention this choice vs ±80% who mentioned this choice).

- However, the pattern differs for the group that is associated with ‘no extent’: For the group that is associated with a no extent an equal number of respondents (50%/50%) mentioned increased manufacturing and sales incentive schemes as a top strategy for the government of Namibia to implement or did not mention this choice.

Q.3 with Q19.2: Clear, consistent, and transparent automotive strategy

The Cramér’s V effect size of 0.175 for the association between Q3 and Q19.2 (as depicted in Table 6.11 above) indicated a **moderate effect.**

From patterns in the cross-tabulations, Table E9 in Appendix E, the following observations were made:

- A similar pattern was observed for the respondent groups associated with ‘to a moderate extent’ and ‘to a large extent’ regarding whether they selected clear, consistent, and transparent automotive strategy as a top strategy for the government of Namibia to implement (±66.7% did not mention this choice vs ±33.3% who mentioned this choice).
- However, the pattern differs for the group that is associated with ‘no extent’. An equal number of respondents (50%/50%) mentioned a clear, consistent, and transparent automotive strategy as a top strategy for the government of Namibia to implement or did not mention this choice.
- In addition, the pattern differs for the group that is associated with ‘to a small extent’: ±80% did not mention this choice vs ±20% who mentioned this choice.

Q.3 with Q19.3: Prohibition of grey imports

The Cramér’s V effect size of 0.188 for the association between Q3 and Q19.3 (as depicted in Table 6.11 above) indicated a **moderate effect.**

From patterns in the cross-tabulations, Table E10 in Appendix E, the following observations were made:

- A similar pattern was observed for the respondent groups associated with ‘to a small extent’, ‘a moderate extent’, and ‘to a large extent’ regarding whether they selected prohibition of grey imports as a top strategy for the government of

Namibia to implement (±70% did not mention this choice vs ±30% who mentioned this choice). Of the group ‘to a moderate extent’, 83.3% did not select this choice vs 16.7% who selected this choice.

- However, the pattern differs for the group that is associated with ‘no extent’. An equal number of respondents (50%/50%) mentioned prohibition of grey imports as a top strategy for the government of Namibia to implement or did not mention this choice.

Q.3 with Q19.4: Proper and advanced training facilities

The Cramér’s V effect size of 0.270 for the association between Q3 and Q19.4 (as depicted in Table 6.11 above) indicated a **moderate effect.**

From patterns in the cross-tabulations, Table E11 in Appendix E, the following observations were made:

- A similar pattern was observed for the respondent groups associated with ‘to a small extent’ and ‘to a moderate extent’, whether they selected proper and advanced training facilities as a top strategy for the government of Namibia to implement (±30% did not mention this choice vs ±70% who mentioned this choice). Of the group ‘to a moderate extent’, 16.7% did not select this choice vs 83.3% who selected this choice.

- However, the pattern differs for the groups that are associated with ‘to no extent’ and ‘to a large extent’. An equal number of respondents (±50%/50%) mentioned proper and advanced training facilities as a top strategy for the government of Namibia to implement and did not mention this choice.

Q.3 with Q20.1: Economic growth and recovery

The Cramér’s V effect size of 0.269 for the association between Q3 and Q20.1 (as depicted in Table 6.11 above) indicated a **moderate effect.**

From patterns in the cross-tabulations, Table E12 in Appendix E, the following observations were made:

- A different pattern was observed across the respondent groups. Those associated with ‘to a small extent’ selected economic growth and recovery as a

top opportunity in Namibia to grow the automotive industry (60% did not mention this choice vs 40% who mentioned this choice). Of the group 'to a large extent', 72.7% did not select this choice vs 27.3% who selected this choice.

- For the group associated with 'to a moderate extent', an equal number of respondents (50%/50%) mentioned economic growth and recovery as a top opportunity in Namibia to grow the automotive industry or did not mention this choice.
- For the group associated with 'to no extent', none (0%) selected economic growth and recovery as a top opportunity in Namibia to grow the automotive industry as a strength vs 100% who did not mention this choice.

Q.3 with Q20.2: Develop Namibia as logistics and infrastructure hub

The Cramér's V effect size of 0.173 for the association between Q3 and Q20.2 (as depicted in Table 6.11 above) indicated a **moderate effect.**

From patterns in the cross-tabulations, Table E13 in Appendix E, the following observation was made:

- Most of the respondent groups (ranged between 70% and 100%) did not select develop Namibia as logistics and infrastructure hub as a top opportunity in Namibia to grow the automotive industry.

Q.3 with Q20.3: Large deficit on trading account with South Africa

The Cramér's V effect size of 0.155 for the association between Q3 and Q20.3 (as depicted in Table 6.11 above) indicated a **small effect.**

From patterns in the cross-tabulations, Table E14 in Appendix E, the following observations were made:

- A similar pattern was observed for the respondent groups associated with 'to a small extent' and 'to a large extent', whether they selected large deficit on trading account with South Africa as a top opportunity in Namibia to grow the automotive industry (±40% did not mention this choice vs ±60% who mentioned this choice).

- However, the pattern differs for the group that is associated with ‘to no extent’. An equal number of respondents (50%/50%) mentioned a large deficit on trading account with South Africa as a top opportunity in Namibia to grow the automotive industry or did not mention this choice. Of the group ‘to a moderate extent’, a quarter (25.0%) did not select this choice vs 75.0% who selected this choice.

Q.3 with Q20.4: High unemployment rates

The Cramér’s V effect size of 0.262 for the association between Q3 and Q20.4 (as depicted in Table 6.11 above) indicated a **moderate effect.**

From patterns in the cross-tabulations, Table E15 in Appendix E, the following observation was made:

- A different pattern was observed for the respondent groups that selected high unemployment rates as a top opportunity in Namibia to grow the automotive industry. The range for those who chose this reason was between 0% (‘to no extent’ group) and 41.7% (‘to a moderate extent’ group).

Q.3 with Q21.1: Manufacturing and tax incentive schemes to grow manufacturing

The Cramér’s V effect size of 0.227 for the association between Q3 and Q21.1 (as depicted in Table 6.11 above) indicated a **moderate effect.**

From patterns in the cross-tabulations, Table E16 in Appendix E, the following observation was made:

- One half or more (between 50% and 81.8%) selected manufacturing and tax incentive schemes to grow manufacturing as a top focus area for role-players in Namibia to grow the automotive industry. Of the group ‘to a large extent’, the majority (81.8%) of respondents mentioned manufacturing and tax incentive schemes to grow manufacturing as a top focus area for role-players in Namibia with which to grow the automotive industry.

Q.3 with Q21.2: Certainty of government legislation on finance, imports, and exports

The Cramér's V effect size of 0.155 for the association between Q3 and Q21.2 (as depicted in Table 6.11 above) indicated a **small effect.**

From patterns in the cross-tabulations, Table E17 in Appendix E, the following observation was made:

- Like Question 21.2, most respondents (between 50% and 75%) selected certainty of government legislation on finance, imports, and exports as a top focus area for role-players in Namibia to grow the automotive industry. Of the group 'to a moderate extent', 75.0% selected this choice.

Q.3 with Q21.3: Skills improvement and employment creation

The Cramér's V effect size of 0.236 for the association between Q3 and Q21.3 (as depicted in Table 6.11 above) indicated a **moderate effect.**

From patterns in the cross-tabulations, Table E18 in Appendix E, the following observation was made:

- In this case, half to more than half (between 50% and 83.3%) of the respondents in each group did not select this choice of skills improvement and employment creation as a top focus area for role-players in Namibia to grow the automotive industry. Of the group 'to a moderate extent', the majority (83.3%) did not select this choice.

Q.3 with Q21.4: Assistance to the private sector of automotive dealerships and component manufacturers

The Cramér's V effect size of 0.176 for the association between Q3 and Q21.4 (as depicted in Table 6.11 above) indicated a **moderate effect.**

From patterns in the cross-tabulations, Table E19 in Appendix E, the following observation was made:

- The majority (between 80% and 100%) did not select assistance to the private sector of automotive dealerships and component manufacturers as a top focus area for role-players in Namibia to grow the automotive industry.

Q.3 with Q22.1: Engine and engine components

The Cramér's V effect size of 0.415 for the association between Q3 and Q22.1 (as depicted in Table 6.11 above) indicated a **large effect.**

From patterns in the cross-tabulations, Table E20 in Appendix E, the following observations are made:

- The majority (between 81.8% and 100%) was observed for the respondent groups associated with 'to no extent', 'to a small extent', and 'to a large extent', which did not select engine and engine components as top automotive component category to manufacture for Namibia to grow the automotive industry.
- Furthermore, the pattern differs for the group that is associated with 'to a moderate extent'. An equal number of respondents (50%/50%) mentioned engine and engine components as top automotive component category to manufacture for Namibia to grow the automotive industry or did not mention this choice.

Q.3 with Q22.2: Body panels

The Cramér's V effect size of 0.132 for the association between Q3 and Q22.2 (as depicted in Table 6.11 above) indicated a **small effect.**

From patterns in the cross-tabulations, Table E21 in Appendix E, the following observation was made:

- Half or less than half (between 27.3% and 50%) of the respondent groups selected body panels as top automotive component category to manufacture for Namibia to grow the automotive industry.

Q.3 with Q22.3: Leather trim

The Cramér's V effect size of 0.253 for the association between Q3 and Q22.2 indicated a **moderate effect** (as depicted in Table 6.11 above).

From patterns in the cross-tabulations, Table E22 in Appendix E, the following observation was made:

- The majority (between 70% and 100%) did not select leather trim as the top automotive component category to manufacture for Namibia to grow the automotive industry in Namibia.

In conclusion to this section, the findings from the data analysis of the Cramér's V effect size for the association between Q3 and Questions 18 to Question 22 (as depicted in Table 6.11 above) indicated an effect size in most of the sections (16 out of 19), where a moderate or large association exists (where Cramér's V values are larger than 0.17). This indicates the existence of a link between the perceived extent of the automotive industry in Namibia to grow with a moderate or large extent and the following variables:

- Well-developed logistics network of roads and transport infrastructure;
- Well-developed deep-sea harbour;
- Political stability;
- Ample space;
- Increase in manufacturing & sales incentives;
- To ban or prohibit grey imports and importers thereof;
- Proper and advanced training facilities;
- Clear, consistent, and transparent automotive strategy;
- Logistics and infrastructure hub;
- High unemployment rates;
- Large deficit of trading account;
- Manufacturing and tax incentive schemes to grow manufacturing;
- Skills improvement and employment creation;
- Assist the private sector of dealerships and private component manufacturing firms;
- Body panels; and
- Vehicle assembly.

6.6 MAIN FINDINGS

The main findings of this chapter are indicated in Table 6.12 below. Main findings are merely summarised here as conclusion to this chapter. In Chapter 7, the conclusion to this study provides a short overview of the research that was conducted, and a

summary of the research aim and objectives. The conclusions drawn from the data analysis conducted in Chapters 5 and 6 are discussed and recommendations for improvements made. Synchronisation between the research objectives and the findings will be offered and the limitations of the study will be explained.

Table 6.12: Summary of main findings

Question/Construct	Comment/Finding
1.1 Ownership of the company: % locally owned.	1.1 Views of respondents are largely characteristic of the local environment based on the percentage (68%) of locally owned respondents' business entities.
1.2 Total employment of the company: % locally employed.	1.2 Perceptions of respondents are distinctive to the local environment based on the percentage (72%) locally employed.
1.3a Business activities of the company: % of activities as automotive dealership.	1.3a Mainly automotive dealerships as 71% of respondents indicated activities of their business entities to be 80% or more focused as automotive dealerships while holding franchise agreements with OEMs.
1.3b Business activities of the company: % of activities as component manufacturer.	1.3b Automotive component manufacturing currently has no or minimal presence in the country as 83% of respondents indicated that activities of their business entities did not include manufacturing of automotive components at all.
1.4a Future business activities of the company: % of future activities as automotive vehicle exporter.	1.4a Export of vehicles is not viewed as a crucial element for future growth of the automotive industry in Namibia as a large majority (88%) of respondents indicated that they do not foresee exports of vehicles in the future.
1.4b Future business activities of the company: % of future activities as component manufacturer.	1.4b No significant increases in countrywide levels of component manufacturing as only 6% of respondents indicated their future business activities will consist of 90% to 100% as automotive component manufacture. In addition, only another 6% of respondents indicated their future business activities will consist of 20% to 50% as automotive component manufacturer.
2. Representation of the respondents of the automotive industry in SA and Namibia.	2. Opinions represent the perspectives of automotive dealerships and franchises to a large degree as 71% of respondents indicated activities of their business entities to be 80% to 100% focused as automotive dealerships.
3. Respondents' perceived extent of the automotive industry in Namibia to grow.	3. A fair and optimistic outlook exists on the growth capability of the automotive industry in Namibia as almost two-thirds (65%) of respondents had a confident opinion that the automotive industry has a

Question/Construct	Comment/Finding
	capability to grow moderately (34%) and to a large extent (31%).
4. Respondents' perceived motor industry sectors with the most promising opportunity to grow the Namibian automotive industry.	4. The modal category chosen by respondents was more vehicle assembly (40%).
5. Respondents' perceived regions outside Namibia with the most promising opportunity to grow the Namibian automotive industry.	5. Respondents indicated that South Africa and the SADC are the regions that present the most promising opportunity for the Namibian automotive industry as a total of 69% of respondents indicated that South Africa (35%) and the SADC (34%) were the regions with the most promising opportunities.
6f1. Growth in the automotive industry of South Africa.	6f1. The impact of more components and vehicle manufacture in SA has a moderate and large impact (as chosen by 32% of respondents) on factors that can add to the growth of the automotive industry in Namibia.
6f2. Growth in the automotive industry in the SADC and globally.	6f2. The impact of more component and vehicle manufacture in the SADC and SSA has an impact on growth factors for the automotive industry in Namibia. Increased regional integration in the SADC was rated by 58.8% of respondents to be impacted by the SAAM 2021-2035 to a moderate and large extent.
7. Opportunity effects to grow motor vehicle manufacturing.	7. Increased profitability, technology, and exports can be impacted because of engagement in the supply chain of the automotive industry in the SADC region. The 3 variables were indicated to a moderate, large, and critical extent each by most (at least 88.6%) respondents.
8. dominance effect of vehicle production of South Africa in the SADC region.	8. Increased component imports and extended supply chain in the SADC are impacted to a moderate or large extent (indicated by 74.3% of respondents) in terms of growth in the demand side of the SA automotive industry.
9. Dominance effect of vehicle production of South Africa in Sub-Sahara Africa.	9. Increased engagement in African and international supply chains and exports are impacted to a moderate or large extent (indicated by 70% of respondents) by expected growth of SA vehicle production.
10. Government's influence effect on growth prospects of the automotive industry in South Africa.	10. Government's influence in Namibia can result in increased component manufacturing, increased vehicle production, and more vehicle assembly plants. At least 74.2% and more of respondents rated these three factors as being impacted to a moderate, large, and critical extent by government in South Africa.

Question/Construct	Comment/Finding
11. Dominance aspects of the supply chain of the automotive industry of South Africa in the SADC region.	11. Quality is the prevailing variable that impacts the dominance of the supply chain of South Africa in the SADC region as 82.9% of respondents indicated it to a large and critical extent.
12. Dominance aspects on the impact of automotive component manufacturers located outside the borders of South Africa.	12. Complementary components and products for integration into the South African automotive value chain is the most dominant variable as 77.2% of respondents rated it to a moderate, large, and critical extent.
13. Trade barriers for automotive component manufacturers located outside the borders of South Africa.	13. Logistics costs and costs competitiveness are each rated as trade barriers to a large and critical extent by 71.4% of respondents.
14. Incentive measures and government encouragements for Namibian component manufacturers to take part in the South African automotive supply chain.	14. Improvements to customs control issues, development of infrastructure for improved logistics, and investment incentives are rated as incentive measures to a large and critical extent each by 65% of all respondents.
15. Respondents; ratings of constraints affecting growth of the Namibian automotive industry.	15. Government constraints of incentives, slow economy, and investment schemes have the largest impact as rated by 75% and more of respondents for each aspect.
16. Respondents' ratings of factors adding to growth of the Namibian automotive industry.	16. Skills and training and policy and strategy execution by the government are rated as most important factors rated by at least 78.7% of respondents for each aspect.
17. Respondents' ratings of impact of role-players on growth of the Namibian automotive industry.	17. Government's trade and policy regimes and OEMs have the most important impact as role-players rated by at least 77.1% of respondents for each.
18. Perceived top strengths Namibia as a country owns which can contribute to the growth of an automotive industry in Namibia.	18. Well-developed logistics of roads and transport infrastructure (19), ample space (12), and the deep-sea harbour (12) are most important strengths that were mentioned numerous times in responses, as indicated in brackets.
19. Perceived top strategies the government in Namibia should implement to grow the Namibian automotive industry.	19. Increased manufacturing and sales incentive schemes (28) with a clear, consistent, transparent automotive strategy (24) are most important and were mentioned numerous times in responses, as indicated in brackets.
20. Perceived top inherent opportunities for Namibia as a country which can contribute to the growth of any automotive industry.	20. Recovery of the local economy (23) and potential to develop as logistics and infrastructure hub (13) are perceived by respondents as the most important country opportunities and were mentioned numerous times in responses, as indicated in brackets.
21. Perceived top areas role-players can embark upon to grow the automotive industry.	21. Areas of manufacturing and tax incentive schemes and consistency of legislation are most

Question/Construct	Comment/Finding
	important as mentioned 24 times and 23 times respectively by respondents.
22. Perceived automotive component categories that can be manufactured in Namibia with the largest potential to take part in the supply chain of the automotive industry of South Africa.	22. Engines and engine components (12) are the top components, followed by body panels (9), vehicle assembly (6), and leather trim (4) were mentioned numerous times in responses, as indicated in brackets.

