EMPIRICAL MODELLING OF CORPORATE DIVERSITY, INNOVATION AND COMPANY PERFORMANCE IN THE AUTOMOTIVE INDUSTRY IN SOUTH AFRICA

by

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ABSTRACT

This research explores the relationship between corporate diversity, innovation and company performance in South Africa's automotive industry. The study is motivated by unsatisfactory company performance in this industry, which is linked to various factors such as high market saturation, high labour costs, and the need for innovative products and services. Moreover, the existence of various research gaps, particularly in the testing of concepts such as corporate diversity, innovation and perceived company performance in the South African automotive industry provided the need for the study. The research study is quantitative in nature, adhering to the correlational research design. The stratified random technique was utilised in recruiting 215 operations and marketing professionals from the automotive industry in various provinces of South Africa to participate in the study. Hypotheses were tested using partial least squares structural equation modelling. The results of the study show that two diversity dimensions, namely attitude about diversity and cultural diversity, positively influenced innovation. Innovation positively influenced all five company performance dimensions, namely perceived value, customer loyalty, market performance, financial performance and environmental performance. Using these results, a model through which corporate diversity can be applied to company performance with the mediation of innovation culture is proposed.

Keywords web search

Automotive value chain, company performance, corporate diversity, cultural diversity, customer loyalty, demographic diversity, diversity attitudes, environmental performance, financial performance, human resource policy, innovation, innovation culture, leadership, market performance, perceived company performance, perceived value, South African automotive industry, South African manufacturing, top management support

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4IR:	Fourth industrial revolution
AA:	Affirmative Action
ACMs:	Automotive Component Manufacturers
ANC:	African National Congress
APDP:	Automotive Production and the Development Programme
ASCCI:	Automotive Supply Chain Competitive initiative
ATM:	African Transformation Movement
BBBEE:	Broad Black Business Economic Empowerment
BRICS	Brazil, Russia, India, China and South Africa
CD	Cultural Diversity
CL	Customer Loyalty
CDP	Corporate Diversity Practices
CIP:	Continual improvement process
CKD:	Completely Knocked Down
DA	Diverse Attitudes
DLC	Design Line Corporation
DP:	Diversity Policy
DD	Demographic Diversity
DIT	Disruptive Innovation Theory
EE:	Employment Equity
EFF:	Economic freedom fighters
EP	Environmental Performance
EMNCs:	Emerging Multinational Companies
FMS:	Flexible manufacturing systems
FP	Financial Performance
HR:	Human Resource
HRP	Human Resource Policy
IC	Innovation Culture
IEs:	Industrial Engineers
IoT:	Internet of Things
JIT-OS:	Just-in-time Organisation System

KM: Knowledge Management

LD Leadership Diversity

LRA 95: Labour Relations Act of 1995

MCEP: Manufacturing Competitiveness Enhancement Programme

MIDP: Motor Industry Development Programme

MNCs: Multinational Companies

MP Market Performance

NAACAM: National Association of Automotive Component and Allied Manufacturers

NAAMSA: National Association of Automobile Manufacturers of South Africa

NDP: National Development Plan

NQF: National Qualification Framework (NQF)

OECD: Organisation for Economic Co-operation and Development

OEMs: Original Equipment Manufacturers

OES: Original Equipment Sales

PV Perceived Value

PCP Perceived Company Performance

R&D: Research and Development

RMI: Retail Motor Industry

SARS: South African Revenue Services

TMS: Top Management Support

TPS: Toyota Production Systems

CHAPTER 1
ORIENTATION OF THE STUDY

1.1 INTRODUCTION AND BACKGROUND TO THE STUDY

As the South African economy continues to grow, the contribution of the automotive industry to it has become well acknowledged by practitioners and researchers alike. This acknowledgement may be attributed to the fact that the automotive industry is one of South Africa's most important economic drivers with a contribution of 6.9% to the country's gross domestic profit (GDP) and exports to 140 foreign destinations, including Japan and the USA (Manilal, 2012; NAAMSA, 2019; Monamodi, 2024). Despite the weakness of the South African currency (the rand), and the generous incentives offered by the government to original equipment manufacturers (OEMs) in using locally produced components, most international vehicle manufacturers, (for example, Toyota and Mercedes Benz), and after-market wholesalers and retailers (for example, Midas) tend to source most of their automotive components from automotive component manufacturers (ACMs) outside South Africa (Naude, 2013; Makoni, & Chikobvu, 2023 Anzolin, 2024). The automotive production and development programme (APDP), a local incentive scheme aimed at enhancing the productivity of the automotive industry, seemingly does not address this disinvestment interest from the multinational companies operating in South Africa and has flaws resulting in numerous interpretations and, therefore, poor implementation (Bronkhorst, Steyn& Stiglingh, 2013; Balcorta, 2023). Also, it has been noted that international disinvestment's interest in the same critical sectors, such as the automotive industry, is due to economic instability, mainly triggered by political chaos in the country (Deloitte, 2013; Anzolin, 2024). As a result of such developments, the automotive industry has been unable to provide adequate employment for the increasing number of job seekers in the South African economy (Mkhize, 2019).

Given South Africa's small domestic market, a limited national system of innovation, weak skills base, and comparatively high operating costs, the future of the automotive industry remains dependent on the key, export-oriented multinational corporations (Black, Barnes & Monaco, 2018; Monamodi, 2024). According to Lamprecht (2019), at the industry level, the focus is on an ambitious multi-billion-rand initiative known as the Automotive Transformation Fund. This initiative is a proposed, black-managed fund to drive the automotive industry's black supplier development, downstream enterprise supplier

development, upstream dealer initiatives, and job creation. However, judging by the inadequate budget allocation toward this programme, it is unlikely to reap any meaningful results. This makes it important for the sector to seek other growth driven by other inputs such as corporate diversity and innovation culture.

It has been suggested that corporate diversity can be an important driver of performance in the automotive sector. Corporate diversity within the present context refers to creating new avenues in which all demographics of the country are participants in the manufacturing sector for growth (Okolo 2018; Balcorta, 2023). Richard, Roh and Pieper (2013) highlighted that substantial growth in the manufacturing sector is due to diverse equality management practices that are intended to improve the inclusion of all organisational stakeholders. Okolo (2018) adds that South Africa is the biggest producer of vehicles in Africa, such that 12 per cent of its exports and seven per cent of its GDP are attributed to its automotive industry. The same author further contends that every vehicle manufacturer creates almost seven other jobs in industries across the economy, and that direct auto-industry employment creates almost four additional jobs in other industries across the economy. As part of the national development plan, the South African economy relies on all stakeholders to be actively involved, especially in the automotive manufacturing sector to increase performance and growth. Therefore, without diversifying the automotive sector, both its growth and performance remain at serious risk (OECD, 2016; Balcorta, 2023).

One of the important outcomes of corporate diversity is organisational innovation. Organisational innovation refers to becoming more economical by increasing ground-breaking and technologically advanced solutions, promoting excellence in quality products, time to market and lowering the cost of products in manufacturing value chains (Oliveira, Nunes & Afonso, 2019; Inyang, Kanakana, & Laseinde, 2023). South Africa has seen a slump in the growth of the manufacturing industry. For instance, in 2012, the country exported to 180 international markets whereas, in contrast, in 2018, exports were restricted to 140 countries, which represents a significant decline (Manilal, 2012; NAAMSA, 2019). Innovation is the key driver of economic growth and job creation in addition to being an essential tool to boost competition, tapping into new markets, accelerating economy-wide efficiencies and reducing poverty and inequality (Airini, Umar Zakir & Thoo, 2017; Nayak, & Sahay, 2024). Through innovation, businesses become

more stable and can improve the standards of living in society (Mafundu & Mafini, 2019; Wuttke, 2023). Therefore, continuous improvement in automotive manufacturing encapsulates not only the improvement of the actual product through the offering of the correct quality, process capability, dependability and flexibility, but also, very importantly, the improvement of innovation culture (Slack, Brandon-Jones & Johnson, 2017; Balcorta, 2023).

This study examined the influence of corporate diversity practices in its seven areas (policy, HR practices, top management support, demographic diversity, leadership, cultural and attitudes about diversity) on innovation culture and perceived company performance. The study considered corporate diversity to be the predictor variable that determines innovation culture (mediating factor), which, in turn, leads to perceived company performance (outcome variable). The research proposed and the examined innovation model could be applied by the automotive industry in South Africa to enhance its economic growth. From the study, local automotive manufacturers may reconsider their options in using innovation hubs and be encouraged to design and produce South African automotive vehicle brands through manufacturing processes guided by the current study.

1.2 PROBLEM STATEMENT

The research study was intended to develop a relationship model involving corporate diversity, innovation and company performance in the automotive manufacturing industry in South Africa. The major challenge that provided an impetus to this study was the unsatisfactory overall company performance in the automotive manufacturing industry. The study suggested that for company performance growth in this industry to occur, corporate diversity must be optimised, which will stimulate innovation, which, in turn, leads to improved company performance. As highlighted by Moos and Sambo (2018), South Africa aims to become an automotive investment destination of choice. However, competition has remained a major challenge, being characterised by overcapacity, high market saturation, high labour and fixed costs, and the need for constant product development and innovation (Martinuzzi, Kudlak, Faber, & Wiman 2011, OECD, 2016; Wuttke, 2023). Moreover, the impact of the fourth industrial revolution (4IR), notwithstanding artificial intelligence (AI), has exposed the lack of innovation in South African automotive infrastructure (Ngepah, Saba & Kajewole, 2024). Some authors

(Verhoef, 2011; Black *et al*., 2018) have noted that the South African automotive sector was the most negatively affected industry during the global financial crisis that started in 2007-8. Even township SMMEs in the automotive sector are facing operational challenges such as increased competition, reduced profits, pressure from industrial relations bodies, and the requirement to comply with new legislation that hinders their growth potential and operational efficiency (Moos & Sambo, 2018: Mafundu & Mafini, 2019; Monaco & Wuttke, 2023). Earlier in the decade, Martinuzzi *et al.* (2011) reported that labour-related unrest had prevailed at the Ford plant, which also disrupted its operations. More recently, the USA car manufacturing firm, General Motors (GM), closed its South African operations, citing a tough operating environment – a move that affected the manufacturing, repairs and sales of Chevrolet, Isuzu and Opel Vehicles (Shezi, 2017). The recent emergence of the Coronavirus (COVID-19) has also worsened the problem, with prices of cars, their accessories and spares dropping significantly, thereby eroding the financial positions of firms in the automotive industry.

Another major area of weakness in the automotive industry in South Africa was the lack of innovation, which has rendered the sector incapable of contributing to global markets. As reported by Kehbila, Ertel and Brent (2009) as well as Shoemaker, Heaten and Teece (2018), the quest to increase manufacturing performance despite a deficiency in innovation management within the automotive sector has been a major problem inhibiting effective global competition. The OECD (2016) states that important indicators of economic development, such as the quality of the environment, personal health and safety status, and equity (income distribution) require attention through an innovation culture. Also, innovation management, together with manufacturing performance, forms part of manufacturing sustainability (Tolmay 2019; Zondo, 2023), which, within this context, is the continued existence of the automotive sector. Therefore, South African automotive firms require innovative strategies to be competitive in international markets (Barnes & Morris, 2008; Verhoef, 2011; Morris & Barnes, 2014; Klaus, 2017).

Various research studies have been conducted in the South African automotive industry. Nitschke (2011) developed a model for the sustainability of local suppliers in the South African automotive value chain. Piderit, Flowerday and Von Solms (2011) researched the influence of information sharing on supply chain trust in the same industry. Also, Ambe and Badenhorst-Wess (2013) investigated the challenges of locally manufactured vehicle

supply chains in South Africa, while Naude (2013) explored supply chain challenges in the same sector. Kaggwa, Pouris and Jasper (2017) reviewed the first five years of the motor industry development programme in South Africa, and Tolmay and Venter (2017) explored the antecedents to relationship value in the country's automotive component supply chain. Also, Moos and Sambo (2018) focused on small automotive businesses in Garankuwa Township in Pretoria, South Africa. However, there is a lack of research evidence directed to concepts such as corporate diversity, innovation and perceived company performance in automotive manufacturing in South Africa. It also appears that there is scant evidence of studies that examined the interconnectedness of these three concepts. This lack of empirical evidence was surprising, given the notable importance of corporate diversity and innovation to organisational performance in most business environments, as noted by Black *et al.* (2018). Therefore, this area deserves empirical attention, given the existing research gaps above.

1.3 OBJECTIVES OF THE STUDY

The objectives of this study are categorised into primary and secondary objectives.

1.3.1 Primary objective

The primary objective of this study was to develop and test a model for corporate diversity, innovation culture and perceived performance in the automotive manufacturing industry in South Africa.

1.3.2 Secondary objective

Two classes of secondary objectives, namely theoretical and empirical objectives, were formulated.

1.3.2.1 Theoretical objectives

The following four theoretical objectives were developed:

I. Conduct a review of the automotive industry in South Africa;
II. Examine literature on corporate diversity and seven of its practices, namely: policy, human resources (HR) practices, top management support, demographics diversity, leadership, cultural, and attitudes about diversity from literature;
III. Conceptualise the innovation culture from literature; and
IV. Analyse literature on perceived company performance using five of its dimensions, namely: perceived value, customer loyalty, market performance, financial performance and environmental performance.

1.3.2.2 Empirical objectives

The following seven empirical objectives were developed:

I. To measure the degree of corporate diversity within the automotive manufacturing industry in South Africa;
II. To measure the scope of innovation in the automotive manufacturing industry in South Africa;
III. To assess the level of company performance within the automotive manufacturing industry in South Africa;
IV. To establish the connection between corporate diversity and innovation culture in the automotive manufacturing industry in South Africa;
V. To establish the connection between the innovation culture and perceived company performance in the automotive manufacturing industry in South Africa;
VI. To determine whether innovation culture mediates the relationship between corporate diversity practices and perceived company performance, and
VII. To develop a model through which corporate diversity can be applied to improve innovation culture and company performance in the automotive manufacturing industry in South Africa.

1.4 RESEARCH QUESTIONS

The following research questions were formulated:

I. How has the automotive manufacturing industry in South Africa embraced corporate diversity along the following seven dimensional areas considered under this study: policy, HR practices, top management support, demographic diversity, leadership, cultural and attitudes about diversity?
II. What is the scope to which the automotive manufacturing industry has adopted and nurtured innovation?
III. How has the automotive manufacturing industry performed in the following five dimensional areas: perceived value, customer loyalty, market performance, financial performance and environmental performance?
IV. How does corporate diversity influence innovation culture in the automotive manufacturing industry in South Africa?
V. What is the empirical connection between innovation culture and perceived company performance in the automotive manufacturing industry in South Africa?

1.5 RESEARCH THEORIES

This study was anchored on two research theories, namely, the systems theory and the disruptive innovation theory. The systems theory was linked to corporate diversity. All seven diversity practices under consideration in this study made up different components of a system that work together as a unified whole in an organisation. The seven components: policy, HR practices, top management, demographics diversity, leadership, cultural and attitude about diversity, represent areas where corporate diversity was required. If one of these components fails, or is not fully recognised, the entire corporate diversity system would suffer to the detriment of the organisation. Therefore, it was important to ensure that the entire spectrum of corporate diversity practices operates optimally as this contributes to the performance of the organisation.

In this study, the disruptive innovation theory (DIT) was linked to innovation. The theory was introduced by Christensen (2002) and postulates that disruptive innovations are those that create new value networks and markets beyond the expectations of the market. This led to a completely new way of operating for most markets. An example within the automotive industry may be the introduction of electric vehicles that may eventually lead

to the replacement of those that rely on fossil fuels. In this way, this study suggested that the automotive industry in South Africa should also overcome its current challenges by developing disruptive innovations that create new products and ways of doing business. The study pre-emptively proposed the linking of innovation to diversity as one such disruptive strategy.

1.6 LITERATURE REVIEW

The literature review briefly deliberated on the constructs used in this study, namely corporate diversity, innovation culture and company performance.

1.6.1 Corporate diversity

Diversity management may be perceived as the effectiveness of organisational top management in managing diversity properly to avoid both positive and negative effects of the culture and climate of their organisations (Mampane, 2019). It relates to culture and race as measured by ethnic differences, background, education, functioning, gender and personality (UNESCO, 2009; Richard *et al*., 2013; Mampane, 2019). In this study, cooperate diversity was defined with seven measures, namely policy, human resource practices, top management support, demographic diversity, leadership, cultural and attitudes toward diversity.

Policy refers to the adoption by the firm of economic transformation imperatives such as broad-based black economic empowerment (B-BBEE), employment equity (EE), and affirmative action (AA), which were put in place in order to bridge the gap in inequality and generate growth in manufacturing (Bak, 2016; Davies, 2017). Human resource practices include those activities related to the people side of the organisation, such as organisational recruitment policies, employee wellness programmes (EAP), remuneration schemes utilised in the organisation as well as the grading of employees (OECD, 2017). Top management refers to the guaranteed support of all demographics, genders, functionality, ethnic groups and backgrounds (Shezi, 2017). Business leaders should spearhead corporate diversity initiatives.

Demographic diversity refers to the inclusion of all people into the economic activities of the business (Borchert, Gootiiz & Mattoo, 2014). Leadership pertains to the allowance of government intervention, organisational directors, chief executive officer (CEO) and the

boards of management to develop corporate diversity plans as a means to build up capacity in the manufacturing sector that sustains national development (Okolo, 2018). Cultural diversity refers to the inclusion of people of different value systems that generate different ideas within the organisation (Ferris, Frink & Galang, 1993). Attitudes about diversity denote the behavioural attributes towards transformation within the organisation (Li & Lin, 2017).

1.6.2 Innovation culture

The term 'innovation' generally means to renew or change that is simply 'new' (Christensen 2002). According to Popadiuk and Choo (2006), innovation includes concepts such as novelty, implementation and commercialisation. Both researchers and practitioners typically have placed a premium upon innovation in recent years, leading to a multiplication of research in the field, and producing an array of convincing results (Anderson, Potočnik & Zhou, 2014). However, the literature on innovation is fragmented and mainly composed of small investigative studies that are not related to any established innovation models (Hughes, Tian, Lee, Newman & Legood, 2018). As argued by Klaus (2017), innovation is particularly important to identify new growth engines and pave the fundamentals for long-term, sustainable growth. The creation of an innovation culture typically results in companies that are focused on innovation improvement in their manufacturing process, products, and services, and tend to be more successful and more competitive in global markets (Barnes *et al.,* 2018; Black *et al*., 2018; Schoemaker *et al.,* 2018).

1.6.3 Company performance

Company performance is defined as "a measure of manufacturing system efficiencies to better the competitiveness of the organisation" (Pourjavad & Mayorga, 2017). According to Narkunienė and Ulbinaitė (2018), while traditionally a company's performance is evaluated based on an analysis of financial performance indicators, there is increasing attention on non-financial performance indicators in the dynamic business environment of today. The assessment of a company's performance is an essential part of the management of every organisation, which consents to define the influence of business management choices on the performance results, the trend of the consequences and the decisions required to improve them (Yadgaridehkordi *et al*., 2018). The global competitive

environment of today requires proper evaluation of companies' performance for investors (Pourjavad & Mayorga, 2017). Performance evaluation can be achieved with various efficient boundary dimensions; however, the strengths and limitations of these methods have to be considered (Yadgaridehkordi *et al.*, 2018). In the present study, company performance is bound to five dimensions, namely perceived value, customer loyalty, market performance, financial performance and environmental performance.

The following definitions for these seven measures have been considered for this study. 'Perceived value' refers to a wide-ranging multifunctional process integrating key predictable such as value creation, innovation, human capital, financials, adaptability and quick reaction ensuring management process, and helping the company to improve and grow (Klovienė & Kuzimana-Merlino, 2012). 'Customer loyalty' is defined as the organisation's management quality rating and determination of value for customers and other interested parties (Moullin, 2007). 'Market performance' refers to the development of quality management practices leading to the generation of best products or services, intellectual capital, manufacturing systems and innovation, which enhance competitive advantage in domestic and international markets (Du Toit, 2003; Stefanikova & Masarova, 2013; Ruiz, Sanches De Pablo, Muñoz & Peña, 2018). 'Financial performance' is defined as the assessment of the financial indicators of manufacturing companies (Kotane & Kuzimana-Merlino, 2018). 'Environmental performance' refers to competitive and partners' pressure, government support and policy, manufacturing systems, market turbulence and institutional-based trust (Yadgaridehkordi *et al.,* 2018).

1.7 DELIMITATION OF THE STUDY

The study was confined to the automotive manufacturing industry in South Africa, with a particular focus on original equipment manufacturers (OEMs), retail motor industry (RMIs) and automotive component manufacturers (ACMs). The study was restricted to original equipment manufacturers (OEMs), retail motor industry (RMIs) and automotive component manufacturers (ACMs) operating in South Africa only. These are the various categories of players/participant organisations in the South African automotive industry. Other manufacturers producing automotive components but not part of ACMs were excluded from the study. According to Stats SA (2016), the trade industry (RMI, ACMs, original equipment suppliers (OES), OEM and original equipment (OE) contribute 13.9% to the country's gross domestic product (GDP). These trade

industries are mostly located next to the country's harbours or the economic hub, which is Gauteng. The study was mainly conducted in the following geographical (in view of the country's automotive industry business strategy) areas, namely: Gauteng (Rosslyn) and the rest of the province for RMI and ACMs; the Eastern Cape (Uitenhage, Buffalo City and the rest of the province); KwaZulu-Natal (Durban, Pinetown and Richards Bay); and the Western Cape (Cape town, Paarl and the rest of the province).

1.8 SIGNIFICANCE OF THE RESEARCH

The study may provide several benefits to the automotive manufacturing industry in South Africa. It may contribute to the body of knowledge in this sector as well as facilitate improved transformation policy implementation. The study may also provide information on how various tools, systems and processes dealing with innovation may be improved. Overall, it will provide information on how the company's performance may improve through corporate diversity and innovation. This is important as it may assist managers in the industry to diagnose performance problems and use corporate diversity practices and innovation to stimulate the performance of their companies, which has a further positive ripple effect on the performance of the entire South African economy.

1.9 RESEARCH METHODOLOGY

This section provides a summary of the research methodology that was followed in this study. The widely accepted literature methodology is described as a more or less systematic way of collecting and synthesising previous research. Most management and marketing studies focus on smaller problems and fewer constructs (Tranfield, Denyer & Smart, 2003; Palmatier, Houston & Hulland, 2018). However, the current study dealt with bigger problems facing the South African automotive manufacturing industry, and therefore all 12 hypothesis statements given in the literature review receive attention in Chapters 1 to 4. Procedures specifically for business or management research have been made, which contribute to theory and practice by using the literature review as a method, also clarifying what criteria should be used to evaluate its quality (Palmatier *et al*., 2018). The increasing methodological rigour within the field of business research is fast-tracking at an incredible speed while, at the same time, it remains fragmented and interdisciplinary. The literature review as a research method is therefore more relevant

than ever (Snyder, 2019). Topics covered included research design, research systems, data collection and procedure, data analysis and statistical approaches, data reliability, data validity, and ethical considerations.

1.9.1 Research design

The study followed a quantitative approach since it emphasised the objective measurements and the statistical, mathematical, or numerical analysis of data collected that will be collected using questionnaires (Mesly, 2015). In other words, the study used various computational techniques to manipulate the collected statistical data in addressing the research objectives, as suggested by Thomas (2011). The quantitative approach facilitated the possible generalisation of the results of the study to the automotive industry within other geographic contexts (Creswell, 2014). A survey research method, which involves the use of a structured questionnaire to collect data, was used to collect the data as this made it easier and faster to collect the data from large numbers of respondents (Smith, Thorpe & Jackson, 2015). A correlational research design in which the researcher measured the relationships between two or more variables was applied to the study. The correlational design was deemed appropriate since the study was primarily intended to examine how diversity practices interact with innovation culture and company performance in the automotive industry in South Africa. In terms of the time horizon, it used a cross-sectional strategy in which data will be collected from respondents once in a specific period (Smith *et al.,* 2015).

1.9.2 Research methodology systems

Literature research methodology systems have many forms and elements from different approaches that are often combined, which can all significantly help to answer a particular research question, given the right conditions (Snyder, 2019). Table 1.1 depicts the different approaches with further emphasis on what was applied in the current study. These wide-ranging approaches include the systematic review, the semi-systematic review, and the integrative review.

Table 1.1: Approaches to literature methodology reviews

APPROACH	SYSTEMATIC	SEMI-SYSTEMATIC	INTEGRATIVE
Typical purpose	Synthesise and compare evidence	Overview research area and track development over time	Critique and synthesise
Research questions	Specific	Broad	Narrow or broad
Search strategy	Systematic	May or may not be systematic	Usually not systematic
Sample characteristics	Quantitative articles	Research articles	Research articles, books, and other published texts
Analysis and evaluation	Quantitative	Qualitative/quantitative	Qualitative
Example of contribution	Evidence of effect inform policy and practice	State of knowledge, themes in literature, historical overview, research agenda, theoretical model	Taxonomy or classification, theoretical model or framework

Source: Synder (2019)

From Table 1.1, each chapter of this research followed a similar pattern, which qualified the nature of the study being quantitative. All reviewed literature was subjected to these approaches, and further adapted to ensure a suitable and perfect fit to the current research project.

1.9.3 Sampling design

The target population in this study encapsulated manufacturing (operations) management and professionals as well as marketing managers and practitioners in both vehicle and components manufacturing and sales in the automotive industry in South Africa. According to the National Association of Automotive Component and Allied Manufacturers register (NAACAM, 2018), there were 400 companies in the automotive industry, of which 225 are multinational automotive component manufacturers (ACMs) and 135 are the first-tier suppliers to original equipment manufacturers (OEMs). Only 135

companies were targeted from this association. According to the National Association of Automobile Manufacturers of South Africa (NAAMSA) (2019), there are 41 member companies, seven OEMs, 21 importers and distributors and 14 heavy commercial vehicle divisions and bus assembly and sales companies. These NAAMSA members had branches in three South African provinces, namely the Eastern Cape, KwaZulu-Natal and Gauteng. All NAAMSA value chains were considered in this study. The retail motor industry organisation (RMI) membership is 8 000 members all around the country, and of these members, a NADA group composed of 1369 is separated as follows: the Free State/Northern Cape has 100 members; the Eastern Cape has 141 members; the Highveld with 410 members; International (Namibia) with 12 members; KZN has 209 members; the Northern Cape has 266 members; and the Western Cape has 231 members.

The predetermined sample size for this study was n= 500 respondents. According to Sekaran (2000), using a 95% level of confidence, a sample size of 500 is acceptable in a quantitative study. Wolf, Harrington, Clark and Miller (2013), who examined sample size requirements for common quantitative studies, recommend samples ranging between 30 and 460 elements. Therefore, the sample size used in this study was suitable since it was well above the recommended minimum cut-off values.

Sampling elements were selected using the probability-based stratified random technique. The probability approach ensured that all retail motor industry (RMI) members would have an equal chance of being selected to participate in this study (Bairamov, 2019). In a stratified random technique, separate sub-groups of the population are created, and then respondents are selected independently from each sub-group (Botev & Ridder, 2017). A stratified random technique ensured that respondents scattered in various provinces and different work categories (for example, managers vs professionals) were provided with an equal chance of involvement in this study.

1.9.4 Data collection procedures

In this study, primary data was collected to address the empirical objectives. A survey method followed in which a questionnaire was prepared and used to collect primary data from the respondents. A minimum of one to a maximum of five responses were expected per company, i.e., a distribution of five questionnaires to each company. The questionnaire was partitioned into four sections. The questions in the measurement scales were adopted from previous studies (refer to section 5.8). The questions in sections B, C and D were presented in a seven-point Likert-type format anchored by 1=strongly disagree, and 7-strongly agree. The data was collected using a combination of e-mail surveys, online surveys (using Survey Monkey or Google Scholar) and the traditional face-to-face distribution of the questionnaire to expedite the process and ensure optimum results.

In addition to the above, secondary data was collected to address the theoretical objectives. This data was collected in the form of a literature review. Academic books, previous postgraduate research studies, academic journal articles, newspapers, magazines, official government publications and other relevant materials available online were used as the sources of data.

1.9.5 Data analysis procedures

The collected quantitative data was analysed using a combination of descriptive and inferential statistics. Descriptive statistics such as frequencies and percentages, mean scores and standard deviations were used in testing for the perceptions of the respondents towards the constructs employed in the study. Inferential statistics were performed in the form of structural equation modelling (SEM) to test the proposed hypotheses. Statistical software tools such as the Statistical Packages for the Social Sciences (SPSS) and the analysis of moment structures (Amos) were used to perform the required analyses.

1.9.6 Validity and reliability

Validity in quantitative research refers to whether one can draw meaningful and useful inferences from scores on particular instruments (Creswell, 2014). In this study, three forms of validity were tested. The first form was face validity, which was measured using a review of the questionnaire by a panel of faculty experts in management sciences. The second form was content validity, which was tested using a pilot study of the questionnaire. The pilot study involved requesting 53 respondents to complete the questionnaire and then their responses were analysed to determine whether there are any gaps that were to be corrected before the final survey was conducted. The third form was construct validity, which was tested through an analysis of the correlations between the research constructs. According to Fraering and Minor (2006), the existence of positive correlations between these constructs will serve as a confirmation of acceptable construct validity.

Reliability, as defined by Creswell (2014), refers to whether scores to items on an instrument are internally consistent, and stable over time, and whether there was consistency in test administration and scoring. In this study, the reliability of each research construct was measured using the Cronbach alpha coefficient, the composite reliability and the Rho_A statistic (Refer to section 5).

1.10 OUTLINE OF THE THESIS CHAPTERS

The research study is presented in the form of a comprehensive thesis document whose chapters are divided as follows:

Chapter 1: Summary of the study

This chapter introduces the study. Its brief background, the research problem, thesis statement, preliminary literature and the conceptual model with the research variables are identified. It also outlines the hypotheses as well as a summary of the research methodology and research approach employed in this study.

Chapter 2: Literature review of the automotive industry

This chapter reviews the relevant literature regarding the automotive industry as a whole.

Chapter 3: Literature review on the research constructs

This chapter reviews the literature on the research theories, constructs and their sub-components.

Chapter 4: Conceptual model and hypothesis development

This section reviews the literature supporting hypothesis relationship statements between the predictor variable (corporate diversity and its practices), the mediator variable (innovation culture) and the outcome variable (perceived company performance and its elements).

Chapter 5: Research methodology

The focus of this chapter will be to provide a detailed discussion of the research methodology employed in this study. It will include a discussion of the research design, the research instrument, sampling design, data collection methods, data analysis techniques and the methods used to ensure that the research is valid and reliable.

Chapter 6: Data presentation, interpretation and analysis of results

This chapter presents the results of the data analysis performed for this study using the descriptive data analysis. Moreover, this will involve the interpretation (i.e. inferential statistics to descriptive data) of the results and their application to the automotive industry.

Chapter 7: Conclusion and recommendations

This chapter details the conclusion, recommendations and limitations of the study. The tested research model and theoretical framework of corporate diversity to be used in the automotive industry in South Africa are presented, discussed and linked to the automotive industry. A major part of this chapter will contain a summary of the results from the literature reviewed and the empirical study, conclusions drawn, and recommendations for improving the innovativeness, corporate diversity and company performance of the automotive manufacturing industry in South Africa, and for future research.

1.11 Chapter conclusion

This chapter detailed the background of the study, highlighting the aims and objectives of the study, revealing the importance and relevance of the current research to the South African automotive value chain [i.e., original equipment (OE)/original equipment suppliers (OES), original equipment manufacturer (OEM), automotive component manufacturers (ACMs) & retail motor industry (RMI), and the National Automobile Dealers Association (NADA)]. The presented problem statement dealt with the major challenges faced by the industry; and it also considered the solutions that are embedded in this study. The research questions were the core of this concept model formulation. This was followed by research methodology and ethnic considerations, a scientific process to be followed when gathering the required data. Therefore, the outlay of the thesis composition in chapter form was presented. The next chapter will deal with a literature review of the South African automotive industry (i.e. legislation, frameworks, contribution to the country's GDP etc.)

CHAPTER 2
THE AUTOMOTIVE INDUSTRY IN SOUTH AFRICA

2.1 INTRODUCTION

This chapter reviews the relevant literature regarding the automotive industry in South Africa. The chapter first outlines the background of the automotive industry in South Africa. Thereafter, the composition of the automotive industry is discussed, focusing on the major players and stakeholders in this sector in South Africa. The chapter then focuses on the legislative framework where various laws governing the automotive industry are discussed. The contributions of the automotive industry to the South African economy are considered next, followed by the challenges it faces. These reflections are succeeded by an analysis of existing research gaps, involving a review of several studies conducted in the South African automotive industry. The chapter then closes with a conclusion.

2.2 BACKGROUND OF THE AUTOMOTIVE INDUSTRY IN SOUTH AFRICA

The South African automotive manufacturing industry enjoyed a long-run relationship between employment and growth, with the component sector considered an integral part of the industry (Black, 1998; Barnes & Kaplinsky, 2003; Karodia, Sitlu & Panday, 2014). The last two and half decades shifted the global economy, specifically in the 2008 financial year, wherein economic crises hit the automotive manufacturing industry, plummeting it to its lowest performance (Borchert *et al.,* 2014; Hattingh, De Waal & Parsons, 2018; Barnes, Black & Monaco, 2018). South Africa adopted transformation policies and programmes, such as broad-based black economic empowerment (B-BBEE, affirmative action (AA), employment equity (EE), the automotive production and development programme (APDP), and the manufacturing competitiveness enhancement programme (MCEP). These were aimed at global competition and inclusion of all demographics in the automotive manufacturing industry while increasing local manufacturing content (Bak, 2016; Davies, 2017; Black *et al.,* 2018). When competing in competitive markets globally, manufacturing firms should balance their environmental and economic situations, innovation, and cultural and technological performance (Erdil, Aktas & Arani, 2018). The globalisation of firms and industries contributes towards the standardisation of systems and practices as well as centrally planned and coordinated

actions (Naude, 2013; Horwitz, 2014; Mkhize, 2019). However, despite all these legislative measures introduced in the South African automotive industry, a considerable shift is necessary as the whole industry is faced with challenges in terms of cultural diversity, innovation/technology, and performance. The fourth industrial revolution brings new meaning to the existing structures brought about by the legislature, and therefore the whole industry must balance employment and growth while venturing into this new terrain.

The automotive manufacturing industry in South Africa is the core of the whole automotive industry and is extremely vital to the country's economic growth due to its considerable contribution to its GDP (Barnes *et al.,* 2018; Black *et al.*, 2018). For the industry to thrive in global markets, all economic transformation policies (B-BBEE, AA, EE), programmes (APDP, MCEP) and regulations need to be properly implemented and monitored. The literature suggests that the OEM's decision to change to a foreign country of operation is influenced, among other things, by poor economic performance, imprudent policy implementation and the absence of transparent monitoring tools. This industry has been carefully selected to test the nexus between corporate diversity, innovation and perceived company performance. The current study will attempt to develop a model between corporate diversity as a predictive variable, innovation as a mediating variable, and company performance as an outcome variable.

2.3 COMPOSITION OF THE AUTOMOTIVE INDUSTRY

The automotive industry in South Africa is classified into three sectors:

(i) Automotive manufacturing is composed of original equipment manufacturers (OEMs) known as vehicle assemblers for both passenger and commercial vehicle sales and automotive components manufacturers (ACMs); a component sector that uses comparative advantages in leather (for seats), platinum (for catalytic converters), inexpensive labour (for harnesses), and heavy components (for wheel hubs, engine blocks, and other metal-bashing components).

(ii) Original equipment supply (OES) is regarded as automotive parts and accessory sales through the vehicle assemblers' official dealership for used and new vehicle sales; and

(iii) Independent aftermarkets, including retail motor industry (RMI automotive parts and accessory sales through independent aftermarket retailers and repair shops) (Barnes & Morris, 2008; Gastrow, 2012; Karodia *et al.,* 2014). A brief outline of the key players in the South African automotive industry follows.

2.3.1 Original equipment manufacturers (OEMs)

Manufacturers in the automotive sector are 'producer-driven' insofar as the lead firms, the OEMs, take on the bulk of innovation activity, the production of most engines and transmissions, and almost all vehicle assembly functions (Gastrow, 2012). This has condensed the productivity of OEMs, which, in turn, has tightened their supply chains, compelling many first-tier suppliers towards bankruptcy (Barnes & Morris, 2008; Naude, 2013). South Africa is home to a considerable number of OEMs such as Bayerische Motoren Werke (BMW), Mercedes-Benz, Volkswagen (VW), Toyota, Isuzu, Ford, Nissan, and General Motors (GM) (GM left the country in 2017) (Gastrow, 2012; Shezi, 2017). The changes taking place in the global arena increasingly affect the trends and direction of the local OEMs, and adversely affect the local automotive component manufacturers (ACMs), thereby changing the whole supplier value chain (Black, 2009; Wad, 2010; Naude, 2013; Barnes *et al.*, 2018). Black *et al*. (2018) accentuate the South African-based OEMs' perception of their domestic automotive component firms to perform substantially better concerning their quality, reliability, flexibility and innovation than in terms of their cost competitiveness.