Source: Author generated

6.7 CONCLUSION

This chapter converged on the inferential data analysis and presentation of the research results. Inferential data analysis was done on the perceptions and expectations of respondents regarding opportunities to grow the automotive industry in Namibia to meet the set objectives.

Key inferences were made in this chapter that address the research aim, objectives, and study purpose described in Chapter 1 of this research study. Key relationships observed in the data obtained from the empirical survey were presented and explained in this chapter. Details of hypotheses tested with relation to research objectives, variables used and measured, statistical test applicable, and nature of tests were summarised in Table 6.2 at the start of this chapter. The analysis in this chapter followed the same order as the questions in the empirical survey.

The next and final chapter of this research thesis (Chapter 7) elaborates on the conclusions and recommendations that can be made from the findings and analysis of the research.

CHAPTER 7:
CONCLUSIONS AND RECOMMENDATIONS

7.1 INTRODUCTION

This chapter comprises the conclusions and recommendations of the study. The purpose of this chapter is to conclude the study regarding growth opportunities for the automotive industry in Namibia. The conclusion to this study will provide a short overview of the research that was conducted, and a summary of the research aim and objectives. The conclusions drawn from the data analysis conducted in Chapters 5 and 6 will be discussed and recommendations for improvements made. Synchronisation between the research objectives and the findings will be offered and the limitations of the study will be explained. Lastly, suggestions for further research on growth of an automotive industry will be presented.

The theoretical underpinning of this research is accentuated with reference in sections below to the literature review and academic sources as discussed in Chapter 2 on market growth strategies.

7.2 OVERVIEW OF THE RESEARCH AIM AND OBJECTIVES

The overall aim, as well as the main research objective, of this study was to explore opportunities to grow the automotive industry in Namibia. The purpose was to gain a better understanding of factors that constrain the growth of the motor industry in Namibia.

To achieve the overall objective of this study, information was explored on how, and to what extent, a developing automotive industry in Namibia can benefit from being part of the South African automotive supply chain. The secondary objectives (see Table 6.1 in Chapter 6) are summarised as follows:

- To identify which variables constrain the growth of the automotive industry in Namibia;
- To examine how automotive component manufacturing in Namibia can grow by linking it to the automotive supply chain in South Africa;

- To examine how automotive component manufacturing in Namibia can grow by linking it to regional integration;
- To examine how automotive component manufacturing in Namibia can grow via FTAs of SACU; and
- To identify the specific successful growth strategies and incentive schemes of policy regimes in other countries that can be effectively implemented in Namibia.
- To determine if an association exists between the most promising motor industry sectors to grow perceived and business characteristics.
- To determine if an association exists between the extent of the automotive industry in Namibia to grow and the top three inherent strengths, opportunities, areas to embark on, and strategies to be implemented for growth in the Namibian automotive industry respectively, as well as the automotive component categories that can be manufactured in Namibia with the largest potential, as perceived by stakeholders in the automotive industry.
- To determine if constraints to growth, incentive measures, government encouragements, or support factors that add to growth, growth in the automotive industry of South Africa, and growth in the automotive industry globally are perceived differently by:
    (i) different extent levels of the capability of the Namibian automotive manufacturing industry to grow, as indicated by the stakeholders in the automotive industry.
    (ii) the motor industry sector in Namibia with the most promising opportunity to grow, as indicated by the stakeholders in the automotive industry.

The methodology for the collection of the data for this study was explained in Chapter 5. It is highlighted here that descriptive and inferential data analyses were employed to assess respondents' data, as in the following:

- Descriptive research, in the form of a questionnaire and interviews was employed to investigate the primary and secondary objectives of this study (see Appendix C and F).

- Hypotheses were tested in the inferential data analysis chapter (see Chapter 6). It is reiterated that according to Teece (2019:17) theory gathering has as aim to generate hypotheses that are tested. In general, quantitative research starts with testing a theory (Trigeorgis and Reuer, 2017:49). Hypothesis testing is seen as refinement of key variables pertaining to constraints as well as to opportunities for growth of the automotive industry in Namibia.

The conclusions and recommendations presented below will follow the sequence of structured questions as they appeared in the empirical survey (see Appendix C). References will firstly be made to the findings from the descriptive data analysis. This is then followed by a discussion of the findings from the inferential data analysis. Thereafter, the synchronisation of the research objectives with the main findings of the study will be done.

7.3 CONCLUSIONS AND RECOMMENDATIONS: DESCRIPTIVE DATA ANALYSIS

The results of the descriptive statistics discussed in Chapter 5 are summarised in this section and recommendations are made. The main conclusions and recommendations are discussed under the sub-headings below.

7.3.1 Business Characteristics of the Respondents

For this study, business characteristics refer to features of the business entities of respondents. It refers to ownership, total employment, business activities as either automotive dealership or component manufacturer, as well as future activities as automotive vehicle exporter and component manufacturer (AIEC, 2022:13). The term ‘locally’ refers to and includes Namibia and South Africa.

The findings related to business characteristics are displayed in Table 7.1 below.

Table 7.1: Findings on business characteristics of respondents in the empirical survey

Business Characteristics Feature Tested	Main Findings
The ownership of the company: % locally owned.	Most respondents (68%) indicated 100% local ownership

The total employment of the company: % locally.	Nearly three quarters of the respondents (72%) specified that their workforce was 100% locally recruited.
Business activities of the company: % of activities as automotive dealership.	Most respondents (71%) indicated activities of their business entities to be 80% or more focused as automotive dealerships.
Business activities of the company: % of activities as automotive component manufacturer.	Most respondents (83%) indicated that activities of their business entities did not include manufacturing automotive components at all or had minimal automotive component manufacturing presence currently.
Future business prospects of the company: % of future activities as automotive vehicle exporter.	Nearly all respondents (88%) indicated that they do not foresee exports of vehicles in the future.
Future business prospects of the company: % of future activities as automotive component exporter.	Very few respondents (6%) indicated their future business activities will consist of 90% to 100% as automotive component manufacturers.

Source: Author generated

Because of the high percentage of local ownership, the conclusions and recommendations of this study are largely based on the perceptions and responses unique to respondents' relations in the business environment located in South Africa and Namibia. However, Wilhelm and Dolfsma (2018:44) had the opinion that foreign investors and OEMs have a large influence on the decisions on the automotive supply chain in the region, as can be deduced from the foreign ownership of business entities and vehicle assembly, as indicated by respondents in the empirical survey.

In this study, insights on the elements of the automotive industry were collected from respondents in the empirical survey with close ties and direct involvement in the automotive industry in Namibia. To a large extent, local employment of workers was indicated in the business entities of respondents in the research.

7.3.2 Perceptions Regarding the Scope of the Namibian Automotive Industry

Many respondents in the empirical survey (65%) believed that the automotive industry in Namibia has the capability to grow. The sector perceived to be the most promising sector to grow the automotive industry in Namibia was indicated to be motor assembly. In addition, the respondents in the empirical survey did not perceive an increase in the countrywide levels of component manufacturing in future.

From thematic analysis on data collected in face-to-face interviews, a supporting theme emerged from Question 2 regarding "*promising, nuanced potential for the Namibian automotive manufacturing industry*". Participants indicated that Namibia is in a promising position to grow its automotive industry, if it harnesses best practice lessons or co-operative opportunities that would grow its ability to engage in and respond to global supply chain demand. With reference to "*existing elements conducive for motor vehicle assembly*", most participants agreed that motor vehicle assembly represented lucrative growth propositions for Namibia. It was discussed in Section 2.5.1 that fragmented production strategies include assembly of motor vehicles that is relocated to different places around the world based on cost advantages (Gereffi, 2019).

The conclusion can be drawn that the local sentiment in Namibia includes positive aspirations to establish and grow a local automotive industry. The sector of the automotive industry that is perceived to have the most promising opportunity to grow is motor assembly. Prospects for increased automotive component manufacturing are reviewed in Section 7.3.4 below.

The markets outside Namibia with the most promising opportunities to grow the automotive industry in Namibia are perceived by the respondents in the empirical survey to be South Africa and the SADC.

It is recommended that PPPs are launched with international OEMs for the establishment of additional automotive assembly facilities in the country. The policy regime should, however, be mindful of SACU customs implications to be able to fully reap the benefits of serving the markets near South Africa and the SADC.

It is further recommended that the automotive industry in Namibia can grow through automotive component manufacturing in Namibia linked to the automotive supply chain in South Africa and the SADC. The SADC's FTA framework and the customs union of SACU represent the enabling factors.

7.3.3 Perceptions Regarding the Potential of the South African Automotive Industry to Grow the Namibian Industry

The theoretical definition of a supply chain is highlighted in Section 2.4.2 to include all the processes required for the manufacturing, distribution, and recycling of materials and components, finished products, and services (Gereffi, 2019).

Most respondents in the empirical survey (85%) held the perception that vehicle production in South Africa under the SAAM 2021-2035 will increase substantially. However, the impact on increased SA component imports from Namibia was rated low.

Another theme grounded in the qualitative data is that Namibia lacks the Fourth Industrial Revolution (4IR) benefits compared to that of South Africa to advance an automotive manufacturing industry (Mkansi, 2021). This theme supports the conclusion as follows:

It is concluded that the current level of activity of automotive component manufacturing in Namibia represents a constraint to the growth of the local automotive industry. The automotive industry in Namibia currently does not have the capability to link it to large-scale participation in the supply chain of the automotive industry in South Africa.

Most respondents in the empirical survey (88.6%) perceived increased profitability, increased access to technology, and increased vehicle export to be affected to a substantial extent in future under the SAAM 2021-2035. It is believed this will add to increased component exports to the SADC (including South Africa).

The perceived increased exports to the SADC represent an ideal opportunity for Namibian component manufacturers to increase their participation in the South African automotive supply chain.

7.3.4 Perceptions Regarding the Potential of the Supply Chain in South Africa and the Southern African Development Community to Grow the Namibian Automotive Industry

The variables indicated as crucial for engaging in the supply chain in the SADC are quality, reliability of supply, and costs competitiveness. Similarly, complementary components and products for integration into the South African automotive supply chain are perceived as extremely important. With adequate government assistance, component manufacturers can manufacture their products in adherence to international standards of quality, costs competitiveness, and reliability of supply (Wilhelm and Dolfsma, 2018:44).

A theme that emerged from Question 4 in the face-to-face interviews, as discussed in Section 7.3.3 above, is "*barriers to ease of doing business*". Participants mentioned the poor track record of some countries on the African continent regarding ease of doing business in these countries. Bureaucracy and inefficiencies at border posts between partner countries of regional trade agreements negatively affects the political economy landscape, as well as engagement in the supply chain of the large automotive industry in neighbouring South Africa in the case of Namibia.

The conclusion is thus reached that increased incentive measures and other government encouragements are crucial for Namibian component manufacturers to take part in the supply chain in the SADC.

It is recommended that government institutions in Namibia place a high focus on streamlining participation in the supply chain in South Africa by improving custom control issues on borders with neighbouring countries in the SADC. The development of infrastructure for improved logistics to the markets in Southern Africa should be prioritised. It is crucial that the policy regime in Namibia expands its investment incentives to boost the local automotive manufacturing industry and increase market exposure to the automotive industry in South Africa.

7.3.5 Factors Affecting the Growth of Namibia's Automotive Industry

The respondents in the empirical survey indicated that government manufacturing incentives are an extremely important constraint, followed by the current low economic growth and government's investment incentives. The findings of this study indicate government's implementation of strategies, inconsistent strategies developed by government, and government's slow enforcement of policies are part of the top inhibitors of the growth of the automotive industry in Namibia.

Regarding factors inhibiting growth, the following theme emerged from Question 5 in the face-to-face interviews: "*inadequate government incentive schemes*". Participants agreed that the prioritisation of government investment and manufacturing incentives is crucial in Namibia for growth of their automotive industry.

The deduction is made that public policy regarding investment and manufacturing incentives remains the crucial enabling factor to grow the automotive industry in Namibia.

Respondents in the empirical survey also rated the human variable as another important constraint. The findings of this study indicate that respondents in the empirical survey rated lack of skills and labour force productivity as the most important constraints.

From the literature review of this study, it can be highlighted that Demir, Wennberg and McKelvie (2017:20) indicated human capital as one of the drivers of HGFs: The various forms of human capital include the educational level and skills of managers, management experience in the industry, and management's cognitive abilities.

The conclusion below has relevance to Question 5 in the face-to-face interviews, which is recorded perspectives and synopses of participants on top factors that inhibit or limit growth of Namibia's automotive industry. A theme was developed as being a "*negative productivity culture*" where participants indicated disappointment with the laid-back attitude in respect of productivity in Namibia. It was mentioned that skilled labour in many African countries remains a major constraint to their ability to manufacture.

The lack of skills and labour force productivity explains why Namibia faces constraints regarding the human factor, thereby hindering the establishment of an automotive manufacturing industry.

Two recommendations follow from the above:

An extended investment and manufacturing incentive framework for Namibia must be drafted, where the South African incentive scheme under the APDP, also applicable in Namibia, could be used as a benchmark. The framework must be implemented and enforced consistently and without delay.

In addition, PPPs must prioritise policy frameworks to create an environment to improve skills and the productivity of the labour force.

7.3.6 Growth Opportunities for Namibia's Automotive Industry

This study's findings indicate that respondents in the empirical survey perceived the top inherent strengths that Namibia as a country must consist of the following (in order of ranking in responses):

- Well-developed logistics network of roads and transport infrastructure;
- Ample space in Namibia;
- The well-developed deep-sea harbour at Walvis Bay; and
- Political stability.

It was mentioned in Section 7.3.2 above that Question 2 in face-to-face interviews collected data of participants' views on the extent of the capability of the Namibia automotive manufacturing industry to grow. A theme emerged, being the potential for the Namibian automotive manufacturing industry assisted by "*country-unique attributes*". Participants debated that Namibia owns unique environmental-friendly properties such as the abundant national resources and renewable energy sources to assist the growth of an automotive manufacturing industry. The theme supports the conclusion below.

It is deduced that the physical environment of Namibia, consisting of a developed infrastructure, combined with natural endowments of ample space and access to sea transport, contributes largely to Namibia's attraction as a manufacturing and logistics hub.

The findings indicate that respondents in the empirical survey perceived increased manufacturing encouragement and export incentive schemes to be the most important top strategies that government and other role-players should implement. In addition, a clear, consistent, and transparent automotive strategy is also indicated by respondents in the empirical survey as a most important strategy that is required from government.

The theoretical underpinning of government intervention is highlighted in research by Black et al. (2019), introduced in Section 2.4.3.2, that suggested that governments in African countries need to adopt appropriate policies and accelerate regional integration policies in their efforts to reap the benefits of the flourishing international automotive industry (Knight et al., 2020:591; Virk and Cook, 2018).

In face-to-face interviews, Question 6 recorded participants' perspectives on top factors adding to growth of Namibia's automotive industry. The theme "*benefactions of government investment incentives*" was discovered. Most participants agreed that current government legislation and strategies provide stimulation packages to attract investment. However, participants debated that these existing government stimuli for the economy are not sufficient.

The findings further indicated that respondents in the empirical survey rated engines and engine components, as well as body panels, vehicle assembly, and leather trim, to be the top components for engagement in regional supply chains.

Recommendations in this regard include role-players promoting the automotive industry in Namibia should engage in proactive dialogue to exploit the advantages of the country's physical suitability factors. Specific automotive components should be identified on which manufacturing and export incentives should focus.

The achievement of the stated research objectives regarding inferential data analysis is discussed next.

7.4 CONCLUSIONS AND RECOMMENDATIONS: INFERENTIAL DATA ANALYSIS

Table 7.2 below presents the hypotheses that were set and tested on the foundation of responses to the questions in the empirical survey of this study (see Appendix C). The main conclusions and findings from the hypotheses will be discussed. The final part of this section is made up of a discussion of the achievement of the stated objectives.