Researchers in the automotive manufacturing industry and global value chain consider the re-shaping of the framework to be the most important aspect as the world is faced with the fourth industrial revolution. Important trends in the sector over the past two and half decades include, but are not limited to the political economy, automotive policy and multinational strategy, automotive value chains, globalisation and trade wars between China and the USA (Humphrey & Memedovic, 2003; Barnes & Morris, 2004; Gereffi, 2005; Black, 2009; Sturgeon, Memedovic, Van Biesebroeck & Gereffi, 2009; Wad, 2010; Shen, 2019). OEMs operating in South Africa seem to be burdened by the considerable amount of political chaos: load shedding from ESKOM, regulations in policy form and programmes, and the weak economy of South Africa. The events leading to poor economic performance affect all stakeholders. Therefore, OEMs should consider cultural

diversity aspects that would contribute positively to innovation and technology linked to company performance and reduce job losses within the South African automotive manufacturing industry.

2.3.2 Automotive component manufacturers (ACMs)

The bulk of manufacturing value lies in the components industry, as opposed to vehicle assembly (approximately 70:30 split). However, it is the OEMs that define the scale and scope of automotive component activity (leather seats, catalytic converters, wheel hubs, brake pads, engine blocks and other metal-bashing components) in developed and developing economies alike (Barnes & Morris, 2008; Gastrow, 2012). The rewards and benefits of South African automotive component manufacturers dealing with OEMs and their exposure to international markets and standard, global value chains are clear, but the long-term sustainability and development of the industry remain in question (Niyimbanira, 2013; Stats SA, 2018). Government encouragement through the Automotive Production and Development Programme (APDP) to increase the local content, including labour, has resulted in 2016 in a substantial 35% of imported vehicles, whereas the local content rose to about 70% and created 49 000 jobs (Venter, 2017; NACAAM, 2018). The critical issue is to assess how they have contributed to raising production capabilities and upgrading the operational performance of the component firms that are members (Rossouw & Rossouw, 2017). Top management can help change the mindsets of operationally-oriented managers away from trying to be overly precise (and often wrong) toward trying to be roughly right (Shoemaker *et al*., 2018). Automotive component manufacturing (ACM) has to achieve operational competitiveness (Rossouw & Weyer, 2019). The OEM globally standardised vehicles assembly in components and process, and therefore expects a high-quality standard from the ACMs, and failure to conform to expected requirement targets results in the transfer of business to a foreign operation.

2.3.3 Independent aftermarket: Retail motor industry

Successful businesses require members of the organisation to safeguard all stakeholders and ensure that they are looked after in a structured way (Barwise & Meehan, 2011). Senior management contribution is essential to formulate clear goals for the company that go beyond the financial year-end, and which address where and when investments should be made within the organisation's resources, and how these will benefit customers (De Waal & De Haas, 2018). According to Jakkie (2019), "the RMI is a proactive, relevant, retail and associated motor industry organisation. It is recognised as the leading voice in South Africa's automotive aftermarket, serving the daily needs of its members and playing a key role in enabling motor traders to deliver top-class service to motoring consumers." The RMI is no stranger or newcomer in the South African aftermarket as it is set up to be the largest organisation with a membership of almost 8 000. This includes businesses across all sectors of the retail motor industry, with vehicle bodybuilding and component manufacturing; for retailers to penetrate the market association with other retailers and provide better distribution channels and new market territories.

Customers in developing countries have increasing needs, making it necessary to focus on R&D and innovation culture on these decentralised demand aspects (Berger, 2014; Stephan, Schmidt, Bening & Hoffmann, 2017). According to Konrad and Wangler (2017), estimations of the digital market potential vary between different studies, yet the common ground is that the digital area offers new business opportunities and would greatly enlarge the traditional automotive market. Although the cutting of product and service innovations to specific market segments is not a new phenomenon, the market potential for such lower-tech innovations becomes more critical as these emerging markets are growing (Strategic Analytics, 2017). To be successful in emerging markets, companies have to adapt their business models according to the needs of these markets (Klaus, 2017). It is always challenging to please customers; however, the South African retail motor industry should take advantage of innovation, especially using the technology through digitalisation to maximise company performance.

2.4 LEGISLATIVE FRAMEWORKS RELEVANT TO THE AUTOMOTIVE INDUSTRY IN SOUTH AFRICA

Because of the apartheid laws regarding education and work exposure, there is a shortage of suitable management candidates. Previous studies have found that a sense of belonging and a clear growth plan in companies have been cited by African black senior managers to be relevant to them (Mazola, 2001; Nzukuma & Bussin, 2011; Naude, 2013; Van Rooyen, 2018).

2.4.1 Broad-based black economic empowerment (B-BBEE)

Inclusive growth requires broad-based transformation to break down structural impediments to new economic activities, deconcentrate industries dominated by a few participants, accelerate the inclusion of millions of black South Africans into jobs and businesses, and return to a path of rising per capita incomes for all (Budget Review. 2017). The Broad-Black Business Economic Empowerment (B-BBEE) Act of 2003 and the Employment Equity Act of 1998 state that companies are legally required to speed up their employment of black African senior managers. The labour market has been disarrayed, and firms must have policies and competencies that enable innovation to be effective (Nzukuma & Bussin, 2011; Lin, 2014; Barnes *et al.,* 2018). The structural challenges to ensure more robust, sustainable and more inclusive growth for all South Africans must be overcome (OECD, 2017). The prosecution of the defaulters from this Act leaves much to be desired, as the law or penalties seem not punitive enough to deter the multinational automotive organisation.

Under Act 46 of 2013 section 13.0, it is considered an offence, and penalties will be sectioned for any person who misrepresents, falsifies and engages in fronting practices (Department of Trade and Industry, 2014). However, the monitoring system and tool for persecution purposes should be transparent, available and utilised. Its policy needs to be decisive and able to change gear to bridge the gap in economic transformation (Barnes *et al.,* 2018). Abdil *et al*. (2017) concluded that knowing the effectiveness of the innovation can assist the government in making decisions about the continuation of this policy. Pike *et al.* (2018) argue that much confusion and disillusionment exist around B-BBEE. These writers maintain that this policy was imprudent and continually create inefficiencies. B-

BBEE was promoting tender corruption and economic strain. Therefore, its participants emphasised on a restructured B-BBEE model for the future.

The BEE Act does not place a legal responsibility on the private sector to conform to its provisions, including, among other aspects, when developing and implementing a preferential procurement policy. However, the structures of state are expected to have a legal onus (Department of Trade and Industry, 2019a). The expected impact of implementing the BEE Act is the increase in market access for black companies. The scorecard adjustments of the years below are an example of this adjustment.

Table 2.1: Adjusted codes of good practice

	Codes of Good Practice 2005	Codes of Good Practice 2007	Codes of Good Practice 2013 *
Element	Weighting	Weighting	Weighting
Ownership	20	20	25
Management and control	10	10	15
Employment equity	10	15	–
Skills development	20	15	20
Preferential procurement	20	20	–
Enterprise development	10	15	–
Enterprise and supplier Development	–	–	40
Residual element	10	–	–
Socio-economic development	–	5	5

Source: Molefinyana, Shai and Quinot (2019)

From Table 2.1 above, it can be seen that both 2005 and 2007 codes measured entities of B-BBEE status out of elements that summed up to 100, whereas the 2013 codes of good practice scorecard adjusted the weighting to 105 points. The results from the study conducted by Molefinyana, Shai and Quinot (2019) show that, in 2016/2017, only 21.2% of the fully registered suppliers conducted business with the government, and these companies participated in tenders, although the verification remained a challenge. These authors further illustrated from Table 2.2 below that 18.4% of the company status remains unspecified during the period 2016/2017.

Table 2.2: B-BBEE level status

BBBEE Level	2016/17	% of Suppliers on CSD
Level 1	249,532	66.7%
Level 2	11,491	2.6%
Level 3	20,005	4.5%
Level 4	29,288	6.6%
Level 5	937	0.2%
Level 6	867	0.2%
Level 7	483	0.1%
Level 8	1239	0.3%
Non contributors	1412	0.3%
Unspecified	81,088	18.4%

Source: Molefinyana, Shai and Quinot (2019)

The B-BBEE scorecard is supposed to measure and regulate compliance of the Act No.53, of 2007; however, companies find it easy to neglect the scorecard. The main aim of this Act is to encourage diversity and inclusion of all demographics, especially the previously disadvantaged black South African. The current study seeks to find the nexus between cooperate diversity, innovation and perceived company performance in automotive manufacturing.

2.4.2 Employment equity (EE) and affirmative action (AA)

In South Africa, the Employment Equity Act (EEA) no. 55 of 1998 has been instrumental in changing the demographic profile of the local labour market (Booysen, 2007; Pregnolato, Bussin & Schlechter, 2017). According to the EEA 13 (2017), when interpreting the EE Act, any relevant codes of practice must be taken into account in terms of section 53(5) of the EE Act as amended. The EEA 13 plan refers to other codes instead of a monitoring and evaluation procedure, which has resulted in confusion and corruption as the culprits are not taken to task for the breach of the Act. The inequality levels are resonated by education. Business here could play a critical role, as from primary schools to the quality of math and science education in general, the record is abysmal (Serobe, 2018). Without a proper plan of well-educated young black people to take their place in executive suites in the automotive manufacturing and retail sectors, the quality of these organisations is at serious risk. The impact of inequality of people living in the country and the fact that the economy has not diversified sufficiently are simple displays of the lack of adherence to affirmative action (AA) and employment equity (EE) (Budget Review, 2017). This inequality has resulted from the Group Areas Act of 1950, which sought to

separate and classify people, and therefore by no means encourages embracing each other cultures, which could be found in firms operating in South African society. In today's world, working together is much needed, regardless of gender, abilities, race and age. However, although the deliberate attempt by the government to ensure that the workplace is gender-free and a demographic presentation is maintained, the executives and boardrooms in the automotive manufacturing are at risk of transformation. This transformation is much desired to encourage innovation culture through corporate diversity.

2.4.3 Automotive production and development programme (APDP)

Keeping in mind the strong interrelationship between policy knowledge and innovation, it may be anticipated that the process of innovation can be formed as an end result of the organisation's knowledge processes (Andreeva & Kianto, 2011). The launch of the Motor Industry Development Programme (MIDP) in September 1995, and the industry's subsequent reintegration from the 2008 financial crisis into the global automotive industry, increased employment and fundamentally altered the status quo of the previous decades (Barnes & Morris, 2008; Gastrow, 2012;). This programme was then substituted by the automotive production and development programme (APDP) to address disinterest from the automotive vehicle manufacturer (AVM) operating in South Africa. However, APDP has flaws resulting in many interpretations and therefore has poor implementation (Francois & Hoekman, 2010; Bronkhorst *et al*., 2013; Barnes, 2022). Through a series of auto plans evolving from the initial protective strategies during the apartheid era to promote progressive liberalisation, the sector was increasingly consolidated and achieved undeniable success, especially in terms of export orientation (Barnes *et al.,* 2018). According to Minister Davies' speech (Davies, 2017-2018), the APDP, updated in 2020, and the government are now engaged in an inclusive consultative process with all key stakeholders to develop an automotive master plan that will inform the motor industry programme.

2.4.4 Manufacturing competitiveness enhancement programme (MCEP)

The MCEP must harness the provision of manufacturing support for the automotive vehicle manufacturing sector. It is further stated in the report that the production incentive (PI) and the industrial financing loan facilities managed by the Department of Trade Industry (DTI) and the Industrial Development Corporation (IDC), respectively, must be used to create incentives (Klaus, 2017). South Africa has introduced an MCEP to further encourage and build competitive manufacturing (Crane, 2016). Automotive manufacturing in South Africa has been largely supported by the government. Therefore, companies could easily comply with government regulations through a policy framework. This incentive should also look at more technological support as the global markets are evolving in that direction.

2.4.5 South Africa's masterplan 2035

Researchers in the automotive industry in South Africa share the sentiment that the above policies and programmes have not yielded the much-envisaged output. This view is premised on the fact that the sector remains a second-tier player in the global auto supply chain and domestic demand, whereby localisation would be compromised to as much as 60% of the components used (Black *et al.,* 2018; Monaco, Bell & Nyamwena, 2019). Therefore, South Africa's masterplan 2035 pursues to modify the landscape of the local industry radically. According to Monaco *et al.* (2019), "South Africa's Masterplan 2035 sets out 6 main targets that seeks to achieve over the 15-year period. These are: firstly, to increase South African vehicle production to be 1% of global output. Secondly, to boost local content levels of domestically assembled vehicles to 60% (up from around 38% in 2021). Thirdly, it seeks to double the current (2021) level of employment in the auto sector. Fourthly, it aims to improve the competitiveness of the auto industry to be more in line with international benchmarks. Also, the masterplan seeks to transform the auto industry, making it more inclusive. Lastly, it has the target of deepening value addition within local supply chains." Again, a proper consultation with all relevant stakeholders is required as well as an implementation model with tools to measure the impact of this masterplan. An important question to answer is whether the masterplan takes into consideration the fourth industrial revolution, and whether will it curb job losses and promote innovation.

2.5 CONTRIBUTIONS OF THE AUTOMOTIVE INDUSTRY IN SOUTH AFRICA

According to the National Association of Automobile Manufacturers of South Africa (NAAMSA's) Quarterly Review Bulletin (Q1 of 2019), the average monthly automotive industry employment number for 2019 was 110 000 people (NAAMSA, 2019). Based on the number of vehicles manufactured in South Africa in 2019 quarter 1, namely 30 348, there was a decline of 5.6% compared to 32 153 in the same period in March 2018. The projection ratio of production to employment is: 567 512 / 30 0348 = 18,7. Therefore, vehicles were produced per worker in 2019 (18,7 units/worker) (NAAMSA 2018). The analysis conducted by Rossouw and Weyer (2019) found that, in 2017, out of 601 178 units produced, 20.01 vehicles were produced per worker (20.01 units per/worker). According to the projected calculation, the production performance is likely to go down by at least eight vehicles per worker, which is a decline of 293 333 units in 2019. This may result in unsatiable job losses and industry revenue decline that negatively affect the GDP of the country. Therefore, the industry's contributions are of significance to ordinary people, the culture of innovation in the automotive manufacturing industry as well as the economy of the country. Following are brief discussions of employment, innovation and GDP.

2.5.1 Employment

The fourth industrial evolution considers innovation transformation with robots, although the question exists: 'Is our workplace alongside machines ready for this collaboration with humans?' Humans will be embarking on a new kind of collaboration that would build our mutual strengths, resulting in a new level of human co-dependence with these robots. The Internet of things and the labour force have to be parallel with the evolution of industry (Masinga, Campbel & Trimble, 2015). Work skills must be accompanied by the ability to interact with technology and the internet of things (Newman, Hughes, Lee & Tian, 2018). Innovation complexities have resulted in labour complexities; therefore, the development and enhancement of labour skills, ranging from higher education to the workplace, are required (Masinga *et al.,* 2015). The higher education system in South Africa should offer training, which prepares graduates for this fourth industrial revolution as skills would no longer come from traditional management or organisational theories and methods. Business transformation is achieved by one or more of the following: realigning the way staff work; how the organisation is structured; and the core product or service portfolio of

the business and how technology is used (Kotter, 2008; Francois & Hoekman, 2010; Hattingh *et al*., 2018). Wenzel, Frued and Graefe (2019) identified the entrepreneurial practices of South African managers as very diverse but separate from the substantial shareholder, value-driven, multinational South African companies. This separation of diversity has a negative effect on innovation in the industry (Barnes & Morris, 2008; Mkhize, 2019). NAAMSA (2019) reported that the sector employed 110 000 people in vehicle and component production. Still, the question is: 'How many of these people are capable of keeping their jobs in this industrial revolution?'

Atalay, Anafarta, and Sarvan's (2013) study demonstrated that technological innovation (product and process innovation) has a significant and positive impact on firm performance. Klaus (2017) and Ferraris *et al.* (2017) discovered that technological innovation leads to a supply-side miracle, with long-term gains in efficiency, company performance and productivity, thereby establishing the relationship between innovative performance, innovation culture, and research and development (R&D). For example, Renault-Nissan proactively embraced frugal engineering. The company now is one of the world's leading producers of both electric cars as well as low-cost vehicles: both markets are the fastest-growing and most promising market segments in the future (Konrad & Wrangler, 2017; Hattingh *et al.,* 2018). Human beings learn from each other easily, and the South African automotive industry should take advantage of the diverse demography and embrace transformation policies.

2.5.2 Innovation

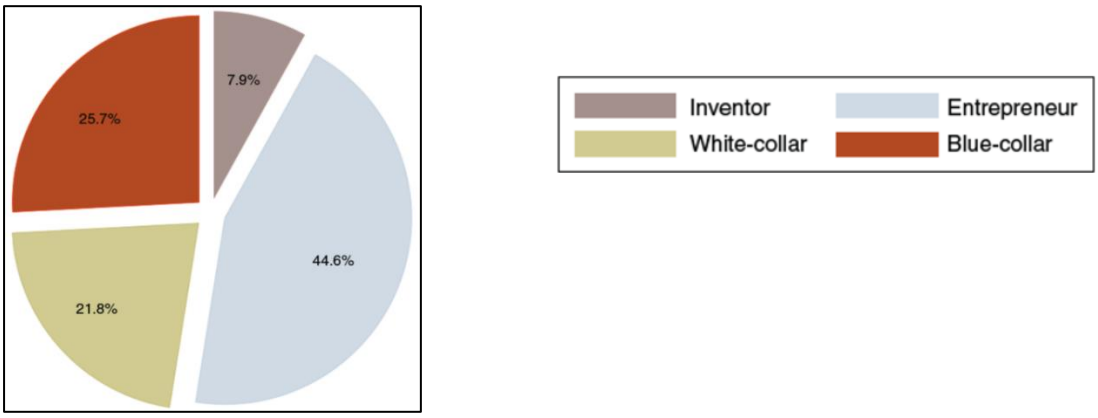
In most organisations in the automotive industry where an innovative environment is created and nurtured, there is good economic performance and growth (Wellman, 2007; Roos, 2017). The adverse attitudes of those firms who have not embraced corporate diversity, decrease their perceived value due to the bankruptcy of innovative ideas. Schoemaker *et al.* (2018) contend that conditions may call for a quantum shift in decision approaches to managing innovation and competition. For individual businesses, innovation offers a means of competition based on non-price-related factors (Dabić, Lažnjak, Smallbone & Švarc, 2018). The South African automotive manufacturing industry has become a technology colony – one capable of introducing and industrialising selected multinational technologies, but mostly incapable of contributing to processes of global innovation (Black *et al.,* 2018). Consequently, it is essential to understand and

distinguish the difference between innovation versus invention. The literature suggests that economic performance in the manufacturing industry can be paddled by corporate diversity, with innovation as a mediating factor pushed through by top management to induce growth in the company.

2.5.3 Innovation versus invention

According to Fagerberg, Mowery and Nelson (2006), the invention is the creation of a new concept while innovation reduces that concept to practice and makes it a commercial success. Shabbir (2015) maintains that innovation can be helpful for organisations to achieve competitive advantage. This author further argues that competitive advantage is usually defined as the ability of a firm to sell its goods and services in a particular market. Naqshabandi and Kaur (2015) defined open innovation as "the use of purposive inflows and outflows of knowledge to accelerate internal innovation and expand the markets for external use of innovation." Management can furthermore make use of different mediums to improve their innovation culture through strategic leadership in their top management. Innovation culture requires the support of senior management and a deliberate intent to ensure a diverse leadership for business development (Klaus, 2017). Figure 2.1 below details the split between the invention and entrepreneurship, white-collar work and blue-collar work.

Figure 2.3: Split between invention and entrepreneurship.



Source: Aghion, Akcigit, Hyytinen and Toivanen (2018)

According to the study conducted by Aghion, Akcigit, Hyytinen and Toivanen (2018), it can be seen from Figure 2.1 that entrepreneurship, white-collar work and blue-collar work

are at 44.8%, 21.8% and 25.7%, respectively, which form part of innovation. An important aspect of the returns to inventions is an understanding of how the proceeds from inventions are shared among the different types of workers within the innovating firm (Aghion *et al.,* 2018), while Shoemaker *et al.* (2018) deliberated on innovation, dynamic, capabilities and leadership.

2.5.4 Gross domestic product (GDP)

The impact of the inequality of people living in South Africa and the fact that the economy has not diversified sufficiently have inevitably resulted in the slow growth of the manufacturing sector (OECD, 2017). The Business Review (2017) suggests that South African policies have to provide the most enabling conditions for the flourishing of people's talents to harness and develop their productive potential. This will ensure that they play a leading role in the allocation of national resources and that they get their due in the country's wealth. According to NAAMSA (2019), the automotive industry contributes 6.9% to GDP (4.4% manufacturing and 2.5% retail); the industry accounts for 30.1% of the country's manufacturing output and 13.9% of total exports and is the fifth largest of all 104 exporting sectors, and vehicles and components are exported to 149 international markets.

The trade and transaction costs that firms must incur are primarily part of a reflection of the domestic business environment and policies of a regulatory nature that act to segment markets. However, more traditional discriminatory barriers to market access also play a role, especially for specific sectors (Borchert *et al*., 2014; OECD, 2016). Businesses increasingly use industrial robots in their manufacturing operations to reduce labour costs and increase competitiveness (Technavio, 2016). Calitz, Poisat and Cullen (2017) highlighted that collaborative robots (Cobots) are designed to work alongside human workers on assembly lines, assisting humans with a variety of assembly and manufacturing tasks.

2.6 MANUFACTURING CHALLENGES FACING THE AUTOMOTIVE INDUSTRY IN SOUTH AFRICA

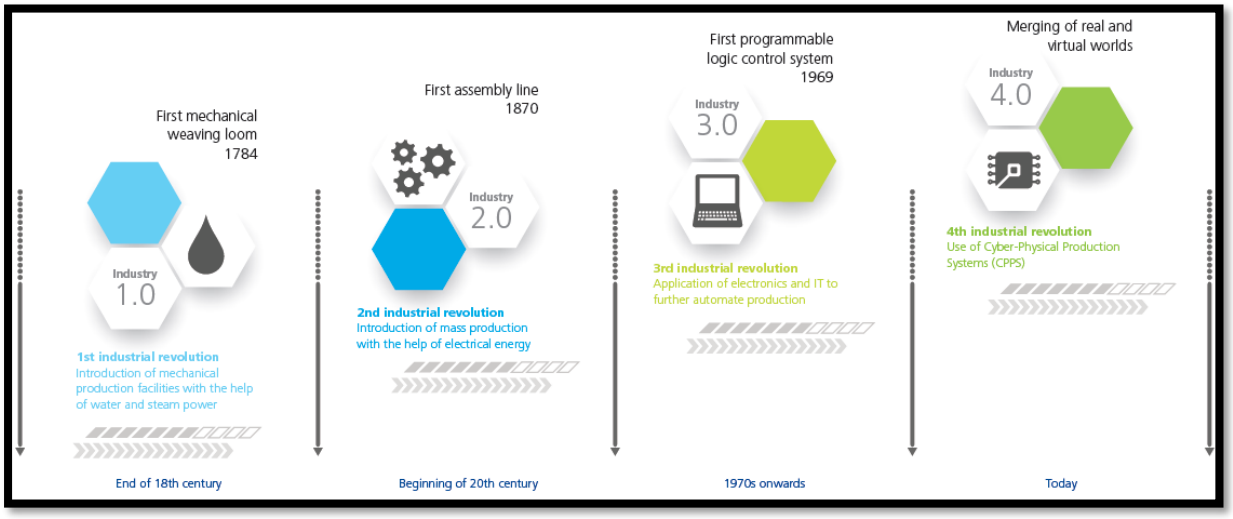
According to Klaus (2017), South Africa maintains its regional leadership in terms of financial markets, competition, infrastructure, and education, despite recent challenges from exchange rate volatility, governance concerns, and policy uncertainty, as reflected in the institution's pillar. Shoemaker *et al.* (2018) contend that identifying appropriate stakeholders as partners and negotiating agreements for long-term cooperation remain key challenges for South African corporations. The South African automotive manufacturing industry is characterised by three vital changing dynamics of global automotive value chains. The following categories also pose a challenge to the firms' innovation culture: i) the physiognomies of producer-driven value chains that strongly inform the nature and structure of operations, including technological transformation; b) mergers and acquisitions that have led to the establishment of global players with access to transparent and truly global information flows; and c) the intensification of global competition throughout the global markets' automotive industry, resulting in weakening financial performance levels and job dissatisfaction (Barnes & Morris, 2008; Pregnolato *et al.,* 2017; Zhao, Zhao & Liu, 2019). The impact of challenges has been prevalent in technological, perceived values or cost challenges, market or service challenges, labour relational challenges, production or skills challenges and, of course, load shedding from ESKOM. These challenges have deteriorated the performance and productivity of many firms in the South African automotive industry.

2.6.1 Technological challenges

The small and medium enterprise (SME) market would become a major driver in the installation of Cobots because they represent over six million businesses worldwide, and nearly 70% of the world's manufacturing sector (Tobe, 2015). Their introduction into assembly and manufacturing lines would expand automation across the plant shopfloor, which would increase worker safety and efficiency (Technavio, 2016). Furthermore, since software now drives more automated machines and manufacturing processes, and Cobots execute much of it, the required number of workers is reduced (Sackey & Bester, 2016). Technology can, therefore, save considerable human payments and fuel costs (Konrad & Wangler, 2017). African manufacturing industries must consider the new category of human-friendly Cobots, which would work safely with humans (Calitz *et al.,*

2017). These authors contend that African managers must align their workforce strategy with their business strategy.

Figure 2.4: The evolution to Industry 4.0



Source: Delloitte, industry 4.0, an introduction 2015 cited in Davies (2018)

According to Davies (2018), looking at Figure 2.2 above:

- The first weaving loom in 1784, was the first industrial revolution (IE), the introduction of mechanical production facilities with the help of water and steam power.
- The first assembly line was in 1870, which was the second industrial revolution (2IR) of mass production with the help of electrical energy.
- The first programmable logic control system was in 1969, which was the third industrial revolution (3IR), the application of electronics and information technology (IT) to further automate production.
- The merging of real and virtual worlds, which is the fourth industrial revolution (4IR), is the the use of cyber-physical production systems (CPPS).

According to Sackey and Bester (2016), the term ‘Industry 4.0’ was sometimes combined with industrial evolution (IE) and education in research. These authors maintain that the shifting nature of shop-floor work and the emergence of new roles would impact IE in ways not seen until now. Calitz *et al.* (2017) maintain that the major challenges faced by top managers in South African and African businesses in introducing Cobots at the organisation level are resistance from unions, technology implementation costs, change management, training and addressing employees’ increased fear of unemployment.

Davies (2018) maintains that countries with high levels of manufacturing value added (MVA) present opportunities for employment and higher equality. It is clear that the pursuit of the industry 4.0 revolution through innovation is on course. Overall, as a strategy for the future, the emphasis is placed on the need for a more targeted approach; for a more reliable link between competitiveness and localisation; for more substantial efforts to promote technological upgrading, innovation, and skills development; and for a longer-term approach to secure the completion of a proper learning process (Black *et al.,* 2018). It is theoretically precise that South Africa is gearing up for the 4IR to be counted among those countries that are embracing innovation. However, resource allocation and infrastructure development are slow.

Automation is therefore not only an end result, but the autonomous vehicle is of interest to OEMs that can earn high margins as a result of customer confidence with specific advanced driver-assistance systems (ADAS) (VDA, 2015). Calitz *et al.'s* (2017) research work on other automobile manufacturers, including Mercedes-Benz, Audi and Toyota, concluded that implementing Cobots in production facilities enhances productivity. Advanced driving technologies such as adaptive cruise control (ACC), collision avoidance, radar, cameras and other sensor systems are enabling interlinked trucks, following the driving behaviour of the leading vehicle – the only one driven by a human employee (Klaus, 2017). Besides the obvious benefits of increased safety for all mobility participants, automation, a sub-factor of innovation, also enables new business (Konrad & Wangler, 2017). Training customers to maintain their technology might be necessary so that customers within developing countries make their buying decision in favour of a specific technology (Strategy Analytics, 2017).

2.6.2 Perceived value or cost challenges

South Africa is experiencing low economic growth, and job creation has primarily remained a burden of the private sector as well as small to medium enterprises (SMEs). Furthermore, some studies report that inequality is correlated with political instability, which creates a bad attitude towards diversity (Alesina & Perotti, 1996; Acemoglu & Robinson, 2001; Dutt & Mitra, 2008; Tolmay, 2019). In South Africa, domestic export production has remained comparably weak, undiversified and volatile (Rodrik, 2008; Kaplan, 2015; Makgetla, 2011; Kaplan, 2015; Mkhize, 2019). According to Stats SA (2019), its report shows that the economy contracted in quarter 2 (Q2) of 2019. However,

the manufacturing figures in production and vehicle sales remained positive, with the following reported figures: motor trade sales increased by 1.5% in the three months ended July 2019 compared with the three months ended July 2018. The main contributors were:

- Sales of accessories (4.1% and contributing 0.7 of a percentage point);
- Fuel sales (1.3% and contributing 0,4 of a percentage point); and
- Used vehicle sales (2,0% and contributing 0,4 of a percentage point).

2.6.3 Market or service challenges

In the marketplace, innovation is essential for the survival of the enterprise. It is also recognised as a strategic advantage in setting up the foundation of economic growth and success and enhances companies' offensive position and changing environment in which they operate (Du Toit, 2003; Shabbir, 2015). These developments have created a platform for new attitudes for an industrial employee to emerge, where workers learn to work side by side with the latest generation of Cobots. The market, therefore, is changing, and the South African automotive manufacturing industry should adapt (Hollinger, 2016). The companies that make their new business ventures in time are mostly based on the value of disruptive innovation by properly created intelligence and can implement them to the market by the right competitive strategy (Stefanikova & Masarova, 2013; Oyesola, Mpofu, Mathe & Fatoba, 2018). South Africa currently exports locally manufactured vehicles to over 70 countries. It is challenged to maintain its position in the market to produce at a competitive cost and to have the ability to respond quickly and reliably to first-world market demands (Ambe & Badenhorst-Wess, 2013; Oyesola *et al.,* 2018). Betancourt, Mooney and Ross (2018) found that Toyota was led to a state of emergency in the digital economy in the first decade of the 2000s, which challenged the company to rethink its approach to innovation.

2.6.4 Labour relational challenges

It is understood that fulfilling employee needs enhances employee motivation and retention. Consequently, the higher the degree of employee satisfaction, the higher the possibility of innovation culture, and the higher the perceived company performance; therefore, the impact of human resource management on corporates has strengths and concerns (Zampetakis & Moustakis 2007; Hull & Rothenberg, 2008; Masinga *et al.,* 2015). Innovation complexities have resulted in labour complexities; therefore, development and

enhancement of labour skills, ranging from higher education to the workplace, are required (Masinga *et al*., 2015). Kweku *et al.* (2017) concluded that each HR practice has different local institutional and cultural implications. These authors, therefore, maintain that compensation and industrial relations practices are more context-specific than other HR practices. The country adopted fiscal and monetary policies geared to maintaining economic stability while seeking to bring about economic transformation to all its demographics and increase productivity (OECD, 2017).

South Africa must follow a more structured approach to the planning and implementation of research activities to determine the needs and satisfaction levels of employees (Lombard, 2009; Gordon, 2018). According to Schaefer (2018), the automotive sector of the South African economy accounts for approximately 7.4% of the gross domestic profit (GDP). It accounts for the direct employment of 113 000 people, whereas NAAMSA (2019) reported a job decline of about 3 000, taking the number of workers to 110 000 and the GDP of about 6.9%. Minor employment losses occurred at OEMs and component manufacturers over the period 1995 to 2001, both component and OEM employment subsequently increased, although OEMs were known to arrest the unemployment (Rossouw & Weyer, 2019). To perform well in the technology transformation value chain, the duties of the relevant links, the job scope and the consistent attention of every relationship need to be understood (Zhao *et al.*, 2019). The decline is mainly attributed to the poor performance of the South African automotive industry as well as policy uncertainty due to imprudent implementation. As noted by Tolmay (2019), the manager's definition of the strategic objectives is important for the relational governance approach on how specifically to add value that results in trust through product quality and delivery, as well as personal interaction.

2.6.5 Production or skills challenges

External work frames, new leaders, and separate organisational structures are often necessary for new cognitive perspectives to take hold and innovations to flourish (Kahneman & Lovallo, 1993). Due to fierce competition in the global market, the introduction of products with shorter lifecycles and growing customer service, vehicle manufacturers in South Africa have been forced to invest in and direct their attention to the supply chains (Naude & Badenhorst-Weiss, 2011; Bak, 2016). Robots have made little impact outside manufacturing, and it will be a gradual process before robots replace

human jobs in the service, transportation or construction sectors (Gordon, 2018). Calitz *et al*. (2017) emphasised that culture plays a significant role in developing trust in robots. It is understood that fulfilling employee needs enhances employee motivation and retention, and consequently the higher the degree of employee satisfaction, the higher the possibility of innovation culture, and the higher the perceived company performance (Lombard, 2009; Barnes, Black & Techakanont, 2017). Calitz *et al.* (2017) contend that the type of communication required for adoption varies between cultures. Schoemaker *et al.* (2018) maintain that the collective skills needed by organisations when pursuing disruptive innovation, radically change new business models and strategic leadership. According to Masinire (2018), one of the present challenges of South African education is to redress the educational inequalities that have persisted since the establishment of colonial authority in the year 1652.

2.6.6 Unique characteristics of the South African automotive industry

Chapter 1 emphasised the justification of research gaps. The automotive industry has fared well with global warming reduction initiatives: there are legislations such as euro four, five and six, which regulate the emissions of carbon dioxide. These regulations are driven by the European Parliament with the support of the World Health Organization. However, research on the decarbonisation of transport logistics in South Africa, due to global warming initiatives, is one of the unique characteristics of pollution (Goedhals-Gerber, Freiboth & Havenga, 2018). The automotive industry is somehow characterised by currency volatility, an evolving market owing to 4IR, labour unions and partnerships across the globe (Black *et al.,* 2018).

Literature revealed the challenges characterised by innovation culture in the automotive manufacturing industry in South Africa. Henceforth, South Africa is experiencing low economic growth due to the low percentile GDP contribution by the automotive industry. The impact is prevalent in job scarcity, and technological applications owing to poor global and domestic market penetration. Moreover, the impact of these challenges has resulted in deteriorating performance and productivity of many firms in the country's automotive sector. Therefore, the empirical modelling of corporate diversity, innovation and company performance in the automotive industry in South Africa will seek to define the premise foundation of operation by this sector in addressing these structural challenges. Because of the lack of empirical studies in the automotive industry, therefore, this current study will

contribute to the body of knowledge. The following section, however, discusses the selected previous scholarly research in the automotive industry in South Africa.

2.7 SELECTED PREVIOUS SCHOLARLY RESEARCH REGARDING THE AUTOMOTIVE INDUSTRY IN SOUTH AFRICA

There is evidence of scholarly work by different authors focusing on the automotive industry in South Africa. Orlando, Weichieh, Mike and Carliss (2015) looked at answering the practices of diversity, asking, in their case study, whether external diversity practices boost local firm performance. Black and McLennan (2015) focused on the prospects and policies for the automotive industry in Africa. Another study by Desiree and Kengne (2016) concentrated on mixed-gender ownership and financial performance of automotive SMEs in South Africa: a multidisciplinary analysis. Van Rooyen (2018) regards people as the most prominent organisation assets, which prompted him to investigate staff reward preferences in a South African automotive manufacturing company. Goedhals-Gerber, Freiboth and Havenga (2018) researched the decarbonisation of transport logistics in South Africa. While appreciating labour and adhering to industry legislation, the industry needs the challenges facing South African businesses in coping with new partners and investors within Brazil, Russia, India, China and South Africa (BRICS).

Having reviewed literature in the automotive industry, it was found that most South African automotive literature is on ACMs, but very limited on OEM, independent aftermarket and retail motor industry (RMI) and original equipment supply (OES). The studies conducted in these sectors have not dealt with innovation as a mediator variable in stimulating performance in the automotive industry. Evidence of a previous study that deals with cooperate diversity, innovation and perceived company performance in the South African automotive industry is rare. The current study, therefore, deserves and requires full empirical attention.