7.4.1 Hypotheses

Six hypotheses were drafted and tested for the study that this thesis is reporting on. The hypotheses are listed in the table below. Each hypothesis is linked back to the relevant research objectives. The outcome of the hypothesis, whether supported or not supported, is stated. Important inferences from the findings of each hypothesis are summarised. Conclusions are therefore described in terms of hypotheses, tests outcome, and effect sizes.

Table 7.2: Hypotheses, aims, and findings

Details of Hypothesis	Aim / Research Objective	Findings
Hypothesis A: There is an association between the motor industry sectors perceived by respondents to present the most promising opportunity to grow the Namibian automotive industry and business characteristics of respondents (Q4 with Q1.1 to Q1.6).	This hypothesis aimed to provide a connection to how each type of business characteristic of respondents' links to sectors perceived to be the most promising to grow. It links to the main objective of the study on opportunities to grow the automotive industry.	Hypothesis A was not supported.
Inference from Hypothesis A		
Although the results indicated that the hypothesis could not be supported as no statistically significant association was found, the results of the study indicated that large effect sizes were observed for the association between the percentage of local ownership and the percentage of local employment of the company and the perceived motor industry sectors with the most promise to grow. These associations indicated that, for a higher level of both local ownership and percentage of local employees, vehicle assembly was perceived as the automotive industry sector to grow.		
Details of Hypothesis	**Aim / Research Objective**	**Findings**
Hypothesis B: There is a difference between the perceived extent of the 'capability of the automotive industry in Namibia to grow' groups in terms of various constraints affecting the growth of the Namibian automotive industry, as listed in the empirical survey (Q3 with Q15).	This hypothesis addressed the first Secondary Research Objective to identify variables that constrain the growth of the automotive industry in Namibia.	The hypothesis was supported for two of the constraints, namely grey imports into Namibia and the long distances to engage in the regional automotive supply chain.
Inference from Hypothesis B		
The findings of this study indicated that there are differences between groups in terms of the extent of the capability of the automotive industry in Namibia to grow with respect to second-hand vehicles from the developed countries entering SACU countries illegally (grey imports). It is implied that new vehicle sales and the development of the automotive industry will be drastically boosted with the prohibition of these grey imports.		
A difference was also indicated between groups in terms of the extent of the capability of the automotive industry in Namibia to grow regarding the long distances to markets, in the case of Namibia as a country with wide open spaces and vast distances. The reason for this could be that the long distances to markets have a detrimental effect on ease and costs of engagement in the South African automotive supply chain.		

For both these constraints, respondents who chose the capability of the automotive manufacturing industry in Namibia to grow 'to a large extent' (group 4) tended to rate the effect of these two constraints as more important than the other groups. The respondents in group 4 who perceived growth 'to a large extent' believe the two constraints – second-hand vehicles from the developed countries entering SACU illegally (grey imports) and long distances to market – to be very important aspects to address in strategy to grow the Namibian automotive industry.

Details of Hypothesis	Aim / Research Objective	Finding
Hypothesis C: There is a difference between the perceived extent of the capability as related to the automotive industry in Namibia to grow in terms of factors adding to the growth of the Namibian automotive industry, as listed in the empirical survey (Q3 with factors in Q16). Section 6.7.2 in Chapter 6 listed factors adding to growth as included in the empirical survey and completed by respondents (see Appendix C).	To expand on the previous hypothesis, which addressed variables that constrain the growth of the automotive industry, this hypothesis aimed to identify growth factors perceived to add the most to the growth of the automotive industry in Namibia. A connection to the main research objective was the aim of this hypothesis.	This hypothesis was supported by one of the growth factors, namely government's industry protection policies. The results of testing this hypothesis indicated a statistically significant difference between groups regarding the perceived extent of the capability of the automotive industry in Namibia to grow in terms of this growth factor.

Inference from Hypothesis C

It was ascertained in this study that government's industry protection policies were perceived by respondents to include import duties applicable to SACU. It also includes restriction on the import of used vehicles consisting of grey imports.

Respondents who had chosen the capability of the automotive manufacturing industry in Namibia to grow 'to a large extent' (group 4) tended to rate the effect of government's industry protection policies as more important than other groups.

The outcome of this hypothesis reaffirmed the difference found in the previous hypothesis regarding grey imports as a constraint affecting the growth of the Namibian automotive industry while also emphasising that sufficient industry protection was required to stimulate manufacturing opportunities in the country.

Details of Hypothesis	Aim / Research Objective	Findings
Hypothesis D: There are differences between the groups representing the perceived extent of the capability of the Namibian automotive manufacturing industry to grow in terms of each of 10 components identified from Question 6 to Question 14 in the empirical survey (Q3 with factors in Q6 to Q14).	This hypothesis targeted the association of growth of the automotive industry as the main research objective with the secondary objectives of how automotive component manufacturing in Namibia can grow by: - linking it to the automotive supply chain in South Africa; - linking it to regional integration;	This hypothesis was supported in terms of two factors, namely impact of government's influence for growth prospects of the automotive industry in South Africa and dominance aspects on the impact of automotive component manufacturers located outside the borders of South Africa.

The 10 factures mentioned in this hypothesis are listed in Section 6.4.1 in Chapter 6.	- utilising FTAs of SACU; and - identifying successful growth strategies and incentive schemes of policy regimes of other countries in respect of automotive industries.	

Inferences from Hypothesis D
The respondents comprising group 2 (those who rated the capability of the automotive manufacturing industry in Namibia to grow 'to a small extent' only) tended to agree far less regarding the effect of government's influence on the growth prospects of the automotive industry in South Africa and dominance aspects on the impact of automotive component manufacturers located outside the borders of South Africa than the other groups. The differences found between the groups that this hypothesis indicated regarding the government's influence on the growth prospects of the automotive industry in South Africa and the extent of growth of the automotive industry in Namibia reaffirms the findings of this study as summarised in Section 7.3.4 above. It is crucial that government institutions in Namibia align increased incentive measures and other government encouragements to the policy regime in South Africa with respect to investment and manufacturing incentives for the automotive industry in Namibia.
This notion complements the second factor, namely the dominance effect of component manufacturers located outside the border of the RSA on the extent of the capability of the Namibian automotive manufacturing industry to grow. The dominance effect of component manufacturers located outside the border of the RSA represents an ideal prospect for component manufacturers in Namibia to increase their participation in the South African automotive supply chain.

Details of Hypothesis	Aim / Research Objective	Finding
Hypothesis E: There are differences between the groups representing the perceived motor industry sector in Namibia that have the most promising opportunity to grow in terms of each of 10 components identified from Question 6 to Question 14 in the empirical survey (Q4 with factors in Q6 to Q14). Section 6.4.1 in Chapter 6 listed these 10 factors on growth in the automotive industry of South Africa and growth in the automotive industry in the SADC and globally identified in the empirical survey (see Appendix C).	This hypothesis expanded on the aim of the previous hypothesis. In this instance, the hypothesis aimed to provide a connection to a specific motor industry sector to grow the automotive industry in Namibia.	The hypothesis in this case was not supported.

Inference from Hypothesis E		
The results indicated no statistically significant difference between the groups of motor industry sectors in Namibia with the perceived most promising opportunity to grow, regarding all 10 factors. In addition, from the mean ranks, no similar pattern of responses regarding the levels of each factor across the groups was observed.		
Details of Hypothesis	**Aim / Research Objective**	**Finding**
Hypothesis F: There is an association between the perceived extent of the automotive industry in Namibia's capability to grow and each of the themes identified per question (Q3 with open-ended Q18 to Q22). The five open-ended questions in the empirical survey were covered in Section 6.5 in Chapter 6.	The aim of this hypothesis was to make an association between the main research objective and components of growth as perceived and elaborated by respondents in open-ended questions in the empirical survey.	This hypothesis was supported by two themes, namely political stability as strength and body panels as automotive component.
Inference from Hypothesis F		
The results of tests of this hypothesis indicated two statistically significant associations with the extent of the automotive manufacturing industry in Namibia's capability to grow.		
The results indicated that an association effect was found between the perceived extent of the automotive industry in Namibia to grow with the following: Political stability: An interesting pattern was observed between the groups as the respondent groups associated 'to no extent' and 'to a moderate extent' mentioned political stability 50% and 41.7% respectively, while for the groups that are associated with 'to a small extent' and 'to a large extent', political stability was mentioned for only 20% and 9.1% who selected political stability 'to a large extent' as a strength. It is deduced that there was a mixed perception from respondents as to whether Namibia has a country strategic strength on account of political stability.		
Furthermore, less than half the respondent groups (between 27.3% and 50%) selected body panels as the top automotive component category to manufacture in Namibia to grow the automotive industry. In addition, body panels as automotive compoentns to take part in the supply chain of the South African automotive industry also reflect an association with the perceived extent of the automotive industry in Namibia to grow.		

Source: Author generated

The achievement of the primary and secondary objectives is summarised in Table 7.3 below.

7.4.2 Achievement of the Objectives

In the table below, all the research objectives of this study, as stated in Chapter 1, are provided as sub-headings. The first column contains the related main findings, as evidence that the specific research objectives were achieved. Main recommendations based on main findings are presented in the second column.

Table 7.3: Summary of the research objectives, main findings, and recommendations

Primary Objective: **To ascertain how to grow the automotive industry in Namibia**	
Main Findings	**Main Recommendations**
- No perfect fit in a one-size-fits-all-solution exists to identify opportunities to grow an automotive industry. - Participating in regional and global supply chains will play a major role for growth of the automotive industry for Namibia. - The government's trade and policy regime with regards to measures for investment and manufacturing incentives are the top areas for role-players to focus upon to grow the automotive industry in Namibia.	- Policymakers in Namibia are warranted to refocus on opportunities presented in this study to grow the automotive industry, local manufacturing, and the national economy. - It is recommended that the establishment of additional automotive assembly facilities in the country be an important aspect for a national strategy on the automotive industry. - Role-players in the Namibian automotive industry should engage in proactive dialogue to exploit advantages of the country's physical suitability factors. - Specific automotive components should be identified on which to focus manufacturing and export incentives.
Secondary Objective: **To identify variables that constrain the growth of the automotive industry in Namibia**	
Main Findings	**Main Recommendations**
- Constraints perceived by respondents include the inadequate manufacturing incentives of the government policy regime, together with low economic growth, little skills development, and inadequate training. - The current low level of activity of automotive component manufacturing in Namibia represents a constraint to the growth of the local automotive industry.	- It is crucial that an extended investment incentive framework for Namibia be drafted. The framework must be implemented and enforced consistently and without delay. - In addition, public-private partnerships (PPPs) must prioritise policy frameworks to create an environment to improve the skills and productivity of the labour force.

Secondary Objective: To examine how automotive component manufacturing in Namibia can grow by linking it to the automotive supply chain in South Africa	
Main Findings	**Main Recommendations**
- Vehicle production in South Africa under the SAAM 2021-2035 is expected to increase substantially in the next decade. - Increased SA component imports from Namibia represent a crucial opportunity to grow the automotive industry in Namibia.	- It is recommended that the automotive industry in Namibia can grow if the automotive component manufacturing in Namibia is linked to the automotive supply chain in South Africa and the SADC. - It is crucial that the policy regime in Namibia expands its investment incentives to boost the local automotive manufacturing industry and increase market exposure to the automotive industry in South Africa.
Secondary Objective: **To examine how automotive component manufacturing in Namibia can grow by linking it to regional integration**	
Main Findings	**Main Recommendations**
- Current and future dominance of the South African motor vehicle production on the automotive industry in the SADC region will add to increased component exports into the SADC as well as to an extended automotive supply chain in the region.	- It is recommended that government institutions in Namibia focus on improving custom control issues on borders with neighbouring countries in the SADC. - The development of infrastructure should be prioritised to improve logistics to the markets in the SADC.
Secondary Objective: **To examine how automotive component manufacturing in Namibia can grow via free trade agreements of SACU**	
Main Findings	**Main Recommendations**
- Increased regional integration in the SADC and with SACU is crucial; the latter is based on common external import and export tariff that is strengthened by global supply agreements with the EU and the USA. - Academic literature in this study reflects on benefits of membership of SACU and beneficial trade agreements of the SADC with the USA and EU.	- Public policy role-players in Namibia must enable and implement substantial exploitation of SACU benefits for growth of the automotive manufacturing industry in Namibia. - The policy regime in Namibia should be mindful of SACU customs implications to be able to fully reap benefits of serving the close-by markets in South Africa and the SADC.

Secondary Objective: To identify effective growth strategies and incentive schemes of policy regimes of other countries to implement in Namibia	
Main Findings	**Main Recommendations**
In South Africa, the following measures were put in place: - Import tariff reductions were coupled with strong export support. - Lower-tier domestic component manufacturers receive assistance with manufacturing incentives. - Import of used cars is prohibited by government policy. - Domestic growth strategies focused on integration into the global automotive industry since the 1990s. Nigeria incorporated government support of local content measurements. Nigeria and Kenya placed higher import tariffs on the imports of new vehicles. In South Korea, Thailand, Brazil, and Mexico, the participation in regional and global production networks added to the development of automotive industries. Thailand and Mexico have superior competitive advantage positions in their automotive industries, based on benefits of lower cost of production, because of economies of scale and more beneficial proximity to major export markets, such as China and the USA.	- This study highlights the traditional contributors to the growth of automotive industries of successful economies on the African continent, as well as in Asia. The necessity and advantages for Namibia's policymakers to follow suit regarding growth of the automotive industry is highlighted in this study. - Combining the field of business management with specific reference to the automotive industry and impact of sales of new vehicles versus used vehicles, this study redeployed popular views and arguments against grey imports and dumping of used vehicles on the African continent by vehicle traders from Japan, the USA, and the EU.
Secondary Objective: **To determine if an association exists between the most promising motor industry sectors to grow perceived and business characteristics**	
Main Findings	**Main Recommendations**
- Because of the high percentage of local ownership and local employment, the conclusions, and recommendations also on the perceived most promising sector to grow the automotive industry are largely based on the perceptions and responses unique to respondents' relation to the business environment located in South Africa and Namibia. - Local ownership was found to be associated with motor vehicle assembly as the most promising industry.	- Most perceptions and views of respondents unique to the business environment in South Africa and Namibia reinforce the recommendation mentioned earlier that the establishment of additional automotive assembly facilities in the country be an important aspect for a national strategy on the automotive industry.

Secondary Objective: **To determine if an association exists between the extent of the automotive industry in Namibia to grow and the top three inherent strengths, opportunities, areas to embark on, and strategies to be implemented for growth in the Namibian automotive industry respectively, as well as the automotive component categories that can be manufactured in Namibia with the largest potential, as perceived by stakeholders in the automotive industry**	
Main Findings	**Main Recommendations**
- In respect of inherent strengths, it is deduced that there is a mixed perception from respondents whether Namibia has a country strategic strength on account of political stability. Some respondents indicated a perceived low extent of expected growth due to political uncertainty.	- It is emphasised and recommended that policy regimes ensure the ease of doing business are favourably affected by the political economic landscape. It is recommended that Namibia's policy and political systems should proactively push country stability.
- Opportunities emphasised are sufficient industry protection required to stimulate manufacturing opportunities in the country in the automotive industry to a large extent. Increased constructive collaboration between industry stakeholders are included.	- The necessity for Namibia's policymakers to follow suit regarding this protection of the automotive sector which has occurred in some developing countries and successful economies on the African continent, as well as in Asia, should be followed in Namibia.
- In addition, business opportunities and other government industry growth strategies are implied that new vehicle sales and the development of the automotive industry would be drastically boosted to a large extent with the prohibition of grey imports.	- It would be required from the policy regime in Namibia to ensure grey imports are positioned correctly in the industry and that, with the role the grey imports play, local initiatives for automotive industry growth are not crowded out and not encumber economic growth and development.
- Participants selected engine and engine components, as well as body panels as the top automotive component categories to manufacture in Namibia to grow the automotive industry to a medium and large extent.	- Specific automotive components, such as engine components and body panels should be identified to focus manufacturing and export incentives to boost the local automotive manufacturing and increase market exposure of these components to the automotive industry in South Africa.