CHAPTER 3
LITERATURE REVIEW ON THE RESEARCH THEORY AND RESEARCH CONSTRUCTS

3.1 INTRODUCTION

This chapter provides a literature review of the research constructs under consideration in this study. The discussions in this chapter are predisposed in the direction of the automotive industry's (i.e., its value chain) organisational environment and presuppose that corporate diversity enhances innovation and thereby increases perceptions of company performance. These perspectives are strengthened by the fundamental theories (that is the systems theory and disruptive innovation theory) that appeal to the current study. The chapter also discusses the nexus between corporate diversity, innovation and perceived company performance in the South African automotive industry. Definitions are provided for corporate diversity and innovation to clarify their meanings/purposes and backgrounds. Corporate diversity is conceptualised in terms of its seven practices (policy, HR practices, top management, demographic diversity, leadership, culture, and attitude about diversity) considered in this research. The chapter also reviews the literature on the types of innovation and innovation culture. Ultimately, the chapter is organised as follows: research theories, corporate diversity with seven practices, innovation, and previous studies conducted in South Africa on corporate diversity as well as innovation and conclusion.

3.2 RESEARCH THEORIES

Learning and disciplinary efforts to interpret the meaning and significance of social change dynamics, the range of construction/deconstructionist post-modern exposition, ranging from predictive/empirical to cultural/interpretative to critical/post-structural epistemological stances require certain theories (Buckley & Von Bertalanffy, 2017). Two theories have been chosen. Gee (2018) argues that we take the "things" we are going analyse to be (our "ontology"). Sequentially, our choice of "things" determines the sorts of tools we will need for analysis and the sorts of questions we will ask. Following this argument, the study is anchored in the systems theory and the disruptive innovation theory.

3.2.1 Systems theory

Systems theory does much to render the complex dynamics of human bio-psycho-socio-cultural change comprehensively. The advantage of the systems theory is its potential to provide a trans-disciplinary framework for a simultaneously critical and normative exploration of the relationship between our perceptions and conceptions and the worlds they purport to represent.

3.2.1.1 Conceptualisation and origins of system theory

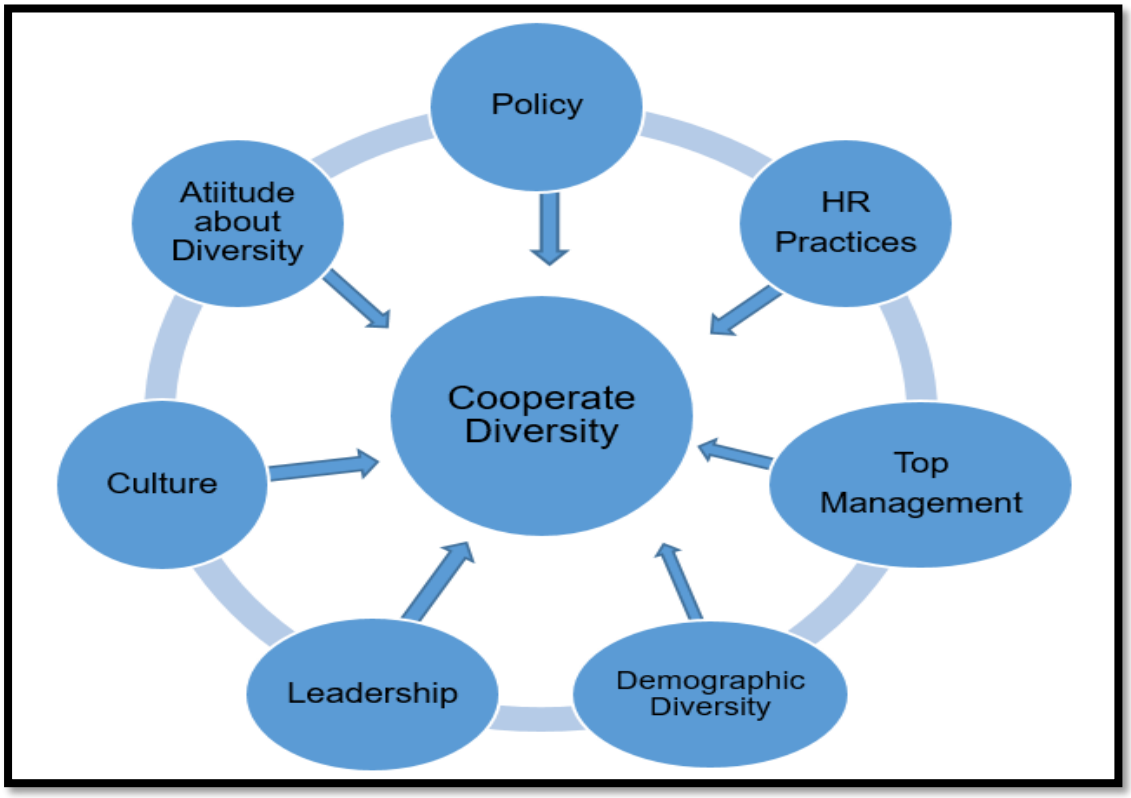
Systematic theories' (i.e. social-ecological systems theory, resilient thinking theory and dual-system theory) perspectives, which have been the dominant form of sustainability for some time, are useful for societal organisation (Armitage, Marschke & Plummer, 2008; Turel & Qahri-Saremi, 2016). However, the conceptualisation of the process and procedure of measuring and monitoring human endeavour achievements according to the internationally well-accepted disciplinary views, and the fragmentation of worldviews outlines an array of possibilities (Laszlo & Krippner, 1998; Zebrowski, 2015; Sage & Zebrowski, 2016). In that, individual perceptions, views, and opinions gathered at the organisational level form part of the system concept and are not taken into consideration when formulating the systems theory.

Systems theory makes a difference to a mechanically-oriented system in terms of mathematical feedback and technology; giving rise to fear that it is indeed the ultimate step towards mechanisation and devaluation of man and technocratic society (Von Bertalanffy, 2010; Buckley & Von Bertalanffy, 2017). On the contrary, sometimes, the individual may feel trapped within an organisational culture that generates mental habits and prevents creative thinking (Werhane, 2008; Sage & Zebrowski, 2016). All individuals are understood as part of the system and the organisation format dictates culture, tradition, behavioural attributes and the direction to achieve or give precise solutions. The systems theory is construed as an approach to industrial relations that equates a medium-sized enterprise to an organism with interdependent parts, each with its own specific function and interrelated responsibilities (Vemić & Molnar, 2019). Therefore, aspects of corporate diversity with its seven practices, as already stated above, are interconnected in responsibilities and functions on the organisational and systemic levels as well as in individual cognition, as will be explored in this study.

3.2.1.2 Description of systems theory within an organisational context

Medium-sized manufacturers of enterprises can augment their development through the dual track-process of conducting a systems theory approach (Von Bertalanffy, 1968; Ewald, 1986; Werhane, 2008; Wang, Hu & Mu, 2013; Zebrowski, 2015; Greene, 2017). This approach in an organisation can be classified as a system of interconnected, interdependent, interacting problems, which also provide a holistic view of the whole strategic entity, from vision to implementation (Laszlo & Krippner, 1998; Perrow, 1999; Sage & Zebrowski, 2016; Vemić & Molnar, 2019). Therefore, organisational strategies require a buy-in, whether it is a top-down or bottom-up strategic approach of whatever other organisational size. Figure 3.1 illustrates the corporate diversity systems theory.

Figure 3.1: Corporate diversity systems theory



Source: Adapted from Naqshabandi & Kaur (2015); Easterby-Smith, Thorpe & Jackson (2015); Rahman, Hamid & Chin (2017)

Figure 3.1 indicates all seven diversity practices under consideration in this study, making up different components of a system that works together, unified and unabridged, in an organisation. If one of these components malfunctions, or is not fully recognised, the entire corporate diversity system suffers to the detriment of the organisation. Therefore,

it is vital to ensure that the whole spectrum of corporate diversity practices is operating optimally as this contributes to the performance of the organisation. The importance of trust and loyalty concern for sustainability in the firm helps compensate for the damage inflicted by orthodox firms on the automotive industry environment (Thompson & Valentinov, 2017).

3.2.1.3 Previous management sciences research on the systems theory in South Africa

A study undertaken by Coetzee, Van Niekerk and Raju (2016) examined the subject of disaster resilience and the complex adaptive systems theory. It revealed that there are inherent similarities between the concepts of resilience. Liu, Yang, Xie and Forrest (2016) considered new progress of a grey systems theory in the new millennium. Their study could explain the general picture of research and the developing trend of a grey systems theory. An empirical study conducted by Schneider, Wicker and Marti (2017) examined the systems theory's perspectives on how organisations respond to their environments. It found that its application is essential in how organisations collaborate in response to complexity. Cumming and Allen (2017) investigated protected areas as social-ecological systems, using perspectives from resilience with the social-ecological systems theory. Their study found that social-ecological systems have the potential to transform management and policy approaches for protected areas and have important implications for conservation in both theory and practice.

Herselman, Botha, Mayindi and Reid (2018) examined, in their case study, how the ecological systems theory influences technological use in rural schools in South Africa. The ecological system theory assisted in indicating the importance of considering all possible influences that can affect the integration and use of technology, whether it is within a specific context (rural schools) or not. Friedland and Cole (2019) introduced 'Homo-virtus', which is a system-theoretic model to raise moral self-awareness. Their research indicated an evolving mindset informed by reflection on moral identity, namely what one's actions say about oneself given the impacts (positive or negative) on others or society that one's action may affect.

The analysis above gives the impression that there is a lack of studies that apply to the systems theory in the automotive industry. However, the literature suggests that it is of

notable importance in influencing corporate diversity for the improvement of organisational performance in most business environments. The systems theory was therefore chosen carefully as one of the theories in which to anchor the current empirical study.

3.2.1.4 Reasons why the systems theory is suitable for this research

Process alignment and people involvement are two key concepts for the successful implementation of business process management, and these two key concepts are better merged in the systems theory (Yu & Hung, 2006). In the automotive industry, especially in the manufacturing sector, these concepts are critical for success as the whole production line requires systems. Introducing systems theory to hinge the current study continued to further deliberate and elaborate on corporate diversity with its seven practices, as well as innovation (i.e. innovation culture and innovation influences on perceived company performance). The systems theory research revealed that both corporate diversity culture and firm/organisational theory are intertwined (Bouncken, Brem & Kraus, 2016; Emeh, Njoku & Ukenna, 2017; Pouwels & Koster, 2017; Santoro, Bresciani & Papa, 2018; Trąpczyński, Puślecki & Staszków, 2018; Berraies, 2019).

Studies on corporate diversity and organisational theory were deliberated on and revealed that corporate diversity in the automotive industry deserves attention. However, more research on the systems theory, especially in the automotive industry's international research, and its application in corporate diversity in this industry in South Africa leaves much to be desired. The reviewed literature suggests that corporate diversity enhances innovation culture and creates platforms for better workplace tolerance (in terms of racial difference, and multi-disciplinary practices) and consequently job satisfaction-level improvement. Corporate diversity requires all these practices to be interrelated and co-dependent in intermingling with solutions/problems; if any of them fail, corporate diversity consequently crumbles. However, if the business environment were to apply specific organisational regulations of a particular industry with government support, it might determine its success. The systems theory in this study is linked to corporate diversity with its seven practices of policy, HR practices, top management, demographics diversity, leadership, culture and attitudes about diversity.

3.2.2 Disruptive innovation theory

Essential questions about the disruptive innovation theory that this research focuses on are, firstly: ‘What are the origins? And how is disruption innovation conceptualised?’; secondly, ‘How is disruptive innovation theory related to other applications of innovations in the research field?; thirdly, ‘How is innovation defined in the current study?’; fourthly, ‘Has there been any application of disruptive innovation theory in the automotive industry?’; and lastly, ‘What are the reasons that make disruptive innovation theory suitable for the current study?’ This section will seek to answer these questions (i.e. disruptive innovation is disruptive to some and yet is sustainable to others). Moreover, the current study explores the influences of innovation and innovation culture on perceived company performance.

3.2.2.1 Conceptualisation and origins of disruptive innovation theory

Disruptive innovation theory is conceptualised as those technological advancements that generate new products, new supply chains and new markets/networks beyond the expectations of the existing markets (Christensen, 2002; Adner, 2002; Payne, 2016). This leads to an entirely new way of operating for most markets. An example is that businesses increasingly use industrial robots in their manufacturing operations to reduce labour costs and increase competitiveness (Christensen & Raynore, 2003; Danneels, 2004; Schmidt & Druehl, 2008; Hang, Cohen & Yu, 2001; Wang *et al.,* 2013; Technavio, 2016). The more business disruptions there are, the more a firm/organisation takes the lead in new ways of business operations, as technological physiognomies that contribute to the disruption of existing markets can be identified as the extension of the disruptive innovation theory (Nagy Schuessler & Dubinsky, 2016; Calitz *et al*., 2017). However, within the South African context, especially in the automotive industry, there are advantages and disadvantages linked to this concept: the organisation can either survive or crash/fail if attention to detail is neglected. The industry is considered to be one of the leading job creators with a highly unionised workforce. However, one example, due to the implementation of robots in the manufacturing industry, is that job losses are inevitable, and consequently, labour unions’ revolt becomes eminent. On the other hand, company performance might reach new heights. In summary, all stakeholders need to be involved, from government and unions to sectorial regulation boards to avoid catastrophes.

3.2.2.2 Definition of disruptive innovation theory

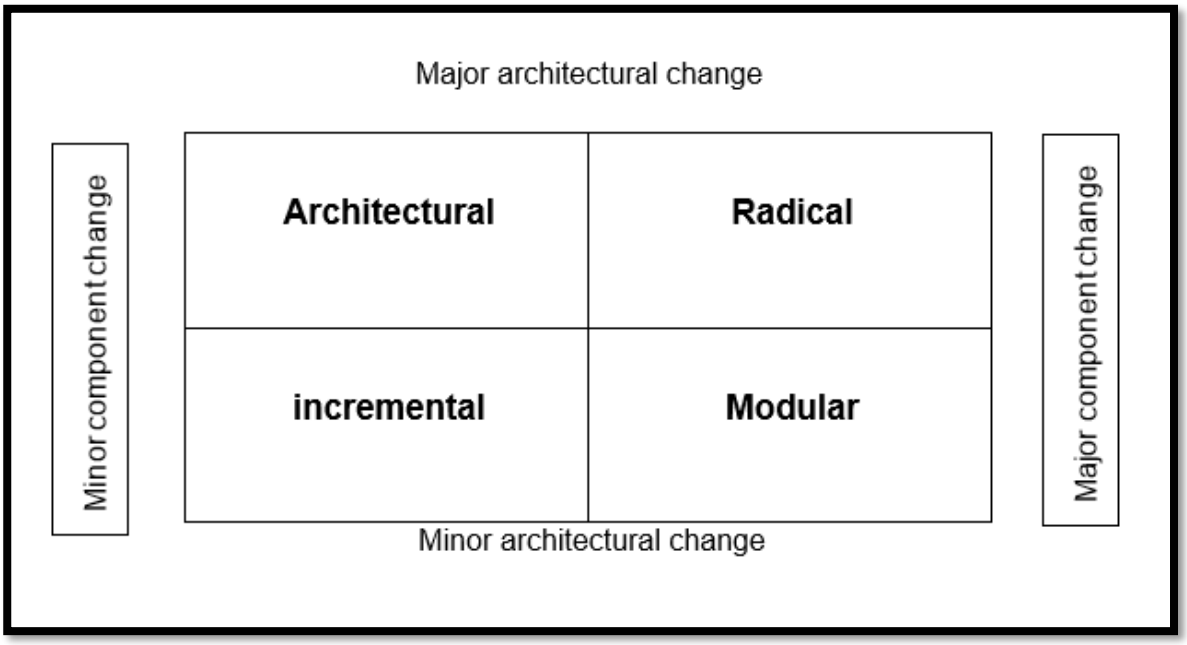
Disruptive innovation theory is defined as the use of purposive inflows and outflows of knowledge to accelerate internal innovation to disrupt existing markets, supply chains and product offerings (Naqshabandi & Kaur, 2015; Ferraris *et al*., 2017). Unfortunately, this definition, according to studies of innovation, falls short, although research shows that incremental innovation and radical innovation could clarify the concept of disruptive innovation theory (Nakamori, 2020) as follows:

- *Incremental innovation*: Advanced and constant change based on an improvement in existing technology; an example would be in the telecommunication industry, through the implementation of 2G, 3G, 4G and now 5G (Beltagui, Rosli & Candi, 2020).
- *Radical innovation:* Discontinuous change based on new technology that is drastically different from existing technology; an example in the automotive industry is the introduction of electric vehicles that may eventually lead to the replacement of those that rely on fossil fuels *(*Nakamori, 2020*).*

The definition of what radical innovations and incremental innovation are is not standardised and accepted. Although researchers have defined it in numerous ways, it is hard to say precisely what the characteristics of a radical innovation are, or what incremental innovation has (Nagy *et al.,* 2016; Beltagui *et al.,* 2020). South African-based OEMs' perceptions of their domestic automotive component firms need to perform substantially better in respect of their quality, reliability, flexibility and innovation, than in terms of their cost competitiveness; and this performance is boosted by carefully implanting the disruptive innovation theory (Black *et al.*, 2018; Beltagui *et al.,* 2020).

The Henderson-Clark model from Naqshabandi and Kaur (2015) provides more in-depth insights into different types of innovation and how they can be distinguished. These authors further contend that the importance of firms to pay attention to the different types of innovation as the competencies require appropriate strategies to ensure optimal returns might differ for different innovation types (Naqshabandi & Kaur, 2015). Figure 3.2 presents the Henderson-Clark model, which displays the kinds of innovations.

Figure 3.2: Simplified version of Henderson-Clark model



Source: Nasqshabandi and Kaur (2015)

Figure 3.2 indicates how incremental innovation builds upon existing knowledge and architectural knowledge, while modular innovation requires new knowledge for one or more components, and architectural knowledge remains unchanged in modular innovation. Architectural innovation, on the other hand, involves changes in the linkage of components in new ways, but the core design they embody remains unchanged. Radical innovation involves drastic changes in components as well as architectural knowledge, leading to the establishment of a new dominant design and new core design concepts embodied in components that are linked together in the new architecture. A reclassification of the disruptive innovation theory, with innovation features of functionality, technical standards and ownership, is therefore needed. This is an extended definition of an innovation with radical functionality, discontinuous technical standards, and new forms of ownership that redefines marketplace expectations (Nagy, Schuessler, & Dubinsky, 2016).

3.2.2.3 Drivers/influences of radical and incremental innovations

It can be argued that radical innovation regards doing something inversely in that it changes the market fundamentally by launching breakthrough novelties. It also requires new capabilities, which might render the existing competencies useless in the

organisation. This, of course, involves high risk and uncertainties, which generally make incumbents choose to invest in low-risk incremental innovations. Consequently, to survive over the long term, organisational growth is vitally dependent on this type of innovation, especially if the market is drastically transforming (Pham-Gia, 2010; Tidd & Bessant, 2014; Pouwels & Koster, 2017). The current study sees disruptive innovation theory as addressing the question: 'How can innovation be disruptive to some, but not to others?'

Having redefined the disruptive innovation theory and determined that it contains some physiognomies that can be compared with technologies currently used in organisations is critical to identify it in the marketplace. If disruptive innovation theory *has* these physiognomies that are already used by an organisation, be it functionality, a technical standard, or a form of ownership, then the innovation will not likely be disruptive to the organisation. On the other hand, if the organisation does not apply the functionality, technical standards, or form of ownership, the innovation has the prospect of being disruptive within it (Tidd & Bessant, 2014; Nagy, Schuessler, & Dubinsky, 2016; Oliver & Parrett, 2018). That innovation that is not applied to the organisation is at risk of being applied/stolen by competitors in the form of invention (see Chapter 2 for the difference between innovation and creativity). Other companies are very good at waiting for innovation to happen to re-manufacture/reconfigure/invent unpatented innovations in the industry.

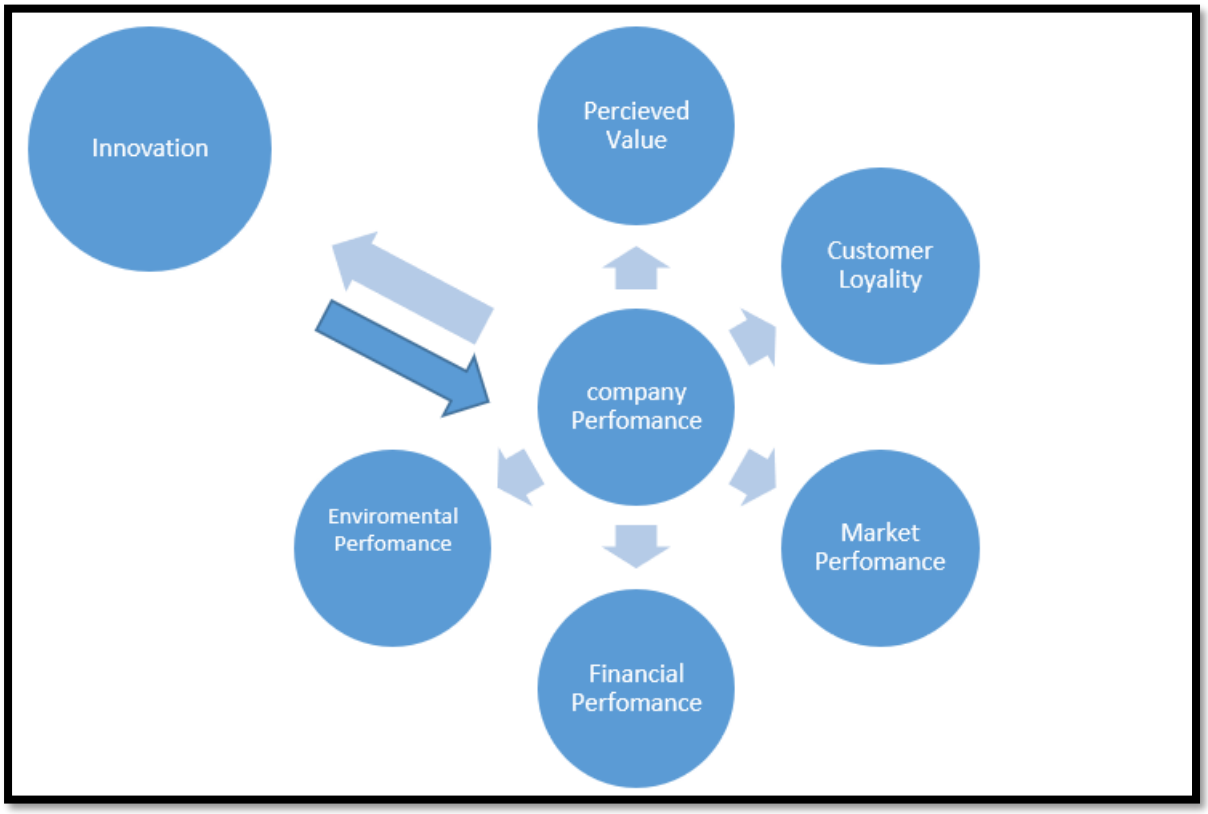
3.2.2.4 Description of disruptive innovation theory in an organisational context

Literature suggests that the disruptive innovation theory has two forms of innovation, as previously discussed (i.e. radical innovation and incremental innovation). Moreover, external factors that can smooth the penetration of new products, and sustain a new supply chain/new network include the knowledge management of the disruption innovation theory within an organisation, such as alertness, search activity, prior knowledge (e.g. Baron, 2006), commercial orientation (e.g. Dess & Lumpkin, 2005), organisational integration (Millson, 2005), and venture backing (Pierrakis & Saridakis, 2017), which all enhance the ability to bring effective products to these new markets (Timothy, Aladin & Pollack, 2018).

Business sustainability is the sense that new technologies can alter and eventually create new markets in a radical or disruptive format of the existing known status and current

business environment. Creative disruption is coursed by new innovations and the identification of new markets within an organisation that need attention (Bower & Christensen, 1995; Nagy *et al*., 2016). This identification should encompass examination, which needs to consider the effect of these technologies and thereby identify whether the organisation is fit or ready for the necessary adjustment to enhance global competitiveness. Disruption innovation theory offers interesting opportunities to suggest an alternative for practitioners concerning the value of different innovations while validating the framework by Christensen (2002) (Strömberg & Thorman, 2019). In this study, the disruptive innovation theory has been linked to innovation elements that moderate perceptions of perceived company performance. These, with their elements of perceived value, customer loyalty, market performance, financial performance and environmental performance, can be measured mainly through incremental innovation and radical innovation, which form part of this theory. Figure 3.3 presents the disruptive theory in terms of perceived company performance inflows and outflows to innovation.

Figure 3.3: Company performance disruptive theory



Source: Adapted from Naqshabandi & Kaur (2015); Rahman, Hamid & Chin (2017)

Figure 3.3 illustrates the influence of innovation through the purposeful inflows and outflows to perceived company performance, consequentially increasing the perceived value of the company by promoting customer loyalty. Customer satisfaction favours innovation: subsequently, organisational performance in new markets and environments increases financial performance (i.e., the bottom line). Disruptive innovation theory requires the support of top management and a deliberate intent to ensure competitiveness for business development in new territories (Christensen & Horn, 2008; Schoemaker, Heaton & Teece 2018). This type of innovation replaces the existing market and creates new networks and value chains through the establishment of new market-leading firms, products and alliances (Rahman, Hamid & Chin, 2017; Schoemaker *et al.,* 2018). Likewise, the automotive industry in South Africa should also overcome current challenges by developing disruptive innovation in the manufacturing of new products (i.e. South African electric vehicle brand) and methods of doing business (Zebrowski, 2015; Sage & Zebrowski, 2016; Nagy, Schuessler & Dubinsky, 2016; Shahzad, Xiu & Shahbaz, 2017; Astuty *et al*., 2022). This study pre-emptively proposes that linking innovation to corporate diversity may also be one such disruptive strategy, and can attain new markets, networks, and supply chains by employing disruptive innovation theory.

3.2.2.5 Previous management science research where the disruptive innovation theory has been applied in South Africa

The disruptive theory has been applied in numerous empirical studies within South Africa. In the technological management sector, a study conducted by Vlok (2017) developed a competency profile for technology innovation leaders in knowledge-intensive organisations. The study identified that technology innovation leader competencies are necessary for innovation competencies. Adegbile and Sarpong (2018) focused on disruptive innovation at lower levels of the organisation and provided critical perspectives on international business. The study identified potential managerial and organisational challenges that multinational corporations are likely to encounter in their efforts to pioneer disruptive innovations. Another study, by Li, Porter and Suominen (2018), investigated the relationships between disruptive technology/innovation and emerging technology. The research highlighted the multiple theoretical foundations of conceptual cross-fertilisation and considered interdisciplinary approaches to technological (and

commercial) emergence, such as technological change processes, disruption, and emergence.

A recent study, by Francke and Alexander (2019), examined entrepreneurial development in South Africa through innovation, and developed a model for poverty alleviation. The research recommended that a multi-factorial approach equipped with a disruptive innovation state response model is necessary to assist in supporting mobile applications in development entrepreneurs towards enhanced competitiveness, poverty alleviation and reduced economic inequality. Duff (2019) developed a model for innovation leadership in South African companies. The study shows how South African innovation leaders can integrate their means and social contexts, cognitive abilities and supportive behaviour of their company to develop innovation projects successfully.

The analysis above suggests that a considerable amount of work has been done in the application of disruption of innovation across various industries. However, most studies are international, and South Africa has limited volumes of any such studies focusing on economic and management sectors. However, considering that the fourth industrial revolution is affecting the automotive industry, many studies are expected to cover the whole value chain (i.e. from product, manufacturing, marketing and retail sectors). Therefore, this study seeks to develop an innovation model for the South African automotive industry to increase company performance.

3.2.2.6 Reasons why the disruptive theory is suitable for this research

The automotive industry as a whole in South Africa requires a sustainable transition from a production/assembly-focused industry towards customer-orientation. Today, customers have become essential. While top managers are searching for ways to create superior innovations and inventions in the industry to compete globally against other international automotive industries in vehicle manufacturing (i.e. electric vehicle manufacturing, hybrid vehicle), the situation here is made worse as South Africa does not have an established vehicle brand. The industry faces challenges (i.e. rigid labour laws, absence of diversity, negative work ethic, job creation, innovation culture) that prevent attempts to launch products in the market and venture into new markets with new technologies. Another researcher, Christensen (2013), unfortunately not in the automotive industry but in paper and plastic packaging, studied the challenges of incumbent firms with his theory of

disruptive innovation theory, which has received much attention throughout the years and provides a holistic literature framework to analyse the industry (Strömberg & Thorman, 2019). However, the South African automotive industry has very little to show in the application of the disruption theory in the value chain; arguably, the country is a technological colony that is best at implementing technologies and innovations of developed countries. Therefore, much enthusiasm is embodied in the current study to develop an innovation model to be followed by the industry.

The disruptive innovation theory is associated with two types of innovation, namely incremental and radical innovations. Consequently, innovation culture relates to creating a new product, finding new markets, developing new supply chains and increasing company performance. The definition of disruptive innovation theory, as discussed above, centres on market impacts, especially looking at how it can be disruptive to some, but not to all organisations; and data is mostly produced only after a disruption has taken place. On the other hand, the organisation that nurtures an innovation culture seems to be successful in those markets and business environments. The current study, therefore, regards innovation as a mediator variable anchored by disruptive innovation theory. It classifies innovation culture as having a direct relationship with perceived company performance with its five elements (i.e. perceived value, customer loyalty, market performance, financial performance and environmental performance).

3.3 CORPORATE DIVERSITY

Corporate diversity is an increasingly popular approach to facilitate workforce relations and communication between inter-/ultra-/team disciples and racial disclose. However, there is little compromise in guidelines for corporate diversity design and evaluation of its seven practices (i.e., policy, HR practices, top management, demographics diversity, leadership, culture and attitudes about diversity), which will be discussed later in this section, or as a definition of what corporate diversity in the South African automotive industry is. This lack of compromise obscures the cross-conceptualisation of corporate diversity research between different sectors in the value chain (i.e., manufacturing, retail, sales) of the automotive industry in South Africa. This section will discuss the following: the definition of corporate diversity, factors/drivers affecting corporate diversity within an organisational context, organisational expectations from corporate diversity, and reasons why corporate diversity is suitable for this research.

3.3.1 Definition of corporate diversity

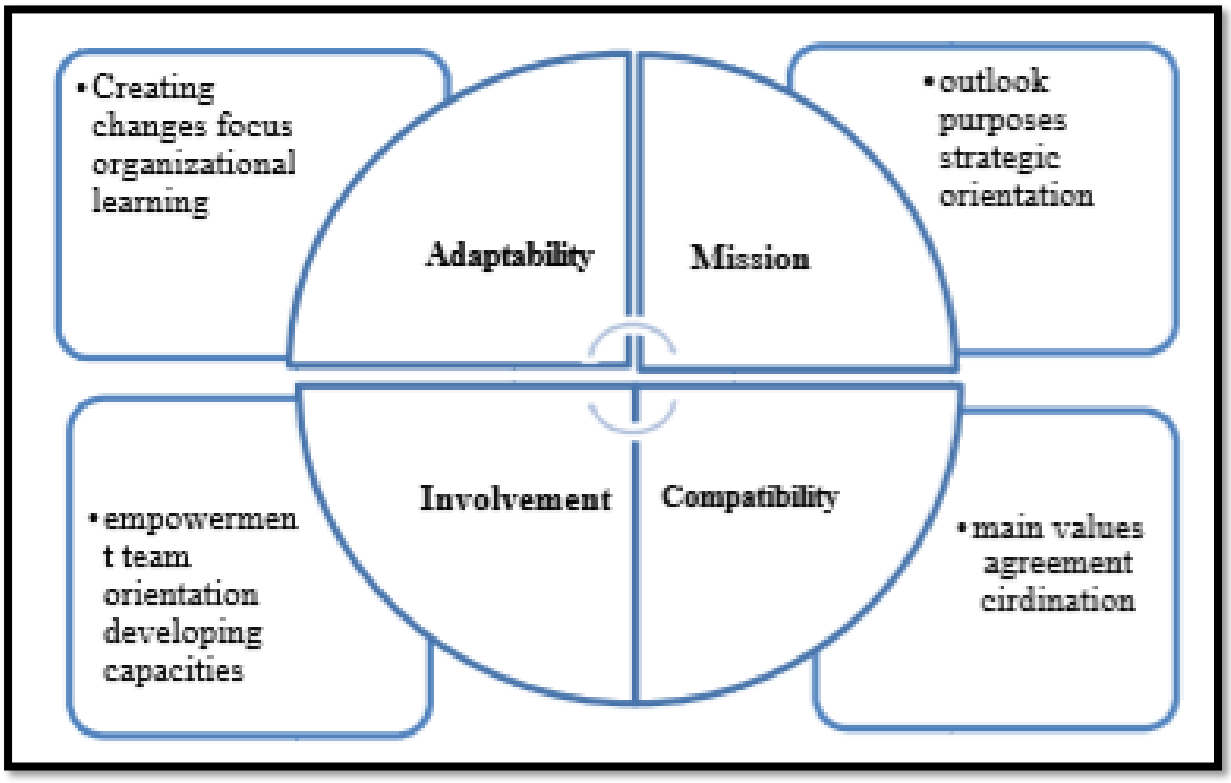
Corporate diversity refers to a more pro-diversity cultural inclusion of all inhabitants in the society practising a better and fair treatment of everyone enhancing future innovative efficiency, even after controlling for endogeneity (Mayer, Warr & Zhao, 2016). It may also be defined as a concept distinguishing equal opportunity when all individuals are permitted without restrictions and similarly to contend for communal living standards (Morgan, 2016). Another definition, by Mazibuko and Govender (2017), identifies corporate diversity as workplace cultural diversity in which population differences are fairly presented (i.e., race, ethnicity, age, ability, language, nationality, socioeconomic status, gender, religion, or sexual orientation). Diversity is associated with an open mindset of individuals in an organisation who challenge the horizons of each person involved to be willing to consider different perspectives (Reed, Ortega & Garvin, 2017). It can be argued that the diversity of team members is one of the crucial preconditions for multi-/inter-/trans-disciplinary cooperation, which challenges the teams' effective collaboration (Reed *et al*., 2017; Abbink *et al*., 2018). Accepting diversity means that all group demographics can work together (Abbink *et al*., 2018). However, embracing diversity means demonstrating the courage to have one's own perspective challenged by *the others* and appreciating the differences in the group (Činčera *et al.,* 2019). The reviewed literature suggests that corporate diversity promotes innovation and gives way to an innovation culture. On the other hand, there is also a parallel understanding of diversity in South Africa; some scholars refer to it as demographic inclusion, which is racial cooperation, while other scholars look at multi-/inter-/trans-disciplinary cooperation.

3.3.1.1 Factors influencing/drivers of corporate diversity within the organisational context

The South African Constitution and Labour Relations Act of 1995 require all companies across all industries to address human rights in their policies, cultural diversity, employment equity and no discrimination through compliance with the Equity Act of 1998 and training in conformance with SETA 10 of 2001. This Labour Act enhances the management of diversity, and the relevance of environmental and social issues across the automotive value chain (Coetzee, 2006; Konrad & Wangler, 2017). Cultural differences may severely interfere with the work of multinational (and multi-disciplinary) teams within organisations; some cultures favour collaboration while others favour

individualism (Wildemeersch, 2009; Colitz *et al.,* 2017). A more structured approach to the planning and implementation of research activities to determine the needs and satisfaction levels of employees in the automotive industry leaves much to be desired. However, there are more structural challenges that must be overcome to ensure more reliable, sustainable and inclusive growth for all South Africans; this separation of diversity has a negative effect on innovation in the industry (Barnes & Morris, 2008; OECD, 2017). In the automotive industry, with the component sector being considered an integral part of this industry, a sectoral composition confirms a long-run relationship between employment and growth in the finance and business services, manufacturing, transport and utilities sectors (Barnes, 2003; Mkhize, 2019). Furthermore, the Denson model clearly (Figure 3.4) categorises the critical drivers of corporate diversity.

Figure 3.4: The Denson model



Source: Ahmady, Nikooravesh and Mehrpour (2016)

Figure 3.4 presents the drivers of corporate diversity culture, which are: adaptability, compatibility, mission, involvement, flexible constant spectrum, and internal-external centralisation. A change could be an added advantage for the organisation, although this requires adaptability. Organisations create change in the known environment and its associates within organisations. Training needs to prepare for future changes and

consequently, customer focus is necessary. These changes direct the organisation towards satisfying customers, interpreting opportunities to encourage creativity and developing the ability to penetrate new terrains (Imani, 2012; Ahmady, Nikooravesh & Mehrpour, 2016). In comparability, associates of an organisation participate in a set of values that form their identity and expectations. Involvement, on the other hand, is the ability to agree on opposing issues, which agreement, in managerial-level coordination and integration of organisational units with different performances, could work with each other to reach common purposes (Sharifirad & Ataei, 2012; Ahmady *et al.,* 2016). Considering the involvement, organisational participation is encouraged where employers empower employees with the intention to orient the whole group to increase the capabilities of individuals (Pouwels & Koster, 2017; Santoro, Bresciani & Papa, 2018). This is done for the improvement of the mission*,* which is the strategic direction with a clear intent/purpose to encourage the participation of each associate to participate in the goal and objective of an organisation, as identified from the core common vision and core values (Pouwels & Koster, 2017).