Secondary Objective: **To determine if constraints to growth, incentive measures, government encouragements, or support factors that add to growth, growth in the automotive industry of South Africa, and growth in the automotive industry globally are perceived differently by:** **(i) different extent levels of the capability of the Namibian automotive manufacturing industry to grow, as indicated by the stakeholders in the automotive industry.** **(ii) the motor industry sector in Namibia with the most promising opportunity to grow as indicated by the stakeholders in the automotive industry.**	
Main Findings	**Main Recommendations**
- Participants perceived the extent of the capability of the automotive industry in Namibia to grow largely is related and adversely affected by constraints of long distances to markets in the case of Namibia as a country with wide open spaces and vast distances. Long distances to markets have a detrimental effect on ease and costs of partaking in the South African automotive supply chain.	- Investment and manufacturing incentives, together with other arrangements to reduce operating costs and risks for investment in automotive manufacturing, should be prioritised by the policy regime in Namibia. - To reduce costs of partaking in the South African automotive supply chain, the Namibian government ensures the industrial infrastructure remains well-developed and efficient. It must be aided by Namibia's policy and political systems that proactively push for ease of doing business.
- Increased incentive measures and other government encouragements aligned to the policy regime in South Africa with respect to investment and manufacturing incentives are crucial for growth to a medium and large extent for the automotive industry in Namibia.	- It is reiterated that government's trade and policy regime with regards to measures for investment and manufacturing incentives should be reviewed. Current government legislation and strategies that provide stimulation packages to attract investment, as well as government stimuli for the economy in existence, are not sufficient.
- Opportunities perceived for component manufacturers located outside the border of the RSA represents an ideal prospect for component manufacturers in Namibia to increase their participation in the South African automotive supply chain.	- Government strategies should be mindful of SACU customs and costs implications to be able to fully reap benefits of serving the close-by markets in South Africa and the SADC.
- The impact of more component and vehicle manufacture in SADC and sub-Saharan Africa has a medium growth implication for the automotive industry in Namibia.	- Growth in the automotive industry in the SADC and globally must be taken into consideration in analysis of growth factors for the automotive industry in namiba.
- It is reiterated that the sector of the automotive industry perceived to have the most promising opportunity to grow to a medium and large extent is motor assembly. - In addition, it was indicated previously that increased South African component imports from Namibia represent a crucial opportunity to grow the automotive industry in Namibia to a medium and large extent.	- Increased incentive measures and other government encouragements are crucial for Namibian component manufacturers to take part in the supply chain in the SADC. - In addition, establishing additional assembly facilities in the country should be priority for policymakers to grow the local automotive industry.

Source: Author generated

7.5 CONTRIBUTION TO THE BODY OF KNOWLEDGE

This study contributed to the body of knowledge pertaining to growth of an automotive industry. In exploring the emerging issue of growing automotive industries of developing countries, much-needed emphasis is placed on the drivers of growth of automotive industries, as well as on the crucial role of government's public policy. Inferences and deductions were made which have direct implications for automotive industries in Africa's developing economies, of which Namibia has special reference in this study.

The contribution of this study is in a strategic management field. Supply chain management is the sub-discipline of strategic management where this study is positioned and contributing towards. This study represents an important contribution to the body of knowledge pertaining to supply chain management's relation to growth of the automotive industry in developing countries, contextualised for the Namibian automotive industry specifically.

This study's additional contributions have the implication to theory and practice as discussed next.

7.6 IMPLICATION FOR THEORY AND PRACTICE

In the process of this study's academic research, the following implications for theory and practice emerged:

- To date, little literature has been compiled which focuses specifically on the drivers essential for the establishment and growth of an automotive industry in developing countries on the African continent to enable them to contribute to the regional automotive value chains (Pavlínek, 2020:513; Virk and Cook, 2018; Knight et al., 2020:591).
- Much of the current management research and published literature on growth of an industry have the focal point of manufacturing incentives and investment encouragements. This study specifically highlighted the scope and responsibility of public policy as driver of the growth of manufacturing industries, considering that no country in the world has established an automotive industry

without government support (Mehta and Tariq, 2020:223; Peng et al., 2018:187).

In the case of this study, the empirical survey (see Appendix C) collected crucial perceptions and opinions of role-players in the Namibian automotive industry. In the process of this study's descriptive and inferential data analyses, practical implications (relevant to the automotive industry) were identified and consist of the following:

- It was noted in Chapter 3 that the automotive manufacturing industry in Namibia showed little development during the past couple of decades. In addition, local role-players have not focused much on the growth of the industry and little research has been done on the required steps towards enhancing the industrial capacity in the local automotive industry (Lamprecht and Tolmay, 2017:135). This study contributed to research done on the topic and could act as a catalyst to stimulate automotive industrial activity in the country.
- The study may be replicated within other sectors, products, or services in Namibia. The themes related to key factors of growth for an industry, as identified in the thematic data analysis part of this study, could be applied to other industries of the Namibian economy, and even other sectors of the automotive industry, to determine if the same themes and results emerge. Focus could be on only component manufacturing, only dealerships, only one geographical area, or all the sectors of the automotive industry available in Namibia including motor assembly.

The next section summarises the limitations of the study.

7.7 LIMITATIONS OF THE STUDY

This study provides unique insight into opportunities to grow the automotive industry in Namibia. However, there were several limitations to this study that need to be highlighted and taken into consideration. These limitations are discussed below.

- This study explored opportunities and driving factors to grow a specific industry in a specific country, consisting of the automotive industry in Namibia. It would not be applicable to generalise and apply the findings of this study to other industries in other countries (Bryman and Bell, 2018:44).

- Comprehensive statistics related to the import, export, and scope of used vehicle trade in Namibia are not readily available. A more complete figure of the scope of the used vehicle trade in Namibia and on the sub-continent of Southern Africa can add to improved analysis and impact on the current state of the local automotive industry.

- It is important to note the large proportion of automotive dealerships that were respondents in the empirical survey or participants in face-to-face interviews as part of the qualitative data collection process. Their opinions and perceptions may differ from other sectors of the automotive industry, such as OEMs and automotive component suppliers. Although it may not necessarily represent a limitation, this most probably influenced the data collected and the results obtained.

- It must be noted that the low response rate for the questionnaire was expected, on account of the nature of the measuring instrument (an online self-administered questionnaire) (see Appendix C). The necessary provisions and validations in respect of statistical analysis were made in this regard, as were discussed in detail in Chapters 5 and 6 on the descriptive and inferential data analyses. It must be reiterated here that thematic data analysis of the open-ended components of the face-to-face interviews were added to support the descriptive statistics stemming from the empirical survey (Saldaña, 2016:14).

The discussion of the limitations aims to place the results, conclusions, and recommendations into an appropriate perspective.

Further research based on the research scope of this study and the results obtained are discussed next.

7.8 RECOMMENDATIONS FOR FUTURE RESEARCH

Potential areas for further research have been identified and are summarised as follows:

- Further research is required to determine if there are any distinct differences or similarities regarding the driving instruments for a growing automotive industry

in other developing countries on the African continent and in Asia (Afzal, Lawrey and Gope, 2019:338).

- A valuable contribution to the body of knowledge can be made by a more in-depth exploration of the potential of manufacturing and investment incentives of SACU and the SADC membership, the South African APDP, SAAM 2021-2035, and other international trade agreements that affect the growth of the automotive industry in Namibia (AIEC, 2022:7).
- A gap clearly exists in the formulation and execution of appropriate public policy related to the growth of an automotive manufacturing industry (Peng et al., 2018:187). Future research can do much to create more understanding on the macro-economic benefits of a growing automotive manufacturing industry for developing countries.
- Given the evidence of research data collected for this study, it can be suggested, and it is recommended, that future research continues to explore driving factors for OEMs to establish automotive assembly factories in developing countries (Pavlínek, 2020:509). A valuable contribution to the academic literature can be made by investigating the topic which is specifically applicable to the automotive industry in Namibia.
- Research into the impact of the new AfCFTA related the development of regional automotive value chains, including the Auto Pact between leading countries in the different regions in Africa (AIEC, 2022:14), could further inform the role of countries such as Namibia as secondary suppliers to the lead countries.

7.9 CONCLUSION OF THE STUDY

The motivation for the expansion of an automotive industry represents a crucial objective of developing countries to master modern technologies and to achieve increased prosperity and employment opportunities. Growing economies need the technological competencies and accompanying advantages of upstream activities flowing from the production of vehicles, automotive parts, and components. In addition, the growth of the automotive industry in the case of Namibia, together with increased

export of automotive components and accessories, can greatly benefit the country to alleviate the national account's large trade imbalance with South Africa.

The overall aim of this study consisted of the identification of the most appropriate opportunities to grow the automotive industry in Namibia. This study aimed to determine the constraints and drivers of growth for this manufacturing industry.

During this process, this study explored role-players and appropriate public policies, as well as current policy regimes and manufacturing incentive measurements. The purpose was to formulate practical proposals and encouragement schemes to grasp opportunities for the growth of the automotive industry in Namibia.

The research of this study has led to a better understanding of the unique characteristics of the manufacturing industry in Namibia and the way in which industry growth strategies in academic research can be applied to the local context. Importantly, the lessons drawn from this study could contribute to an investor-friendly regulatory framework that will support the development and implementation of policies to establish a viable automotive manufacturing industry on the continent for both OEMs and automotive component suppliers.

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APPENDICES

APPENDIX A:

ETHICAL CLEARANCE CERTIFICATE

UNISA university of south africa

UNISA DEPARTMENT OF BUSINESS MANAGEMENT RESEARCH ETHICS REVIEW COMMITTEE

12 September 2019

ERC Reference #: 2019_CEMS_BM_087
Name: Hennie Johan Smeer
Student #: 6695809
Staff #1983385

Dear Mr Hennie Johan Smeer

Decision: Ethics Approval
From 12 September 2019
to 11 September 2024

Researcher(s): Mr Hennie Johan Smeer
E-mail address: hsmeer@iway.na
Telephone #: 00264 81124 5309

Supervisor (s): Prof Sharon Rudansky-Kloppers
E-mail: rudans@unisa.ac.za
Tel: (012) 429-4689

Opportunities for growth in the Namibian automotive industry`

Qualification: PHD degree

Thank you for the application for research ethics clearance by the UNISA Department of Business Management Ethics Review Committee for the above-mentioned research. Ethics approval is granted for 5 years, from 12 September 2019 to 11 September 2024.

*The **low risk application** was **reviewed** by the Department of Business Management Ethics Review Committee on 29 August 2019 in compliance with the Unisa Policy on Research Ethics and the Standard Operating Procedure on Research Ethics Risk Assessment. The decision will be tabled at the next Committee meeting on 16 October 2019.*

The proposed research may now commence with the provisions that:

1. The researcher(s) will ensure that the research project adheres to the values and principles expressed in the UNISA Policy on Research Ethics.

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2. 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 Department of Business Management Ethics Review Committee.
3. The researcher(s) will conduct the study according to the methods and procedures set out in the approved application.
4. 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.
5. 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.
6. 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 requires additional ethics clearance.
7. No field work activities may continue after the expiry date (11 September 2024). Submission of a completed research ethics progress report will constitute an application for renewal of Ethics Research Committee approval.

Note:

*The reference number **2019_CEMS_BM_087** should be clearly indicated on all forms of communication with the intended research participants, as well as with the Committee.*

Yours sincerely,

D. Visser

Chairperson: Dr Dorothea Visser
Department of Business Management
E-mail: vissed@unisa.ac.za
Tel: (012) 429-2113

Executive Dean: Prof. Thomas Mogale
Economic and Management Sciences
E-mail: mogalmt@unisa.ac.za
Tel: (012) 429- 4805

APPENDIX B:
COVER LETTER

Dear prospective participant,

Herewith an invitation to please participate in a survey conducted by Mr. Hennie Smeer, a DCom (Business Management) student under supervision of Prof Sharon Rudansky-Kloppers, professor in the Department of Business Management at the University of South Africa.

This survey assists in research to study opportunities for growth of the Namibian automotive industry. As role-player in the automotive industry, your views would offer respected insights to understand constraints impeding the growth of an automotive manufacturing industry in Namibia.

This survey is developed to be anonymous. It will not be possible to connect the information you provide to you personally. With your participation in this questionnaire, you agree that information you provide may be used for purposes of this research. It will include dissemination in peer-reviewed publications, conference presentations and other communication. This research will include findings from the perspective of the participating group and not of any individual.

You are under no obligation to complete this survey. Completion of the survey would take no more than 20 minutes. No adverse consequences with the completion of this survey are foreseen. Information provided will be kept confidential and safeguarded. For audit purposes records will be permanently destroyed after five years. As participant no personal benefit is foreseen. Findings of this research will be used in the DCom thesis. If you require feedback, the researcher can be contacted.

Requirements of the Policy on Research Ethics of the University of South Africa are applicable for this study. The Research Ethics Committee of the College of Economic and Management Sciences has reviewed and approved this research. A copy of the approval letter can be obtained from the researcher. For enquiries on ethical aspects

of this study the chairperson of the Research Ethics Committee of the College of Economic and Management Sciences can be contacted at vissed@unisa.ac.za or at telephone number 012 429 2113. Any unethical behavior regarding this research can be reported to the toll-free hotline number of the university at 0800 86 96 93. The researcher, Mr. Hennie Smeer, can be contacted at telephone number 00 264 61 277 730 or email at hsmeer@iway.na. The study leader, Prof Sharon Rudansky-Kloppers, can be contacted at telephone number 012 429 4689 or email at rudans@unisa.ac.za.

Yours faithfully

Mr. Hennie Smeer

APPENDIX C:
EMPIRICAL SURVEY

QUESTIONNAIRE

Please ensure that the attached covering letter has been read before completing this questionnaire. The covering letter contains crucial information on the topic of this study that will clarify the questions below.

A. DEMOGRAPHIC INFORMATION OF OEMs AND DEALERSHIPS

- *Please answer questions in Section A with the most recent information available to you.*
- *Questions in this section are not applicable to governments, associations or industry-related organisations.*
- *Please use the blue squares, do not write in the grey or white areas.*

1. Please indicate the applicable percentage for your company.

1.1 The ownership of the company:	**%**		
% Locally owned			
1.2 The total employment of the company:	%		
% Locally			
1.3 Business activities of the company:	%		
% of activities as automotive dealership			
% of activities as automotive component manufacturer			
1.4 Future business prospects of the company:	%		
% of future activities as automotive vehicle exporter			

B. GENERAL

- *Please answer the questions in Section B with a tick in the relevant blue square.*
- *Please do not write in the grey or white areas.*

2. Please indicate with a tick in the relevant blue square how you represent the automotive industry in Namibia **OR** represent industry-related organisations in Southern Africa and Namibia such as associations, councils, governments, **OR OTHER**?

Component manufacturer			**Automotive dealership**		
Automotive association or council			**Government**		
Other (please specify hereunder)					

Other: _____

3. To what extent in your opinion has the automotive manufacturing industry in Namibia the capability to grow?

No extent			**Small extent**		
Moderate extent			**Large extent**		
Critical extent					

4. Which sector in Namibia in your opinion may have the most promising opportunity to grow the Namibian automotive industry? Specify only one option.

More vehicle assembly			**Component Production**		
Aftermarket sales & services			**Automotive dealerships**		

5. Which region outside Namibia in your opinion may have the most promising opportunity to add to growth in the automotive industry in Namibia? Specify only one option.

South Africa			**SADC**		
Rest of Africa			**European Union**		
North and South America			**Other (please specify hereunder)**		

OTHER: _____

C. THE AUTOMOTIVE INDUSTRY IN SOUTH AFRICA

- *Please indicate your opinion by rating the following statements in Section C with a tick in the applicable square on the scale of 1 to 5.*
- *Please use the blue squares, do not write in the grey or white areas.*
- *Should you mention any other factor not included, please specify the factor, and please rate it in the table at the end of each question in the open spaces.*

6. Please indicate the extent to which **current** motor vehicle manufacturing in South Africa, under the SA Auto Masterplan 2021-2035, will:

	No extent	Small extent	Moderate extent	Large extent	Critical extent		
Allow for increased SA vehicle production	**1**	**2**	**3**	**4**	**5**		
Allow for increased SA component manufacturing	**1**	**2**	**3**	**4**	**5**		
Allow for increased SA component imports from SADC	**1**	**2**	**3**	**4**	**5**		
Allow for increased SA component imports from Namibia	**1**	**2**	**3**	**4**	**5**		
Allow for increased employment creation in SADC	**1**	**2**	**3**	**4**	**5**		
Allow for increased regional integration in SADC	**1**	**2**	**3**	**4**	**5**		
Allow for utilising advantages of the global automotive overcapacity	**1**	**2**	**3**	**4**	**5**		
Other (please specify)							
	1	**2**	**3**	**4**	**5**		

7. Please indicate the extent to which **opportunities** in South Africa to grow motor vehicle manufacturing, under the SA Auto Masterplan 2021-2035, will:

	No extent	Small extent	Moderate extent	Large extent	Critical extent		
Allow for increased export of manufactured vehicles	**1**	**2**	**3**	**4**	**5**		
Allow for increased component localisation for the domestic market	**1**	**2**	**3**	**4**	**5**		
Allow for increased component localisation for the export market	**1**	**2**	**3**	**4**	**5**		
Allow for increased investment in the SADC automotive value chain	**1**	**2**	**3**	**4**	**5**		
Allow for increased financial performance and profitability	**1**	**2**	**3**	**4**	**5**		
Allow for increased access to new technology and innovation	**1**	**2**	**3**	**4**	**5**		
Other (please specify)							
	1	**2**	**3**	**4**	**5**		

8. Please indicate the extent to which dominance of vehicle production of South Africa **in the SADC region** will:

	No extent	Small extent	Moderate extent	Large extent	Critical extent		
Provide an extended value chain into the SADC region	**1**	**2**	**3**	**4**	**5**		
Provide an extended value chain into other concentrated export markets	**1**	**2**	**3**	**4**	**5**		
Provide for increased component exports to SA and the SADC	**1**	**2**	**3**	**4**	**5**		
Other (please specify)							
	1	**2**	**3**	**4**	**5**		

9. Please indicate the extent to which dominance of vehicle production of South Africa **in Sub-Saharan Africa** will:

	No extent	Small extent	Moderate extent	Large extent	Critical extent		
Provide an extended value chain into multiple African export markets	**1**	**2**	**3**	**4**	**5**		
Allow partaking in international automotive value chains	**1**	**2**	**3**	**4**	**5**		
Allow to export vehicles globally	**1**	**2**	**3**	**4**	**5**		
Other (please specify)							
	1	**2**	**3**	**4**	**5**		

10. Please indicate the extent to which government's influence for growth prospects of the automotive industry in South Africa will:

	No extent	Small extent	Moderate extent	Large extent	Critical extent		
Attract investments in vehicle manufacturing plants locally	**1**	**2**	**3**	**4**	**5**		
Focus on increased motor vehicle manufacturing	**1**	**2**	**3**	**4**	**5**		
Focus on increased component manufacturing	**1**	**2**	**3**	**4**	**5**		
Other (please specify)							
	1	**2**	**3**	**4**	**5**		

D. AUTOMOTIVE SUPPLY CHAIN IN SOUTHERN AFRICA

- *Please indicate your opinion by rating the following statements in Section D with a tick in the applicable scale.*
- *Please use the blue squares, do not write in the grey or white areas.*
- *Should you mention any other factor not included, please specify the factor, and please rate it in the table.*

11. Please indicate the extent of the dominance of the following aspects of the supply chain of the automotive industry of South Africa i**n the SADC region?**

	No extent	Small extent	Moderate extent	Large extent	Critical extent		
Reliability of supply	**1**	**2**	**3**	**4**	**5**		
Quality	**1**	**2**	**3**	**4**	**5**		
Costs competitiveness	**1**	**2**	**3**	**4**	**5**		
Range of components	**1**	**2**	**3**	**4**	**5**		
Complexity of components	**1**	**2**	**3**	**4**	**5**		
Other (please specify)							

	1	2	3	4	5		

12. Please indicate the extent of automotive component manufacturers that are located outside the borders of the Republic of South Africa, on the South African automotive value chain.

	No extent	Small extent	Moderate extent	Large extent	Critical extent		
Various component suppliers outside SA	1	2	3	4	5		
Opportunities for value chain integration by complementing each other with different products i.e., leather or plastics, etc.	1	2	3	4	5		
Increased imports into SA from African component suppliers	1	2	3	4	5		
Revenue growth opportunities for African component suppliers	1	2	3	4	5		
Other (please specify)							
	1	2	3	4	5		

13. The degree of openness, ease of doing business and opportunities for automotive component suppliers and manufacturers outside South Africa to take part in the supply chain of the South African automotive industry are impacted by aspects listed below. Please rate the impact of each aspect.

	No extent	Small extent	Moderate extent	Large extent	Critical extent		
Understanding of the South African policy regime and its benefits	1	2	3	4	5		
Logistics costs	1	2	3	4	5		
Costs competitiveness	1	2	3	4	5		

Component sector profitability	**1**	**2**	**3**	**4**	**5**		
Component sector employment	**1**	**2**	**3**	**4**	**5**		
Other (please specify)							
	1	**2**	**3**	**4**	**5**		

14. Please indicate the extent of aspects of incentive measures and government encouragements in the SADC region, required for component Namibian manufacturers to take part in the South African automotive supply chain:

	No extent	**Small extent**	**Moderate extent**	**Large extent**	**Critical extent**		
Increased trade over borders by improving custom control issues	**1**	**2**	**3**	**4**	**5**		
Investment incentives to boost and market the automotive industry in SA	**1**	**2**	**3**	**4**	**5**		
Aligned domestic trade to tax regimes of SA	**1**	**2**	**3**	**4**	**5**		
Assistance of logistics costs by way of i.e., logistics hubs etc.	**1**	**2**	**3**	**4**	**5**		
Development of infrastructure for improved manufacture	**1**	**2**	**3**	**4**	**5**		
Development of infrastructure for improved logistics	**1**	**2**	**3**	**4**	**5**		
Other (please specify)							
	1	**2**	**3**	**4**	**5**		

E. FACTORS INHIBITING GROWTH OF NAMIBIA'S AUTOMOTIVE INDUSTRY

- *In the following questions in Section E, please rate **each** factor as a percentage out of 100, as representative of its importance with 100% largely important and 0% of no importance.*

- *Each statement/factor is rated **separately** out of 100, therefore the total for all the factors will not add up to 100%.*
- *Please use the blue squares, do not write in the grey or white areas.*
- *Should you mention any other factor not included, please specify the factor, and please rate it in the table.*

15. Please indicate how important you rate the following constraints affecting growth of the Namibian automotive industry.

	%%		
15.1 Logistics costs			
15.2 Labour force productivity			
15.3 Local innovation			
15.4 Local modernisation			
15.5 Import tariff barriers			
15.6 Government's investment incentives			
15.7 Exchange rates			
15.8 Size of the local automotive market			
15.9 Growth of the local economy			
15.10 Link to major regional export markets			
15.11 Long distances to partake in regional automotive value chains			
15.12 The government in Namibia's investment incentive schemes			
15.13 Lack of skills			
15.14 Grey imports into Namibia			
15.15 Low global competitiveness rating			
15.16 Border delays on non-SACU borders			
15.17 Low economic growth			
15.18 Decreased purchasing power			
15.19 Low rate of employment			
15.20 Affordability of credit			
15.21 Access to credit			
15.22 Other (please specify)15. Access to credit			

16. Please indicate how important you rate the following factors that can add to the growth of the Namibian automotive industry.

16.1 Cost-effective infrastructure	**%%%**		
16.1 Cost-effective infrastructure			
16.2 Economies of scale capabilities			
16.3 Appropriate public industrial policy			
16.4 Low-cost manufacturing location			
16.5 Policies: consistency			
16.6 Policies: implementation			
16.7 Policies: enforcement			
16.8 Public policies for local procurement			
16.9 Increased ability to manufacture to deepen the supply chain			
16.10 Government's industry protection policies			
16.11 Constructive collaboration between industry stakeholders			
16.12 Regional trade agreements and links			
16.13 Public private partnerships (PPP) supporting infrastructure development			
16.14 Skills development and training			
16.15 Satisfactory rates of inflation			
16.16 Satisfactory rates of interest			
16.17 Satisfactory rates of foreign exchange			
16.18 Politically stable and secure country			
16.19 Access to key export markets			
16.20 Low rate of employment			
16.21 Positioning Namibia as vehicle testing center			
16.22 Industry-university links to condense skills shortage			
16.23 Increased automotive aftermarket franchises			
16.24 Local content developments			

16.25 Licensing as enabler of manufacturing capability			
16.26 Develop a tool, die and mould-making industry			
16.27 Structured platforms for industry stakeholder's collaboration			
16.28 Public private partnerships to grow the automotive industry			
16.29 Grey imports			
16.30 Local innovation			
16.31 Modernisation locally			
16.32 Other (please specify)			

17. Please indicate how important you rate the following role-players' impact on the automotive industry in Namibia.

	%%		
17.1 The government in Namibia's trade regime			
17.2 The government in South Africa's trade regime			
17.3 The trade regime of SACU			
17.4 Associations in the automotive industry in South Africa			
17.5 Associations in the automotive industry in Namibia			
17.6 International automotive manufacturers (OEMs)			
17.7 Importers of new vehicles into the region			
17.8 Component manufacturers in the region			
17.9 Automotive dealerships in the region			
17.10 Grey importers in Namibia			
17.11 Grey importers in Botswana			
17.12 Other (please specify)			

F. GROWTH OPPORTUNITIES FOR THE AUTOMOTIVE MANUFACTURING INDUSTRY IN NAMIBIA

- *Questions in Section F require you to express your views and opinions.*
- *If more space for answers is needed, please add these on a blank paper or separate page, starting with the number of the question and add to the completed questionnaire at the end.*

18. Please indicate your views on which top three inherent **strengths** Namibia as a country owns, which can contribute to the growth of an automotive industry in Namibia? Please elaborate and explain.

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19. Please indicate your views on which top three **strategies** the government in Namibia should implement to grow the Namibian automotive industry. Please elaborate and explain.

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20. Please indicate your views on which top three inherent **<u>opportunities</u>** for Namibia as a country exist, which can contribute to the growth of an automotive industry in Namibia? Please elaborate and explain.

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21. Please indicate your views on which top three areas **role-players** can embark upon to grow the automotive manufacturing industry in Namibia. Please elaborate and explain.

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22. Please indicate your views on which **automotive component categories** can be manufactured in Namibia, with the largest potential to take part in the supply chain of the automotive industry of South Africa. Please elaborate and explain.

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G. CONTACT DETAILS

Name:	
Position:	
Company / organisation:	
Telephone no.:	
E-mail:	

H. NOTE OF THANKS

Thank you for your time and contribution to participate in this research study. It is much appreciated.

Please close and save this survey. Please forward the email to hsmeer@iway.na. Alternatively, please fax the survey back to fax no 00 264 61 225764.

APPENDIX D:
FREQUENCY TABLES

- Frequency tables and descriptive statistics of demographic items and typical break items -

Table D1: Ownership of the entity: % locally owned

% locally owned	Frequency	Valid percentage
0%	9	25.7%
49%	1	2.9%
95%	1	2.9%
100%	24	68.5%
Total	35	100%

Table D2: Employment of the entity: % local employment

% locally employed	Frequency	Valid percentage
0% - 16%	5	14.3%
90% - 99%	5	14.3%
100%	25	71.4%
Total	35	100%

Table D3: % of business activities as automotive dealership

% automotive dealership	Frequency	Valid percentage
0%	9	25.7%
15%	1	2.9%
80% - 95%	6	17.1%
100%	19	54.3%
Total	35	100%

Table D4: % of business activities as automotive component manufacturer

% as auto component manufacturer	Frequency	Valid percentage
0%	29	82.8%
70% - 85%	3	8.6%
100%	3	8.6%
Total	35	100%

Table D5: % of future business activities as automotive vehicle exporter

% automotive vehicle exporter	Frequency	Valid percentage
0%	31	88.5%
10%	1	2.9%
50%	1	2.9%
100%	2	5.7%
Total	35	100%

Table D6: % of future business activities as automotive component exporter

% automotive vehicle exporter	Frequency	Valid percentage
0%	31	88.5%
20% - 50%	2	5.7%
90%	1	2.9%
100%	1	2.9%
Total	35	100%

Table D7: Respondents' representation of the automotive industry

Channel	Frequency	Valid percentage
Component manufacturer	2	5.7%
Automotive association or council	1	2.9%
Automotive dealership	23	65.7%
Government	1	2.9%
Other	8	22.8%
Total	35	100%

Table D8: Capability of the Namibian automotive industry to grow

Capability	Frequency	Valid percentage
No extent	2	5.7%
Small extent	10	28.6%
Moderate extent	12	34.3%
Large extent	11	31.4%
Critical extent	0	0%
Total	35	100%

Table D9: Sector of the Namibian automotive industry with most promising opportunity to grow

Sector	Frequency	Valid percentage
More vehicle assembly	14	40.0%
Aftermarket sales & services	6	17.1%
Component production	6	17.1%
Automotive dealerships	9	25.8%
Total	35	100%

Table D10: The region outside Namibia with the most promising opportunity to add to growth of the automotive industry in Namibia

Region	Frequency	Valid percentage
South Africa	12	34.3%
SADC	12	34.3%
Rest of Africa	6	17.1%
European Union	5	14.3%
North and South Africa	0	0%
Total	35	100%

Table D11: The impact of the current South African automotive industry under the SAAM 2021-2035

Incremental factor	No extent	Small extent	Moderate extent	Large extent	Critical extent
Increased SA vehicle production	2.9	11.4	57.1	28.6	0
Increased SA component manufacturing	2.9	8.6	45.7	42.9	0
Increased SA component imports from the SADC	8.6	51.4	34.3	5.7	0
Increased SA component imports from Namibia	25.7	40.0	25.7	5.7	0
Increased employment creation in the SADC	11.4	34.3	42.9	11.4	0
Increased regional integration in the SADC	5.7	34.3	42.9	14.3	0
Increased utilisation of the global automotive market overcapacity	11.4	28.6	40.0	20.0	0

Table D12: The future impact of the current South African automotive industry under the SAAM 2021-2035

Incremental factor	No extent	Small extent	Moderate extent	Large extent	Critical extent
Increased export of manufactured vehicles	2.9	8.6	51.4	34.3	2.9
Increased component localisation for the domestic market	5.7	17.1	45.7	31.4	0
Increased component localisation for the export market	2.9	28.6	37.1	31.4	0
Increased investment in the SADC automotive value chain	2.9	34.3	42.9	20.0	0
Increased financial performance and profitability	2.9	8.6	65.7	22.9	0
Increased access to new technology and innovation	2.9	8.6	48.6	40.0	0

Table D13: The impact of dominance of vehicle production of South Africa in the SADC region

Incremental factor	No extent	Small extent	Moderate extent	Large extent	Critical extent
Provide an extended value chain into the SADC region	0	25.7	48.6	25.7	0
Provide an extended value chain into other concentrated export markets	2.9	40.0	25.7	31.4	0
Provide increased component exports to SA and the SADC region	5.7	20.0	54.3	20.0	0

Table D14: The impact of dominance of vehicle production of South Africa in Sub-Saharan Africa

Incremental factor	No extent	Small extent	Moderate extent	Large extent	Critical extent
Provide an extended value chain into multiple African export markets	2.9	20.0	42.9	34.3	0
Allow partaking in international automotive value chains	2.9	25.7	45.7	25.7	0
Allow export of vehicles globally	5.7	22.9	42.9	28.6	0

Table D15: The impact of government influence on growth prospects of the South African automotive industry

Incremental factor	No extent	Small extent	Moderate extent	Large extent	Critical extent
Attract investments in vehicle manufacturing plants locally	2.9	22.9	25.7	37.1	11.4
Focus on increased motor vehicle manufacturing	2.9	22.9	25.7	42.9	5.7
Focus on increased component manufacturing	2.9	17.1	37.1	37.1	5.7

Table D16: Factors of the supply chain of the SA automotive industry impacting dominance in the SADC region

Incremental factor	No extent	Small extent	Moderate extent	Large extent	Critical extent
Reliability of supply	2.9	-	20.0	62.9	14.3
Quality	2.9	-	14.3	74.3	8.6
Costs competitiveness	2.9	5.7	22.9	51.4	17.1
Range of components	2.9	5.7	37.1	45.7	8.6
Complexity of components	2.9	2.9	40.0	48.6	5.7

Table D17: Factors adding to impact of component manufacturers located outside the RSA, on the automotive value chain of South Africa

Incremental factor	No extent	Small extent	Moderate extent	Large extent	Critical extent
Various component suppliers outside RSA	2.9	28.6	34.3	31.4	2.9
Opportunities for value chain integration with complementary products	5.7	17.1	28.6	45.7	2.9
Increased imports into SA from African component suppliers	8.6	25.7	37.1	22.9	5.7
Revenue growth opportunities for African component suppliers	5.7	20.0	48.6	22.9	2.9

Table D18: Factors impacting degree of openness, ease of doing business and opportunities for outside component suppliers for partaking in the South African automotive industry

Incremental factor	No extent	Small extent	Moderate extent	Large extent	Critical extent
Understanding of the South African policy regime and its benefits	2.9	5.7	31.4	54.3	5.7
Logistics costs	2.9	2.9	22.9	57.1	14.3
Costs competitiveness	2.9	8.6	17.1	57.1	14.3
Component sector profitability	2.9	2.9	31.4	54.3	8.6

Table D19: Extent of incentive measures and government encouragements in the SADC region required for Namibian automotive component manufacturers to take part in the South African automotive supply chain

Incremental factor	No extent	Small extent	Moderate extent	Large extent	Critical extent
Increased trade over borders by improving custom control issues	2.9	2.9	22.9	57.1	14.3
Investment incentives to boost and market the automotive industry in SA	2.9	8.6	20.0	54.3	14.3
Aligned domestic trade to tax regimes of SA	2.9	8.6	25.7	51.4	11.4
Assistance of logistics costs by way of i.e., logistics hubs etc	2.9	5.7	34.3	42.9	14.3
Development of infrastructure to improved manufacture	2.9	2.9	34.3	40.0	20.0
Development of infrastructure for improved logistics	2.9	5.7	22.9	54.3	14.3