Flexible spectrum and internal-external focus concern consistency, where the organisational culture with dynamic culture flexibilities is focused on organisational models. The advantages of the Denison model are that it evaluates group behaviour instead of individuals, achieves the measurement of the lowest organisational levels (i.e. top management, employees etc.), and has been used on all organisational levels (Imani, 2012; Shafee, Qaderzade & Lavee, 2010; Ahmady *et al.,* 2016). The South African automotive industry could benefit from the Denson model's principles (adaptability, compatibility, involvement, and mission) while looking at internal-external consistencies (customer satisfaction). The desired planned outcome of the BEE Act, EE, and AA is to achieve workforce diversity, and inclusion, among other attributes, although modelling and monitoring/evaluation are imperative.

3.3.1.2 Organisational expectations from corporate diversity

African countries have a diverse business environment that is not homogeneous to international institutions, i.e. regulatory, political, economic, social and cultural systems that affect corporate diversity practices. (Adeleye, 2011; Ellis *et al*., 2015; Kweku *et al.,* 2017). South Africa comes from a very harsh administration background engineered by the National Party Government from 1948 until 1994, which constructed existing customs

and laws into the legal structure of apartheid that separated people from one another into ethnic territories and deliberately excluded the majority from educational and economic opportunity (Kahn, 2006; Konrad & Wangler, 2017). The record of education and business, which could play a critical role, from primary schools to the quality of math and science education in general, is abysmal (Black *et al.*, 2018). The quality of the automotive industry is at serious risk without a pipeline of well-educated young black people to take their place in executive suites, manufacturing firms, and the retail marketing/sales industry (ANC, 2012; Black *et al.,* 2018). From the first democratic government 28 years ago, it has put in legislation and regulations on corporate diversity with its seven practices (policy, HR practices, top management, demographic diversity, culture, leadership and attitudes about diversity).

3.3.1.3 Application of corporate diversity in the current study

To strengthen the organisational culture and successfully implement corporate diversity in the automotive industry, government policy and other human-automation interaction methods require explicit modelling. The current study should reveal the generalisability and utility of the proposed corporate diversity framework to design useful, safe, and comfortable interaction between humans and intelligent machines, and boost the automotive industry's performance, and thereby increase global completion of the industry (Ahmady *et al*., 2016; Abbink *et al*., 2018). This section (3.3. Corporate diversity) provided a definition of corporate diversity, conceptualised within an organisational context with a previous definition and a set of general maxims for the design and evaluation of corporate diversity practices. Its utility and maxims were deliberated on by applying them to the following domains: the automotive industry; general organisational formations; manufacturing; and organisational learning. The literature discussed each of these domains with reference to the following topics: definition of corporate diversity; factors/drivers of corporate diversity; the organisational expectation of corporate diversity exposed the agility of literature; bankruptcy of applied studies of corporate diversity in the automotive value chains, especially in South Africa. Finally, to enable the design application of corporate diversity in automotive industry organisations, the researcher of this study intends to introduce a hierarchical framework for corporate diversity that links all seven practices under study.

3.3.2 Policy

Policy can be defined as client-oriented advice relevant to the public decision informed by social values. Businesses and trade often seek advice about proposed legislation and regulations that might affect their private interests. When their employees or consultants consider the full range of social consequences by giving such advice, they also provide policy analysis (Weimer & Vining, 2017). Eaton (2017) considers the policy as a referral to institutional legislation and regulation to demonstrate a commitment to practice in the business environment. However, a policy should be more progressive rather than punitive in approach. Barnes *et al.* (2017) consider this as a guard to misconduct in all-inclusive terms that simply rely on common sense, a general definition of what is right or wrong (Eaton, 2017). The South African Government imposes policies such as broad-based black economic empowerment (B-BBEE), affirmative action (AA), and employment equity (EE) to bridge the economic gap caused by the apartheid regime, which excluded black people from economic participation. However, the gap is worse still, being caught in scandals of collusion and corruption, such as fronting word missing (Coetzee, 2006; Dutt & Mitra, 2008; Barnes *et al.,* 2016).

Policy optimises culture for organisations that pursue long-term innovation performance and social coherence; and once the knowledge of innovation is affected, government and organisations can decide on the continuation or amendment of the policy (Kotter, 2008; Abdi *et al.,* 2017). The Government also introduced an automotive product development programme (APDP), and the Manufacturing Competitiveness Enhancement Programme (MCEP) to boost product localisation content, which incentives were meant to enforce the BEE Act, EE, and AA with a focus on the automotive industry's black supplier development, downstream enterprise supplier development, upstream dealer initiatives, and job creation (Lamprecht, 2019). These policies and programmes require a monitoring model linked to the South African Revenue Service (SARS) to bring about economic and corporate diversity so that all South Africans participate in the opportunities provided.

The impact of the inequality of people living in South Africa and the fact that the economy has not diversified sufficiently has inevitably resulted in slow growth, derived from exchange rate volatility, governance concerns, and policy uncertainty (OECD, 2017; Klaus, 2017). Decisive policy creates the possibility of innovation culture; the higher the perceived company performance is, the more jobs will be created, which provides

employee satisfaction (Lombard, 2009; Barnes *et al.,* 2017). South African automotive policies should provide enabling conditions for black people's talents to prosper, harness and develop their productive potential, and ensure that they play a leading role in the allocation of national resources and that they get their due in the country's wealth (Lombard, 2009; Barnes *et al.,* 2017; Black *et al*., 2018). The current study seeks to reveal the impact of policies, such as the BEE Act, AA, and EE, on corporate diversity and automotive economic value chains. It will also explore the influence of innovation and the five elements of perceived company performance, i.e. perceived value, customer loyalty, financial performance, market performance, and environmental performance.

3.3.2.1 Diverse policy literature review summary

The South African government imposes policies such as broad-based black economic empowerment (B-BBEE), affirmative action (AA), and employment equity (EE) to bridge the economic gap caused by the apartheid regime, which excluded black people from economic participation. It was found that these policies and programmes require a monitoring model linked to the South African Revenue Service (SARS) to bring about economic and corporate diversity so that all South Africans participate in the opportunities provided. The country's automotive policies are not enabling conditions for black people's talents to prosper, harness, and develop their productive potential. Moreover, the impact of legislation failed the policy and resulted in non-transformed organisations and corporate diversity suffering. Consequently, the country's automotive industry, in global competition and market penetration, faces challenges. In fact, literature has exposed that the South African automotive industry has made slow progress in addressing past inequalities. Therefore, policy is at the centre of complete legislation for a corporate diversity framework but falls short due to inconsistent monitoring systems/processes.

3.3.3 HR practices

Two types of HR practices in this study have been identified: firstly, learning-enhancing employment practices; and secondly, task-interdependent work practices. The competitive academic environment nowadays reinforces hostility to cross-disciplinary work, although HR formalisation has a positive influence on organisational performance and industries at large (Koutsouris, 2009; Kehoe & Wright, 2013; Činčera *et al.,* 2019; Sánchez-Marín, Meroño-Cerdán & Carrasco-Hernández, 2019). Literature suggests that

employees' perceptions of HR practices influence their motivation, attitudes and behaviour, understanding how individual learning and knowledge is gained through HR practices, which may encourage key exchanges between the employer and employee (Kehoe & Wright, 2013; Schippers *et al.,* 2015; Monks, Conway, Fu, Bailey, Kelly & Hannon, 2016; Warnich & Grobler, 2016; Sánchez-Marín *et al*., 2019). The South African Labour Relations Act of 1995 (LRA 95) promotes a safe nurturing environment conducive to individual wellness and personal growth, and therefore recognises education qualifications and previous experience. However, the tribulations of the automotive industry, such as nepotism, corruption, and collusion in avoidance of the BEE Act, EE and AA pose a challenge to the LRA 95. Without consequential management to the detractors, the automotive economy is at serious risk, and the whole country is likely to endure a brain drain to global firms. The economic level and automotive industry development of the host country in the case of multinational companies would influence the adoption of home or host country HR systems and practices (Niekerk, 2016; Kweku *et al.,* 2017). South Africa's economic growth is generally regarded as the creator of employment and opportunities for the growing labour force in finance and business services, manufacturing, transport and utilities, but is unable to provide adequate employment for the increasing number of job seekers (Naude, 2013; Niekerk, 2016; Mkhize, 2019). HR practice has different local institutional and cultural implications, as compensation and industrial relations practices are more context-specific than other HR practices. The South African automotive industry composition confirms a long-run relationship between employment and industrial growth, which depends on the adoption and management of the two HR practices identified above.

3.3.3.1 Human resources practices summary

The reviewed literature in this study concluded on two types of HR practices; *f*irstly, learning-enhancing employment practices; and secondly, task-interdependent work practices. These HR practices have different local institutional and cultural implications as compensation, and industrial relations practices are more context-specific than other HR practices. The tribulations of the automotive industry, such as nepotism, corruption and collusion in avoidance of the BEE Act, EE and AA pose a challenge to the Labour Relations Act of 1995 (LRA 95). Without consequential management to the detractors, the automotive economy is at serious risk, and the whole country is likely to endure a

brain drain to global firms. Therefore, the South African automotive industry composition confirms a long-run relationship between employment and industrial growth, which depends on the adoption and management of the two HR practices identified above.

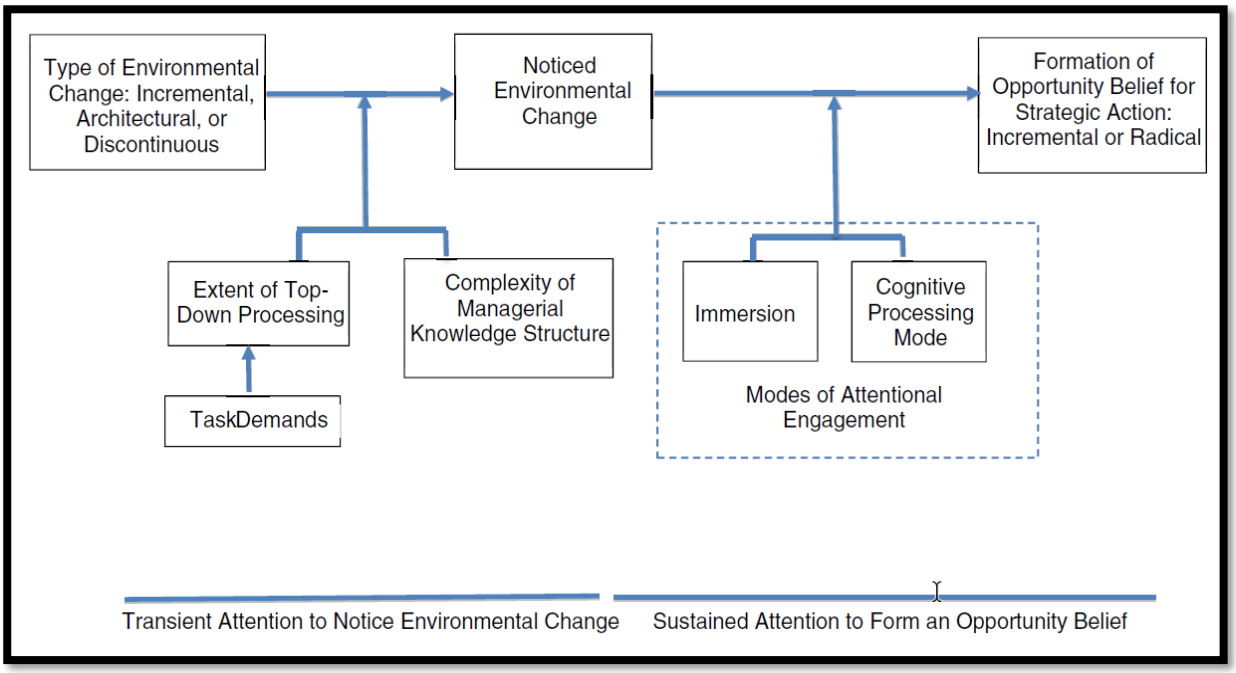
3.3.4 Top management support

The current research seeks to understand the support in all organisational dimensions required by top managers in executing organisational strategic intent while organising company resources to support the organisation's vision and strategic goals, as well as the humanistic and cultural views of the top managers. This section deals with the definition of top management and their attributes in the workplace, organisational expectations from top managers, and top managers in the automotive industry in South Africa.

3.3.4.1 Definition of top managers and their attributes

Top managers' attributes in the workplace, as classified by Guo, Zhao and Tang (2013), are "managerial skills [that] refer to top managers' ability to organise, allocate, and configure various firm resources effectively." Top managers are known as human capital with managerial and entrepreneurial skills. Their knowledge of the South African automotive industry directs attention to aspects of the automotive environment anticipated to be relevant (Kaplan & Tripsas, 2008; Guo, Zhao & Tang, 2013; Shepherd, McMullen & Ocasio, 2017). Top managers mainly drive their strategic leadership decisions as they organise company resources to ensure that the company's radical new business model remains cost-effective and competitive in new markets (Schoemaker, Heaton & Teece 2018). South Africa maintains its regional leadership in terms of financial markets, competition, infrastructure and education, despite recent challenges from exchange rate volatility, governance concerns and policy uncertainty, as reflected in the institutions' pillar (Klaus, 2017). Arguably, identifying appropriate stakeholders as partners and negotiating agreements for long-term cooperation remains a key challenge for South African corporations and top managers (Shoemaker *et al.,* 2018). It is necessary to identify the entrepreneurial practices of South African senior managers, which are diverse but separate from the substantial shareholder value-driven multinational South African companies (Barnes & Morris, 2008; Mkhize, 2019; Wenzel *et al.,* 2019). The organisational expectations of top managers is shown in Figure 3.5.

Figure 3.5: An attention model of top managers' opportunity beliefs for strategic action



Source: Shepherd *et al.* (2017)

Figure 3.5 shows the attention model of top managers in ensuring that the organisation seizes opportunities through strategic action. Top managers access the business environment (type of environment) to introduce the change (i.e. incremental, architectural or discontinuous) needed for the organisation to compete; the outcome of which depends on the mode of attentional engagement employed in the process (Shepherd *et al.,* 2017). While dealing with the direction of the company, top management ensures that focus is placed on changing operational mindsets, and the orientation of middle managers and individuals. In other words, top managers need to sell their strategic position to get buy-in towards the new direction considered of critical importance, and that the approach and feedback are of value. Furthermore, top managers' managerial skills should enhance organisations in obtaining competitive advantages and opportunities, and through entrepreneurial skills, enable the firm to build innovation to penetrate new markets (Ireland, Hitt, Camp & Sexton, 2001; Guo *et al.,* 2013; Shepherd *et al*., 2017).

3.3.4.2 Top managers in the automotive industry in South Africa

Businesses increasingly use industrial robots in their manufacturing operations to reduce labour costs and increase competitiveness. Top management can help change the mindsets of operationally-oriented managers to gear the organisation for this new way of business. One example is Hyundai South Africa Motor (a component of the much larger diversified Hyundai Group), which has become the leading car manufacturer among developing countries (Kahn, 2006; Technavio, 2016). Significant challenges faced by top managers in South African and African businesses have been the introduction of cobots at the organisation level, resistance from unions, technology implementation costs, change management, training and addressing employees' increased fear of unemployment (Calitz *et al.,* 2017; Schoemaker *et al.,* 2018). The culture of consultation with unions has been taken too far; industries that used to pursue the ever-changing business environment are forcing top managers into consultation where sometimes the desired business gets lost.

The South African automotive industry's disadvantageous effects in the workplace of racial harassment and job satisfaction remain a challenge, especially to black employees in the industry, which is much accentuated among highly career-oriented individuals and those of low managerial rank. Job dissatisfaction in organisations has resulted in a lack of commitment, productivity, and retention of necessary skills, all of which are vital for the industry. Furthermore, there is racial harassment in the workplace, which is highly associated with racial ethnicity within the South African context, where corruption antennas are explored by corruption (i.e. BEE Act collusion). The redress, therefore, mainly relies on the top manager in the industry (Stoermer, Hitotsuyanagi-Hansel & Froese, 2019). However, due to the honoured position of being a top manager, the insight of social distance is greater, almost immune to racial insults, societal exclusion and racial harassment (Kahn, 2006; Magee & Smith, 2013; Stoermer *et al.,* 2019). This could be exhibited by the negative effects of workplace racial harassment for managers, and the more negative consequences for individuals of no or low managerial rank. Their organisational position permits top managers to address workplace tribulations such as hostility and racial harassment more effectively to create a creative environment for innovative ideas.

3.3.4.3 Top management support summary

Literature reviewed explained top managers as those presidents and executive officers who execute organisational strategies, allocate company resources to support the organisation's vision, and strategic goals. While dealing with the direction of the company as well as humanistic and cultural views, the focus is placed on changing operational mindsets through police policies. The main findings are, firstly, slow progress in orientating middle managers and individuals towards the country's diversity policy framework such as B-BBEE, AA, and EE; secondly, no sufficient evidence of top managers who sell their strategic position to get buy-in towards the new direction; thirdly, there seems to be racial harassment in the workplace, which is highly associated with racial ethnicity within the South African context; and lastly, the implementation of B-BBEE is mangled with corruption.

3.3.5 Demographic diversity

Kagzi and Guha (2018) identify the types of board diversity as dimensions of board demographic diversity. Harness (2019) mentions that diversity refers to many ways people may differ from one another demographically, meaning different races, genders, ages, sexual orientations, religions, and cultures, among others. Many of these characteristics are protected by anti-discrimination laws (Stoermer *et al.,* 2019). Demographic diversity is an aspect of the socio-ecological context of intergroup relations and depends on how diversity is operationalised, as well as peoples' attitudes, behaviour, performance, and other outcomes (Roberson, Ryan & Ragins, 2017; Pirog *et al*., 2019; Verkuyten & Yogeeswaran, 2019). Demographic configuration moderates the effects of racial ethnicity on job satisfaction, exacerbated by workplace racial harassment of black South Africans (Stoermer *et al.,* 2019). A structure in a society whereby individuals or institutions deliberately or unintentionally exercise power against a defined inferior group is known as racism (Trawlter, Bart-Plange & Hoffman, 2019). South Africa belongs to all who live in it; therefore, a clear roadmap for creating inclusion characterised by training of managers and employees on diversity management and team-building exercises is needed. Integration of all demographics within organisations is one of the values, with strict, performance-based, transparent and accountable evaluations necessary from industry and government (Sudharsanan & Geldsetzer, 2019; Stoermer *et al.,* 2019).

3.3.5.1 Demographic diversity summary

The Government has set a path to regulate demographic diversity in our society and workplace by introducing the much-resisted BEE Act. The automotive industry in South Africa has embraced this Act. However, the follow-through has not been fully actualised to the desired potential, and there is no proper monitoring and consequent management for lawbreakers. It seems as if the labour court has no foot to stand on or finds it very difficult to bring about evidence for prosecution. Literature indicated that the determination of demographic diversity can be classified as the acknowledgement of all people, ages and genders, namely black, Indian-South African, white, and coloured/mixed race, residing in the country. The South African automotive industry should see equal participation in various levels (i.e., board members, as well as executive and senior managers), of the organisation of all races, ages and genders. In some cases, the literature suggests that fronting was used by some companies. The government has set a path to regulate demographic diversity in our society and workplace by introducing the much-resisted BEE Act. The automotive industry in South Africa has embraced this Act. However, the follow-through has not been fully actualised to the desired potential, and there is no proper monitoring and consequent management for lawbreakers. Therefore, a clear roadmap for creating inclusion is characterised by the training of managers and employees on diversity management and team-building exercises. Moreover, there seems to be a need for the automotive industry demographic diversity framework – a framework that has a clear set of monitoring tools with clear consequential management and legal implications thereof.

3.3.6 Leadership

Leadership, according to Silva (2016), is defined as the process of interactive influence that occurs when, within each context, some people accept someone as their leader to achieve common goals. It is the art of motivating a group of people to act towards achieving a common goal guarded by a shared vision from strategic business content (Gill, Gardeneer, Claeys & Vangronsvlet, 2018). Research shows that senior executives' significant focus is on choosing a leader who has a vigilant attitude and the dynamic capabilities to adapt to different environments (Astuty *et al.,* 2022). The leader's function is a co-devising and co-constructing strategic vision of what is viewed as being a reality in the organisation, thereby gaining a sense of shared identity and buy-in from all

organisational levels (Gill *et al.,* 2018). Authentic leadership banks on the philosophies of empowerment and more specifically, the influence of leaders may occur by making room for the authenticity of other parties (e.g. employees, HR business partners, senior executives). An authentic leader is quick to make a strategic decision and, at the same time, catalyses the innovation culture. The key critical function of leaders is to manage the values of an organisation and to monitor/evaluate performance; most importantly, the duties of leadership are to form and direct central values within the bounds of organisational culture. An example of a cultural weakness is exploited by leadership awareness, and necessary strategies for this weakness are precisely planned for (Shaffe *et al.*, 2010; Ahmady *et al.,* 2016). Moreover, leaders could spend a period in one domain, helping to generate new knowledge before they are replaced by newcomers (Samarawickrama *et al*., 2018). Also, leaders could ensure that proper organisational governance is followed through, that performance does not drop, and that new opportunities are not missed while intensifying the completion in new/old markets. The innovation culture should therefore be strongly guarded for ease of strategic planning.

3.3.6.1 Leadership diversity summary

This study defined the authentic leader as one who is quick in filtering a strategic decision and simultaneously driving the innovation culture. Literature suggests the three following critical functions of leaders exist, namely (i) to manage the values of an organisation and monitor/evaluate performance; (ii) to form and direct central values within the bounds of organisational culture; and (iii) to ensure proper organisational governance is followed through. Therefore, performance and new opportunities are not missed, while intensifying the completion in new/old markets.

The reviewed literature found that the importance of leadership diversity to drive corporate diversity should lie in diversity strategic planning. With a notable South African past (i.e. apartheid regime), organisational leadership should bridge the economic exclusion of black people in the automotive industry giving strength to corporate diversity. Leaders are very involved in creating and determining a safe, diverse workplace. The literature revealed that one of the vitally important major qualities or attributes of leadership is a zest for diversity and therefore the expectation to provide diverse leadership.

3.3.7 Culture

Culture refers to the customary beliefs, social forms and material traits of a racial, religious or social group. Gorodnichenko and Roland (2017) argue that a more individualistic culture leads to more innovation and higher growth due to the social status rewards associated with innovation in that culture. Groups of people congregate in purposeful systems' design formed in communities; the culture of evolutionary design; the core essence of neighbourhood planning, the safety of inhabitants and its cultural adaptation that incorporates cultural variation (Laszlo & Krippner, 1998; Parida, 2017). Humans enhance their wellbeing and assert their dignity while creating the structural conditions for the sustainability of the process of development (Castells & Himanen, 2014; Konrad & Wangler, 2017). Human development is influenced by the environmental values of culture, policies of the public, laws, etc., as well as direct relationships with individuals. Cultural beliefs within the South African context influence beliefs of culture and include the politics of the province from where people originate. However, each industry workplace has its unique challenges (Botha & Herselman 2016; Herselman, Botha, Mayindi & Reid, 2018). Other restrictions within this type of context include cultural issues that people are usually not familiar with or are anxious about. Therefore, recognition of culture with global and localised cultural inspiration to human behaviour, including human resources across geographic boundaries has become commonplace. This enhances the need for organisations to understand and contend with added complexities due to variability in cultural norms, values, and language, which affect the inflows of goods, services and products to international markets (Roberson, 2019). It can be argued that the type of communication required for adoption varies between cultures.

3.3.7.1 Culture diversity summary

In this study, culture refers to customary beliefs, social forms and material traits of a racial, religious or social group. Additionally, from the literature review, human development is influenced by the environmental values of culture, policies of the public, laws, etc., as well as direct relationships with individuals. Moreover, cultural beliefs within the South African context include the politics of the province from where people originate. Therefore, literature observed recognition of culture with global and localised cultural inspiration to human behaviours, including human resources across geographic boundaries that have become commonplace. Therefore, managers of the South African workforce must take

cognisance of the fact that technological advancements and innovation culture in the manufacturing factories require investigation in the human-collaborative work environment, as this will impact workplace tradition and culture.

3.3.8 Attitude about diversity (DA)

The conundrum of DA in South Africa is due to the country having diverse inhabitants from a racial, multi/inter/ultra-disciplinary background, resulting in a dynamic workplace. The contextualisation of attitudes towards diversity and its origins are relevant drivers/influencers of these attitudes. Attitude toward organisational diversity refers to the degree to which one tends to accept/embrace other cultures from social demographic groupings, primarily women and black South Africans, and different age, and sexual orientations in the workplace (Timothy *et al*., 2018; Glass, 2019).

3.3.8.1 Contextualisation of attitude about diversity and its origins

Business developments have created a platform for new attitudes in industries where employers emerge, and workers learn to work side by side, making new products for new markets using the latest innovation methods (i.e. implementation of cobots) (Hollinger, 2016). The term workforce diversity was coined in the early 1990s. It refers to any compositional difference among people within a work unit and considers how people relate to attitudes, behaviour, performance, and other outcomes in organisations (Mor, Barak & Travis 2013; Roberson *et al.,* 2017). Inequality is correlated with political instability, which creates a bad attitude towards diversity (Muller & Seligson, 1987; Alesina & Perotti, 1996; Acemoglu & Robinson, 2001, Dutt & Mitra, 2008; Abdil *et al.,* 2017). The diversity of team members is one of the crucial preconditions for multi-/inter-/trans-disciplinary cooperation, as the main challenge of teams is effective collaboration (Činčera *et al.,* 2019). South Africa is a diverse society with different racial groups and languages. Due to the apartheid regime, disadvantaged people's scars of the past are slowly healing, and in the automotive industry, they are expected to work together in units tht they find very difficult. The Government then acted by means of regulation implementations such as the BEE Act, AA, and EE; however, certain racial groups still drive the impact of inequality due to favouritism. Stoermer *et al.* (2018) found that black employees suffer racial harassment and hardly enjoy job satisfaction in the workplace.

3.3.8.2 The relevance of drivers/influencers of these attitudes about diversity in South Africa socioeconomics

The business landscape applies pressures on existing socio-technical, socio-ecological and diversity regimes that create opportunities for responses. For example, climate change and the need for the expansion of renewable energy, and environmental wastes are targeted in green manufacturing. Workforce diversity is further in line with a country's inhabitants (Tice, Ahouse & Larson, 2005; Swiling *et al.,* 2015). Roberson (2017) contends that intergroup biases stemming from social categorisation processes may disrupt the informational exchange processes that are critical to realising the value of diversity. These are driven by socioeconomic patterns that change the number and types of people who compose organisational workforces and the differences that exist between people at work, labour statistics and other data. Workforces have been and continue to become more heterogeneous (Mor Barak & Travis, 2013; Pirog *et al.,* 2019). It has been 29 years since the dawn of democracy in South Africa, yet there is a sense that society is becoming impatient with the sluggard transformation in embracing diversity. This impatience is evident in the socio-political spheres wherein new political parties, such as the Economic Freedom Fighters (EFF) and the African Transformation Movement (ATM) were formed to speed up change. The South African automotive industry could benefit from more academic development, particularly interdisciplinary work on culture and racial behaviour, which would be better explained by empirical research. The South African system of innovation has its origins in the quest to understand and exploit the natural environment, and to compete in the current competitive market, and therefore manufacturing firms should balance their environmental, economic, and social performance (Kahn, 2006; Erdil *et al.,* 2018). The challenge with a relational perspective on diversity is that differences of the individual within a group attract similarities of individuals outside the group; and subsequently, this impacts feelings of group identification (Roberson, 2019; Sudharsanan & Geldsetzer, 2019; Pirog *et al.,* 2019).

3.3.8.3 Diversity attitudes summary

The literature suggests that diverse attitudes (DA) are good towards diversity; however, the implementation of the diversity legislation is slow. Findings from the literature detail the conundrum of DA in South Africa due to the country having diverse inhabitants from racial, multi-/inter-/ultra-disciplinary backgrounds, resulting in a vibrant workplace.

Innovation culture hinges on the DA; the more diverse the organisation, the better the chance of innovation. South Africa is a diverse society with different racial groups and languages owing to the apartheid regime. Literature highlights that black people's wounds of the past are slowly healing, and in the automotive industry, they are starting to work together in units with great difficulty.

3.4 INNOVATION CULTURE

Literature suggests that a conducive innovation culture increases organisational performance. This section will conceptualise and define innovation culture and look at different factors influencing/driving it within an organisational context.

3.4.1 Innovation culture (IC) definition

Mckinley *et al.* (2014) defines innovation culture as "*the values, beliefs, assumptions, and symbols in an entrepreneurial venture that facilitates activities including, but not limited to, the pursuit of novel products, services, and/or production processes."* Nagy *et al.* (2016), Christensen (2013), Christensen, Raynor and McDonald (2015), and Shahzad *et al.* (2017) contend that innovation culture is widely acknowledged to increase organisational performance, which is supported by Malison (2015) and Michaelis, Aladin and Pollack (2018), who maintain that it also increases the performance of new products in new markets. Shahzad *et al.* (2017) and Michaelis *et al*. (2018) further maintain that it relates to new product performance, which is widely recognised to increase. Timothy *et al*.'s (2018) research found that ventures in the high innovation culture cluster had significantly higher profits and sales. There have been multiple measures and dimensions of innovation, although the disruptive innovation theory has to be defined and identified for the success of an organisation (Nagy, 2016; Pandit, Sahay & Joshi, 2017; Kumaraswamy, Garud & Ansari, 2018).

The South African automotive industry has become a technology colony – one capable of introducing and industrialising selected multinational technologies, but largely incapable of contributing to processes of global innovation (Black *et al.,* 2018). Environments may call for a quantum shift in the decision approach to managing innovation and competition to perform substantially better with respect of their quality, reliability, flexibility and innovation, rather than in terms of their cost competitiveness (Schoemaker *et al.,* 2018; Black *et al.,* 2018). Unfortunately, this industry finds itself

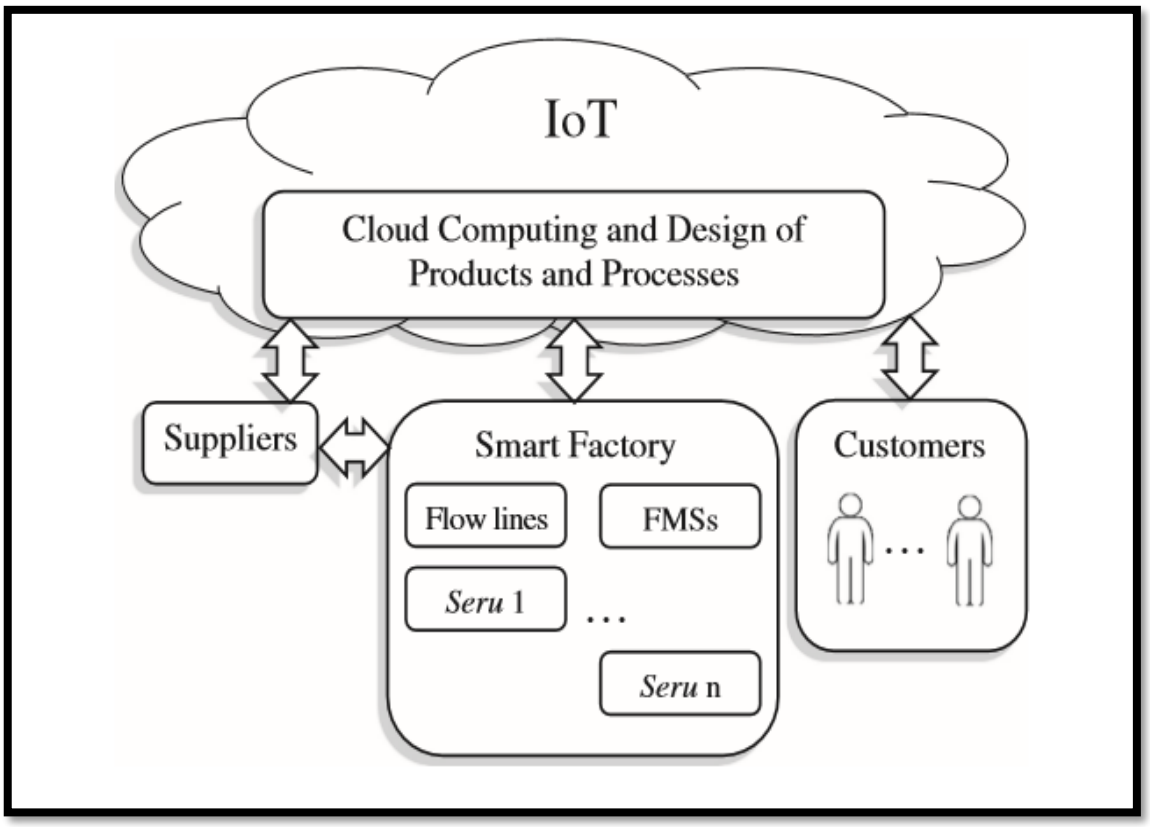
having to compete with multinational companies whose innovation practices and innovation cultures are far superior, as derived from the developed countries. Top managers and the government anticipate a much-needed pursuit through regulations of the new normal in the business environment and technological advancements of the sectors. According to Timothy *et al.* (2018), innovation culture relates to new product performance and thereby increases organisational performance. Entrepreneurs, practitioners and policymakers need to establish each sub-population benchmark across each innovation culture dimension in the industry to allow the use of culture as a metric for tracking innovation performance over time.

3.4.2 Factors influencing/drivers of innovation culture (IC) within the organisational context

The higher the possibility of innovation culture is, the higher the perceived company performance will be. The central role of innovation culture emphasises the symbolic meaning of systems that entrepreneurs use as toolkits to facilitate their pursuit of novelty. Since software now drives more automated machines and manufacturing processes, and robots execute much of it, the required number of workers is reduced (Sackey & Bester, 2016; Barnes, Black & Techakanont, 2017). Appropriate control philosophies/principles to organise manufacturing systems, using the internet of things (IoT) should be efficient, flexible, responsive, known and traditional manufacturing (total production systems [TPS], continual improvement process [CIP], and Six Sigma, as systems may fall short of achieving requirements that involve high technology (Zawadzki & Żywicki, 2016; Barnes *et al*., 2017; Yin, Stecke & Li, 2018). Moreover, management can make use of different mediums to improve their innovation culture through strategic leadership from top management while juggling job losses in the industry. Manufacturing factories should evolve to smart manufacturing systems resembling the fourth industrial revolution. Industrial 4.0 evolution dimensions are variety: products may be standard, depending on multiple models introduced by the company; and standard modules of hardware function for general customers (as some customers may participate in product design) (Rolls Royce and Ferrari have already begun this customer product design participation). Time: The product life cycle may be short due to frequent upgrading from individual customer preferences, and also lead-time may be shortened. Volumes: standard products may be uncertain, from the middle to high levels, depending on customer preference and the

influence on the market/public (Yin *et al.,* 2018; Lounsbury, Cornelissen, Granqvist & Grodal, 2019). Figure 3.6 illustrates a smart manufacturing system for the fourth industrial revolution.

Figure 3.6: Smart manufacturing system for industry 4.0



Source: Yin *et al.* (2018)

A future smart manufacturing system should be organised to conform with the above industry 4.0 customer demand dimensions, Figure 3.6 details the conceivable formation of the construction of IoT, and big data cloud-enables communication among customers, assemblers, suppliers and other service providers (Deloitte, 2015; Davies, 2018; Yin *et al.*, 2018). The first part is an information system (cloud computing and design of products and processes in Figure 3.6 that can act as the core of the smart manufacturing system). Customised modules and components are articulated during product design to realise participated individual customisation. An intelligent manufacturing system is a physical system that consists of a smart factory and its suppliers. The smart factory assembles or fabricates final products, platforms and modules. A smart factory can contain various production systems (that use flow lines, flexible manufacturing systems [FMS], Toyota

production systems [TPS], just-in-time organisation systems [JIT-OS], lean manufacturing etc.) (Yin *et al.,* 2018).

Overall, as a strategy for the future, the emphasis is placed on the need for a more targeted approach, a more reliable link between competitiveness and localisation, more robust efforts to promote technological upgrading, innovation, and skills development, and for a longer-term strategy to secure the completion of a proper learning process (Sackey & Bester, 2016; Black *et al.,* 2018). The fourth industrial revolution has always produced an innovation culture. Top management can enhance this evolution by seizing new opportunities and new networks. It is theoretically precise that South Africa is gearing up for the fourth industrial revolution to be counted among those countries that are embracing innovation. However, resource allocation and infrastructure development are slow. The skills offset due to new paradigms from the 4IR requires attention in the form of training, reconstruction of innovation cultures and new multi-disciples.

3.5 SELECTED PREVIOUS STUDIES ON CORPORATE DIVERSITY IN SOUTH AFRICA

A study by Gyapong, Monem and Hu (2016) examined how women directors and ethnic minorities influence firm value in post-apartheid South Africa. It concluded that the firms' value increases when three or more women are board directors. They further argue that ethnicity decreases the firms' value, whereas gender does not. Mazibuko and Govender (2017) explored workplace diversity and organisational effectiveness using an exploratory case study. The findings were that understanding and managing diversity had played a pivotal role in performance and efficiency. More specifically, diversity management created room for appreciation, innovation and creativity that gave organisations an edge to tackle diverse markets. Scholtz and Kieviet (2018) surveyed the influence of board diversity on company performance in South African companies. The study showed that the proportion of women on a board, the number of directors with a business qualification and board size are significantly and positively related to the performance of South African companies. However, the ethnic diversity of a board is significantly negatively related to performance.

Masuku (2018) focused on strategies for managing a racially diverse workforce in corporate South Africa. The study concluded that leaders need to be aware of external

factors and how team members' performances will be individually impacted. Sarhan, Ntim and Al-Najjar (2019) considered the link between board diversity, corporate governance, corporate performance, and executive pay. The study made three main findings: firstly, board diversity, as measured by director gender and nationality, has a positive effect on corporate financial performance; secondly, the relationship between board diversity and corporate performance is more potent in better-governed firms than their poorly governed counterparts; and thirdly, board diversity, as measured by director gender, ethnicity, and nationality, enhances the pay-for-performance sensitivity but not the actual executive pay. The results from a study by Brieger, Francoeur, Welzel and Ben-Amar (2019) revealed a positive single and combined framework of components on board gender diversity.

The above analysis displays that most studies on corporate diversity focused on the inclusion of women as the board of directors in the South African industry. They concentrated on gender bias, and most results reveal the concave relationship between race and organisational performance. Management is in full control of creating a conducive innovation culture through appreciation of corporate diversity; where creativity is promoted to give the organisation an edge to meet the needs of new markets. However, in better-governed firms, corporate diversity seems to be managed appropriately. Remarkably, from the above analysis, there is a vacuum of studies conducted in the automotive industry in South Africa, yet this industry could benefit from these strategies. The current study therefore explores the level of understanding as well as the operationalisation of corporate diversity with its seven practices, i.e. policy, HR practices, top management, demographic diversity, leadership, culture and attitudes about diversity in the automotive industry in South Africa.

3.6 SELECTED PREVIOUS STUDIES ON INNOVATION CULTURE IN SOUTH AFRICA

Morgan (2016) explored the relationship between cultural and informational diversity and innovation at MultiChoice South Africa. It was found that, within the context of innovation, cultural and informational diversity has been shown to produce the most notable results on workgroup performance. In the telematics and informatics sector, Roberts *et al.* (2016) studied the relationship between climate, environment and early human innovation. The study revealed that the remarkable cultural and technological innovations seen in the sites could not be linked directly to climate shifts. On the other hand, in the academic industry, an empirical study by d'Errico *et al.* (2018) focused on identifying early modern human ecological niche expansions and associated cultural dynamics in the South African Middle Stone Age. The study concluded that cultures have uniqueness, flexibility and the ability to produce innovation that allows a population to shift its ecological niche. In business review research by Bag (2018), it was found that supplier performance has a positive effect on sustainable innovation in supplier networks in the economic and social sectors. An emerging market study by Gupta and Gupta (2019) focused on innovation and culture as a dynamic capability for firm performance. It found that only process innovation has shown a significant impact on firm performance.

A predominant view, after analysing the studies above, is that there is a shortage of empirical research on innovation culture in the automotive industry in South Africa. The current study seeks to fill the research gaps and contribute to the body of knowledge in this area. Furthermore, there is much enthusiasm to develop an innovation model to ease the application of innovation in this industry.

3.7 CHAPTER OVERVIEW AND SUMMARY

This section deals with the chapter's summary. It considers all the literature review aspects in a snapshot format. Topics to be covered are research theories and corporate diversity; corporate diversity with its seven practices; and innovation.

3.7.1 Research theories and corporate diversity practices (CDP)

The chapter began by introducing two theories, namely the systems theory and disruptive theory based on current studies and provided a further definition of systems theory and disruptive theory. The reviewed literature suggests that both systems have never been applied to the automotive industry in South Africa. As such, the current study recommends the empirical application of these theories in the automotive industry's value chain. The current research variables (i.e., corporate diversity, innovation and perceived company performance) are presented, but despite the regulations (i.e., BEE Act, AA and EE) imposed by the government to foster inclusion while promoting corporate diversity in the automotive industry the adherence to these regulations is impaired. There is no proper monitoring/evaluation model that exposes perpetrators to the labour courts for consequential management; the BEE scoring card is not properly monitored. Consequently, the current study proposes that the scoring be linked to SARS, which will provide the necessary financial management while organisations are filling their returns.

3.7.2 Corporate diversity with its seven practices

Corporate diversity's seven practices are policy: the South African economy has not sufficiently diversified, which has unavoidably resulted in slow growth derived from inequalities, governance concerns, exchange rate volatility and policy uncertainty.

- Policy: Government should, therefore, have a clear, precise policy to regulate the automotive industry (Organisation for Economic Co-operation and Development [OECD], 2017; Klaus, 2017).
- HR practices: Industrial growth has a direct relationship with learning enhancement and task-interdependent work practices, which need to be monitored by the industry (Činčera *et al.,* 2019; Sánchez-Marín *et al.,* 2019).

- Top managers support: To address workplace tribulations such as hostility, and racial harassment more effectively to create a creative environment for innovative ideas, as well as support from other departments in the organisation.
- Demographic diversity*:* Where every structure in a society that deliberately or unintentionally exercises power against an inferior group, labour courts should publish the cases' detractors.
- Leadership: This filters a strategic decision and at the same catalyses the innovation culture. More leaders should ensure that business opportunities are not missed, and new markets are penetrated.
- Culture: Technological advancements such as implementing robots in the manufacturing factories require different automation investigations into the human-collaborative work environment as they will impact workplace tradition and culture adversely, leading to job losses.
- Attitudes about diversity: South Africa has two parallels (i.e., racial diversity and multi/inter/ultra-disciplinary). Therefore, the automotive industry could benefit from academic development, particularly interdisciplinary work on culture, race, and behaviour, which would be better explained by empirical research.

3.7.3 Innovation

There is an impoverishment of empirical research application of innovation culture in the automotive industry of South Africa; therefore, its value chain requires a detailed approach in implementation. The 4IR has always produced a disruption innovation culture, which is widely recognised to increase organisational performance, which launched new products and new markets/networks. However, the automotive industry needs to develop innovation hubs across the country to encourage and build an innovation culture. Also, the IoT deserves attention as it enhances smart manufacturing factories. The automotive industry in South Africa should further consider the 4.0 industrial revolution (Yin *et al.,* 2018).

3.7.3.1 Innovation summary

This chapter establishes innovation culture with reference to new product/service performance and thereby increases organisational performance. Moreover, it derived the key factors influencing/driving innovation culture within an organisational context.

Additionally, the evaluation of previous studies on innovation culture in South Africa was analysed.

Concerning the factors influencing or driving innovation culture, the literature indicated that the following innovation culture drivers, namely entrepreneurship, business practitioners and policymakers, are available. Moreover, it established that organisations need to establish a metric to track innovation performance over time for each sub-population benchmark across each of the three areas. Additionally, the literature suggests that top managers and government should anticipate a much-needed pursuit through regulations of the new normal in the business environment and technological advancements of the sectors.

Regarding manufacturing, findings from the literature detail that manufacturing factories should evolve into smart manufacturing systems resembling the fourth industrial revolution. It has been concluded that (i) industrial 4.0 evolution dimensions are products that may be standard in comparison with those in the market; (ii) the firm may introduce multiple products with different growth paths; (iii) they may standardise modules of hardware functions for general customers; and (iv) they may participate in product design (i.e. Rolls Royce, Ferrari etc.) to complement customer benefits. Therefore, top management can enhance this evolution by seizing new opportunities and new networks. Literature found that South Africa is gearing up for the 4IR to be counted among those countries that are embracing innovation. However, resource allocation and infrastructure development are slow. Importantly, the skills offset due to new paradigms from the 4IR require attention in the form of training, reconstruction of innovation cultures and new multi-disciplines.

With reference to scholarly knowledge of innovation culture, previous studies revealed an economic failure regarding the predominant views on innovation culture. The literature emphasised the shortage of empirical research on innovation culture in the automotive industry in South Africa. Remarkably, the majority of the literature review proves scarcity in studies conducted in the automotive industry in South Africa, yet this industry could benefit from innovation culture strategies. However, the literature reviewed suggested that management is in full control of creating a conducive innovation culture through the appreciation of corporate diversity, wherein, creativity is promoted to give the organisation

an edge to meet the needs of new markets. Furthermore, the literature reiterates that better-governed organisations seem to have better management of corporate diversity.

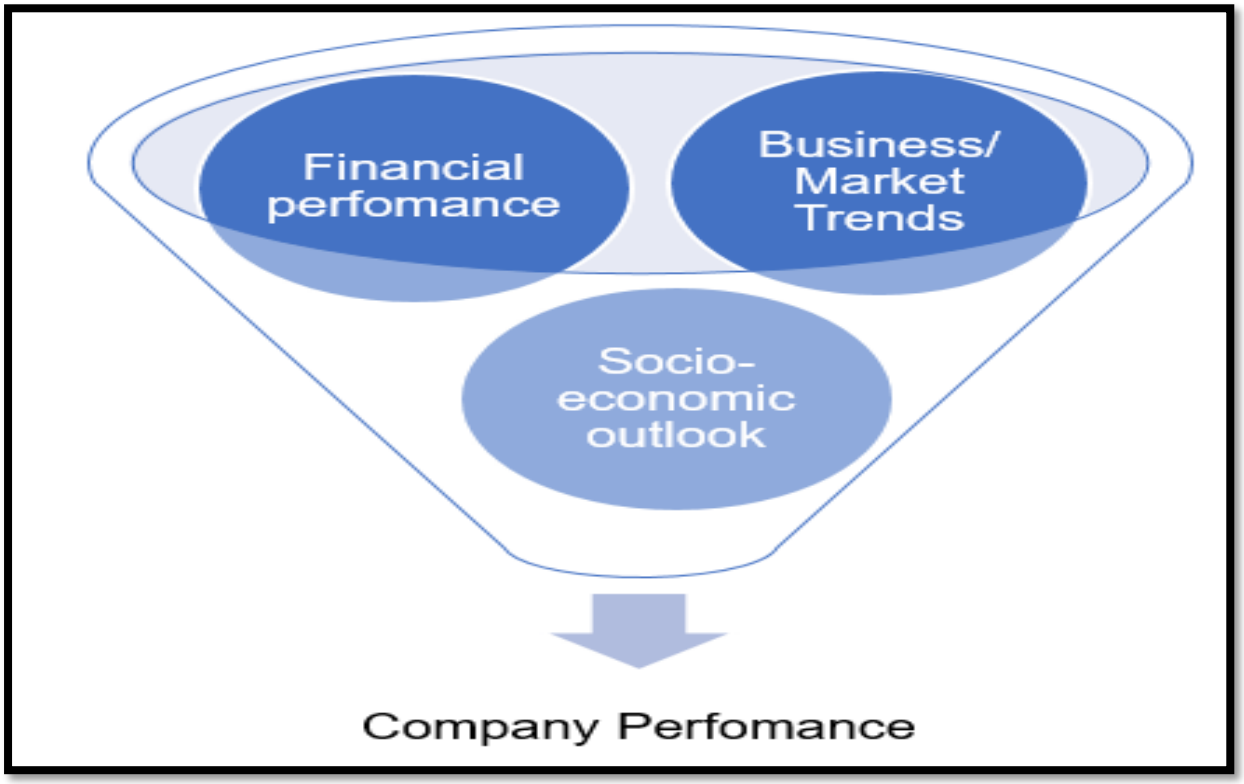
3.8 COMPANY PERFORMANCE (CP)

Company performance refers to numerous measurements comprising operational processes, management systems and competitive advantages of the organisation. It can be well-defined as a process that involves risk-taking in consideration of the nexus to innovation being a driver of growth and profitability (Garmann *et al.,* 2015; Putniņš & Sauka, 2019). The two major aspects, financial entitlement (i.e., investor ownership and an increase in enterprise value) and socio-economic outlook (i.e. internal-external relationships' complexity management) characterise company performance (Benková, Gallo, Balogová & Nemec, 2020). The literature suggests that it is composed of different measurements of how well the company implements its important parameters: categorically, financially, local/global markets and shareholders performance.

3.8.1 Factors influencing company performance (CP)

South Africa's manufacturing sector developed capabilities from networking and in collaboration with multi-national companies that developed products such as kits, leather seats, platinum (for catalytic converters), inexpensive labour (for harnesses), and heavy components (for wheel hubs, engine blocks, and other metal-bashing components) (Barnes & Morris, 2008; Gastrow, 2012; Rossouw & Rossouw, 2017). The automotive sector is particularly sensitive to the business cycle, and the short- and medium-term prospects of the industry are shaped by the conditions of the global economy (Gastrow, 2012; NAACAM, 2018). Company performance in the component, assembly and retail sectors augments comparative advantages in the global markets; and, in addition to financial performance drivers, contains several non-financial performance pointers, such as customer satisfaction, country and/or industrial legislation, socio-economic outlook and marketing performance (Garmann *et al.,* 2015; Javeed & Lefen, 2019). Figure 3.7 illustrates the key drivers of company performance. It mainly stipulates three major factors that influence it, namely financial performance, business/market trends and socio-economic outlook. It is vital to have these factors monitored and measured to the detriment of the automotive industry in South Africa.

Figure 3.7: Factors influencing company performance



Source: Author's own compilation

To confront the challenges of the South African emerging economy, the automotive industry needs to gauge company performance in three key changing characteristics of global chains, namely producer-driven, mergers and acquisitions, and intensification of competition (Barnes & Morris, 2008; Van Rooyen, 2018; Rossouw & Weyer, 2019). These strongly inform the nature and structure of operations that have led to the establishment of global players that have access to transparent and truly global information flows, resulting in either deterioration or growth of financial as well as company performance levels. Consistent innovation initiatives result in a strong positive relationship between company performance and risk-taking. Constructive risk-taking mirrors the principle of risk and return in financial investment scenarios (Putniņš & Sauka, 2019). To improve company performance, it is critical to monitor and respond correctly to current business trends, socio-economics, customer outlooks and legislation that affect the business; only then can the company make a profit and satisfy the expectations of shareholders (Benková, 2020). In the wake of a volatile South African currency and considering that most multinational companies are from developed economies, productivity through

company performance is of grave concern. Labour uncertainties, electricity blackouts, and COVID-19 have deteriorated its performance, especially in the automotive industry.

Organisational performance is characterised by rising financial entitlements that have led to competition in global markets, interdependence and internationalisation (Onuferova & Cabinova, 2018). All three dimensions, namely risk-taking, reactiveness and innovativeness contribute to company performance (Putniņš & Sauka, 2019). Innovation involves creating and introducing products, the production process and organisational systems, whereas renewal is considered as revitalising the company operations and/or products by changing the scope of its business, its competitive approaches or both (Banumathi, 2020). The characterised outcome of company performance in corporate enterprises involves the sum of company innovation, their business approach renewal and venturing efforts (especially in international markets).

3.8.2 Importance of company performance (CP)

The percentage of local content (including labour) in imported vehicles in 2017 was recorded as 35 per cent, on average, while the local content of some vehicles was recorded at 70 per cent (Rossouw & Rossouw, 2017). The National Association of Automotive Components and Allied Manufacturers (NAACAM) of South Africa estimated that the local content of locally produced vehicles was set at 38.5 per cent (Venter, 2017; NAACAM, 2018). Therefore, domestic vehicle assemblers and component firms have to achieve operational competitiveness. Multinational manufacturers of globally standardised vehicles can no longer tolerate poor performance from local component manufacturers and failure to conform to specific performance targets as a result of the transfer of business to a foreign operation (Rossouw & Weyer, 2019). Organisational performance in South Africa is prudent as it enhances the transformation of individual ideas into collective actions by managing uncertainties for better chances of competitiveness (Banumathi, 2020). The current study examines company performance with its five elements: perceived value; customer loyalty; market performance; financial performance; and environmental performance.

3.8.3 **Company performance summary**

Company performance literature reviewed concluded with three major factors that influence company performance, namely (i) financial performance, business/market trends and socio-economic outlook. It is vital to have these factors monitored and measured to the detriment of the automotive industry in South Africa; (ii) the characterised outcome of company performance in corporate enterprises involves the sum of company innovation, their business approach renewal and venturing efforts (especially in international markets); and (iii) the domestic vehicle assemblers and component firms have to achieve operational competitiveness. The following are the detailed conclusions drawn from the literature on company performance practices, namely perceived value, customer loyalty, market performance, financial performance and environmental performance.

3.8.4 Perceived value (PV)

Perceived value is defined as an exchange between wanted or needed qualities and expense qualities (Woodruff & Gardial, 1996; Yang, Yu, Zo & Choi, 2016). It is also understood as a pure prototype to embrace purpose, and perceived value in practice is about “value-in-use” (Yang *et al.,* 2016; Prebensen & Xie, 2017). Many scholars conceptualise and measure perceived value from the nature of value, an intellectual concept with a different meaning, that of value linked to perceived price through trade and transactional value (economic dimension), the cognitive and effective influence on product purchase, and brand of choice (psychological dimension) (Schechter, 1984; Dodds, Monroe & Gewal, 1991; Zeithaml, 1988; Gallarza, Gil-Saura & Holbrook, 2011; Yu *et al.,* 2017). In this study, the term ‘perceived value’ describes customers’ value perceptions as the term is synonymous with its consumer value or customer value (Yu *et al.,* 2017). It comprises qualitative and quantitative values as well as objective and subjective factors. This ratio of perceived benefit is relative to perceived sacrifice (i.e. a low price, whatever I want in a product [the needs], the quality I get for the price I pay [quality], and what I get for what I give [value]) by consumers (Schechter, 1984; Zeithaml, 1988; Dodds *et al.,* 1991; El-Adly, 2019). Therefore, this multidimensional definition gives way to customer satisfaction and therefore promotes customer benefit and customer loyalty, two critical attributes of a company's perceived value that any organisation strives to achieve (El-Adly, 2019).

3.8.4.1 Factors influencing perceived value

The main drivers for perceived value are consumer-perceived price, quality and the actual value of the product based on the market performance (Zeithaml, 1988; Yang *et al.,* 2016; El-Adly, 2019). Consequently, the expertise of the manufacturer matters as consumers consider brand strength in association with the manufacturers or company producers (i.e. Toyota manufacturing/company is perceived differently from Mercedes-Benz's manufacturing/company in the market). It is important that the South African automotive industry should pay attention to both quality and perceived quality to be competitive in global markets. Greater value originating from the total experience with service is one of the most critical means of generating customer satisfaction and customer loyalty (Kesari, & Atulkar, 2016; El-Adly, 2019). The actual value is derived from an income statement and balance sheet, which are the main drivers of the perceived value. Quality refers to a product being suitable for its intended use (fitness for purpose), while satisfying customer expectations. Goods and/or services and the manufacturing process encompass many types of processes, procedures, equipment, personnel, and investments, which all require quality management (Zeithaml, 1988; Nanda, 2016; Kaphle, 2020). Quality can be defined broadly as superiority or excellence, whereas perceived quality is different from objective or actual quality. It has a higher level of abstraction rather than a specific attribute of a product, a global assessment that in some cases resembles attitude, and judgement is usually made within a consumer's evoked set. This value chain has a perceived value dependent on the efficacy of the company's performance management (Zeithaml, 1988; Mehdipour *et al*., 2020).

The outcomes of perceived value are customer loyalty, market share, financial performance, investor outlook, brand loyalty, and customer satisfaction. Perceived value characterises the business exchange between the benefits received and the sacrifices made to get those benefits of what is received (volume/quality/convenience) and what is given (money/time/effort). It varies across customers, the consumer's perspective and the price that is sacrificed to obtain a product, and therefore customers estimate perceived value based on considering all relevant benefits and sacrifice factors (Zeithaml, 1988; Kim, Chan & Gupta, 2007; El-Adly, 2019). Perceived value is important to the automotive industry as an attribute of innovation, which, in turn, increases company performance leading to customer loyalty.

3.8.4.2 Perceived value summary

The current study adopted a multidimensional definition of perceived value, namely customer satisfaction and customer loyalty. Customer satisfaction has quality perceptions and attributes (i.e., value for money/service, brand of choice and comfort), and these promote customer benefit. Customers get what they want, when they want it, at an affordable price, and value for money, whereas customer loyalty includes brand and service outlets' (i.e., quality, respect, customised service) appeal to customers.

The chapter establishes the actual value that originates from an income statement and balance sheet; these are considered the main drivers of the perceived value. Perceived value is linked to perceived quality, which is different from objective or actual quality. Quality broadly refers to superiority or excellence and is reliant on the eyes of the beholder. It has a higher level of abstraction rather than a specific attribute of a product, a global assessment that in some cases resembles attitude, and judgement enhanced by perceived value is usually made within a consumer's evoked set. The study observed outcomes of perceived value as customer loyalty, market share, financial performance, investor outlook, brand loyalty, and customer satisfaction. All of these attributes are characterised by the business exchange between the benefits received and the sacrifices made to get those benefits received (volume/quality/convenience) and sacrificed (money/time/effort).

3.8.5 Customer loyalty (CL)

Customer loyalty is defined as a measurement of the likelihood that customers will continue doing business with a certain company or brand of choice (Greene, 2020). Acknowledging the background of customer value and appreciating that this customer value is considered as the vital fundamental requirement in gaining differential and/or competitive advantage (Woodruff, 1997, Yu *et al*., 2017; Akhmedova, Marimon & Mas-Machuca, 2020). Customer satisfaction is critical and also a determination for any service organisation to maintain long-term benefits of satisfied customers that result in positive word-of-mouth comments, customer loyalty and sustainable profitability (Liu & Jang, 2009; Tanford, Raab & Kim, 2012; Yu *et al.*, 2017; Prebensen, & Xie, 2017; Akhmedova *et al.,* 2020). Customer behaviour encompasses risk as a result of product usage of future knowledge (i.e., product usage is likely to be unsatisfactory in the future) (Nanda, 2016;

Yu *et al.,* 2017; Molinillo, Anaya-Sánchez & Liébana-Cabanillas, 2020). Consequently, innovation at the centre of the value chain is the key to achieving a differential and competitive advantage in favour of customer loyalty.

3.8.5.1 Factors influencing (drivers or antecedents) customer loyalty

Customer loyalty necessitates various developments of successful strategic goal ambitions. Three customer considerations are required: firstly, a platform provider enabling exchange; secondly, a peer service provider offering the same services (i.e. manufacturing, assembly and retail); and lastly, customer needs (in terms of assets, products, service etc.) (Benoit, Baker, Bolton, Gruber & Kandampully, 2017). Furthermore, enhancing customer loyalty requires three dimensions: (i) organisational information care that is customer relationship management (CRM) philosophy; (ii) market responsiveness and reliability; and (iii) customer interaction with other suppliers (Benoit, *et al.,* 2017; Akhmedova *et al.,* 2020). These are critical for the company's survival and without innovation implementation, they are difficult to achieve.

Interaction promotes trust towards industry and its products manufactured (i.e. increasing output in its compensation policy, transaction security and communication with customers), whereas ease of efficacy deals more with the relationship between the supply/manufacturer and its customers (i.e. customers' lead time towards a manufacturer/supply negotiation and product quality management); and online, which focuses on good search engines, transaction securities in internet search engines, and post-purchase support (Obal & Kunz, 2016; Akhmedova *et al*., 2020). Taking cognisance of natural disasters and pandemics such as COVID-19, e-commerce is taking precedence, and therefore the automotive industry in South Africa should develop capabilities to compete on this platform. Table 3.1 presents the outcomes of customer loyalty, and highlights three areas of focus: interaction, ease and efficacy, and online e-commerce (online).

Table 3.1: Outcomes of customer loyalty

Outcome	Action to enhance customer loyalty	Example
Interaction	Transaction security	Services that require long-term interaction
	Compensation policy	
	Communication with support	
	Communication with peer suppliers	
	Controlling the quality of the peer service	
	Quality of peer evaluation	
	Education peer providers	
Ease and efficacy	Providing means to communicate with the peer providers	Spot-basis services
	Education peer providers	
Online	Good research engines	Marketplaces that provide exchange of ownership standardise services
	Transaction security	
	Compensation policy	
	Post-purchase support	

Source: Akhmedova, Marimon & Mas-Machuca (2020)

Displayed in Table 3.1 are services requiring long-term interaction. The outcomes of customer loyalty are important in the marketplace as they provide an exchange of ownership and standardise service in the industry, where market performance is critical.

3.8.5.2 Customer loyalty summary

Key specific drivers of customer loyalty require several stages of implementation and strategic focus. Moreover, it was established that three major customer factors are required, namely (i) a platform provider enabling exchange; (ii) a peer service provider offering the same services (i.e., manufacturing, assembly and retail); and (iii) customer needs (in terms of assets, products, service etc.). Improving customer loyalty requires three dimensions: (1) organisational information care that is a customer relationship management (CRM) philosophy; (2) market responsiveness and reliability; and (3) customer interaction with other suppliers.

This chapter observed outcomes of customer loyalty that are important in the marketplace as they provide an exchange of ownership and standardise service in the industry where

market performance is critical. However, the marketplace is dynamic and endeavour changes, i.e. pandemics such as COVID-19, affected the leading marketing platforms. Therefore, the automotive industry in South Africa should develop capabilities to compete in e-commerce platforms. This competitiveness is enhanced by customer loyalty, highlighted by four areas of focus: (i) interaction, (ii) ease, (iii) efficacy, and (iv) online e-commerce.

3.8.6 Market performance (MP)

Market performance refers to the suppliers who use economic resources efficiently towards benefitting customers in the automotive industry while increasing the organisational stock performance (Pass, Lowes & Davies, 2005; Denise, Evans, William & Evans, 2007; Erdem, 2020). According to Feldman, Amit and Villalonga (2019), “The stock market performance of acquiring firms is highest when family firms buy businesses from non-family firms, relative to the other possible combinations of family and non-family firm acquirers and divestors.” Consequently, investors deliberate on both acquiring and divesting firms when examining acquisitions and divestitures that are crucial in anticipating market performance (Feldman *et al.,* 2019). However, the economic challenges during COVID-19 might have been suppressing the stock market performance and firm value in emerging economies (Erdem, 2020). Some organisation market performance, therefore, might have been affected in the South African automotive industry.

3.8.6.1 Factors influencing (drivers or antecedents) implementation of market performance practices

The main drivers of market performance are price, product and service in global ventures. Customer value accomplishment of all advantages leads to increased market performance (Kaleka & Morgan, 2017). Price advantage has a direct positive effect on market performance, while the strong positive effect of service advantage is further strengthened (and the non-significant effect of product advantage becomes negative) when the distributor has high-quality relationships with overseas customers and there is available production capacity, even in technologically turbulent environments (Kaleka & Morgan, 2017). In evaluating acquisitions and divestitures, market performance has significant implications for the expected performance gains of these transactions/trade in

business platforms (Feldman *et al*., 2019). Product innovation enhances the competitive advantage of a firm, although reasonable pricing may be critical to exploit product innovation (Falahat, Ramayah, Soto-Acosta & Lee, 2020). Market performance therefore requires excellence in all antecedents (i.e., manufacturing, innovation, price, product, service logic etc.) to create customer/consumer loyalty and requires multiple achievements to develop a successful strategy (Akhmedova *et al.,* 2020).

The market performance outcome measures considered in this study include productive efficiency, distributive efficiency, perceived value (setting of fair prices to consumers), product performance, technological progressiveness, quantity traded, and net returns (Abdul-Rahaman & Abdulai, 2020). Consequently, the response to exploration or exploitation in cross-border mergers and acquisitions by emerging multinational companies are based on the stock market performance of firms. Exploration-oriented acquisitions are learned tacit knowledge from target firms, whereas exploitation-oriented acquisitions involve explicit knowledge (Zhang, Lyles & Wu, 2020). The survival of most firms relies on market performance, otherwise, those poorly performing firms are not immune from mergers and acquisitions, which, consequently, change their footprint, culture and value chain. Mergers and acquisitions hold both job loss and job creation roles in the job market while considering the financial performance of the firm.

3.8.6.2 Market performance summary

Literature indicates that the automotive firm's market performance affects the industry's global competitiveness in the South African automotive industry. The main drivers of market performance are price, product and service in global ventures. Price advantage has a direct positive effect on market performance, and product innovation enhances the competitive advantage of a firm. Additionally, market performance requires excellence in all antecedents (i.e., manufacturing, innovation, price, product and service logic). Therefore, responses to exploration or exploitation in cross-border (i.e., country-to-country) mergers and acquisitions by emerging multinational companies are based on the stock market performance of firms.

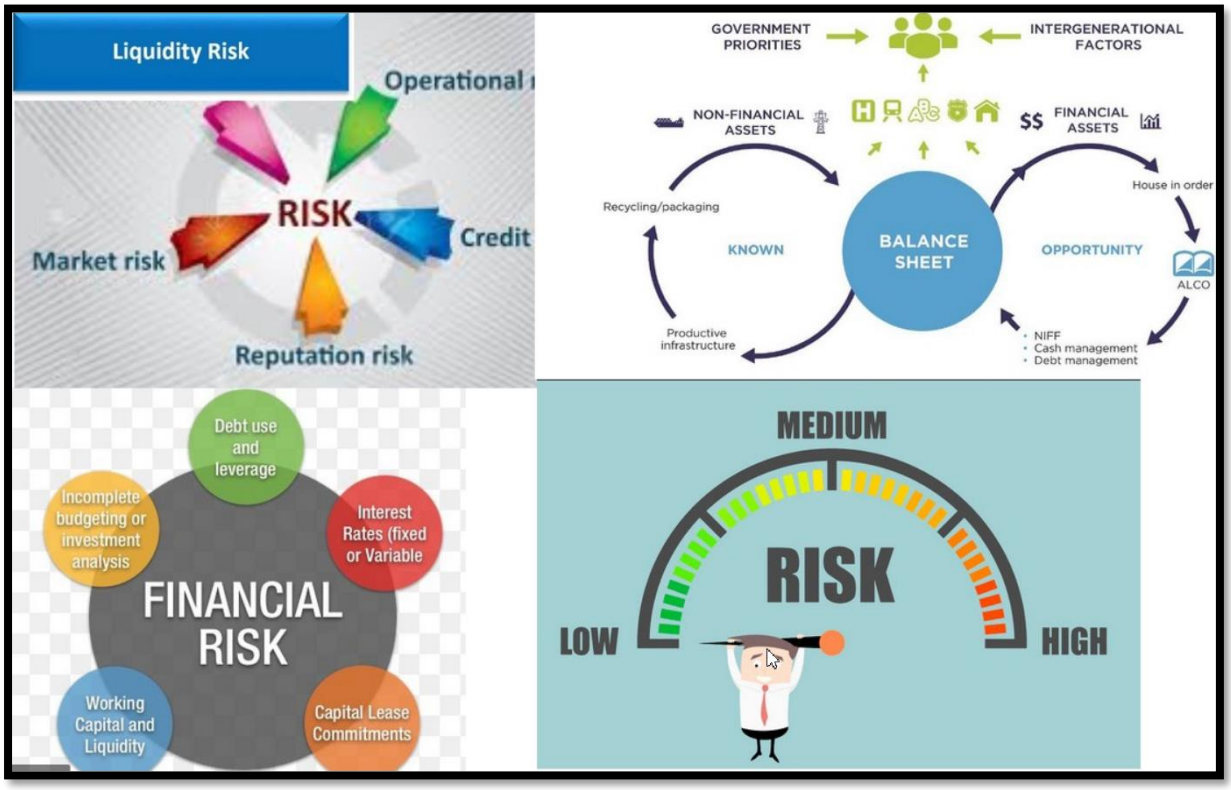
3.8.7 Financial performance (FP)

In the financial management world, a consideration of risk management is the procedure of classifying, evaluating, accepting or reducing uncertainty about investment decisions (Trujillo-Ponce, Samaniego-Medina & Cardone-Riportella, 2014). A generally utilised definition of financial performance resulting in investment risk is the rate of nonconformity from a predictable outcome (Shattuck, Slaughter & Zonneveld, 2017). This amount of deviation can be positive or negative (no pain, no gain) (Trujillo-Ponce *et al.,* 2014; Shattuck *et al.,* 2017). When an investor or fund manager tries to establish the probable risk of investment losses and then takes appropriate action with investment measures and risk tolerance, a risk management philosophy has to be considered (Mohammadnazar & Samimi, 2019). Financial performance in this study therefore is defined as the result of measurements employed by an organisation through its policies, manufacturing procedures and operations (i.e., supply chain, HR functions etc.) in monetary terms given risk assessment (Karami, Samimi & J''fari, 2020). To achieve higher revenues in the long run, risk must be taken in the form of fluctuations in the short and long term, and investors use a variety of methods to identify risk (Shattuck *et al.,* 2017; Mohammadnazar & Samimi, 2019; Karami *et al.,* 2020). These influence the market performance direction and consequently the company's share in market platforms.

3.8.7.1 Factors influencing (drivers or antecedents) financial performance

International competition and innovation/technological advances have made business environments more complex (Karami *et al.,* 2020). Considering risk, companies are divided into chancy and risk-averse; and investors in the stock market act rationally to demand the expected revenue in exchange for accepting a certain amount of risk (Mohammadnazar & Samimi, 2019; Karami *et al.,* 2020). The volatility of the stock market is influenced by major political and disaster developments that are usually unpredictable and can have a serious impact on this market and is one of the critical drivers of financial performance (Karami *et al.,* 2020). Another important factor in the stock market is the foreign exchange market; where the price of a currency depends on a variety of factors and conditions. Sometimes, sudden variables affect it, and participation is associated with greater risk. Figure 3.8 details methods of financial risk management in a company.

Figure 3.8: Methods of financial risk management in companies



Source: Karami *et al.* (2020)

The first step in financial risk management in the stock market is to identify the risk (i.e. various factors that reduce profits or losses and the loss of capital value). Then financial risk management is prepared to respond to the risks (i.e., market risk, reputational risk, credit risk and operational risk). Another issue, especially for stockbrokers and stockholders, is the direct monitoring of various probabilities and variables; shareholders, in particular, prefer a calculated low-risk participation (Karami *et al.,* 2020). Consequently, striking the balance between the non-financial and financial factors as a result of government properties and intergenerational factors increases the financial performance of the company. However, this also links to business operational environments and the environmental legislations thereof.

3.8.7.2 Financial performance summary

Literature findings generally disclosed that the definition of financial performance resulted in investment risk. Consider the fund manager who tries to establish the probable risk of investment losses and then takes appropriate action with investment measures and risk

tolerance. Consequently, financial performance in this study is defined as the result of measurements employed by an organisation through its policies, manufacturing procedures and operations. Therefore, risk must be taken in the form of fluctuations in the short- and long term, and investors should use a variety of methods to identify risk, namely the financial performance direction and therefore the company's share in market platforms.

3.8.8 Environmental performance (EP)

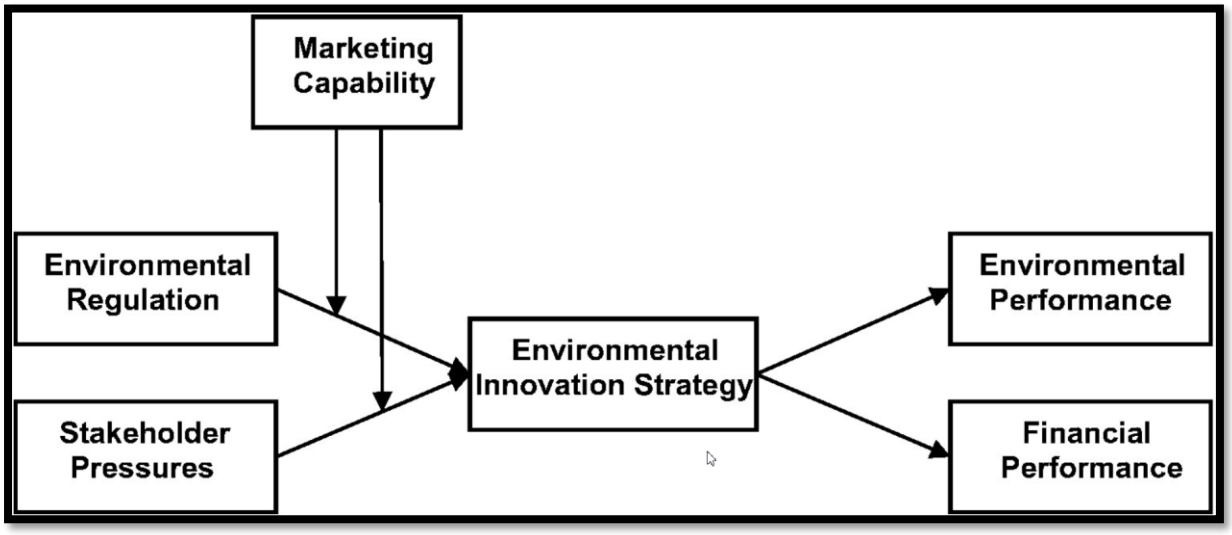
A great amount of pressure from stakeholders to implement environmental management initiatives has become the rule of business/firms across the industry and globally to engage in the green process and product development (Yu, Lee, Ha & Zo, 2017). Environmental performance in this study refers to competitive and partners' pressure; government support and policy; manufacturing systems; market turbulence; and institutional-based trust (Yadgaridehkordi *et al.,* 2018). Organisations are required to address the intricacy of environmental sustainability issues and respond in a manner to handle diverse stakeholder pressures by relying on intangible resources (Singh & El-Kassar, 2019; Singh, Del Giudice, Chierici & Graziano, 2020). Other important environmental factors include sourcing of raw material (i.e., extraction and production), vehicle manufacturing and assembly, vehicle distribution, and fuel source (i.e. production and distribution) that impact tailpipe emissions (ASG, 2020). These elements influence the legislation by Governments to ensure green zones otherwise known as pollution-free industries.