Table D20: Constraints affecting growth of the Namibian automotive industry

Constraints	Mean	Median	Std. Deviation
Incentive schemes of the government in Namibia	77.1	80.0	21.5
Low economic growth	76.7	80.0	22.9
Lack of skills	76.6	80.0	22.4
Government's investment incentives	75.7	80.0	20.2
Labour force productivity	75.4	80.0	22.2
Growth of the local economy	74.6	80.0	25.0
Grey imports into Namibia	73.0	80.0	29.3
Decreased purchasing power	72.5	75.0	22.9

Exchange rates	71.4	80.0	27.3
Access to credit	71.1	75.0	22.3
Affordability of credit	71.1	75.0	24.1
Import tariff barriers	70.9	80.0	26.1
Local modernisation	70.1	75.0	24.6
Local innovation	68.3	75.0	26.3
Low rate of employment	68.0	75.0	27.3
Border delays on non-SACU borders	66.7	70.0	26.1
Link to major regional export market	66.6	70.0	30.7
Logistics costs	66.3	70.0	27.7
Size of the local automotive market	64.3	70.0	29.0
Long distances to partake in regional value chains	63.9	70.0	27.2
Low global competitiveness rating	62.1	60.0	22.6

Table D21: Factors adding to growth of the Namibian automotive industry

Growth factors	Mean	Median	Std. Deviation
Skills development and training	79.7	85.0	23.8
Policies: implementation	78.7	80.0	21.1
Access to key export markets	77.4	80.0	26.6
Politically stable and secure country	77.2	85.0	27.5
Policies: consistency	76.6	80.0	21.1
Cost-effective infrastructure	76.4	80.0	20.6
Policies: enforcement	75.3	80.0	26.2
Economies of scale capabilities	74.8	80.0	21.3
Satisfactory rates of foreign exchange	74.5	80.0	25.0
Public policies for local procurement	73.4	80.0	26.5
Government's industry protection policies	73.0	80.0	26.3
Regional trade agreements and links	72.9	75.0	24.8
Public-private partnerships (PPPs) for infrastructure development	72.9	80.0	24.9
Modernisation locally	71.9	70.0	21.0
Appropriate public industrial policy	71.1	70.0	22.2
Satisfactory rates of interest	70.4	80.0	25.1
Positioning Namibia as vehicle testing centre	70.3	75.0	25.1
Local innovation	70.3	70.0	21.9
Low-cost manufacturing location	69.7	75.0	25.0
Industry-university links to condense skill shortage	69.4	75.0	24.5
Structured platforms for industry stakeholders' collaboration	69.4	70.0	23.6
Increased ability to manufacture	69.3	75.0	23.9
Constructive collaboration between industry stakeholders	68.3	70.0	23.2
Satisfactory rates of inflation	67.9	70.0	25.4
Public-private partnerships (PPPs) to grow the automotive industry	67.9	75.0	28.5
Low rate of employment	67.8	70.0	25.9
Licensing as enabler of manufacturing capability	65.3	65.0	23.6
Local content incentive developments	64.8	65.0	23.5

Develop a tool, die and mould-making industry	63.6	65.0	22.3
Grey imports into Namibia	58.3	60.0	34.9
More automotive aftermarket franchises	57.7	60.0	29.4

Table D22: The importance of role-players impacting on growth of the Namibian automotive industry

Growth factors	Mean	Median	Std. Deviation
The government in Namibia's trade regime	80.4	85.0	18.2
International automotive manufacturers (OEMs)	77.1	85.0	23.6
Automotive dealerships in the region	73.8	80.0	25.6
Importers of new vehicle into the region	73.7	75.0	21.6
The government in South Africa's trade regime	73.4	80.0	24.3
The trade regime of SACU	72.1	80.0	24.0
Component manufacturers in the region	71.4	75.0	23.1
Associations in the automotive industry in SA	68.4	75.0	23.9
Associations in the automotive industry in Namibia	65.7	75.0	27.3
Grey importers in Namibia	59.2	70.0	34.3
Grey importers in Botswana	50.5	50.0	33.7

Table D23: Top inherent strengths Namibia as a country owns

Namibia has a **well-developed logistics network of roads and transport infrastructure.** The logistics network is reaching the far stretching corners and markets of the country. The country's infrastructure rivals many developed countries. The developed infrastructure fosters development of an automotive manufacturing industry.
Namibia owns a **well-developed deep-sea harbour** at Walvis Bay. It provides access to automotive markets around the world, in the SADC as well as for South Africa. The large harbour also allows for ease of imports and exports of automotive products.
Political stability is at the order of the day since Namibia gained independence in 1990. Namibia has a politically stable environment for development of an automotive industry.
The country is described as a land of wide-open spaces. **Ample space** is available across the country to established industrial parks and factories.
An **abundant labour force** exists in the country. The high unemployment reflects an oversupply of labour as a strength of Namibia as a country.
The country represents a logistical hotspot with links to developing markets on the South African subcontinent. As logistic hub, **easier access to markets in Africa** is provided. These include markets in the SADC region as well as the African free continental trade area.
The vast space in the country, harsh climate conditions, as well as extreme terrains make Namibia **an ideal testing location.** Automobile manufacturers require such locations for development and testing of new vehicles.
The **labour force is adaptable** and versatile with an inherent mild nature. The labour force is currently being trained and developed to address the shortage of skills.
A most **advantageous legislative and fiscal environment** exists in the country**.** The government in Namibia seems keen to foster economic growth and prosperity. Some of the most attractive fiscal incentives in Africa, for example, the Export Processing Zone (EPZ) regime is on offer.
The country has vast natural resources. It includes raw minerals as well as large primary economic sectors like mining, fishing, agriculture, tourism, and construction. These **economic sectors are massive buyers** and consumers of automotive products.
A well-established automotive dealership network is in place in Namibia. The current motor dealership network possesses a collection of vast automotive experience, knowledge, and skills.
Regulated financial institutions are the norm in the financial sector of Namibia. The sophisticated financial services sector presents viable credit solutions to the public. It adds to mechanisms to increase the ability to invest and purchase automotive products. The strength of institutions supports business activities in the country.
The **Rule of Law** is upheld in Namibia. The country has an independent judiciary and a largely effective commercial legal sector. These foster economic activity and growth of manufacturing industry such as those of the automotive sector.
Namibia is **a member of SACU. T**he South African APDP tariff regime is in place for the automotive industry in member-states of SACU. The membership of SACU is advantageous to be being part of the free trade area in the SADC region.
Namibia is situated on the doorstep **to South Africa's large automotive market** and economy. The two countries are neighbours on the southern tip of the continent of Africa.
An **attractive income tax rate** which forms part of economic incentives to attract foreign investment, is in place in Namibia.
The country has immense **solar power potential** to fuel potential trade expansion and to compliment reigning power production.
The population of Namibia is relatively small. It can be argued that most of **future automobile assembly and component products will be exported** Exports can become a most prominent variable of the gross national product.

Because of the growing population and nature of a developing economy, a **growing demand for motor vehicles** exits in Namibia. Motor vehicle ownership represents freedom and economic growth.

The economy of Namibia can be described as typical of a **developing country economy.** Intense competition in developed markets necessitates automobile manufacturers to target developing economies. It is done to sustain profitability.

Namibia has extended natural beauty which act as **natural attraction for foreign investors** and draw lot of tourists.

Table D24: Top three strategies for the Government of Namibia to implement

Increased manufacturing and sales incentive schemes should be implemented by government. These create jobs and economic growth for the country. Manufacturing incentives and tax rebates can be extended to make the industry more attractive. Company tax rates are currently higher than those in South Africa. There are little incentives to manufacture locally. It is crucial that the implementation of incentives schemes is modernised. It must be done to such a degree that incentive rebates and credits are refunded efficiently and on time.

The Namibian government should protect its local market from grey imports. Grey imports affect the market in Namibia negatively. Grey imports and importers thereof must be banned or prohibited. A clear and **transparent vehicle import strategy** should be defined by government. All role-players must be taxed and rewarded equally. The policy must be fully implemented and enforced.

A **clear labour strategy** with focus on employment of the local workforce should be prioritised by government. Proper and advanced training facilities should be established by government. Professional trainers should be utilised. A complete revamp of the whole primary and secondary education system in the country is required. It must be done in order emphasise engineering and manufacturing skills. Ramped-up standards at tertiary institutions will be the natural outflow. The adverse outcome of local drain of skills and experience to developed countries should be addressed by government. Government's regulations on labour cost and minimum wage must ensure a sustainable workforce. Incentives in the secondary sector of manufacturing will help with job creation.

Government should develop a **clear, consistent, and transparent automotive strategy** to grow the industry. The automotive plan must clarify import of vehicles. It should stamp out corruption and leave no space for bribery and fraudulent actions. The government should appreciate that secondary supply of parts and components to the automotive supply chain in South Africa is a crucial steppingstone to grow the automotive industry in the country. Development of these aftermarket production capabilities for exports is vital.

It is crucial that government provide **financial assistance for setup of automotive factories**. Incentive schemes should include government assistance and funds available for start-op of automotive manufacturing industries. The Namibian government should prioritise subsidising new investments in the automotive industry.

The Namibian government should focus on implementation of **business policies to ensure ease of doing business.** Trade and business practices must be streamlined. Inhibiting policies affecting the growth of the automotive industry must be addressed. These include customs delays at the country's borders and NATIS licencing delays at facilities around the country. It is crucial that the government displays clear purpose and direction to grow the automotive industry in Namibia. Stability and transparency of incentive policies are crucial elements. The problem of corruption must be eradicated at all costs.

Government must initialise **financial assistance for franchise dealerships** in Namibia in addition. The increase in number and in business activities of automotive dealerships will add to growth of the local automotive industry.

The Bank of Namibia should put **relaxed finance options** in place. Regulations must be developed to provide improved access to finance for more people to buy vehicles. It is crucial for government to facilitate those with no access to capital and credit to start businesses of their own. The central bank should investigate more attractive interest rates and maximum terms for vehicle finance agreements.

Available industrial land, property, and space must be made more readily accessible for investors and start-up businesses in the automotive manufacturing industry. It should be offered by government in closer relation to investment costs.

The middleman in the procurement process must be eliminated by **efficient procurement processes** of the government in Namibia. It must be possible for dealerships to purchase their vehicles directly from the motor manufacturers. Dealerships will become more profitable and will be encouraged to invest and expand more.

Public-private partnerships (PPPs) should be nurtured and developed by the government. This must be done in order that endeavours to grow the automotive industry by both the government and the public sector, are streamlined and coordinated.

The government in Namibia should follow suit of Japan and other manufacturing economies with policies to **increase licensing fees for older automobile models** over time. These measures are put in place to encourage people to sell older vehicles. People should buy new vehicles to stimulate local manufacturing and assembly in the automotive industry.

The government in Namibia should also consider options to **invest more in assembly plants** for local vehicle production, even on a small scale.

Investments in the automotive industry by both foreign and local investors must be reasonably protected by government. **Safeguarding of assets of investors** with guarantees by government as well as protection of infant industries are requirements in this regard.

The government in Namibia should stabilise and normalise its annual government budget for spent on **purchase of new vehicles for government use**. The government previously bought vehicles on a large scale, that resulted in unusual high sales figures. Dealerships became accustomed to these high sales figures as the norm. With contraction of economic growth in Namibia, government spending on new vehicles came to a stand-still. It resulted in disastrous decrease in sales in the automotive industry.

It is essential for government to **abandon the policy on economic empowerment** of the previously disadvantaged. The empowerment policy is a copy of a policy which has been proven ineffective in other countries on the South African subcontinent.

It is imperative for the government in Namibia to develop a **local content credit scheme**. In this way products with a prescribed percentage local (SADC) content, are favoured in terms of taxation and levies. Namibia should investigate negotiation and aligning import levies and taxes with SACU to a much larger degree. The lowering of import duties and taxes not aligned to agreed SACU agreements should be implemented forthwith.

Current and global norms for **quality standards in automotive manufacturing** must be adopted and enforced by government. Import and export of motor vehicles and automotive components into and out of Namibia will be streamlined. It is not required to re-invent the wheel in terms of automotive production processes.

Government should ensure more **business-friendly travel policies for foreigners** and tourists to attract more foreign investment.

Export contracts with neighbouring countries to facilitate automotive products manufactured or assembled in Namibia should be concluded by government.

Table D25: Top three opportunities in Namibia to grow the automotive industry

The Namibian harbour at Walvis Bay represents a sought-after opportunity to act as **logistics and infrastructure hub**. The port can be utilised for interaction between global suppliers and consumers abroad and the SADC region. The country possesses a well-developed infrastructure with high standard roads, airports, and harbours, providing access to the region.
Respondents summarised that a huge opportunity exists to grow the automotive manufacturing industry in Namibia. **Manufacturing in the automotive industry in Namibia is at low levels**. Government must commit to development plans such as APDP and AfCFTA (African Continental Free Trade Area). The alignment of the local automotive industry in this regard must be addressed. Government should commit to production and supply of automotive components and aftermarket products as secondary supplier to the automotive supply chain of South Africa.
Namibia's **high unemployment rates** represents an opportunity for establishment of new industries. Inhabitants of the country can be described as stable country-people eager to work for a living and to maintain peace.
The necessity for an injection in respect of **recovery and growth in the economy** provides an opportunity for much needed investment such as for the automotive industry.
Substantial levels of inland production and export thereof is required to attend to the **large trading account deficit** of Namibia. Exports of locally manufactured automotive products would be a substantial contribution in this regard.
A considerable **shortage of skills** and training of the local labour force are opportunities that exist to increase the manufacturing sector in the economy. Training and development of skills needed for the automotive industry will increase productivity and output of the sectors of the economy.
The political turmoil in countries like South Africa, Zimbabwe, Mozambique, and Angola provides opportunity for Namibia to attract foreign investment in manufacturing industries in Namibia. Namibia's **political stability** and little crime (compared to other countries in the region) can facilitate the manufacture and supply of products in the SADC region. The supply in the region is adversely influenced by politics and labour unrest.
The **ever-growing tourism sector** provides most favourable prospects that can add to growth of the local automotive industry. Large car rental companies should source their vehicles from local vehicle suppliers and dealerships.
The **vast open spaces** available across the country embody another country opportunity. Ample space for establishment of industrial parks exists, which can also add to establishment and growth of the automotive industry. An opportunity exists to establish much needed production plants for automotive assembly and component factories. The vast distances in the country are the ideal opportunity for large automobile manufacturers around the world to test their vehicles in Namibia. It will add to development of the local automotive industry.
The **well-regulated financial sector** in Namibia provides excellent opportunities for growth of the automotive industry. Banks deliver viable credit solutions to the public to increase their ability to invest and purchase motor vehicles.
The weather and climate of Namibia provide opportunity to develop solar and wind energy on a larger scale. **Supply of renewable energy** that is less expensive is an opportunity for Namibia to attract foreign investment. It is needed for local industries and production facilities such as manufacture of components and assembly of vehicles.
Improvement of the country's position on **global indexes of ease of doing business, competitiveness, eradication of corruption and increase in productivity** represent most favourable opportunities to grow the gross domestic product and in turn the automotive industry.
Together with the tourism industry, mining of raw materials is a huge contributor to the gross national product of Namibia. The **mining sector** are large consumers of vehicles such as trucks and automotive equipment. Local automotive supply to the large uranium, diamond and gold mines represents large opportunities in the country that can add to growth of the local automotive industry.

Table D26: Top three areas for role-players

Government should focus on the creation and **improvement of manufacturing and tax incentives schemes** to grow manufacturing. Apart from attraction of foreign investors, improved incentive schemes will give much needed assistance to local manufacturers of components and parts. Similarly, tax, manufacturing, and exports incentives in place in South Africa and in other SADC member-states must be rolled out, implemented, and fully utilised in Namibia.
For government it would be essential to focus on **certainty of government legislation on finance, imports, and exports.** The government's role should include to facilitate objections to current legislation as well as suggestions on future legislation. Bodies to review restrictive policies and adjust shortcomings of current procurement legislation should be established. The government should ensure to draft transparent well-established plans to stabilise economy in the short term.
The public and private sector should focus to improve legislation for import of expertise to **improve skills and create employment.** Development of these skills can flow from improved educational assistance and establishment of more institutions such as universities. Skilled and qualified employees are needed in the automotive manufacturing industry.
For role-players it is imperative to **assist the private sector** of dealerships and private component manufacturing firms. These private equity firms grow the local automotive industry by providing automotive products to local individuals, construction firms, the agriculture sector and transport companies, among others. It is essential that role-players such as PPPs assist automotive dealerships. A need exists to form governing bodies to stand together to pressure government to come to the table on issues experienced.
The **ease of doing business** in Namibia must be attended to. Focal areas are the improvement of border processes and border controls. In addition, more efficient processes to establish businesses quicker can be aided by elimination of overstretched affirmative action measurements. Improved licensing processes in the local NATIS licensing system are required. It must be easier for other countries to do business with Namibia.
Funding to create an automotive manufacturing industry must be addressed by local financial institutions and the government's development bank. Companies that want to embark on manufacturing of automotive components should have access to financial assistance. Government should focus on funding of SME's who are first-time business ventures in the automotive manufacturing market.
The **ban of grey imports** by desisting from supporting all "grey import" products and associated companies should be areas of focus for role-players of the automotive industry in Namibia. The public should not buy grey imports, the banks should not finance them, and insurance companies should not insure them.
Assistance from OEMS is required to aid and finance companies that are willing to embark on manufacturing of automotive components, spare parts, and vehicle assembly in Namibia. Together with OEMs abroad, OEMS in South Africa should be approached and their awareness be increased to become larger role-players in the automotive industry in Namibia.