3.8.8.1 Business environmental performance

Business environmental regulation and environmental innovation strategy related to performance measurement are both needed; and the firm is required to respond based on its innovativeness towards developing a long-term environmental strategy and adapting to marketing needs (James, 1994; Yu *et al.,* 2017). Business influence on environmental policy through its activities can be expected to actively support such environmental measures towards new regulations. The success of business attempts to influence policy will depend on the quality of environmental knowledge, values in society and the government agencies responsible for protecting and conserving the natural environment (Blohmke, Kemp & Türkeli, 2016; Yu *et al*., 2017). Some of the

measurements have resulted in Environmental Performance Vehicles (EPV), previously known as Design Line Corporation (DLC), which is a manufacturer of coach, electric, and range-extended electric (hybrid) buses founded in 1985 (Tuton & Luo, 2019). The results obtained permit one to speak about the efficiency of using CNG as a motor fuel in a turbocharged diesel engine to reduce the smoke content of the exhaust gases, and consequently the soot content in the exhaust gas (Likhanov & Rossokhin, 2020). Figure 3.9 details the environmental innovation strategies' moderation effect towards environmental performance, financial performance and environmental regulation of stakeholders with influence from market platforms and market capabilities.

Figure 3.9: Environmental strategies



Source: Yu *et al*. (2017)

The influence of environmental innovation strategy on firm performance is not straightforward. Environmental regulations positively influence performance despite common knowledge that they negatively influence economic competitiveness, adversely enhance opportunities for more innovative strategies, and ultimately improve their financial performance in their business environments (Yu *et al.,* 2017). Innovation-based sustainability strategies can be new products, processes and technologies intended to reduce the environmental impact of business activities, or improve energy and material efficiency (Yu *et al.,* 2017; Karami *et al.,* 2020). This reduction of environmental impact needs to be driven by all stakeholders within the firm and the automotive industry in South Africa.

3.8.8.2 Natural environmental performance: Corporate social responsibility (CSR)

Environmental regulations are crucial in preventing the impact of economic activity on the natural environment and are part of corporate social responsibility (Blohmke *et al.,* 2016). Conversely, they come at a significant cost to businesses and manufacturers in particular (Li *et al.,* 2016). Climate change and the need for the expansion of renewable energy, together with environmental wastes are targeted in green manufacturing. Countries with advanced environmental policies tend to exert competitive pressure on countries lagging behind in implementing their environmental policy (Blohmke *et al.,* 2016). Clean technology is the major influence in the policy-making process, and environmental policy remains the driving force of environmental performance (Li *et al*., 2016). For example, income effects have remained the primary driving force to make this change, and such a role has shown a steady increment in the level of carbon intensity in central China (Li *et al*., 2016). On the other hand, the global trend to boost internal combustion engines, including diesel, primarily in terms of average effective pressure, leads to an increase in the average cycle temperature, which has led to an increase in the thermal tension of parts and the content of soot in exhaust gases (Likhanov, & Rossokhin, 2020). Therefore, all automotive firms need to prioritise the implementation of environmental regulations.

Companies with a higher competence to use scarce resources to achieve the desired outcomes are likely to achieve higher performance, even though environmental regulations come at a significant cost on businesses and manufacturers in particular (Li *et al.,* 2016). In the past, the company and consumers relied solely on environmental performance assessment (EPA) estimated miles per gallon (MPG) ratings and generic EPA reported tailpipe emission scores to assess automotive environmental performance, whereas the environmental lifecycle assessment today is conducted by the Automotive Science Group (ASG) (ASG, 2020). Therefore, a reduction in emissions is expected as groups like these perform policing on automotive environmental impact.

3.8.8.3 Environmental performance summary

The current study concluded on two dimensions of environmental performance, namely the business environment and the natural environment. These require different regulations, and environmental innovation strategies related to performance

measurement are both needed. Literature imposes legislation as the major detector for natural environmental preservation; this policy is well observed in Europe as they are currently on Euro 6, unlike South Africa which is currently aiming for Euro 6 legislation implementation on carbon emission. Consequently, a reduction in emissions is expected as groups like these perform policing on automotive environmental impacts. The influence of environmental innovation strategy on firm performance is not straightforward. Environmental regulations positively influence performance despite common knowledge that they hurt economic competitiveness. Another important factor in the stock market is the foreign exchange market; when the price of a currency depends on a variety of factors and conditions. Consequently, striking a balance between the non-financial and financial factors as a result of government properties and intergenerational factors increases the financial performance of the company. However, this also links to business operational environments and the environmental legislations thereof. Environmental factors include the sourcing of raw materials (i.e. extraction and production), vehicle manufacturing and assembly, vehicle distribution, and fuel source.

3.8.9 Selected previous studies on corporate performance in South Africa

Previous scholarly work reported by different authors on corporate performance in South Africa has been consulted. Mugobo, Mutize and Aspeling's (2016) study focused on the ownership structure effect on firm performance in South Africa. This study found a positive and significant correlation between ownership concentration, government ownership and firm performance, and showed a negative relationship between insider ownership and firm performance. Dzingai and Fakoya (2017) conducted research on the effect of corporate governance structure on the financial performance of Johannesburg Stock Exchange (JSE)-listed mining firms. This study recommended that South African companies see compliance with the recommendations of the King IV Code on Corporate Governance not as a liability but as an ethical investment that may likely yield financial benefits in the long term. Tshipa, Brummer, Wolmarans and Du Toit (2018) examined the impact of flexible corporate governance disclosures on value relevance from empirical evidence from South Africa. The findings suggest that the net asset value per share is value-relevant in South African listed firms and also when the boardroom is largely independent. Dube (2018) investigated an analysis of the effects of ownership on capital structure and corporate performance of South African firms and found that foreign

ownership and ownership by other shareholders had positive effects on corporate performance. On the other hand, Dzomira (2020) investigated corporate governance and the performance of audit committees and internal audit functions in an emerging economy's public sector. This investigation determined that the absence of advice, implementation of recommendations and inadequacy of resources have undermined the performance of audit committees and internal audit units in South Africa's public sector. A study undertaken by Anwana (2020) on social justice, corporate social responsibility and sustainable development in South Africa concluded that for South Africa to achieve sustainable economic transformation, the business community along with other stakeholders must participate in ensuring social justice and socio-economic development for its previously disadvantaged people; promoting the implementation of BEE Act, AA, EE policies that would ensure full participation of the country's demographic groups.

Having reviewed the previous scholarly work on corporate performance above, it can be concluded that most South African automotive literature does not address corporate performance in the automotive industry, especially looking at ACMs, OEM, the independent aftermarket and retail motor industry (RMI), and original equipment supply (OES). Studies conducted in other sectors have also not dealt with corporate performance as an outcome variable stimulated by innovation culture (IC) in the automotive industry. Evidence of previous studies that deal with cooperate diversity, innovation and perceived company performance in the South African automotive industry is rare. There is merit and justification for the current study exploring the nexus between corporate diversity, innovation, and perceived company performance. This research therefore deserves and requires full empirical attention.

3.8.10 Sources of literature

The current study offered a wide-range review of the literature discussed in Chapters 2 and 3. Chapter tw2o primarily focused on the background of the automotive industry in South Africa to better determine the research context from a broader perspective and understanding, including unique characteristics and challenges facing the industry. The chapter was devoted to understanding the composition, and legislation followed by the industry, as well as its contribution to the GDP. Manufacturing challenges such as the inevitable 4IR concerning labour relations, productivity and market penetration through the use of innovation culture were discussed. It revealed the gaps through the discussion

of the manufacturing challenges and made suggestions for improvements and recommendations, such as installing the innovation hubs in the automotive sectors of the industry. This chapter found a void in the modelling of corporate diversity, innovation and company performance, thereby justifying the direction assumed in the study.

The information found in the literature review was obtained from various sources. The literature referred to the gathering of academic writings on a topic, which includes peer-reviewed articles, textbooks, dissertations and conference papers, all of which were primary sources (Galvan, 2013; Cady, 2020). The widely accepted definition of the term primary source is used broadly to refer to the original information; this includes original reports of research found in academic journals detailing the methodology used in the research, in-depth descriptions, and discussions of the findings (Cady, 2020). The researcher focused on these primary sources, as they provided first-hand information according to the current study objectives; other common primary sources such as letters, government official reports, speeches, drawings and autobiographies were also consulted. Many scholars regard secondary sources as sources that provide non-original or second-hand data or information; therefore, secondary sources are written about primary sources (Galvan, 2013; Cady, 2020). For the current study, secondary sources such as textbooks, newsletters, magazines, newspapers, internet blogs, internet websites and biographies were sourced. This information was achieved through computer-based search engines such as Google Scholar, Bing, Firefox, Microsoft Edge and the UNISA library system for journal searches and book searches, all of which were sourced.

3.9 CHAPTER CONCLUSION

Systems theory and disruptive theory were used to anchor the current study, while a Denson model to monitor and evaluate corporate diversity with its seven practices was recommended for the South African automotive industry.

Empirical studies in the management of sciences and knowledge management systems are receiving much-desired attention across all industries and disciplines, especially as enterprises are challenged by 4IR. The reviewed literature on innovation culture displays that innovation has a positive influence on organisational performance. With 4IR changing the business environment, it was discovered from the literature that incremental innovation and radical innovation as part of disruptive innovation theory are vital to penetrate new markets, new supply chains/networks and new products. However, as human resources are critical as well as essential parts of the organisations, it is important to approach this innovation culture enhancement with the sensitivity it deserves. Importantly, corporate diversity is at the centre stage more than ever in the South African economic landscape. Therefore, innovative ways to implement are on the rise. The burden of this approach on top managers as they organise company resources and should also consider that all other departments (i.e., HR, finance, manufacturing) are in sync. Without a clear, precise policy to steer the industry in global markets, it faces serious risk. A monitoring and evaluation model is much needed, and the labour courts should be given more information/details to bring perpetrators to book.

Inconsistent results to implement policies fostering the BEE Act, AA and EE Acts are unfortunately delaying the diversification of the economy, thereby excluding black South Africans to senior executive boardrooms of large multinational companies (MNCs). There is a need for the automotive industry value chain of South Africa to create innovation hubs to encourage participation and increase company performance in competing with global markets. Grounded on the evidence of literature, this chapter suggests that corporate diversity increases company performance, especially moderated by innovation and innovation culture. The next chapter looks at the development of the hypotheses.

CHAPTER 4
CONCEPTUAL MODEL AND HYPOTHESES DEVELOPMENT

4.1 INTRODUCTION

This chapter recommends that innovation mediates the relationship between corporate diversity and perceived company performance, and therefore it pursues to hypothetically answer the question: “Does innovation mediate the relationship between corporate diversity and perceived company performance?”

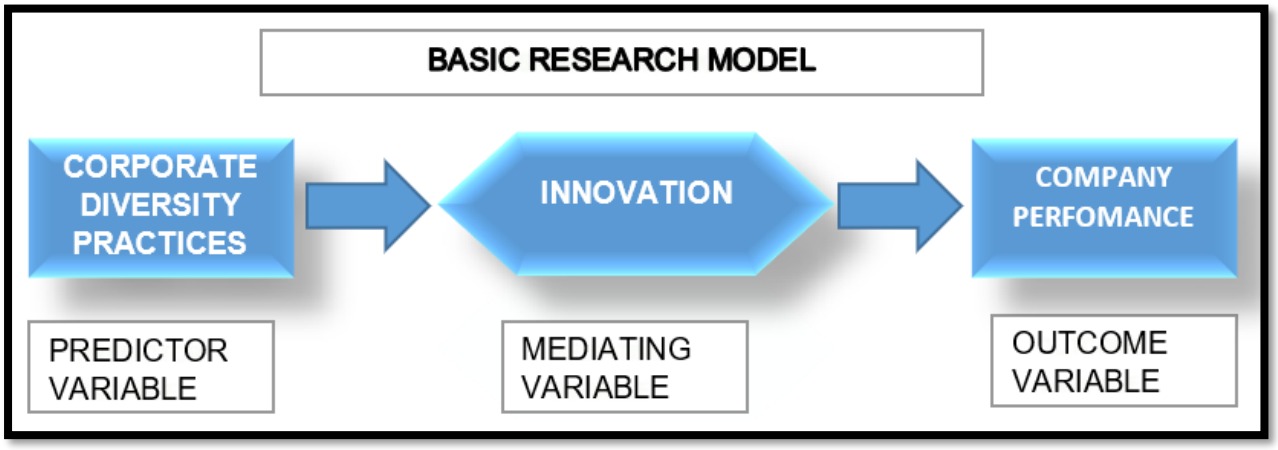
4.2 BACKGROUND OF THE THEORETICAL FRAMEWORK

The conceptual model for this research study, as discussed in Chapter 1, is backed up by the literature review from the previous chapters. This section also outlines the significance of each hypothesised relationship and the empirical evidence that supports the hypotheses. Figure 4.1 displays the overall basic research theoretical framework under consideration in the study.

4.3 BASIC RESEACH MODEL FOR THE STUDY

Figure 4.1 presents the basic research model of this study. The figure shows that the study will conceptually examine three variables, namely corporate diversity as the predictor variable; innovation as a mediating variable; and company performance as the outcome variable.

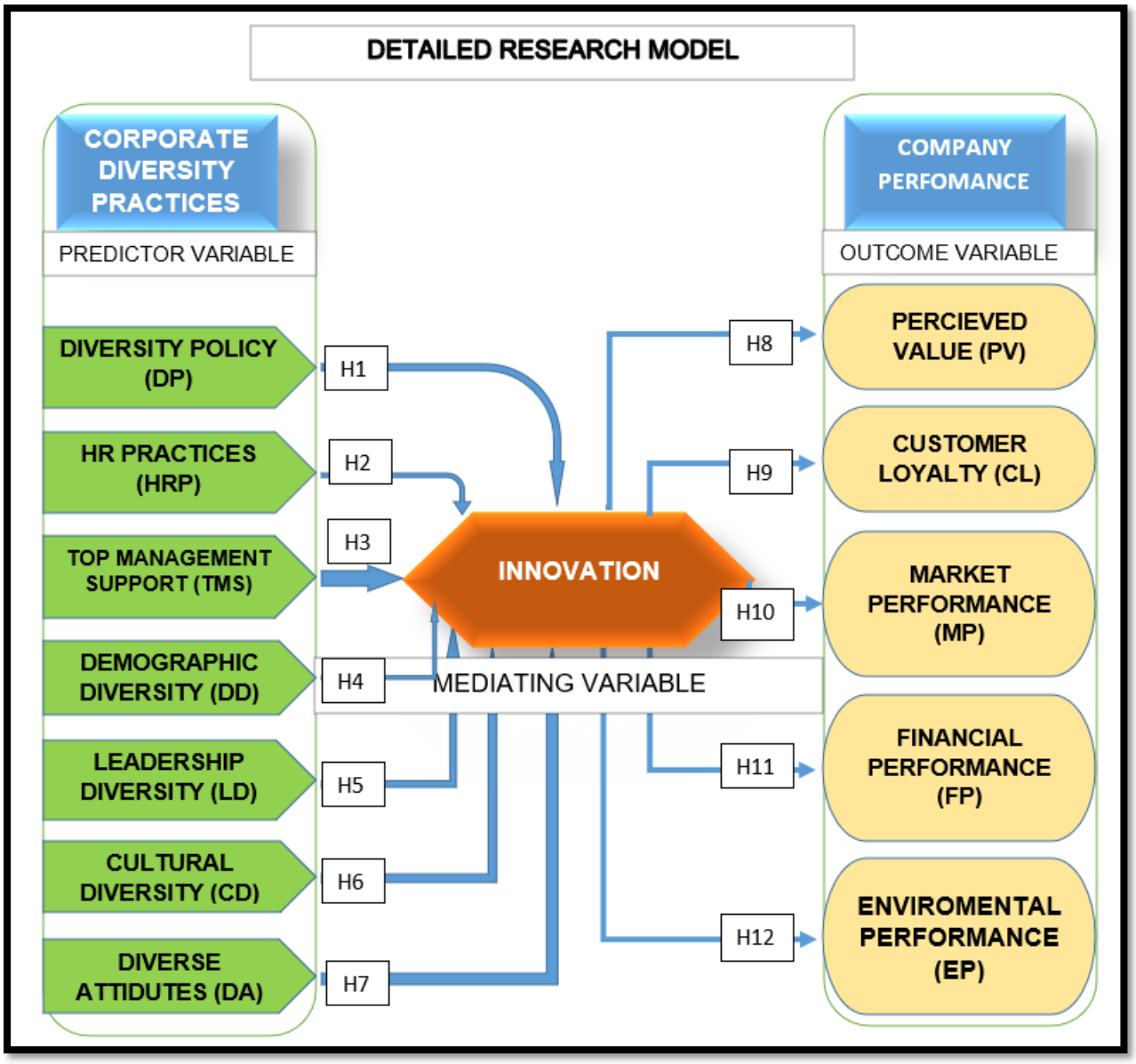
Figure 4.1: Basic research model for the study



Source: Author’s own work

Since corporate diversity and company performance are multidimensional constructs that have numerous sub-components, it necessitated the provision of an exploded view of the theoretical model. This model (Figure 4.2) presents the detailed subcomponents of each construct and the proposed relationships.

Figure 4.2: Detailed research model



Source: Author's own work

The model (Figure 4.2) illustrates the relationship between the predictor variable (corporate diversity with its seven constructs), innovation (mediating variable), and the outcome variable (company performance with its five dimensions) in the automotive

manufacturing industry in South Africa. A total of 12 hypotheses were developed for the study.

Literature evidence will determine whether the relationship is as claimed in the question in the introduction (Does innovation mediate the relationship between corporate diversity and perceived company performance?). Hypothesis discussions from H1 to H12 will determine the impact of the relationship in the organisational and manufacturing sector as well as the whole automotive industry.

4.4 RESEARCH HYPOTHESES

The study sought to test the following hypotheses, based on the theoretical model (refer to Figure 4.2).

4.4.1 Corporate diversity practices and innovation

Evidence exists in the literature that shows relationships between corporate diversity practices and innovation. For instance, a study conducted by Lee (2012) indicates that to stimulate innovation, it is necessary to develop and implement policies that encourage the innovative behaviours and creativity of the individuals in organisations. Another study by Bak (2016) argues that innovation is a product of human resource competencies. In support, Kweku, Nyuur, Ellis and Yaw (2017) state that at the national level, it has been observed that countries that foster the adoption of state-of-the-art human resource (HR) systems and practices tend to innovate more and become better developed than countries that do not exert the same focus. Schoemaker *et al.* (2018) provide a link between top management support and innovation. Their view is that top management can be instrumental in helping managers and employees change their mindsets to become more innovative. Additionally, several scholars (Adeleye, 2011; Ellis, Nyuur & Debrah, 2015; Osabutey, Nyuur & Debrah, 2015) have pointed out that the greater the diversity of institutions, regulatory, political, economic, social and cultural systems, the greater the likelihood of establishing a positive innovation culture in African business environments. Also, research by Saadat (2015) has shown that leadership is one of the most important sets of skills needed by organisations when pursuing disruptive innovation and new business models. This is because proper leaders typically stay open to different viewpoints, and encourage and cultivate new ways of thinking in organisations, thereby allowing innovation to flourish. A separate study by Abdil *et al.* (2017) concluded that

organisational cultural effects on innovations result in significant innovation processes. These insights lead to the following hypotheses:

H1: There is a positive relationship between policy and innovation in the automotive manufacturing industry in South Africa.
H2: There is a positive relationship between HR practices and innovation in the automotive manufacturing industry in South Africa.
H3: There is a positive relationship between top management support and innovation in the automotive manufacturing industry in South Africa.
H4: There is a positive relationship between demographic diversity and innovation in the automotive manufacturing industry in South Africa.
H5: There is a positive relationship between leadership and innovation in the automotive manufacturing industry in South Africa.
H6: There is a positive relationship between cultural diversity and innovation in the automotive manufacturing industry in South Africa.
H7: There is a positive relationship between diverse attitudes and innovation in the automotive industry in South Africa.

4.4.2 Innovation and company performance

There was substantial research evidence that innovation can lead to improved company performance. In competitive environments, every organisation requires a more robust adaptive culture that encourages learning and cooperation among its members (Liao, Chang, Hu & Yueh, 2012). Shenbagavalli (2013) highlights that innovation culture is a significant factor that contributes to gaining a long-term competitive advantage for firms. Klaus (2017) reports that technological innovations can lead to supply-side miracles that yield sustainable gains in productivity and efficiency. A study by Ferraris, Santoro and Dezi (2017) noted the relationship between innovative performance and research and development (R&D). For instance, Konrad and Wrangler (2017) reported that to become successful in frugal innovation, Renault-Nissan had to enter into collaborative alliances with R&D sectors in other countries such as India. Consequently, the company has become one of the leading producers of both low-cost vehicles and electric cars (Strategic Analytics, 2017). Abdi *et al.* (2017) noted that innovation assists organisations in supplying the product or service in the automotive sector to operate innovatively, competitively and profitably. Innovation also helps companies contribute to the broader

economy through the ability to generate and implement national and sectoral plans, extract and deploy capital productively, and effect dynamic, free and productivity-enhancing development programmes in the infrastructure, small enterprise, land, education and training, and housing sectors (Swiling, Musango & Wakeford, 2015). These views led to the following hypotheses:

H8: There is a positive relationship between innovation and perceived value in the automotive manufacturing industry in South Africa.
H9: There is a positive relationship between innovation and customer loyalty in the automotive manufacturing industry in South Africa.
H10: There is a positive relationship between innovation and market performance in the automotive manufacturing industry in South Africa.
H11: There is a positive relationship between innovation and financial performance in the automotive manufacturing industry in South Africa.
H12: There is a significant positive relationship between innovation and environmental performance in the automotive manufacturing industry in South Africa.

4.5 THEORETICAL FRAMEWORK AND VARIABLE RELATIONSHIPS

The conceptual framework detailed in Chapter 1 postulates the literature-based evidence of the relationship between the variable components considered in this study. The predictor (corporate diversity) and its seven practices of the relationship with innovation culture as well as the outcome (perceived company performance) with its five elements of relationships with innovation culture will be discussed in this section.

4.5.1 Relationship between diversity policy and innovation

The relationship between the predictor variable (corporate diversity and its practice; policy) and the mediating variable (innovation) is proposed in this research study.

4.5.1.1 Evidence supporting the hypothesised relationship

Barnes *et al.*'s (2016) empirical study found that the relationship between the domestic business environment and policies is necessary to enhance innovation culture and should have a policy that is user-friendly and has a clear policy stance on innovation. While the OECD (2016) paper recommended the role of a regulatory policy in nature to segment

markets, traditional discriminatory barriers should be removed to access the market, especially for specific sectors. However, Cui, Jiao and Jiao (2016) revealed that Brazil, Russia, India, China and South Africa's technological innovation has a direct and positive relationship between policies. Barnes *et al*.'s (2017) study concluded that policy optimises culture for organisations pursuing long-term innovation and performance in a dynamic environment as an adaptive, learning culture – a culture that fosters and nurtures innovation. Moreover, Abdil *et al*. (2017) commended that knowing the effectiveness of innovation culture can help the government make decisions about the continuation of this policy. Barnes *et al*. (2017) resolved that it is necessary for firms to have policies and competencies, while Black *et al.*'s (2018) study emphasised enabling innovation to be effective through policy intervention; innovation that improves innovative behaviours and creativity of the individuals guided by the policy. Lamprecht's (2019) study established that a strong interrelationship between policy knowledge and innovation is of the essence; innovation can be formed as a result of the organisation's knowledge processes. Iskandar and Ariffin (2019) established that innovation mediates between the National Automotive Policy (NAP) and the vendor's performance, except in the process of innovation when it has set up a suitable pathway for the Malaysian automotive ecosystem. Therefore, there is a direct and positive relationship between policy and innovation culture, which can improve governmental, automotive, and industrial strategies in policy formulation, implementation and execution, innovation and performance.

4.5.2 Relationship between HR practices and innovation

The relationship between the predictor variable (corporate diversity and its practice; HR practices) and the mediating variable (innovation) is proposed in this research study.

4.5.2.1 Evidence supporting the hypothesised relationship

Business transformation through innovation culture can lead to the development of new human resource competencies and make better use of existing human resource capabilities; business transformation is achieved by realigning the way staff work; how the organisation is structured; and how the core product or service portfolio of the business and technology is used (Kotter, 2008; Bak, 2016; Calitz *et al*., 2017). Kweku *et al.* (2017) reported on the level of economic and institutional development of the host country (in the case of multinational companies) that would influence the adoption of

home or host country HR systems and practices. HR practices encompass the premeditated operations of HRs, including but not limited to planning, organising and managing the department, achieved through employees (e.g. practices, mission and goals) (Kweku *et al*., 2017; Van Esch, Wei & Chiang, 2018).

HR practices, in particular the on-the-job task management practice, encourages organisational innovations from a very comprehensive strategy involving all shop-floor employees in a continuous improvement process, designed according to Kaizen principles (Jaehrling, Gautie, Keune, Koene & Perez, 2018). In the case studies by Makó, Illéssy and Latniek (2018), most of the innovations analysed depict the determination of the companies to recruit and collectively share the tacit knowledge of employees, thereby more fully exploiting their skills and experience of them. These findings from Makó *et al.* (2018) further accentuate the importance of the relationship between HR practices (in particular recruitment and task management) and innovation culture. Jaehrling (2018) contends that certain forms of work organisation are more conducive to individual and organisational learning and hence are an essential element of a firm's innovative capacity and culture. Van Esch *et al.* (2018) established a positive relationship between high-performance HR practices and firm performance, and further also found that employees' competencies were partially mediated by an innovation culture. A notable direct positive link, therefore, is observed between HR practices and innovation culture. This relationship between HR practices and innovation seems to promote more innovation and creativity in the workplace and is positive in nature, resulting in higher organisational performance.

4.5.3 Relationship between top management support (TMS) and innovation

The relationship between the predictor variable (corporate diversity and its practice; top management) and the mediating variable (innovation) is proposed in this research study.

4.5.3.1 Evidence supporting the hypothesised relationship

Top management refers to the board of directors, organisational presidents, chief executive officers (CEOs), chief operations officers (COOs), chief financial officers (CFOs), directors, and so on; the upper tier in an organisation; these individuals are also involved in the decision-making process for the company (Hambrick 2007; Hambrick, Cho & Chen, 1996; Tulung & Ramdani 2016). An example of the decision process made by top management in Hyundai South Africa is the motor construction crisis that pushed

them to become the leading car manufacturer among developing countries using technological innovation to increase business through manufacturing operations, reducing labour costs and increasing competitiveness, thereby introducing innovation culture (Kahn, 2006; Technavio, 2016; Calitz *et al.,* 2017). Lee, Shiue and Chen (2016) found that there is a strong relationship between top management and innovation culture; developing tools to build an innovation culture environment that enables more effective sharing of process knowledge and enhances peer interaction and teamwork driven by top management (TMS). TMS strongly orientates organisation technologies to R&D, innovativeness, and entrepreneurship that maintain a special pattern of work relations of a corporate innovation culture of technology (García-Sánchez, García-Morales & Bolívar-Ramos 2017). Chekanov *et al*.'s (2017) findings confirm that the management of innovation culture affects both product and process innovation positively; TMS moderates this relationship positively. Lee, Park and Baker (2018) determined that TMS tempers the relationship between human resource developments and also improves employees' job satisfaction and organisational innovation culture. Li, Sun and Dong (2018) established a positive effect of TMS on learning and employee learning orientation on absorptive capacity and subsequent firm innovative performance. TMS helps change the mindsets of operationally-oriented managers away from trying to be overly precise (and often wrong) towards trying to be roughly right (Balachandran, Wennberg & Uman, 2019). Therefore, there is a direct positive relationship between top management and innovation. The more visible the TMS, the higher the organisational performance through innovation culture.

4.5.4 Relationship between demographic diversity and innovation

This relationship between the predictor variable (corporate diversity and its practice, and demographic diversity) and the mediating variable (innovation) is proposed in this research study.

4.5.4.1 Evidence supporting the hypothesised relationship

The business environments in African countries are not homogenous but diverse in their institutions of regulatory, political, economic, social and cultural systems (Adeleye, 2011; Ellis *et al.,* 2015; Osabutey *et al.*, 2015). Dayan, Ozer and Almazrouei (2017) describe demographic diversity as a narrative of the differences in identity that each individual

brings to the group and relates more to each member's individual identity rather than the knowledge they bring. Dayan *et al*. (2017) recognised that the direct relationship between functional diversity and new product creativity (NPC) was stronger when project uncertainty was high as opposed to when it was low. However, in South Africa, monetary policies geared at maintaining economic stability while seeking to bring about economic transformation to all its demographics and increasing productivity through innovation culture were adopted (OECD, 2017). Therefore, there seems to be a positive linear relationship between demographic diversity and innovation culture.

On the other hand, Dayan *et al.* (2017) contend that the direct relationship between demographic diversity and new product creativity was weaker when project uncertainty was high as opposed to when it was low. Kagzi and Guha's (2018) results, however, indicated that a positive linear relationship between the overall board demographic diversity index (board gender, age, tenure, and education) and firm performance existed. Certainly, new product creativity is a result of an innovation culture within an organisation. When the overall demographics diversity index (board gender, age, tenure and education) is involved in the NPC there seems to be a linear relationship between demographic diversity and innovation.

4.5.5 Relationship between leadership and innovation

The relationship between the predictor variable (corporate diversity and its practice; leadership) and the mediating variable (innovation) is proposed in this research study.

4.5.5.1 Evidence supporting the hypothesised relationship

Sethibe and Steyn (2015) revealed that the transformational leadership style significantly and positively relates to innovation; the transactional leadership style is more appropriate when the aim is to cultivate an innovation culture. The findings further reveal that innovation significantly and positively relates to higher organisational performance. Khalili (2016) discovered positive and significant relationships between transformational leadership and employees' creativity and innovation when employees' perceptions of a supportive climate for innovation moderate the transformational leadership employees' creativity and transformational leadership employees' innovation relationships. On the other hand, Sethibe (2018) recognised the relationship between leadership styles, organisational climate, innovation and organisational performance, taking into account

the nature of innovation (i.e. incremental and radical) and the stage at which innovation operates in the innovation process. Transformational leadership cultivates employees' creativity and thereby creates an innovation culture in the workplace.

External frames, new leaders, and separate organisational structures are often necessary for new business models, and strategic leadership should take hold of innovations to flourish and stay open to different viewpoints; they help ensure that leaders are not unduly hindered by decision traps and can instead divulge information or solutions that were not previously considered (Kahneman & Lovallo, 1993; Saadat, 2015). In a study conducted by Shoemaker *et al.* (2018), more than 160 senior executives showed that a vigilant attitude in leaders is the most significant component of a superior dynamic capability to anticipate and adapt in business environments. The study by Sahraee and Abdullah (2018) determined the congruence between leadership style, which employees prefer, and the leadership style that they actually perceive, which moderates the effects of the leadership style on affective commitment. Zuraik and Kelly's (2019) findings show that CEO transformational leadership has a direct positive effect on organisational innovation and an indirect effect through innovation climate, in that CEO leadership is more impactful regarding exploitation compared to an innovation climate, which has a greater influence on exploration. Consequently, Villaluz and Hechanova's (2019) findings show that a leadership variable, role modelling, and support for innovation, directly and indirectly, predict an innovation culture. Leaders impact innovation culture and influence innovation through strategy, evaluation and rewards. Therefore, there is a direct relationship between leadership and innovation culture; and leadership influences the innovation within an organisation.

4.5.6 Relationship between cultural diversity and innovation

The relationship between the predictor variable (corporate diversity and its practice and, culture) and the mediating variable (innovation) is proposed in this research study.

4.5.6.1 Evidence supporting the hypothesised relationship

Abdi's (2016) results revealed that organisational culture and knowledge management do influence corporate innovation. On the other hand, Ali and Park's (2016) study concluded on the importance of creating an organisational learning culture, encouraging teamwork, creativity, innovation, doing things in new ways, individually approaching the job, and

improving communication between departments. Organisational cultural effects on innovation result in significant innovation processes (Castells & Himanen, 2014; Ferraris *et al.*, 2017). Abdil *et al.*'s (2017) study discovered that organisational culture and knowledge management predisposed organisational innovation. Consequently, it is understood that without considering employee cultural aspects, innovation culture could be hindered; therefore, there is a relationship between culture and innovation. Robots have made little impact outside manufacturing, and it will be a gradual process before they replace human jobs in the service, transportation or construction sectors. They emphasise that culture plays a significant role in developing trust in robots; a specific type of communication is required, for adoption varies between cultures (Calitz *et al.,* 2017; Gordon, 2018). It can be concluded, therefore, that there is a positive and direct relationship between diverse culture and innovation, and that employees' culture affects organisational innovation culture.

4.5.7 Relationship between diverse attitudes and innovation

The relationship between the predictor variable (corporate diversity and its practice and attitudes about diversity) and the mediating variable (innovation) is proposed in this research study.

4.5.7.1 Evidence supporting the hypothesised relationship

Overall competitiveness through radical innovation requires a right attitude about diversity, which advances knowledge in creating an organisational culture (Radas & Božić 2009; Abdil *et al*., 2017). Many studies reported that inequality is correlated with political instability that creates a bad attitude towards diversity (Muller & Seligson, 1987; Alesina & Perotti, 1996; Acemoglu & Robinson, 2001; Dutt & Mitra, 2008; Timothy *et al.,* 2018). All these studies, therefore, substantially support the fact that there is a relationship between diverse attitudes and innovation.

4.5.8 Relationship between innovation and perceived value

The relationship between the outcome variable (perceived value) and the mediating variable (innovation) is proposed in this research study.

4.5.8.1 Evidence supporting the hypothesised relationship

Innovation is an important factor that contributes to gaining a sustained innovation culture that leads to sustainable competitive advantage, and results in profitability and competitive environments for the organisation, especially for a stronger, adaptive culture that will encourage cooperation and learning by its members (Liao *et al.,* 2012; Shenbagavalli, 2013; Abdil *et al.,* 2017). Consequently, innovation assists organisations in supplying products or services in the automotive sector to operate innovatively, competitively, and profitably. These developments have created a platform for new attitudes in industrial employees to emerge, where workers learn to work side by side with the latest generation of cobots, which automobile manufacturers, including Mercedes-Benz, Audi and Toyota, have implemented in production facilities (Hollinger, 2016; Calitz *et al.,* 2017). Mkhize's (2019) study indicated that South Africa's economic growth is generally regarded as the creator of employment and needed to create sufficient employment opportunities for the growing labour force. It can be concluded that there is a relationship between innovation and the perceived value of the organisation in the automotive industry.

4.5.9 Relationship between innovation and customer loyalty

The relationship between the outcome variable (customer loyalty) and the mediating variable (innovation) is proposed in this research study.

4.5.9.1 Evidence supporting the hypothesised relationship

Adaptive cruise control (ACC), lane-keeping assistant, and emergency braking systems, and also technological innovations such as digital 3-D maps are bundled into an overall system in commercial vehicles to promote customer comfort, resulting in customer loyalty (VDA, 2015). Customers in developing countries have increasing needs, and it is necessary to focus on R&D and innovation culture on these decentralised demand aspects; besides the obvious benefits of increased safety for all mobility participants, automation – a subfactor of innovation – also enables new business (Berger, 2014; Konrad & Wangler, 2017). Klaus (2017) highlighted that advanced driving technologies like adaptive cruise control (ACC), collision avoidance, radar, cameras and other sensor systems are enabling the interlinked trucks to follow the driving behaviour of the leading vehicle, the only one driven by a human employee. Automation is therefore not only an

end result, but the autonomous vehicle is attractive to OEMs, who earn high margins as a result of customer confidence, with specific advanced driver-assistance systems (ADAS) in the meantime (Strategic Analytics, 2017). Cohn and Vaccaro's (2018) study results provide new consumer insights to reduce the green gap and generate more successful marketing strategies for eco-innovations to achieve the triple bottom line of people, planet, and profits. Tolmay (2019) contends that training customers to maintain their technology might be necessary, as customers within developing countries make their buying decisions in favour of a certain technology. Therefore, there is a positive relationship between innovation and customer loyalty.