APPENDIX E:

MEAN RANKS

Table E1: Mean ranks of the perceived extent of the capability of the Namibian automotive manufacturing industry to grow and specific constraints to growth

Ranks

	Q3	N	Mean Rank
Q15.1 Logistics costs	2	10	13.85
	3	12	18.08
	4	11	18.68
	Total	33	
Q15.2	2	10	14.95
Labour force productivity	3	12	18.17
	4	11	17.59
	Total	33	
Q15.3	2	10	15.00
Local innovation	3	12	16.63
	4	11	19.23
	Total	33	
Q15.4	2	10	14.25
Local modernisation	3	12	16.92
	4	11	19.59
	Total	33	
Q15.5	2	10	13.20
Import tariff barriers	3	12	18.25
	4	11	19.09
	Total	33	
Q15.6	2	10	15.65
Government's investment incentives	3	12	16.71
	4	11	18.55
	Total	33	
Q15.7	2	10	15.50
Exchange rates	3	12	16.75
	4	11	18.64
	Total	33	
Q15.8	2	10	16.75

Size of the local automotive market	3	12	16.58
	4	11	17.68
	Total	33	
Q15.9	2	10	14.40
Growth of the local economy	3	12	15.42
	4	11	21.09
	Total	33	
Q15.10	2	10	14.20
Link to major regional export markets	3	12	16.67
	4	11	19.91
	Total	33	
Q15.11	2	10	13.50
Long distances to partake in regional automotive value chains	3	12	15.54
	4	11	21.77
	Total	33	
Q15.12	2	10	16.40
The government in Namibia's investment incentive schemes	3	12	13.29
	4	11	21.59
	Total	33	
Q15.13	2	10	17.95
Lack of skills	3	12	15.13
	4	11	18.18
	Total	33	
Q15.14	2	10	13.60
Grey imports into Namibia	3	12	13.71
	4	11	23.68
	Total	33	
Q15.15	2	10	16.05
Low global competitiveness rating	3	12	15.25
	4	11	19.77
	Total	33	
Q15.16	2	10	14.30
Border delays on non-SACU borders	3	12	15.00
	4	11	21.64
	Total	33	
Q15.17	2	10	14.05
Low economic growth	3	12	16.88
	4	11	19.82

	Total	33	
Q15.18	2	10	12.85
Decreased purchasing power	3	12	16.25
	4	11	21.59
	Total	33	
Q15.19	2	10	11.50
Low rate of employment	3	12	17.67
	4	11	21.27
	Total	33	
Q15.20	2	10	15.00
Affordability of credit	3	12	16.08
	4	11	19.82
	Total	33	
Q15.21	2	10	14.55
Access to credit	3	12	16.25
	4	11	20.05
	Total	33	

Table E2: Mean ranks of the perceived extent of the capability of the Namibian automotive manufacturing industry to grow and certain factors that add to growth

Ranks

	Q3	N	Mean Rank
Q16.1	2	10	15.55
Cost-effective infrastructure	3	12	16.00
	4	11	19.41
	Total	33	
Q16.2	2	10	16.30
Economies of scale capabilities	3	12	17.21
	4	11	17.41
	Total	33	
Q16.3	2	10	14.60
Appropriate public industrial policy	3	12	15.25
	4	11	21.09
	Total	33	
Q16.4	2	10	15.40
Low-cost manufacturing location	3	12	16.25
	4	11	19.27
	Total	33	

Q16.5	2	10	16.30
Policies: consistency	3	12	15.71
	4	11	19.05
	Total	33	
Q16.6	2	10	14.60
Policies: implementation	3	12	19.08
	4	11	16.91
	Total	33	
Q16.7	2	10	15.80
Policies: enforcement	3	12	20.08
	4	11	14.73
	Total	33	
Q16.8	2	10	14.55
Public policies for local procurement	3	12	17.13
	4	11	19.09
	Total	33	
Q16.9	2	10	17.80
Increased ability to manufacture to deepen the supply chain	3	12	13.04
	4	11	20.59
	Total	33	
Q16.10	2	10	11.70
Government's industry protection policies	3	12	17.46
	4	11	21.32
	Total	33	
Q16.11	2	10	14.85
Constructive collaboration between industry stakeholders	3	12	15.13
	4	11	21.00
	Total	33	
Q16.12	2	10	14.60
Regional trade agreement and links	3	12	16.21
	4	11	20.05
	Total	33	
Q16.13	2	10	13.20
Public-private partnerships (PPPs) supporting infrastructure development	3	12	18.21
	4	11	19.14
	Total	33	
Q16.14	2	10	13.90
Skills development and training	3	12	17.42

	4	11	19.36
	Total	33	
Q16.15	2	10	16.85
Satisfactory rates of inflation	3	12	15.13
	4	11	19.18
	Total	33	
Q16.16	2	10	16.70
Satisfactory rates of interest	3	12	14.63
	4	11	19.86
	Total	33	
Q16.17	2	10	16.80
Satisfactory rates of foreign exchange	3	12	16.38
	4	11	17.86
	Total	33	
Q16.18	2	10	18.10
Politically stable and secure country	3	12	15.13
	4	11	18.05
	Total	33	
Q16.19	2	10	15.00
Access to key export markets	3	12	18.25
	4	11	17.45
	Total	33	
Q16.20	2	10	15.15
Low rate of employment	3	12	16.38
	4	11	19.36
	Total	33	
Q16.21	2	10	13.35
Positioning Namibia as vehicle testing centre	3	12	16.54
	4	11	20.82
	Total	33	
Q16.22	2	10	18.25
Industry-links to condense skills shortage	3	12	15.33
	4	11	17.68
	Total	33	
Q16.23	2	10	15.10
Increased automotive aftermarket franchises	3	12	14.33
	4	11	21.64
	Total	33	

Q16.24	2	10	15.40
Local content developments	3	12	16.83
	4	11	18.64
	Total	33	
Q16.25	2	10	16.30
Licensing as enabler of manufacturing capability	3	12	14.88
	4	11	19.95
	Total	33	
Q16.26	2	10	18.20
Develop a tool, die and mould-making industry	3	12	15.25
	4	11	17.82
	Total	33	
Q16.27	2	10	16.85
Structured platforms for industry stakeholders' collaboration	3	12	16.08
	4	11	18.14
	Total	33	
Q16.28	2	10	14.45
Public-private partnerships (PPPs) to grow the automotive industry	3	12	16.33
	4	11	20.05
	Total	33	
Q16.29	2	10	17.70
Grey imports (grey imports are vehicles traded outside authorised manufacturer channels)	3	12	14.38
	4	11	19.23
	Total	33	
Q16.30	2	10	16.25
Local innovation	3	12	17.75
	4	11	16.86
	Total	33	
Q16.31	2	10	14.55
Modernisation locally	3	12	19.54
	4	11	16.45
	Total	33	

Table E3: Mean ranks of the perceived extent of the growth of the automotive manufacturing industry in Namibia (Q3) regarding the 10 factors identified from Question 6 to Question 14

	Question 3	N	Mean Rank
Growth in the Automotive Industry of South Africa	2	10	16.05
	3	12	20.25
	4	11	14.32
	Total	33	

	Question 3	N	Mean Rank
Growth in the Automotive Industry in the SADC and Globally	2	10	12.90
	3	12	18.04
	4	11	19.59
	Total	33	

	Question 3	N	Mean Rank
Q7. The extent to which opportunities in South Africa to grow motor vehicle manufacturing under the SA Auto Masterplan 2021-2035	2	10	12.35
	3	12	17.96
	4	11	20.18
	Total	33	

	Question 3	N	Mean Rank
Q8. The extent to which dominance of vehicle production of South Africa in the SADC region	2	10	12.90
	3	12	16.13
	4	11	21.68
	Total	33	

	Question 3	N	Mean Rank
Q9. The extent to which dominance of vehicle production of South Africa in Sub-Saharan Africa	2	10	14.05
	3	12	17.25
	4	11	19.41
	Total	33	

	Question 3	N	Mean Rank
Q10. The extent to which government's influence for growth prospects of the	2	10	8.40

automotive industry in South Africa	3	12	20.46
	4	11	21.05
	Total	33	

	Question 3	N	Mean Rank
Q11. Aspects add to dominance of the supply chain of the automotive industry of South Africa in the SADC region	2	10	15.35
	3	12	20.13
	4	11	15.09
	Total	33	

	Question 3	N	Mean Rank
Q12. Factors add currently to the impact of automotive component manufacturers, that are located outside the borders of the RSA, on the South African automotive value chain	2	10	11.75
	3	12	20.42
	4	11	18.05
	Total	33	

	Question 3	N	Mean Rank
Q13. The degree of openness, ease of doing business and opportunities for automotive component suppliers and manufacturers outside South Africa to take part in the supply chain of the South African automotive industry are impacted	2	10	13.55
	3	12	17.92
	4	11	19.14
	Total	33	

	Question 3	N	Mean Rank
Q14. The extent of aspects of incentive measures and government encouragements in the SADC, required for Namibian component manufacturers to take part in the South African automotive supply chain:	2	10	15.25
	3	12	16.50
	4	11	19.14
	Total	33	

Table E4: Q3 with Q18.1: well-developed logistics network of roads and transport infrastructure

Cross-tabulations
Q18.1 Well-developed logistics network of roads and transport infrastructure

			.00 No	1.00 Yes	Total
Q3: The perceived extent of the automotive industry in Namibia to grow	to no extent	Count	1	1	2
		% within Q3	50.0%	50.0%	100.0%
		% within q18.1	6.3%	5.3%	5.7%
	to a small extent	Count	5	5	10
		% within Q3	50.0%	50.0%	100.0%
		% within q18.1	31.3%	26.3%	28.6%
	to a moderate extent	Count	4	8	12
		% within Q3	33.3%	**66.7%**	100.0%
		% within q18.1	25.0%	42.1%	34.3%
	to a large extent	Count	6	5	11
		% within Q3	54.5%	45.5%	100.0%
		% within q18.1	37.5%	26.3%	31.4%
Total		Count	16	19	35
		% within Q3	45.7%	54.3%	100.0%
		% within q18.1	100.0%	100.0%	100.0%

Table E5: Q3 with Q18.2: well-developed deep-sea harbour

Cross-tabulations
Q18.2 Well-developed deep-sea harbour

			.00 No	1.00 Yes	Total
Q3: The perceived extent of the automotive industry in Namibia to grow	to no extent	Count	1	1	2
		% within Q3	50.0%	50.0%	100.0%
		% within q18.2	4.3%	8.3%	5.7%
	to a small extent	Count	6	4	10
		% within Q3	60.0%	40.0%	100.0%
		% within q18.2	26.1%	33.3%	28.6%
	to a moderate extent	Count	7	5	12
		% within Q3	58.3%	41.7%	100.0%
		% within q18.2	30.4%	41.7%	34.3%
	to a large extent	Count	9	2	11
		% within Q3	81.8%	**18.2%**	100.0%
		% within q18.2	39.1%	16.7%	31.4%
Total		Count	23	12	35
		% within Q3	65.7%	34.3%	100.0%
		% within q18.2	100.0%	100.0%	100.0%

Table E6: Q3 with Q18.3: political stability

Cross-tabulations
Q18.3 Political Stability

			.00 No	1.00 Yes	Total
Q3: The perceived extent of the automotive industry in Namibia to grow	to no extent	Count	1	1	2
		% within Q3	50.0%	50.0%	100.0%
		% within q18.3	3.8%	11.1%	5.7%
	to a small extent	Count	8	2	10
		% within Q3	80.0%	**20.0%**	100.0%
		% within q18.3	30.8%	22.2%	28.6%
	to a moderate extent	Count	7	5	12
		% within Q3	58.3%	41.7%	100.0%
		% within q18.3	26.9%	55.6%	34.3%
	to a large extent	Count	10	1	11
		% within Q3	90.9%	**9.1%**	100.0%
		% within q18.3	38.5%	11.1%	31.4%
Total		Count	26	9	35
		% within Q3	74.3%	25.7%	100.0%
		% within q18.3	100.0%	100.0%	100.0%

Table E7: Q3 with Q18.4: ample space

Cross-tabulations
Q18.4 Ample space

			.00 No	1.00 Yes	Total
Q3: The perceived extent of the automotive industry in Namibia to grow	to no extent	Count	2	0	2
		% within Q3	100.0%	0.0%	100.0%
		% within q18.3	8.7%	0.0%	5.7%
	to a small extent	Count	7	3	10
		% within Q3	70.0%	30.0%	100.0%
		% within q18.3	30.4%	25.0%	28.6%
	to a moderate extent	Count	6	6	12
		% within Q3	50.0%	50.0%	100.0%
		% within q18.3	26.1%	50.0%	34.3%
	to a large extent	Count	8	3	11
		% within Q3	72.7%	27.3%	100.0%
		% within q18.3	34.8%	25.0%	31.4%
Total		Count	23	12	35
		% within Q3	65.7%	34.3%	100.0%
		% within q18.3	100.0%	100.0%	100.0%

Table E8: Q3 with Q19.1: increased manufacturing and sales incentive schemes

Cross-tabulations

Q19.1: Increased manufacturing and sales incentive schemes

			.00 No	1.00 Yes	Total
Q3: The perceived extent of the automotive industry in Namibia to grow	to no extent	Count	1	1	2
		% within Q3	50.0%	50.0%	100.0%
		% within q18.3	14.3%	3.6%	5.7%
	to a small extent	Count	2	8	10
		% within Q3	20.0%	80.0%	100.0%
		% within q18.3	28.6%	28.6%	28.6%
	to a moderate extent	Count	2	10	12
		% within Q3	16.7%	83.3%	100.0%
		% within q18.3	28.6%	35.7%	34.3%
	to a large extent	Count	2	9	11
		% within Q3	18.2%	81.8%	100.0%
		% within q18.3	28.6%	32.1%	31.4%
Total		Count	7	28	35
		% within Q3	20.0%	80.0%	100.0%
		% within q18.3	100.0%	100.0%	100.0%

Table E9: Q3 with Q19.2: clear, consistent, and transparent automotive strategy

Cross-tabulations

Q19.2: Clear, consistent, and transparent automotive strategy

			.00 No	1.00 Yes	Total
Q3: The perceived extent of the automotive industry in Namibia to grow	to no extent	Count	1	1	2
		% within Q3	50.0%	50.0%	100.0%
		% within q18.3	4.2%	9.1%	5.7%
	to a small extent	Count	8	2	10
		% within Q3	80.0%	20.0%	100.0%
		% within q18.3	33.3%	18.2%	28.6%
	to a moderate extent	Count	8	4	12
		% within Q3	66.7%	33.3%	100.0%
		% within q18.3	33.3%	36.4%	34.3%
	to a large extent	Count	7	4	11
		% within Q3	63.6%	36.4%	100.0%
		% within q18.3	29.2%	36.4%	31.4%
Total		Count	24	11	35
		% within Q3	68.6%	31.4%	100.0%
		% within q18.3	100.0%	100.0%	100.0%

Table E10: Q3 with Q19.3: prohibition of grey imports

Cross-tabulations
Q19.3: Prohibition of grey imports

			.00 No	1.00 Yes	Total
Q3: The perceived extent of the automotive industry in Namibia to grow	to no extent	Count	1	1	2
		% within Q3	50.0%	50.0%	100.0%
		% within q18.3	3.8%	11.1%	5.7%
	to a small extent	Count	7	3	10
		% within Q3	70.0%	30.0%	100.0%
		% within q18.3	26.9%	33.3%	28.6%
	to a moderate extent	Count	10	2	12
		% within Q3	83.3%	16.7%	100.0%
		% within q18.3	38.5%	22.2%	34.3%
	to a large extent	Count	8	3	11
		% within Q3	72.7%	27.3%	100.0%
		% within q18.3	30.8%	33.3%	31.4%
Total		Count	26	9	35
		% within Q3	74.3%	25.7%	100.0%
		% within q18.3	100.0%	100.0%	100.0%

Table E11: Q3 with Q19.4: proper and advanced training facilities

Cross-tabulations
Q19.4: Proper and advanced training facilities

			.00 No	1.00 Yes	Total
Q3: The perceived extent of the automotive industry in Namibia to grow	to no extent	Count	1	1	2
		% within Q3	50.0%	50.0%	100.0%
		% within q18.3	9.1%	4.2%	5.7%
	to a small extent	Count	3	7	10
		% within Q3	30.0%	70.0%	100.0%
		% within q18.3	27.3%	29.2%	28.6%
	to a moderate extent	Count	2	10	12
		% within Q3	16.7%	83.3%	100.0%
		% within q18.3	18.2%	41.7%+++	34.3%
	to a large extent	Count	5	6	11
		% within Q3	45.5%	54.5%	100.0%
		% within q18.3	45.5%	25.0%	31.4%
Total		Count	11	24	35
		% within Q3	31.4%	68.6%	100.0%
		% within q18.3	100.0%	100.0%	100.0%

Table E12: Q3 with Q20.1: economic growth and recovery

Cross-tabulations
Q20.1: Economic growth and recovery

			.00 No	1.00 Yes	Total
Q3: The perceived extent of the automotive industry in Namibia to grow	to no extent	Count	2	0	2
		% within Q3	100.0%	0.0%	100.0%
		% within q18.3	9.1%	0.0%	5.7%
	to a small extent	Count	6	4	10
		% within Q3	60.0%	40.0%	100.0%
		% within q18.3	27.3%	30.8%	28.6%
	to a moderate extent	Count	6	6	12
		% within Q3	50.0%	50.0%	100.0%
		% within q18.3	27.3%	46.2%	34.3%
	to a large extent	Count	8	3	11
		% within Q3	72.7%	27.3%	100.0%
		% within q18.3	36.4%	23.1%	31.4%
Total		Count	22	13	35
		% within Q3	62.9%	37.1%	100.0%
		% within q18.3	100.0%	100.0%	100.0%

Table E13: Q3 with Q20.2: develop Namibia as logistics and infrastructure hub

Cross-tabulations
Q20.2: Develop Namibia as logistics and infrastructure hub

			.00 No	1.00 Yes	Total
Q3: The perceived extent of the automotive industry in Namibia to grow	to no extent	Count	2	0	2
		% within Q3	100.0%	0.0%	100.0%
		% within q18.3	7.4%	0.0%	5.7%
	to a small extent	Count	7	3	10
		% within Q3	70.0%	30.0%	100.0%
		% within q18.3	25.9%	37.5%	28.6%
	to a moderate extent	Count	9	3	12
		% within Q3	75.0%	25.0%	100.0%
		% within q18.3	33.3%	37.5%	34.3%
	to a large extent	Count	9	2	11
		% within Q3	81.8%	18.2%	100.0%
		% within q18.3	33.3%	25.0%	31.4%
Total		Count	27	8	35
		% within Q3	77.1%	22.9%	100.0%
		% within q18.3	100.0%	100.0%	100.0%

Table E14: Q3 with Q20.3 large deficit on trading account with South Africa

Cross-tabulations
Q20.3: Large deficit on trading account with South Africa

			.00 No	1.00 Yes	Total
Q3: The perceived extent of the automotive industry in Namibia to grow	to no extent	Count	1	1	2
		% within Q3	50.0%	50.0%	100.0%
		% within q18.3	8.3%	4.3%	5.7%
	to a small extent	Count	4	6	10
		% within Q3	40.0%	60.0%	100.0%
		% within q18.3	33.3%	26.1%	28.6%
	to a moderate extent	Count	3	9	12
		% within Q3	25.0%	75.0%	100.0%
		% within q18.3	25.0%	39.1%	34.3%
	to a large extent	Count	4	7	11
		% within Q3	36.4%	63.6%	100.0%
		% within q18.3	33.3%	30.4%	31.4%
Total		Count	12	23	35
		% within Q3	34.3%	65.7%	100.0%
		% within q18.3	100.0%	100.0%	100.0%

Table E15: Q3 with Q20.4 high unemployment rates

Cross-tabulations
Q20.4: High unemployment rates

			.00 No	1.00 Yes	Total
Q3: The perceived extent of the automotive industry in Namibia to grow	to no extent	Count	2	0	2
		% within Q3	100.0%	0.0%	100.0%
		% within q18.3	8.0%	0.0%	5.7%
	to a small extent	Count	7	3	10
		% within Q3	70.0%	30.0%	100.0%
		% within q18.3	28.0%	30.0%	28.6%
	to a moderate extent	Count	7	5	12
		% within Q3	58.3%	41.7%	100.0%
		% within q18.3	28.0%	50.0%	34.3%
	to a large extent	Count	9	2	11
		% within Q3	81.8%	18.2%	100.0%
		% within q18.3	36.0%	20.0%	31.4%
Total		Count	25	10	35
		% within Q3	71.4%	28.6%	100.0%
		% within q18.3	100.0%	100.0%	100.0%

Table E16: Q3 with Q21.1 manufacturing and tax incentive schemes to grow manufacturing

Cross-tabulations
Q21.1: Manufacturing and tax incentive schemes to grow manufacturing

			.00 No	1.00 Yes	Total
Q3: The perceived extent of the automotive industry in Namibia to grow	to no extent	Count	1	1	2
		% within Q3	50.0%	50.0%	100.0%
		% within q18.3	9.1%	4.2%	5.7%
	to a small extent	Count	3	7	10
		% within Q3	30.0%	70.0%	100.0%
		% within q18.3	27.3%	29.2%	28.6%
	to a moderate extent	Count	5	7	12
		% within Q3	41.7%	58.3%	100.0%
		% within q18.3	45.5%	29.2%	34.3%
	to a large extent	Count	2	9	11
		% within Q3	18.2%	81.8%	100.0%
		% within q18.3	18.2%	37.5%	31.4%
Total		Count	11	24	35
		% within Q3	31.4%	68.6%	100.0%
		% within q18.3	100.0%	100.0%	100.0%

Table E17: Q3 with Q21.2 certainty of government legislation on finance, imports, and exports

Cross-tabulations
Q21.2: Certainty of government legislation on finance, imports, and exports

			.00 No	1.00 Yes	Total
Q3: The perceived extent of the automotive industry in Namibia to grow	to no extent	Count	1	1	2
		% within Q3	50.0%	50.0%	100.0%
		% within q18.3	8.3%	4.3%	5.7%
	to a small extent	Count	4	6	10
		% within Q3	40.0%	60.0%	100.0%
		% within q18.3	33.3%	26.1%	28.6%
	to a moderate extent	Count	3	9	12
		% within Q3	25.0%	75.0%	100.0%
		% within q18.3	25.0%	39.1%	34.3%
	to a large extent	Count	4	7	11
		% within Q3	36.4%	63.6%	100.0%
		% within q18.3	33.3%	30.4%	31.4%
Total		Count	12	23	35
		% within Q3	34.3%	65.7%	100.0%
		% within q18.3	100.0%	100.0%	100.0%

Table E18: Q3 with Q21.3 skills improvement and employment creation

Cross-tabulations
Q21.3: Skills improvement and employment creation

			.00 No	1.00 Yes	Total
Q3: The perceived extent of the automotive industry in Namibia to grow	to no extent	Count	1	1	2
		% within Q3	50.0%	50.0%	100.0%
		% within q18.3	3.8%	11.1%	5.7%
	to a small extent	Count	8	2	10
		% within Q3	80.0%	20.0%	100.0%
		% within q18.3	30.8%	22.2%	28.6%
	to a moderate extent	Count	10	2	12
		% within Q3	83.3%	16.7%	100.0%
		% within q18.3	38.5%	22.2%	34.3%
	to a large extent	Count	7	4	11
		% within Q3	63.6%	36.4%	100.0%
		% within q18.3	26.9%	44.4%	31.4%
Total		Count	26	9	35
		% within Q3	74.3%	25.7%	100.0%
		% within q18.3	100.0%	100.0%	100.0%

TableE19: Q3 with Q21.4 assistance to the private sector of automotive dealerships and component manufacturers

Cross-tabulations
Q21.4: Assistance to the private sector of automotive dealerships and component manufacturers

			.00 No	1.00 Yes	Total
Q3: The perceived extent of the automotive industry in Namibia to grow	to no extent	Count	2	0	2
		% within Q3	100.0%	0.0%	100.0%
		% within q18.3	6.7%	0.0%	5.7%
	to a small extent	Count	8	2	10
		% within Q3	80.0%	20.0%	100.0%
		% within q18.3	26.7%	40.0%	28.6%
	to a moderate extent	Count	11	1	12
		% within Q3	91.7%	8.3%	100.0%
		% within q18.3	36.7%	20.0%	34.3%
	to a large extent	Count	9	2	11
		% within Q3	81.8%	18.2%	100.0%
		% within q18.3	30.0%	40.0%	31.4%
Total		Count	30	5	35
		% within Q3	85.7%	14.3%	100.0%
		% within q18.3	100.0%	100.0%	100.0%

Table E20: Q3 with Q22.1: engine and engine components

Cross-tabulations
Q22.1: Engine and engine components

			.00 No	1.00 Yes	Total
Q3: The perceived extent of the automotive industry in Namibia to grow	to no extent	Count	2	0	2
		% within Q3	100.0%	0.0%	100.0%
		% within q18.3	7.7%	0.0%	5.7%
	to a small extent	Count	9	1	10
		% within Q3	90.0%	10.0%	100.0%
		% within q18.3	34.6%	11.1%	28.6%
	to a moderate extent	Count	6	6	12
		% within Q3	50.0%	50.0%	100.0%
		% within q18.3	23.1%	66.7%	34.3%
	to a large extent	Count	9	2	11
		% within Q3	81.8%	18.2%	100.0%
		% within q18.3	34.6%	22.2%	31.4%
Total		Count	26	9	35
		% within Q3	74.3%	25.7%	100.0%
		% within q18.3	100.0%	100.0%	100.0%

Table E21: Q3 with Q22.2: body panels

Cross-tabulations
Q22.2: Body panels

			.00 No	1.00 Yes	Total
Q3: The perceived extent of the automotive industry in Namibia to grow	to no extent	Count	1	1	2
		% within Q3	50.0%	50.0%	100.0%
		% within q18.3	4.3%	8.3%	5.7%
	to a small extent	Count	6	4	10
		% within Q3	60.0%	40.0%	100.0%
		% within q18.3	26.1%	33.3%	28.6%
	to a moderate extent	Count	8	4	12
		% within Q3	66.7%	33.3%	100.0%
		% within q18.3	34.8%	33.3%	34.3%
	to a large extent	Count	8	3	11
		% within Q3	72.7%	27.3%	100.0%
		% within q18.3	34.8%	25.0%	31.4%
Total		Count	23	12	35
		% within Q3	65.7%	34.3%	100.0%
		% within q18.3	100.0%	100.0%	100.0%

Table E22: Q3 with Q22.3: leather trim

Cross-tabulations
Q22.3: Leather trim

			.00 No	1.00 Yes	Total
Q3: The perceived extent of the automotive industry in Namibia to grow	to no extent	Count	2	0	2
		% within Q3	100.0%	0.0%	100.0%
		% within q18.3	6.9%	0.0%	5.7%
	to a small extent	Count	7	3	10
		% within Q3	70.0%	30.0%	100.0%
		% within q18.3	24.1%	50.0%	28.6%
	to a moderate extent	Count	11	1	12
		% within Q3	91.7%	8.3%	100.0%
		% within q18.3	37.9%	16.7%	34.3%
	to a large extent	Count	9	2	11
		% within Q3	81.8%	18.2%	100.0%
		% within q18.3	31.0%	33.3%	31.4%
Total		Count	29	6	35
		% within Q3	82.9%	17.1%	100.0%
		% within q18.3	100.0%	100.0%	100.0%

APPENDIX F:

INTERVIEW GUIDE

OPPORTUNITIES FOR GROWTH IN THE NAMIBIAN AUTOMOTIVE INDUSTRY – INTERVIEW GUIDE AND QUESTIONS

1. Demographic information. What is your involvement in the automotive industry and how many years' experience in the automotive industry? How many of these years in Namibia? 0 - 1 year, 1 - 3 years, 4 - 6 years and 6+ years.

2. On the extent of the capability to grow of the automotive manufacturing industry in Namibia, two thirds of respondents of a 2019 survey indicated that the capability is moderate to high (Strengths). Do you agree or disagree and why?

3. Do you agree that the most promising automotive sector to grow in Namibia is more vehicle assembly? (Opportunities).

4. The top factors identified in a 2019 survey to increase partaking by Namibia in the automotive supply chain in Southern Africa are the following: (Opportunities that

5. will be strengths if in place). Do you agree or disagree and why? Is there any other aspect you would like to add?

a) Improved custom control issues,
b) Improved logistics infrastructure, and
c) Increased investment incentives of the SA automotive industry.

6. Do you agree or disagree and why, with ranked factors in a 2019 survey that inhibit or limit growth of Namibia's automotive industry? (Weaknesses / Threats).

a) Current low economic growth
b) Lack of skills
c) Inconsistent strategies developed by government
d) Government's actual implementation and enforcement of policies
e) Government's investment incentives
f) Labour force productivity
g) Grey imports

7. Do you agree or disagree and why, with ranked factors in a 2019 survey that can add to growth of Namibia's automotive industry? (Strengths and opportunities).

a) Politically stable and secure country
b) Access to key markets
c) Economic growth and recovery in Namibia

APPENDIX G:
LETTER OF INDEPENDENT CODER: ATTACHED

Dr. Charmaine Williamson
Qualitative Research Advisor to PhD and Masters Candidates; Research Teams
23 Tickle Lane Main Brook
A0K3N0
Newfoundland and Labrador
Canada
June 2022

To whom it may concern:

I am a qualitative research advisor to PhD and Masters Candidates as well as research teams at several universities. I hold a part-time, virtually-based position at the Universities of South Africa and Pretoria, specifically to provide methodological advice to post-graduate candidates, supervisors and research teams. I am also a supervisor for my own PhD students. Additionally, I facilitate qualitative research modules to the Universities of South Africa, Pretoria, Zululand, Free State, Sol Plaatjie and Nelson Mandela on an annual basis. I also work in an advisory capacity for programs in the United States and Netherlands.

I do qualitative independent coding for post-graduate candidates and research teams using the qualitative data analysis program, ATLAS.ti™. I am also a trainer on the program. Furthermore, I do quality assurance of PhD and M theses and dissertations in terms of trustworthiness of the research approach. I am an examiner for a number of universities, mainly University of Cape Town.

I was approached by Mr Hennie Smeer to be an independent coder to enhance the trustworthiness of his thematic analysis for his study. To this end, I reviewed most of his submitted thesis, and did second coding on his 15 interviews. This therefore provides a letter to authenticate the use of an Independent Coder for the purposes of thematic analysis as per the feedback on his submitted thesis (first round).

I have provided coding reports to Mr Smeer in this regard.

I am contactable through email: charmwilliam@gmail.com for further clarifications related to this report.

APPENDIX H:
DECLARATION OF PROFESSIONAL EDIT

NIKANN
*Service
*Quality
*Excellence
Transcription and Typing Solutions

Cell: 079 886 5226
E-mail: nikki@nikann.co.za

Language Editing Certificate

for

HENNIE JOHAN SMEER

for the study

OPPORTUNITIES FOR GROWTH IN THE NAMIBIAN AUTOMOTIVE INDUSTRY

A thesis submitted in fulfilment of the requirements for the Degree:

DOCTOR OF COMMERCE

at the

UNIVERSITY OF SOUTH AFRICA

This is to certify that Nikki Solomon provided full language editing for this thesis

Nikki Solomon
29 December 2022

APPENDIX I:

DECLARATION OF PROFESSIONAL EDIT

Retha Burger
B.A.(H.E.D.)
tel : 012 807 3864
cell : 083 653 5255
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e-mail : retha@skillnet.co.za
Independent Skills Development Facilitator

Dear Mr Smeer

This letter is to record that I have completed a language edit of your thesis entitled, "OPPORTUNITIES FOR GROWTH IN THE NAMIBIAN AUTOMOTIVE INDUSTRY".

The edit that I carried out included the following:

-Spelling -Grammar
-Vocabulary -Punctuation
-Pronoun matches -Word usage
-Sentence structure -Correct acronyms (matching your supplied list)
-Captions and labels for figures and tables
-Spot checking of 10 references

The edit that I carried out excluded the following:

-Content
-Correctness or truth of information (unless obvious)
-Correctness/spelling of specific technical terms and words (unless obvious)
-Correctness/spelling of unfamiliar names and proper nouns (unless obvious)
-Correctness of specific formulae or symbols, or illustrations.

Yours sincerely

RBurger

Retha Burger

20 January 2021

APPENDIX J:

REPORT ON INDEPENDENT CODING: ALL CODES AND QUOTES

ATLAS.ti was used to generate computer-assisted codes from transcriptions of face-to-face interviews with participants. Due to the volume of the complete list of codes and quotes, these are available on request at hsmeer@iway.na.