4.5.10 Relationship between innovation and market performance

The relationship between the outcome variable (market performance) and the mediating variable (innovation) as proposed in this research study.

4.5.10.1 Evidence supporting the hypothesised relationship

The digital market potential varies between different studies, but the common ground is that the digital area offers new business opportunities and will significantly enlarge the traditional automotive market (Konrad & Wrangler, 2017). To be successful in emerging markets, companies have to adapt their business models according to the needs of these markets (Klaus, 2017). Although the cutting of product and service innovations to certain market segments is not a new phenomenon, the market potential for such lower-tech innovations becomes more important, as these emerging markets are growing (Strategic Analytics, 2017). Therefore, there is a relationship between innovation and market performance.

4.5.10.2 Relationship between innovation and financial performance

The relationship between the outcome variable (financial performance) and the mediating variable (innovation) is proposed in this research study.

4.5.10.3 Evidence supporting the hypothesised relationship

Barnes *et al*. (2017) indicated that innovation speed had accelerated tremendously, and OEMs are well aware of the expected disruptions, substantially changing the entire value

chain and its stakeholders, which results in better financial performance. Technology can, therefore, save considerable human payments and fuel costs (Konrad & Wrangler, 2017). It is believed that the globalisation of firms and industries drives the move towards the standardisation of systems and practices as well as centrally planned and coordinated actions (Horwitz, 2014; Mkhize, 2019). This serves as evidence that there is a relationship between innovation and financial performance.

4.5.11 Relationship between innovation and environmental performance

The relationship between the outcome variable (environmental performance) and the mediating variable (innovation) is proposed in this research study.

4.5.11.1 Evidence supporting the hypothesised relationship

The landscape applies pressures on existing socio-technical regimes that create opportunities for responses, i.e. climate change and the need for the expansion of renewable energy (Tice *et al.,* 2005; Swiling *et al.,* 2015; Thompson & Valentinov, 2017). The South African system of innovation has its origins in the quest to understand and exploit the natural environment. According to Kahn (2006) and Erdil *et al.* (2018), to compete in the current competitive market, manufacturing firms should balance their environmental, economic, and social performance. Moreover, it noted that environmental wastes are targeted in green manufacturing, and not in lean manufacturing. It can therefore be concluded that there is a relationship between innovation culture and environmental performance. With the Euro regulation of carbon dioxide (CO_2) in line with the World Health Organization (WHO) and other organisations, they should conform to these standards.

4.6 CHAPTER CONCLUSION

This chapter formulated the hypotheses tested in this study, based on the literature review. The theoretical basic research model and all 12 hypotheses tested in this study were derived from previous literature, which supported the existence of such relationships. The principle for choosing the predictor variables was based on harmonising the nature of corporate diversity management practices and theoretical systems in the organisation, as outlined in the existing literature. The lack of research on the performance of the automotive sector has resulted in the question asked in the introduction section of this chapter, namely: “Does innovation mediate company performance?” Moreover, a lack of or poor automotive performance was a result of connecting the innovation culture to company performance. Upon analysing the literature on the relationship between corporate diversity, innovation and company performance, it appears that innovation relates positively to company performance. This leads to the conclusion that innovation mediates the link between corporate diversity and company performance. The next chapter discusses the research methodology followed in this study.

CHAPTER 5
RESEARCH METHODOLOGY

5.1 INTRODUCTION

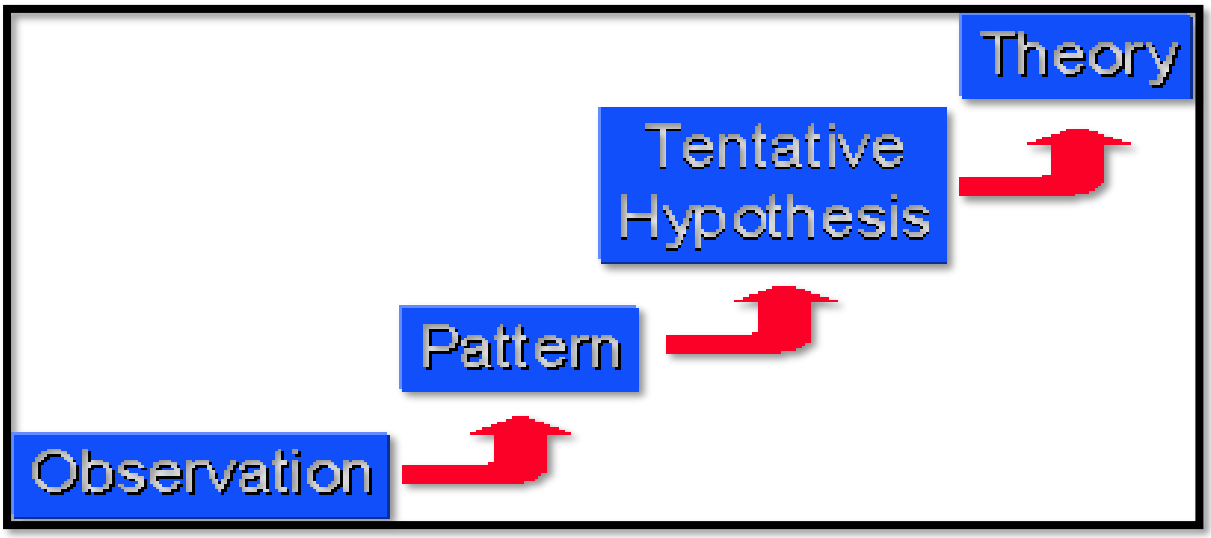
Research methodology is a systematic, theoretical analysis of the approaches applied to a field of study. The chapter therefore comprises a theoretical analysis of the group of techniques and principles associated with a branch of knowledge. Most scholars define methodology as the study of methods, or ways of doing things, and acknowledge it as a set of principles and practices that regulate an academic discipline. The researcher will explain and motivate this approach and why a quantitative one was chosen rather than qualitative and mixed-method approaches. This study will further utilise quantitative methods as a means of the scientific process of collecting and logically analysing data. The chapter provides a detailed research methodology that will be followed in this study. It encompasses concepts such as research reasoning, research paradigms, research approach, research design, research strategy, a brief literature review outline, sampling design, data collection and conclusion.

5.2 RESEARCH REASONING

Quantitative reasoning is a higher-order reasoning skill that any intelligent natural language understanding system or research approach can reasonably be expected to handle; popular reasoning techniques are commonly grounded on first-order logic illustration, whereas popular learning techniques are not (Magnani, 2009; Ravichander, Naik, Rose & Hovy, 2019). Logic-based to language-based reasoning is mainly stimulated by the significant body of work on language entailment and language-based common sense reasoning (Bowman, Angeli, Potts & Manning, 2015; Williams, Nangia & Bowman, 2018; Mostafazadeh *et al*., 2016; Zellers *et al.,* 2018). Considering the information growth with its wide range of communication platforms and tools, such as the increase in internet users, most contexts are uncertain, which creates many ambiguities, both in learning logic and reasoning logic, thereby perpetuating some ambiguities and uncertain relationships in the ontology knowledge (Gao & Dong, 2019). The discernment and reasoning of human beings are entwined rather than separated; this is reconvened in some sense in abductive learning and abductive reasoning (Bhagavatula *et al.,* 2019). Abductive reasoning is an extrapolation to the most reasonable elucidation (Bhagavatula *et al.,* 2019). Mostly,

abductive reasoning is used between the machine and human beings (i.e., computer programming), and therefore will not qualify for the current study and was consequently not chosen. Inductive reasoning works the other way, moving from specific observations to broader generalisations and theories (Trochim, 2020), and therefore, in logic, the two broad methods of reasoning, i.e., the deductive and inductive approaches are always favoured. Figure 5.1 illustrates the inductive reasoning approach.

Figure 5.1: Inductive reasoning approach

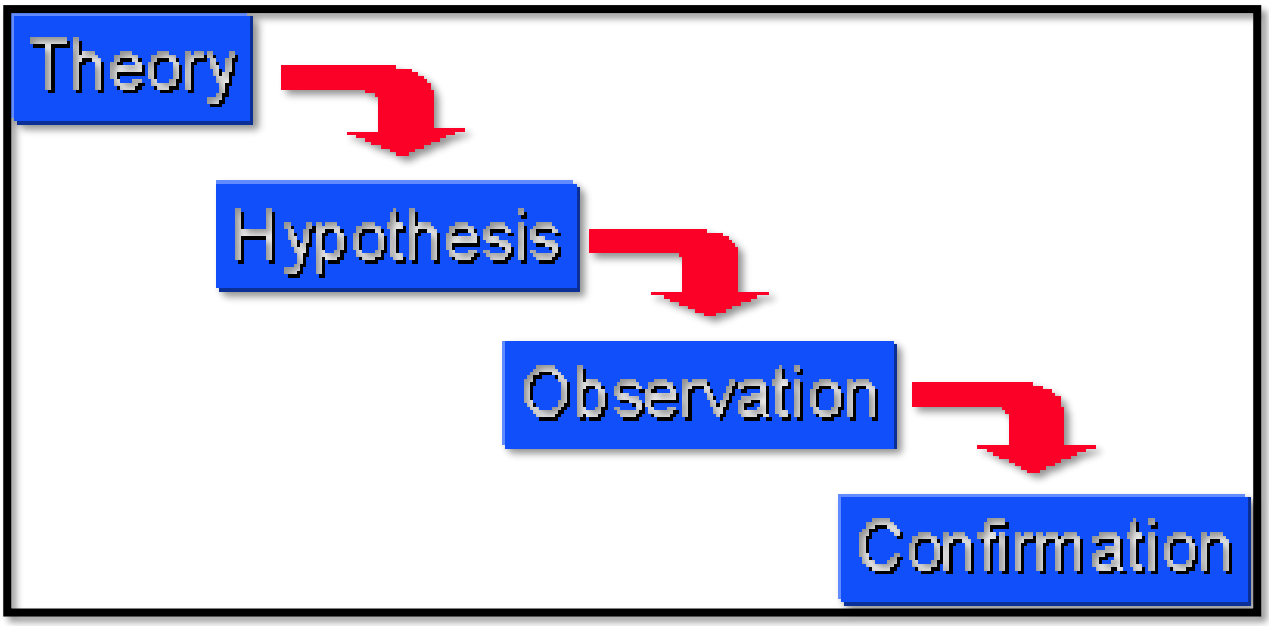


Source: Trochim (2020)

Figure 5.1 displays the inductive reasoning approach. It begins with specific observations or measures and from these observations patterns and regularities are detected; also, some tentative hypotheses can be discovered, and finally it ends by developing some general conclusions or theories (Ravichander *et al*., 2019; Trochim, 2020). Since the current study began on specific views, which are systems theory and disruptive innovation theory, this reasoning approach does not qualify.

The perceptions of human beings are not always precise, and some misperceptions can be corrected when the perceived patterns are involved in reasoning, wherein the reasoning process can provide a *guess* about the correct patterns (Zhou, 2019). According to Trochim (2020), deductive reasoning works from the more general to the more specific, also sometimes referred to as a *top-down* approach. Figure 5.2 illustrates the deductive reasoning approach.

Figure 5.2: Deductive reasoning approach



Source: Trochim (2020)

It can be seen from Figure 5.2 that a theory regarding the topic of interest is then tapered down into more specific hypotheses that can be tested, and further tapered down to observations to address the hypotheses, which ultimately leads to testing the hypotheses with specific data – a confirmation (or not) of original theories. The current study adopted this *top-down* approach, whereby all 13 hypothesis statements were tested, and observations were collected to confirm (or not) the original theories. Brisson and Markovits (2020) regard deductive reasoning evaluation on the basis of the logical connection between results and extant theory, which notion was followed by the current study. Turnbull, Chugh and Luck (2020) stated that deductive methodologies of research are often linked with quantitative analysis, while inductive reasoning is associated with qualitative nemesis. Therefore, many scholars (Harel & Weber, 2020; Chugh & Luck, 2020; Brisson & Markovis, 2020) apply purely quantitative techniques to confirmatory studies, which suited the current research as a result of being quantitative in nature.

5.2.1 Previous research studies using the deductive reasoning approach

A deductive reasoning approach was used in a study for a “developed novel hierarchical modelling framework”, based on deductive reasoning so that the assessment of municipality solid waste management systems could be measured (Abdulaziz *et al.,* 2019). In another study, it was found that logical response instructions, suggesting that deducting reasoning transforms a probabilistic evaluation into a dichotomous judgement, is a key determinant of strategy use, which did not hold with a probabilistic one (Brisson & Markovits, 2020). Many scholars acknowledge that applying purely quantitative techniques results in confirmatory studies, concluding that the field of management and organisation studies has perfected down-the-road theorising and systematic research designs using the deductive reasoning approach (Turnbull *et al*., 2020; Von Krogh, 2020). A deductive reasoning approach for the current study in the management field was therefore a perfect fit.

5.3 RESEARCH PARADIGMS

The word paradigm means a philosophical way of thinking, also widely defined as human constructions, which deal with first principles or ultimate ones, indicating where the researcher is coming from so as to construct meaning embedded in data. The paradigm defines a researcher’s philosophical orientation (Kuhn, 1962; Lincoln, 2000; Kivunja & Kuyini, 2017). Research that should be conducted requires an assumption or philosophy; all research is based on assumptions/paradigms/philosophies about how the world is perceived and how we can best come to understand it (Trochim, 2020).

Five major paradigms, i.e., the positivist; the interpretive/constructivist; the transformative; the realist; and the post-positivist, were addressed by Corry, Porter and McKenna (2019). Acceptance of interpretivism, transformative or realist approaches necessarily entails the wholesale rejection of positivism, while acceptance of post-positivism involves its partial rejection. Trochim (2020) acknowledges that relativism, subjectivism, hermeneutics, de-constructivism, constructivism, and feminism should be specifically considered as the most currently debated alternatives. In this study, positivism, post-positivism, phenomenology and pragmatism were explained, in a brief discussion in Table 5.1 below:

Table 5.1: Research paradigms and their definitions

Paradigms	Definitions and role of paradigms in research
Positivism	Positivism relies on observation *(*hypothetical-deductive method) – the idea that empirical study (often stated quantitatively) and measurement of functional relationships can be derived between causal and explanatory factors (independent variables) and outcomes (dependent variables) (Ponterotto, 2005; Turnbull *et al.,* 2020). According to Trochim (2020), positivism is a denunciation of theoretical formation; based on the results of the study, the theory may not fit the facts well, so the need to revise the theory to better predict reality arises. Consequently, this paradigm fits the categories of the current study.
Post-positivism	Post-positivism paradigm refers to the researcher's attempts to explain the phenomena they study in the most economical way possible; it is used to search for cause-and-effect relationships (Kivunja & Kuyini, 2017). Scientific reasoning and common-sense reasoning are essentially the same processes; a post-positivist might begin by recognising that the way scientists think and work and the way we think in our everyday lives are not distinctly different (Trochim, 2020). Also, post-positivism is favoured and sometimes renders positivism useless according to many scholars but does not qualify to be suitable for this current study.
Phenomenology	Philosophical inspiration or methodological guidance does not look to phenomenology. Phenomenology is a qualitative research method, a substantial theoretical and methodological support, and therefore it can play a significant role in diagnosis, treatment, and therapy (Paley, 2017; Husserl, 2019). Therefore, this paradigm does not qualify for the current study and will not be followed, as it is mostly applied to qualitative research.
	Philosophers and intellectual historians generally recognise pragmatism as a philosophy of progress (Sheehey, 2019). Many

Paradigms	Definitions and role of paradigms in research
Pragmatism	scholars regard this philosophy as an improvement philosophy that looks to the past in pursuit of future improvements. Since the current choice is a cross-sectional study, this philosophy does not qualify and is not applicable.

Source: Author's own compilation

Table 5.1 briefly discusses the four paradigms acknowledged in this study. This discussion led to the choice of the positivism paradigm as a perfect fit, as it met all the categories set out in the current study.

5.3.1 Previous research studies using positivism paradigms

A study that determined that by reducing the entire reality to empirical reality, logical positivists dealt with metaphysics, not its *elimination* but an empiricist brand of metaphysics (Marsonet, 2019). On the other hand, Matusov, Marjanovic-Shane, Kullenberg and Curtis (2019) conclude that in research on dialogic pedagogy (and beyond, on social sciences in general) both dialogic science (involving dialogic analysis) and positivist science (involving discourse analysis) are unavoidable and are needed. A study undertaken by Park, Konge and Artino (2020) proves that alignment with positivism elucidates on identifying explanatory associations or causal relationships through quantitative approaches. Pieper (2020) found that positivists, by contrast, seek to distinguish factual matters from subjective judgements and limit the study of literature as far as possible. In this regard, general inferences, replication of findings and controlled experimentation have been principles guiding positivist science. For this reason, the present study sought generalisation of the inferences made towards the automotive sector and chose the positivism paradigm.

5.4 RESEARCH APPROACH AND DESIGN

Research approach and design are a strategy encapsulating steps/systems of broad assumptions to the detailed methodology of data collection, analysis and interpretation of results. It is therefore dependent on the nature of the research problem being addressed (Chetty, 2016). Research approaches are essential in research as they propel the study according to the set research strategy. There are various computational techniques such as qualitative, quantitative and mixed methods that may be applied in manipulating the collected statistical data to address the research objectives. These three techniques are considered the leading research approaches (Thomas, 2011; Creswell, 2014; Smith *et al*., 2015). Qualitative methodologies originate in the social and behavioural science field and are widely recognised as valuable and credible approaches for conducting empirical research (Hays, Wood, Dahl & Kirk-Jenkins, 2016; Miller, Chan & Farmer, 2018). Data collection using the qualitative approach employs a combination of documentary/transcribe analysis, organisational/household/individual surveys, and in-depth structured interviews (Frühauf, Hardy, Pfoestl, Hoellen & Kopp, 2017; Neely & Ponshunmugam, 2019). Trochim (2020) defines a qualitative approach as a general way of intellectually steering qualitative research: the distinction between explicit or implicit as to the purpose of the qualitative research, the role of the researcher(s), the stages of research, and the method of data analysis are clearly defined. Therefore, the qualitative approach does not qualify in the current study and was not used. The mixed-methods approach is a combination of quantitative and qualitative research methods and value-laden axiology that is considered research that benefits people (Kivunja & Kuyini, 2017). Also, this approach was not well suited for the current study since no qualitative methods were applied and consequently not utilised.

Quantitative research is a systematic investigation of phenomena by gathering quantifiable data and performing statistical, mathematical, or computational techniques; mathematical techniques that can be used during process development to assist in the determination of the phenomena (Rogers & Lerapetritou, 2016). The quantitative approach also facilitates the possible generalisation of the results (Mesly, 2015). The current study followed a quantitative approach since it emphasised the use of objective measurements and the statistical, mathematical, and/or numerical analysis of data collected was collected using questionnaires. A correlational research design in which the

researcher measures the relationships between two or more variables was applied to the study. It was appropriate since the study primarily intended to examine how diversity practices interact with innovation culture and company performance in the automotive manufacturing industry in South Africa. In terms of a time horizon, it used a cross-sectional strategy in which data was collected from respondents once in a specific period (Smith *et al.*, 2015; Kivunja & Kuyini, 2017). The only observation used followed the quantitative approach (surveys, and questionnaires to collect the data) and as a cross-sectional study was limited due to time constraints. A cross-sectional strategy was suitable due to the collection of data on more than one case and at a single point in time and the collection of a body of quantitative or quantifiable data linked with three variables to examine the detecting patterns/relationships of association.

5.5 RESEARCH METHOD

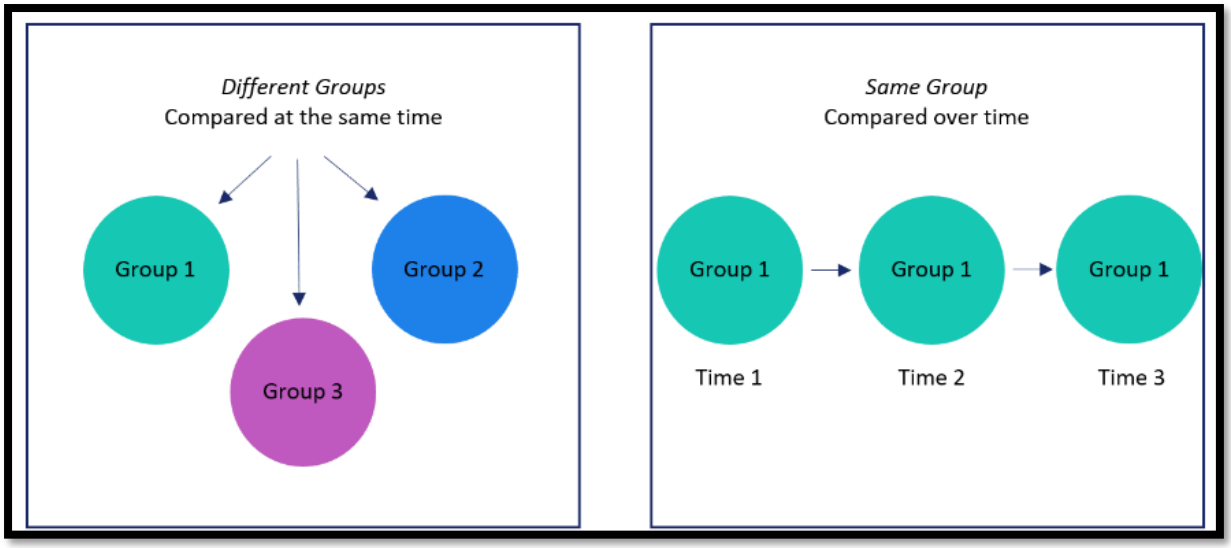
A survey research method, which involves the application of a structured questionnaire to collect data, was used to collect the data in the present study. Survey research is the collection of data attained by asking individuals questions, either in person, on paper, by phone or online (Rouse, 2017). A survey method was used in this study because it facilitated the easier and faster collection of data from large numbers of respondents (Smith *et al.,* 2015; Rogers & Lerapetritou, 2016). Surveys provide an organised and broad overview of the research on incongruity detection; they provide accurate knowledge of the different ways of the conducted research, and how techniques are formulated in one area that can also be applied in other domains (Chandola, Banerjee & Kumar, 2009).

5.6 RESEARCH STRATEGY

Research strategy or techniques refer to the methods researchers use to perform research operations. A research strategy is a plan to systematically solve the research problem (Hays *et al.,* 2016). It also accentuates the logic behind the methods we use within the context of research study and explains the use of a particular method or technique and why we do not use others so that research results are capable of being evaluated, either by the researcher or by others (Kothari 2009; Creswell, 2014; Frühauf *et al.,* 2017). Understandably, a research strategy would have distinctive choices of research method implemented in the study. These idiosyncrasies would either be a case

study, longitudinal study, *ex post facto* or cross-sectional. As a qualitative methodology, case study research encompasses a great deal more complexity than a typical case report; it is also useful for testing whether scientific theories and models actually work in the real world; and it cannot be generalised to fit a whole population or ecosystem (Shuttleworth, 2008; Alpi & Evans, 2019). According to Luaren's (2020) longitudinal study, researchers repeatedly examine the same individuals to detect any changes that might occur over a period of time. Figure 5.3 clearly displays the significant difference between cross-sectional on the left-hand side and longitudinal studies on the right-hand side.

Figure 5.3: Cross-sectional study vs longitudinal study



Source: Lauren (2020)

Figure 5.3 indicates that the opposite of a longitudinal study is a cross-sectional study. While longitudinal studies repeatedly investigate the same respondents over a period of time, cross-sectional studies survey different samples (or a "cross-section") of the population at one point in time and can be used to provide a snapshot of a group or society at a specific moment. Therefore, the research project employed the cross-sectional study method. The research choices and time horizon are discussed next.

5.6.1 Choices

Research that deals primarily with people and information in a world of change, competition, and fluid communications technology should take into account and allow for an understanding of human behaviour (Burke, 2007). All the data gathered was treated with the utmost confidentiality, respect and dignity it deserved.

5.6.2 Time horizon

The time horizon of the study refers to two-time horizons, namely longitudinal and cross-sectional. Longitudinal studies are repeated over an extended period. Cross-sectional studies are limited to a specific timeframe. Likewise, limited to a particular timeframe, the cross-sectional time horizon was used.

5.7 SAMPLING DESIGN

Sampling design refers to the framework or roadmap that hinges on the selection of a survey sample (Trochim, 2020). In this section, sampling design was discussed under various subtopics, namely target population, sample frame, sampling size, sampling approach and sampling technique.

5.7.1 Target population

Target population refers to the actual population of individuals to whom research findings would be applicable and represents the entire population for which any given study intends to examine (Dahabreh *et al.,* 2019; Whaley, 2020). A target population is essential in research as it sets a strong course on the choice, objectives of the research and data types; defines the characteristic variables of the individuals partaking in the study; and also determines the scope of the total population or universe to define sample size (Whaley, 2020). The target population in this study was composed of manufacturing (operations) management professionals as well as marketing managers and practitioners in both vehicle and components manufacturing and sales in the automotive industry in South Africa. According to the National Association of Automotive Component and Allied Manufacturers (NAACAM, 2019), there were at least 135 companies in the automotive industry that were first tier to the seven OEMs, and all these companies formulated the target population. According to the NAAMSA (2019) register, there were 41 member

companies, seven OEMs, 21 importers and distributors, 14 heavy commercial vehicle divisions and bus assembly and sales companies, and therefore, all these companies were considered in the current study. These NAAMSA members had branches in three South African provinces, namely the Eastern Cape, KwaZulu-Natal and Gauteng. The Retail Motor Industry Organisation (RMI) membership is 8000 people all around the country. However, the study focused on the National Automobile Dealers' Association (NADA), which had 1 369 members all around the country separated as follows: Free State/Northern Cape with 100 members; Eastern Cape has 141 members; Highveld has 410 members; International (Namibia) with 12 members; KZN with 209 members; Northern Cape has 266 members; and the Western Cape with 231 members. Consequently, the company population size to be considered is 1 545 companies.

5.7.2 Sample frame

A sampling frame is referred to as a list of elements from which a sample is drawn, which is accessible for sampling purposes. The role of a sample frame is to ensure that the representation of the population of interest, from which the sample is drawn, includes its units/individual higher probability sampling (Smelser & Baltes, 2001; Cady, 2020). In other words, the sampling frame defines the set of edits chosen by the researcher to include in the sample and from which units of analysis will be assembled (Hansen, Shneiderman, Smith & Himelboim, 2020). In the current study, the sample frame was drawn from the automotive industry in South Africa. The current lists of the enterprises and their employees in this industry were accessible from the National Automotive Allied Component Manufacturing (NAACM), National Association of Automobile Manufacturers of South Africa (NAAMSA) and Retail Motor Industry (RMI) – a National Automobile Dealers' Association (NADA) group. Management in these three organisations was approached for permission to conduct the study. However, the lists of enterprises in the automotive industry were in the public domain through various website platforms on the internet. Letters requesting permission to conduct the study were sent to all relevant organisations with the expectation of receiving written consent from these associations, which was obtained from the organisations. Also, virtual meetings on Microsoft Teams with the executives and representatives were conducted.

5.7.2.1 Sample size

Sample size refers to the minimum sample size required to measure the actual population ratio (Dahabreh *et al*., 2019; Dalmaijer, Nord & Astle, 2022). It is crucial to determine the sample size of a study systematically because the objective is to make conclusions about a population from a sample; the sample size employed in a study is determined by the cost, convenience of collecting the data, time, and the prerequisite for adequate statistical analysis (Chetty, 2016; Um *et al.,* 2022). Series of manual operations, including classifying the processing mode, labelling operation conditions, storing them in a time-series order and pre-processing customised data were conducted (Um, Park, Cho & Shin, 2022). Therefore, SPSS was used to compute data gathered from this study. According to Sekaran (2000) and Glen (2017)**,** using a 95% level of confidence, a sample size of 100 is acceptable in a quantitative study. Wolf *et al*. (2013) and Mohadjer, Krenzke and Van de Kerckhove (2018), who examined sample size requirements for common quantitative studies, recommend samples ranging between 30 and 460 elements. Consequently, the sample size proposed in this study was suitable since it was well above the recommended minimum cut-off values. Sampling elements were selected using the probability-based stratified random technique. The sample sizes used in previous studies are shown in Table 5.3 below.

Table 5.2: The sample sizes used in previous studies

Construct	**Previous study**	**Sample size used**
Policy	Nguyen, Le & Su (2020) Kern, Rogge & Howlett (2019) Olsen & Orr (2016)	22 894 10
HR practices	Ybema, Van Vuuren & van Dam (2020) Ferraris, Santoro, Bresciani & Carayannis (2018) Josserand, Schmitt & Borzillo (2017)	2428 21 33
Top management	Boada-Cuerva, Trullen & Valverde (2019) Venugopal, Krishnan, Kumar & Upadhyayula (2019) Sung & Choi (2018)	681 78 163
Demographic diversity	Sung & Choi (2019)	178

Construct	Previous study	Sample size used
	Hatipoglu & Inelmen (2018)	707
	Choi, Sung & Zhang (2017)	256
Leadership	Afsar, Badir, Saeed & Hafeez (2017)	557
	Top, Akdere & Tarcan (2015)	2108
	Carmen & Gomes (2012)	323
Cultural	Kubicek, Bhanugopan & O'Neill (2019)	299
	Presbitero & Toledano (2018)	225
	Hajro (2015)	71
Attitude about diversity	Carstens & De Kock (2017)	157
	Köllen (2016)	1308
	Schneid, Isidor, Li & Kabst (2015)	71
Perceived company performance	Christensen-Salem *et al.* (2020)	795
	Choi *et al.* (2017)	256
	Von Bonsdorff, Janhonen, Zhou & Vanhala (2015)	25
Perceived value	Meynhardt, Brieger & Hermann (2020)	1045
	Park, Oh & Lee (2018)	1211
	Newton & Mazur (2016)	227
Customer loyalty	Iglesias, Markovic, Bagherzadeh & Singh (2020)	1101
	Budianto (2019)	100
	Wang, Cai, Liang, Wang & Xiang (2018)	328
Market performance	Gotteland, Shock & Sarin (2020)	109
	Cappa *et al.* (2019)	150
	Cabrilo & Dahms (2018)	101
Financial performance	Paniagua *et al.* (2018)	1207
	Maqbool & Zameer (2018)	28
	Wang & Sarkis (2017)	500
Environmental performance	Danso, Adomako, Amankwah-Amoah, Owusu-Agyei & Konadu (2019)	269
	Centobelli, Cerchione & Singh (2019)	374
	Qiu, Shaukat & Tharyan (2016)	629

Source: Author's own compilation

5.7.2.2 Sampling approach

The sampling approach refers to the methodology regarded by the researcher in gathering information about the population subjected to the investigation (Creswell, 2014; Chetty, 2016). It is important in research because it ensures statistical quality assurance of units/individuals from within the statistical population to evaluate the physiognomies of the whole population (Sakshaug *et al*., 2019; Cady, 2020). There are two widely known sampling approaches, namely the probability sampling and non-probability sampling approaches. Non-probability sampling is a group of sampling procedures where the samples are gathered so that all the units in the population have equal probabilities of being selected, and excludes a completely random selection (Lehdonvirta *et al.,* 2021). Probability sampling employs random sampling procedures and philosophies to create a sample, which allows the units/individuals of a population equal chances of being selected and is alternatively known as random sampling or chance sampling (Newman *et al.,* 2018). Since the current study employed random sampling, this non-probability sampling method did not qualify and was not utilised. The probability sampling method was chosen because it was a reasonable and more straightforward method of sampling with a lesser degree of judgement, and also with the high level of reliability of research findings, it can be highly accurate in dealing with sampling error estimation. Also, it ensured that all RMI members would have equal chances of being selected to participate in this study (Bairamov, 2019).

5.7.2.3 Sampling technique

There are various techniques available for application in quantitative studies. These include simple random, stratified, cluster and systematic techniques:

- Simple random sampling is described as a sampling method whereby items in the studied population have a uniform probability/prospect of being selected in the sample (Galvan, 2013; Dahabreh *et al.,* 2019). Items hinge completely on luck or probability; therefore, this sampling technique is alternatively known as a method of chance (Whaley, 2020; Hansen *et al.,* 2020).
- In a systematic sample, all inhabitants/people were listed in order and samples were chosen at defined intervals; in a stratified sample, ontology and metaphysics were first divided into strata, and then samples were randomly selected from the

strata (i.e., segment of the population was between men and women when a given number of men and a given number of women were chosen haphazardly) (Rogers & Ierapetritou 2016; Glen 2017).

- Cluster strata are when inhabitants/people are separated into groups, which are given names, and randomly selected, and then random members of the selected group are sampled (for example, first randomly select a number of streets in a certain suburb, then, from the street lists of those streets, randomly sample a number of houses) (Glen, 2017; Mohadjer *et al.,* 2018).

Respondents were selected using the stratified random technique, when separate sub-groups of the population were created from which respondents were selected independently from each sub-group (Botev & Ridder, 2017). A stratified random technique was necessitated by the need to ensure that respondents, who were scattered in various provinces and different work categories (i.e., managers vs professionals) were provided with an equal chance of involvement in this study. Both organisations and the actual respondents were sorted into diverse groups or layers, from which random choices were made to determine the respondents of this study. Each targeted individual had the probability n/N of being in the sample, where: n was the total number of units to be sampled, and N was the number of units in the total population.

5.7.3 Data collection procedures

Primary data was collected to address the empirical objectives. A survey method followed in which a questionnaire was prepared and used to collect primary data from the respondents. The questionnaire was partitioned into four sections (refer to Appendix 1). Section A elicited information on the demographic profile of respondents. Section B focused on corporate diversity practices. A minimum of one to a maximum of five responses were expected per company, and therefore the distribution of five questionnaires to each company. The questions on corporate diversity practices were obtained from previous studies conducted by Sheau-yuen (2006), Timothy *et al.* (2018), Leveson, Joiner and Bakalis (2009), Jin, Lee and Lee (2017) and Bizri (2018). Section C elicited information on innovation culture, using questions adapted from Lynch, Walsh, and Harrington (2010) and Ferraresi *et al.* (2012). Section D elicited information on company performance using questions adapted from Byrne and Markham (1991), Heskett, Jones, Loveman, Sasser & Schlesinger (1994), Zondo (2020), LaLonde and

Cooper (1989), Bag, Gupta, Kumar and Sivarajah (2020), McKee, Wolson, Long and Owen (1989) and Narver and Slater (1995). The questions in Sections B, C and D, are presented in a seven-point Likert-type format anchored by 1=strongly disagree to 7-strongly agree. The data was collected using a combination of e-mail surveys, online surveys (using Survey Monkey or Google Forms) and the traditional face-to-face distribution of the questionnaire expedited the process and ensured optimum results. A list of the measurement scales is provided in Appendix 1. A combination of approaches used to distribute the chosen questionnaire to maximise participation for optimum data collection, and these include face-to-face, email and online surveys (Dalati & Gómez, 2018). This study applied three different approaches, with a slight modification to the face-to-face approach due to the effects of the COVID-19 pandemic.

Firstly, the questionnaire was distributed physically to randomly selected organisations subscribing to the following associations: NAAMSA, NAACAM and RMI in the automotive industry in South Africa. Adherence to the COVID-19 pandemic regulations was followed in that sanitisers were provided, social distancing was maintained, and face masks were worn. A drop-and-collect procedure enhanced the opportunities for communication with targeted respondents within the automotive sector and encouraged the participants in the study. A follow-up on the completed questionnaires was made after a period of one to two weeks through virtual platforms (i.e., Zoom, Microsoft Teams, Skype and telephone calls).

Apart from its physical distribution, an internet (i.e., Google link) survey was used to collect the data. The emails of targeted respondents were obtained from the respective affiliated associations (i.e., NAAMSA, NAACAM and RMI). An email with the link to the questionnaire was circulated to the targeted email respondents, which stored data on the cloud, and other platforms (i.e., Google, Microsoft Edge etc.). The Google link guided the respondents to an online version of the questionnaire. All questions required respondents to click the answer from a Likert scale, and a submit button was available, which directed completed questionnaires back to the researcher.

An electronic copy of the questionnaire was emailed to the respondents. This provided an opportunity for respondents to either complete the questionnaire in Microsoft Word or print and hand-fill it. However, respondents were required to email the completed questionnaire back to the researcher. All email addresses were requested from the

associate affiliation websites and validated through the association membership list. Also, telephone calls were made to remind the targeted respondents to participate.

Physical distribution of the questionnaire was critical as it ensured that the targeted respondents existed and promoted a higher response rate due the direct contact and exchange between the researcher and respondents. The approach was positive since it provided a platform to explain the research objectives. The email method was convenient, cheaper, and provided a more preferable method to avoid the COVID-19 pandemic. However, because emails could have been easily ignored or discarded, targeted participants were telephonically reminded. The online survey was convenient, time effective and did not involve much logistics in the distribution of the questionnaire. It took little to no time for the respondents to return the questionnaire. Therefore, there were several benefits linked to the three selected questionnaire distribution approaches that were applied in this study.

5.7.3.1 Research questionnaire covering letter

The purpose of the research cover letter and structure of the questionnaire (refer to Appendix 1) was to inform targeted respondents about the questionnaire. It supplemented and further detailed the requested actions from the respondents, and so was vital in transmitting the survey questionnaire. The participant information sheet detailing how the survey was followed was given (refer to Appendix 2).

5.7.3.2 Questionnaire development

The survey questionnaire encapsulated four discrete sections; each underpinned a specific aspect of investigation considered in the study. The use of a measuring tool was important not only to the quantitative survey studies (Kriksciuniene, Sakalauskas & Lewandowski, 2019). Therefore, the questionnaire development, the measurement tools and the scale were discussed.

Section A emphasised the demographic information of the respondents included the automotive clusters (component manufacturing sector, retail motor industry – aftermarket and vehicle manufacturing & sales sector) in the automotive industry in South Africa. This section also provided freedom for targeted respondents to either participate or decline participation. Sections B, C and D encompassed questions about the three constructs of

the current research, namely corporate diversity practices, innovation culture and perceived company performance. Response options for these scales were based on a seven-point Likert scale, which is anchored by 1= “strongly disagree” to 7= “strongly agree”. However, due to the nature of the information assessed in corporate diversity, the construct was measured using a seven-point Likert scale anchored by 1 =s strongly agree, 2 = disagree, 3 = somewhat disagree, 4 = neutral, 5 = somewhat agree, 6 = agree and 7 = strongly agree. These structured responses, based on the Likert scale, were critical in this study because they ensured that the research assessed respondents’ attitudes and perceptions towards the measurement instruments developed in the constructs (Likert, 1932). The advantages of the seven-point scale are that it is more precise, is simpler to use and allows better replication of participant evaluation, making it a useful tool for questionnaires and most scholars (Likert, 1932; Trochim 2020; Pugh 2021; Lehdonvirta *et al.,* 2021)

5.7.3.3 Design of measurement scales

The design of a measurement instrument is a critical step in the research process since a poor design may lead to the collection of incorrect data (Wilson & Djamasbi, 2019). The literature review facilitated the development of the measurement scales used in the questionnaire of this study. Research instruments were derived from previous studies that established the reliability and validity of the original scales. The current research considers a total of 65 measurement items that form part of the questionnaire applied in this investigation. These items are categorised as:

- Corporate diversity practices, consisting of 34 measurement items.
- Innovation culture, consisting of six measurement items.
- Perceived company performance, consisting of 25 measurement items.

A detailed questionnaire of the current study is provided in Appendix 1. The next sections present the table of the measurement scales applied for each research, their sources as well as scale reliability.

Section B: Corporate diversity practices

This section presents the items and scales used to measure corporate diversity practices in the study. A total of 34 measurement items were used, which were obtained from studies conducted by Yeo (2006); Leveson, Joiner and Bakalis (2009), Ali and Konrad (2017); Jin *et al*. (2017); Bizri (2018); and Timothy *et al.* (2018). Further details of the measurement items are presented in Tables 5.4 to 5.10. These practices include policy (P1 to P5*),* HR practices (HRP 1 to HRP5), top management suppor*t* (TPS1 to TPS5), demographic diversity (Dd1 to Dd4), leadership (L1 to L5), culture (C1 to C5), and attitudes about diversity (AaD1 to AaD5). Furthermore, it was detected that the Cronbach alpha value of this scale is above the required minimum threshold of 0.7 (an average point of 0.85 is obtained from the table). Consequently, the current study considers the measurement scale of corporate diversity as reliable and valid.

Table 5.3: Measurement scale for policy

Item code	**Item description**	**Author(s) and year**	**Industry and region where the scale was applied**	**Minimum reliability (Cronbach alpha) (α)**
PI	I can disclose a suspected violation of any law, rule or regulation without fear of reprisal.	Jin *et al.* (2017)	Public sector, USA	0.906
P2	Arbitrary action, personal favouritism and coercion for partisan political purposes are not tolerated			
P3	Prohibited personnel practices (e.g., illegally discriminating for or against any employee/applicant, obstructing a person's right to compete for employment, knowingly violating)			

Item code	Item description	Author(s) and year	Industry and region where the scale was applied	Minimum reliability (Cronbach alpha) (α)
	Veterans' preferences requirement) are not tolerated.			
P4	Promotions in my work unit are based on merit.			
P5	Awards in my work unit depend on how well employees perform their jobs.			

Source: Author's own compilation

Table 5.4. displays policy as the first corporate diversity measurement, in which item codes are grounded on different levels of dimensions as measured by previous research on different areas of application. They are of importance for investigating the level of good practices in corporate diversity, as highlighted by the authors in their initial work. The item codes of policy (P1 to P6*),* the reliability from Jin *et al*. (2017); and do Adro and Leitão (2020) is 0.906, which was above the 0.7 threshold and accepted for the study.

Table 5.4: Measurement scale for HR practices

Item code	Item description	Author(s) and year	Industry and region where the scale was applied	Minimum reliability (Cronbach alpha) (α)
HRP1	Employees in my company make innovative suggestions to improve the department in which they work	Bizri (2018)	Banking sector, Lebanon	0.90
HRP2	Managers in this company have a track record of hiring and promoting employees fairly regardless of religion, sect, or ethnicity			

Item code	Item description	Author(s) and year	Industry and region where the scale was applied	Minimum reliability (Cronbach alpha) (α)
HRP3	Employees here are treated fairly regarding promotion without consideration of their religion, sect, or ethnicity	Ali & Konrad (2017)	Selected listed company, Australia	0,714
HRP4	Compensation and benefits policies are applied objectively to all employees regardless of religion, sect, or ethnicity			
HRP5	In this company, there is a general atmosphere of inclusion, tolerance, and acceptance of the other			

Source: Author's own compilation

Table 5.5 illustrates HR practices (HRP 1 to HRP6). These authors, namely Yeo (2006), Ali and Konrad (2017), and Bizri (2018) in both these industries (i.e., management and banking sector) found 0.714 and 0.93, respectively. This was above 0.7 Cronbach threshold and accepted for the study. With regard to corporate diversity measurement, these items are grounded on different levels of dimensions as measured by previous research on different areas of application. They were important regarding investigations of the level of good practices in corporate diversity, as highlighted by the authors in their initial work.

Table 5.5: Measurement scale for top management support

Item code	Item description	Author(s) and year	Industry and region where the scale was applied	Minimum reliability (Cronbach alpha) (α)
TPS1	Administrative leadership (which refers to headmaster, division heads, and other school management personnel) encourages appreciation of group differences at this school.	Yeo (2006)	Education, USA	0,89
TPS2	Administrative leadership is committed to creating a school environment that welcomes all students.			
TPS3	Administrative leadership emphasises the importance of attracting a diverse student body.			
TPS4	Administrative leadership is concerned with making this school a school that welcomes students from different cultural groups.			
TPS5	Administrative leadership talks about the value of having a diverse campus.			

Source: Author's own compilation

Table 5.6 shows top management support (TPS1 to TPS5), which is one of the practices of corporate diversity measurements according to the current study. These items were grounded on different levels of dimensions as measured by previous research on different areas of application and are of importance regarding investigations of the level of good

practices in corporate diversity, as highlighted by the authors in their initial work. The reliable Cronbach alpha was 0.92, which was above the 0.7 threshold, and was also accepted for the study.

Table 5.6: Measurement scale for demographic diversity

Item code	Item description	Author(s) and year	Industry and region where the scale was applied	Minimum reliability (Cronbach alpha) (α)
Dd1	A senior manager is designated to champion equality and diversity in your organisation	Ali & Konrad (2017)	Public sector, Australia	0.85
Dd2	A committee comprising senior managers/executives oversees whether EO/diversity issues exist	Jin *et al.* (2017)	Public sector, USA	0.91
Dd3	Managers promote communication among different work units (e.g. about projects, goals, needed resources).			
Dd4	Managers support collaboration across work units to accomplish work objectives.			

Source: Author's own compilation

In Table 5.7, demographic diversity, a corporate diversity measurement, with items grounded on different levels of dimension was measured by previous research on different areas of application and is of importance regarding investigations of the level of good practice in corporate diversity, as highlighted by Ali and Konrad (2017) and Jin *et al*. (2017) in their initial work. In the management, leadership and public sector, the alpha

scores were 0.906, 0.77 and 0.92, respectively. All these values were above the required threshold and the current study adopted and adapted them.

Table 5.7 Measurement scale for leadership

Item code	Item description	Author(s) and year	Industry and region where the scale was applied	Reliability (Cronbach alpha) (α)
L1	Would race moderate the relationship between diversity policy and perceptions of work group performance?	Yeo (2006)	Education, USA	0.92
L2	My supervisor/team leader is committed to being a workforce representative of all segments of society.	Leveson *et al*. (2009)	Selected financial institutions, Australia	0.93
L3	My supervisor/team leader provides me with opportunities to demonstrate my leadership skills.	Ali & Konrad (2017)	Public Sector, Australia	0.77
L4	There is a person with executive oversee (EO) expertise on staff	Timothy *et al.* (2018)	SMEs, cross-country study	0.87
L5	My supervisor/team leader listens to what I have to say.			

Source: Author's own compilation

Table 5.8 displays leadership as one of the corporate diversity measurements, with items grounded on different levels of dimensions as measured by previous research on different areas of application, and important regarding investigations of the level of good practices in corporate diversity, as highlighted by Yeo (2006), Leveson *et al*. (2009), Ali and Konrad (2017), and Timothy *et al.* (2018) in their initial work. The Cronbach alphas were above the 0.7 threshold, scoring at 0.93, and were therefore acceptable for the current study.

Table 5.8: Measurement scale for cultural diversity

Item code	Item description	Author(s) and year	Industry and region where the scale was applied	Minimum reliability (Cronbach alpha) (α)
C1	Would race moderate the relationship between diversity policy and perceptions of work group performance?	Leveson *et al*. (2009)	Selected financial institutions, Australia	0,93
C2	My supervisor/team leader is committed to a workforce representative of all segments of society.			
C3	My supervisor/team leader provides me with opportunities to demonstrate my leadership skills.			
C4	There is a person with executive oversee (EO) expertise on staff			
C5	My supervisor/team leader listens to what I have to say.			

Source: Author's own compilation

Table 5.9 shows corporate diversity practice – cultural measurements, with items grounded on different levels of dimensions as measured by previous research on different areas of application and are of importance for investigations of the level of good practices in corporate diversity, as highlighted by the authors in their initial work. For *culture* (C1 to C5), the alpha Cronbach was 0.93, which was above the minimum threshold of 0.7, and was therefore accepted for the current study.

Table 5.9: Attitude about diversity

Item code	Item description	Author(s) and year	Industry and region where the scale was applied	Reliability (Cronbach alpha) (α)
AaD1	Accepting many different ways of life in South Africa will strengthen us as a country.	Yeo (2006)	Education, USA	0.83
AaD2	All cultural groups make positive contributions to South Africa society.			
AaD3	People should develop meaningful friendships with people from different backgrounds.			
AaD5	Racial and ethnic diversity is good for schools.	Timothy *et al.* (2018)	SMEs, cross-country study	0.87
AaD6	It is very important that all public facilities are accessible to the disabled.			

Source: Author's own compilation

Table 5.10 displays corporate diversity measurements, with items grounded on different levels of dimensions as measured by previous research on different areas of application and are of importance regarding investigations of the level of good practices in corporate diversity as highlighted by the authors in their initial work. On attitude about diversity (AaD32 to AaD36), it was detected that the Cronbach alpha value of this scale was above the required minimum threshold of 0.7 (an average point of 0.85 was obtained from the table). Consequently, the current study considered the measurement scale of corporate diversity as reliable and valid.

Section C: Innovation culture

This section deals with the innovation culture measuring instrument as adopted from Dabić *et al.* (2018). It offers responses on innovation culture using six measurement items. Table 5.11 provides further details on the measurement instruments.

Table 5.10: Innovation culture

Item code	Item description	Author(s) and year	Industry and region where the scale was applied	Reliability (Cronbach alpha) (α)
IC 1	The enterprise is constantly developing new products or new processes	Dabić, Lažnjak, Smallbone, & Švarc (2018)	SMEs, Croatia	0.86
IC 2	The enterprise is orientated towards investing in new technologies			
IC 3	The enterprise has been successful in process innovation			
IC 4	The enterprise has been successful in product innovation			
IC 5	The enterprise owns patents or utility models			
IC 6	The enterprise is constantly looking for information concerning the potential integration of new technologies			

Source: Author's own compilation

Table 5.11 shows innovation culture measurements. The seven items were mostly applied to small business and enterprise development; the application of these measures is crucial regarding investigations of the innovation culture. The Cronbach alpha of 0.864 was above the minimum accepted threshold of 0.7.

Section D: Perceived company performance

This section offers responses to company performance elements using 25 measurement items. They were obtained from studies conducted by Tracey, Lim and Vonderembse (2005), Tracey, Lim and Vonderembse (2005), Yadav and Sagar (2013), Tracey, Lim and Vonderembse (2005), Bag *et al*. (2020), and Bag, Gupta and Foropon (2018). Details on the measurement items are presented in Tables 5.12 to 5.16. These practices include perceived value (PV1 to PV5*),* customer loyalty (CL1 to CL5), market performance (MP1 to MP5), financial performance (FP1 to FP5) and environmental performance (EP1 to EP5). Moreover, it was discovered that the Cronbach alpha value of this scale was above the required minimum threshold of 0.7 (an average point of 0.85 was obtained from the table). It was noted that perceived value and market performance had reached some measurements lower than the accepted threshold coefficient of 0.7, where Tracey *et al.* (2005) attained as low as 0.54 efficiencies. Since the scales meet and exceed the Cronbach alpha threshold of a minimum 0.7, the current study considered the measurement scale of perceived company performance as valid and reliable, with a special focus on the result of the three elements falling below the accepted threshold. These elements are anchored on measurement scales developed by previous research; the measurement levels were considered acceptable practices for perceived company performance, as highlighted by the authors in their initial work.

Table 5.11: Perceived value

Item code	**Item description**	**Author(s) and year**	**Industry and region where the scale was applied**	**Reliability (Cronbach alpha) (α)**
PV 1	Customers perceiving that they receive their money's worth when they purchase our products.			
PV 2	Customers feeling that we offer products with high value.			

Item code	Item description	Author(s) and year	Industry and region where the scale was applied	Reliability (Cronbach alpha) (α)
PV 3	Generating new business through customer referrals.	Tracey *et al.* (2005)	Metals industry, USA	0.86
PV 4	We work with each customer to develop a delivery schedule that is acceptable.			
PV 5	Purchasing obtains materials that meet specifications.			

Source: Author's own compilation

Table 5.12 shows perceived value measurements. The five items were mostly applied to supply chain management; the application of these measurements was crucial regarding investigations of the perceived company performance. The Cronbach alpha of 0.86 was above the minimum accepted threshold of 0.7, and consequently, accepted for the current study.

Table 5.12: Customer loyalty

Item code	Item description	Author(s) and year	Industry and region where the scale was applied	Reliability (Cronbach alpha) (α)
CL1	We deliver the assortment of products ordered.	Tracey *et al.* (2005)	Metals industry, USA	0.86
CL 2	We offer customers a reliable order processing time.			

Item code	Item description	Author(s) and year	Industry and region where the scale was applied	Reliability (Cronbach alpha) (α)
CL 3	Orders submitted to us are delivered on time, as defined by the customers.			
CL 4	We respond with accurate information to a customer inquiry concerning an order.			
CL 5	We are flexible in developing delivery schedules.			

Source: Author's own compilation

Table 5.13 displays customer loyalty measurements; the alpha Cronbach of 0.86 was above the minimum accepted threshold of 0.7, and consequently accepted.

Table 5.13: Market performance

Item code	Item description	Author(s) and year	Industry and region where the scale was applied	Reliability (Cronbach alpha) (α)
MP 1	Our sales growth position is high	Tracey *et al.* (2005)	Metals industry, USA	0.86
MP 2	Our market share gain is high			
MP 3	Our overall competitive position is good			

MP 4	We work with each customer to develop a delivery schedule that is acceptable.			
MP 5	Our packaging minimises damage to our final product.			

Source: Author's own compilation

Table 5.14 shows market performance measurements. One of the five items was mostly applied to supply chain management; the application of these measurements was crucial regarding investigations of the perceived company performance. The Cronbach alpha of 0.86 was above the minimum accepted threshold of 0.7, and consequently accepted.

Table 5.14: Financial performance

Item code	**Item description**	**Author(s) and year**	**Industry and region where the scale was applied**	**Reliability (Cronbach alpha) (α)**
FP 1	Our firm makes high profits consistently	Yadav & Sagar (2013)	Literature review on performance management	N/A
FP 2	Our shareholder value is high			
FP 3	The economic value added by our operations is high			
FP 4	Our firm has high returns on investment			
FP5	Our firm's investments are high			

Source: Author's own compilation

Table 5.15 shows financial performance measurements. One of the five items was mostly applied to the literature review on performance management, and the application of these

measures was crucial regarding investigations of the perceived company performance. It was difficult to have a consistent Cronbach alpha.

Table 5.15: Environmental Performance

Item code	Item description	Author(s) and year	Industry and region where the scale was applied	Reliability (Cronbach alpha) (α)
EP 1	Our firm follows the product take-back and recovery legislations	Bag *et al.* (2018)	Automotive, South Africa	0.976
EP 2	Our remanufacturing operations conform to environmental regulations			
EP 3	Our firm emphasises products designed for disposal			
EP 4	We have optimised setup cost for disassembly operations			
EP 5	We emphasise value addition			

Source: Author's own compilation

Table 5.16 shows environmental performance measurements. One of the five items was mostly applied to business management; the application of these measures was crucial regarding investigations of the perceived company performance. Therefore, the Cronbach alpha of 0.976, which was above the minimum threshold of 0.7, was accepted.

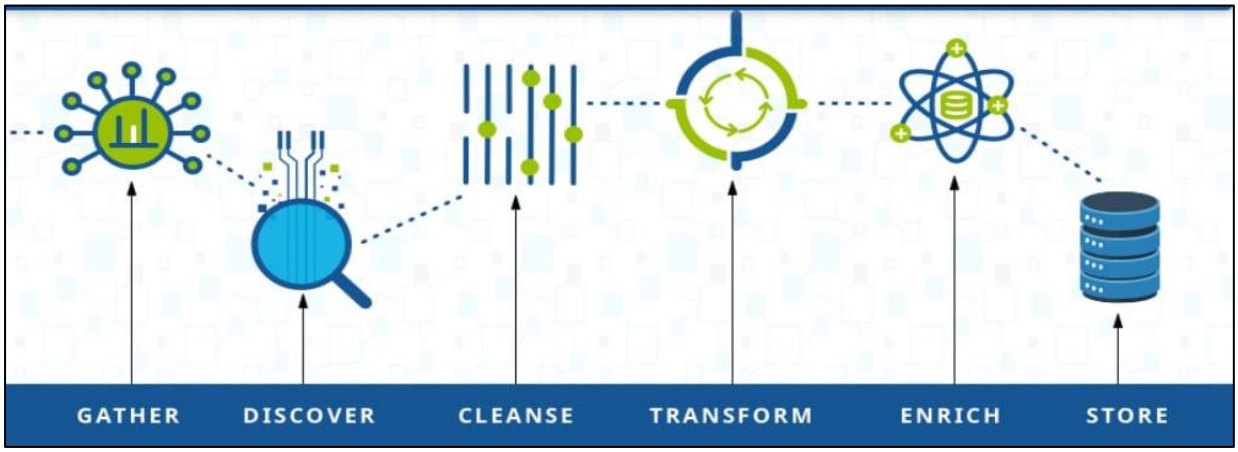
5.8 Procedures for data analysis

Data analysis is a procedure of cleansing (i.e., inspecting, purging, and converting) and demonstrates data to determine useful information, informing conclusions and supporting decision-making. Data analysis has different levels and methods surrounding diverse techniques under a variety of research jargon and is used in various business, science, and social science domains (Koomey, 2006; Friese, 2019). It was crucial therefore in the business world because data analysis plays a significant role in making decisions more scientific and helping businesses operate more efficiently and effectively (Friese, 2019). The collected quantitative data was analysed using a combination of descriptive and inferential statistics. Descriptive statistics such as frequencies and percentages, mean scores and standard deviations were used to test the perceptions of the respondents towards the constructs used in the study. Inferential statistics were performed in the form of structural equation modelling (SEM) to test the proposed hypotheses. Statistical software tools such as the Statistical Package for the Social Sciences (SPSS) and the analysis of moment structures (Amos) were used to perform the required analyses.

5.8.1.1 Data preparation

Data preparation is the procedure of scrutinising and transmuting raw data before processing and analysing it. It is a crucial step before dispensation and converting corrections and the combination of data required to supplement the data (Berthold, Borgelt, Höppner, Klawonn & Silipo, 2020). It is widely accepted as a lengthy process considered by data professionals, researchers and business users to contextualise data in order to bring insights and exclude biases resulting from poor data quality (Kiser, 2020). Figure 5.4 depicts the step of data preparation.

Figure 5.4: Data preparation



Source: Kiser (2020)

As shown in Figure 5.4, the first step was finding the right data, followed by discovering the data. This step helped the researcher to visualise the dataset tools; moreover, the researcher understood what needed to be done before the data became useful for a particular research project. The data then went through the cleansing stage. This step provided an opportunity for data to remove extraneous data and outliers, confirming data to a standard pattern and highlighting private and sensitive information. The transformation stage provided the opportunity to update the format to satisfy the statistics software used for results to be clearer and easily understood by broader stakeholders. Enriching the data focused on editing data in consideration of other related information available to provide deeper insights. The last step was storage, which refers to any storage whereby access could be granted to the qualifying entities or personnel. Therefore, the current study followed the above-stated procedure in data preparation to determine the three techniques, namely (i) data editing, (ii) coding and (iii) cleansing.

5.8.1.2 Data editing

Data editing is the activity aimed at detecting and correcting errors (logical inconsistencies) in data. This includes editing techniques and approaches (i.e., micro-editing/macro-editing, input/output editing, graphical editing, interactive editing etc.) to a range of procedures and processes used for detecting errors and handling errors in data (OECD, 2006). It is important to research as it serves as a data quality control process, ensuring the absolute values are presented to the expected audience (Berthold *et al.,* 2020). All questionnaires' characteristics, ambiguities and irregularities, which may be

present in data, including oversights, contradictions, incompleteness, illegibility, and any other identifiable errors are considered typical errors (Kaphle, 2020). Where variances exist in the questionnaire of the current study, editing was employed through the evaluation of each questionnaire from the target respondent to ensure accurate and correct filling of the required information. Also, before the questionnaires were distributed, they were subjected to these editing techniques to ensure that accurate questions were asked.

5.8.1.3 Data coding

Data coding refers to a process of capturing observations from an empirical study and categorising them into categories that can be numbered, critical in ensuring that the gathered data can be analysed and correlated with other variables (Kaphle, 2020). The purpose of code writing is to clean, transform, scrap, and merge data. This is done to implement statistical analyses, stimulate models, format results and produce plots (Gentzkow & Shapiro, 2014). The current study used a Microsoft Excel spreadsheet to store all codes and reflected as follows: Section A: Demographic information; Section B: Corporate diversity practices; Section C: Innovation culture; and Section D: Perceived company performance. However, each section was coded, for example, Section B was given a code from 1 to 34, whereas Section C allocated 35 to 41 and Section D coded from 42 to 65. The implementation of the process of allocation of codes was applied to all questions in the questionnaire and their respective codes. Additionally, all responses including the section were classified according to codes (i.e., participation; yes, was given 1 and no was given 2, black people were given code 1, white people given 2, coloured people given 3, Indians given 4 and others given 5). This was done so that all codes were stipulated in the Microsoft Excel datasheet.

5.8.1.4 Data cleansing

Data cleaning is the procedure of sensing and rectifying inaccurate, incomplete and irrelevant parts of data or erroneous records because they may be aggregated, delayed, censored, missing or vague from a record set, table, or database. It also includes replacing, modifying, or deleting dirty or coarse data (Wu, 2013). Data cleaning is necessary when incorporating various data sources and should be addressed together with schema-related data alterations (Larsson, 2013). Data cleansing may be performed

interactively with data wrangling tools or as batch processing through scripting (Maharana, Mondal & Nemade, 2022). After the data had been coded and entered into the Microsoft Excel sheet/file, it was assessed again to detect any irregularities (i.e., typos, omissions, inaccurate etc.) in the current study. Data was checked and verified on at least three consecutive occasions to ensure accuracy. In case errors were identified, they were rectified through code referencing by referring to the actual number of the questionnaire and then re-entering the correct/missing/wrong data using the correct code. This process was repeated until all entries in the database were available.

5.8.1.5 Test for normality data

The test for normality data is constructed in many statistical procedures, namely parametric tests because their validity depends on it, assuming it needs to be checked for normality in statistical analysis using SPSS (Ghasemi & Zahedias, 2012). The violation of normality in a large enough sample (>30 or 40) should be largely destabilised data (Pallant, 2020). Considering the current study, sample size distribution is expected to be normal, regardless of the shape of the data. There are various normality tests used to compare the scores in the sample to a normally distributed set of scores with the same mean and standard deviation. The null hypothesis is that “sample distribution is normal.” If the test is significant, the distribution is non-normal (Elliott & Woodward, 2007; Ghasemi & Zahedias, 2012). The following table details the main normality test supplemented by graphical assessments: Kolmogorov-Smirnov (K-S) test, Lilliefors corrected K-S test, Shapiro-Wilk test, Anderson-Darling test, Cramer-von Mises test, D’Agostino skewness test, Anscombe-Glynn kurtosis test, D’Agostino-Pearson omnibus test, and the Jarque-Bera test (Elliott & Woodward, 2007; Ghasemi & Zahedias, 2012; Pallant, 2020). Consequently, since K-S is a much-used test, and the K-S and Shapiro-Wilk tests can be conducted in the SPSS Explore procedure, the current study is best suited for the test: the plan was to analyse data, use the descriptive statistics then explore consideration of graphical plotting data and thereby confirm normality plots with tests. The D’Argostino’s K squared test was conducted with the aid of the SPSS software concurrently with the analysis of descriptive statistics.

5.9 Descriptive statistics

Descriptive statistics are summary statistics that quantitatively describe or sort data summaries from a collection of information and analyses of the data. It is important in data reporting of the overall sample sizes of subgroups (i.e., management or coverage of group) and demographics (i.e. age, gender, race etc.) (Elliott & Woodward, 2007; Ghasemi & Zahedias, 2012; Pallant, 2020; Trochim, 2020). In the current study, a pattern and data distribution descriptive statistic are necessary for the sample and cannot be inferred from the whole population from which the sample is drawn. Also, three main descriptive groups were applied in the current study, namely frequencies, mean scores and standard deviations.

5.9.1 Frequencies

Frequency is defined as the number of times that a periodic function repeats the same sequence of values during a unit variation of the independent variable (Merriam-Webster, 2020). Importantly in this study, the frequency distribution list, table or graph displayed the number of occurrences of results in a sample. Each entry in the table contained the frequency or count of the occurrences of values within a particular group or interval. The current study considered the statistical frequency application in the analysed demographic profile of respondents; the frequencies of how many scores are either component manufacturing sector, retail motor industry-aftermarket and vehicle manufacturing and sales sector. Also, the frequencies were employed to define the research construct by determining how many scores (i.e., how many respondents agreed or disagreed) each research construct was entered by the targeted respondents. A table of frequencies according to the categories/responses, the actual number of scores occurring (n) and the percentages (%) of the total sample were presented either graphically (i.e., histograms) or through charts (i.e., pie - and bar charts).

5.9.2 Mean score

Mean score is a value that lies within a range of values and is calculated according to a certain type of research (Merriam-Webster, 2020). It is crucial in statistics for the validation of hypothesis statement, i.e., a study by Reyes (2020) revealed that: “The hypothesis was false because the mean for all music students combined is 17.444. This score is lower than the mean of the control group, which had a mean score of 18.182.

This proved the hypothesis invalid because the mean score for music students as a whole is lower than the mean score for those in the control group." The study considered the mean application as a determinant of important scores among a set of items in a specific construct (i.e., the item with the highest mean is the most important). The mean was employed to determine the extent to which respondents agreed or disagreed with the items on the questionnaire. A mean score rank was also determined, where constructs were compared against each other to determine their relative importance.

5.9.3 Standard deviation

A standard deviation (SD) is a number characteristically used to represent how the measurements are spread out from the average (mean); and the amount of variation or dispersion of a set of values (i.e., sample size, and targeted population) (Boretti, 2020). It is important when reporting empirical studies. There are five widely acknowledged types of SD favoured by most researchers (i.e., including the sample median, the first and third quartiles, and the minimum and maximum values) rather than the sample mean and standard deviation (SD), particularly for skewed data (Shi *et al.,* 2020). The study used the sample median, although it accentuated normal distribution, to confirm whether data is normally distributed. Normal distributions are crucial in statistics and were often used in the natural and social sciences to represent real-valued random variables whose distributions are not known (Weisstein, 2020). The analysis of SD concurrent values was useful in further ascertaining the distribution of the data in the study.

5.9.4 Exploratory factor analysis

Exploratory factor analysis (EFA) is a statistical method employed to simplify complex datasets by examining the pattern of correlations (or covariances) among observed variables. EFA is predominantly valuable in examining complex concepts that are not easily measurable (i.e., mental health, racial impact, culture and quality of life), including the concept of a latent factor that exerts influence on observed variables (Kline, 1994; Basto & Pereira, 2012; Alavi *et al.,* 2020). The current study considered numerous latent variables, namely cooperate diversity with its seven practices; policy, HR practices, top management support, attitude about diversity, leadership, cultural and demographic diversity. Also, innovation culture and perceived company performance with its five elements of perceived value, customer loyalty, market performance, financial

performance and environmental performance were also studied. The questionnaire (refer to Appendix 1) structure presents all these variables to ensure consistent data gathering, as well as the research model structure to determine the factor stricter of data collected. Conducting EFA requirements was met as a result of the borrowed items of the questionnaire from other studies; it made sense to utilise the current research context to measure scales employed in the questionnaire.

A factor structure is a correlational relationship between a number of variables that are said to measure a particular construct. This critical tool is intended to interpret scattering patterns obtained in X-ray, electron and neutron experiments. There is also a unique variance to that variable not explained by the factors, known as uniqueness (Basto & Pereira, 2012; Alavi *et al.,* 2020). The degree of targeted respondents provides information to decide whether a particular factor should be retained. Bartlett's test of sphericity and a Kaiser Meyer Olkin (KMO) test of sampling adequacy will be performed to check for the factorability of the data. Bartlet's test determines that the correlation matrix is an identity matrix; unrated variables would be considered unsuitable for EFA. The KMO tests whether the sample is large enough and will be indicated by a value greater than 0.5; a p-value less than 0.05 indicates that the variables in the correlation matrix are related. Therefore, factor analysis is useful for this data (Creswell, 2014; Smith *et al*., 2015; Snyder, 2019; Trochim, 2020).

The information from the questionnaire was gathered and entered into a master sheet using the Statistical Package for Social Science (SPSS) version 22. Firstly, to test the suitability of the corporate diversity scale, data for factor analysis was verified by using Bartlett's test of sphericity and the Kaiser-Mayer-Olkin measure of sampling adequacy. Firstly, only items that had factor loadings greater than 0.5 were retained. Secondly, a parallel analysis was performed to obtain the suitable factors. A factor loading of > 0.50 was used to determine the items for each factor.

5.9.4.1 Structural equation modelling

A structure factor is the hypothetical construction of a structure that is normally associated with factor analysis where it is a matrix containing the factor loadings, which is the correlation between the latent and manifest variables. It can be represented in a mathematical function describing the amplitude and phase of a wave diffracted from

characterised crystal lattice planes (Miller, 1839; Pam, 2013; Al Kurdi, Alshurideh, Salloum, Obeidat & Al-dweeri, 2020). The partial least squares path modelling or partial least squares structural equation modelling (PLS-PM, PLS-SEM) is a method of structural equation modelling that allows estimating complex cause-effect relationship models with latent variables (Shamsa, Meia & Adnana, 2020). Therefore, a PLS-SEM approach will be employed to confirm as well as explore the interrelationships between corporate diversity, innovation culture and perceived company performance. There are various considerations for employing PLS-SEM in the current study. Firstly, PLS-SEM is more capable of handling a variety of modelling issues without imposing restrictive assumptions. Secondly, PLS-SEM is best for mediation analysis as it lacks restrictive distribution assumptions. Thirdly, PLS-SEM has the flexibility to be applied to both reflective and formative measurement models, and it overcomes the limitation of a multiple regression approach while yielding higher levels of statistical power with smaller sample sizes. Finally, PLS-SEM is useful in applying the higher-order component models (HCMs) to get more accurate solutions for the structural models that exhibit high multicollinearity (Vinzi, Trinchera & Amato, 2010; Hair, Sarstedt, Hopkins & Kuppelwieser, 2014; Carrión, Nitzl & Roldán, 2017).

5.9.4.2 Confirmatory factor analysis

Confirmatory factor analysis (CFA) refers to a statistical technique employed to define variability among observed, correlated variables in terms of a potentially lower number of unobserved variables called factors (Zhang, Dawson & Kline, 2020). It is the first stage of the SEM procedure. CFA is intended to assess the accuracy of the measurement scales that are employed in the study. This was achieved by focusing on three psychometric properties, which were reliability, validity and model fit.

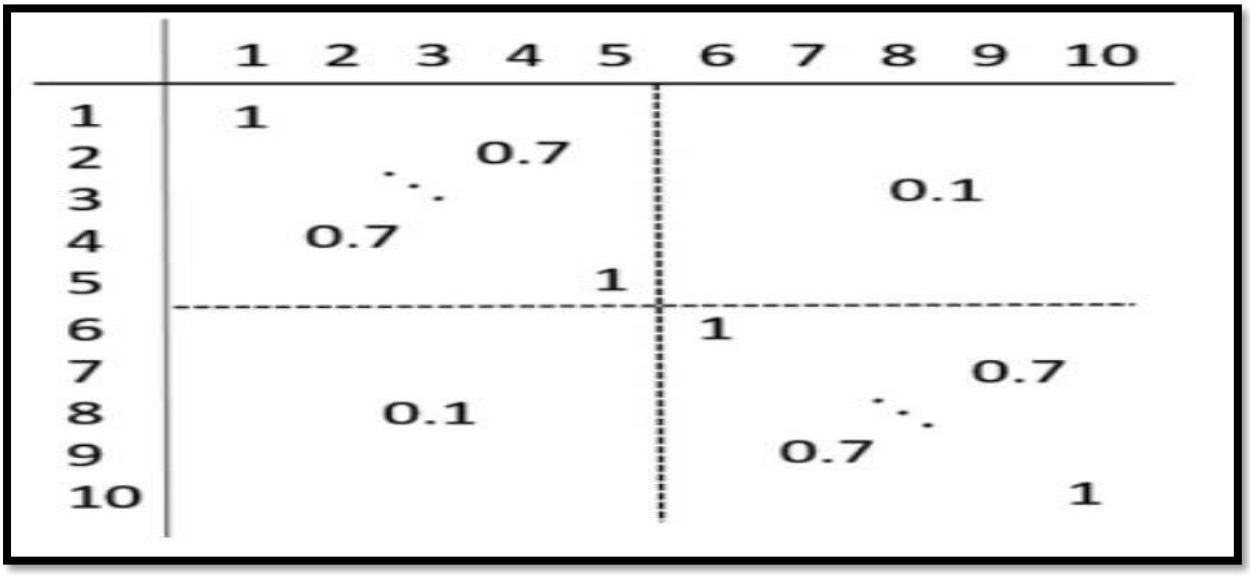
5.9.4.3 Reliability

Reliability refers to whether scores for items on an instrument are internally consistent, and stable over time, and whether there was consistency in test administration and scoring (Creswell 2014). In this study, the reliability of each research construct was measured using the Cronbach alpha coefficient. The minimum cut-off value for acceptable reliability is 0.7 (Malhotra, 2010).

5.9.4.4 Cronbach alpha

Cronbach's alpha**,** α (or *coefficient alpha*), developed by Cronbach in 1951, measure's reliability, or internal consistency, with high reliability implying it measures job satisfaction, while low reliability implies it measures something else (or possibly nothing at all) and in general, a score of more than 0.7 is usually accepted. However, some authors suggest higher values of 0.90 to 0.95 (Glen**,** 2020).

Figure 5.5a Cronbach alpha guidelines



Source: Schrepp (2020)

Figure 5.5a shows two categories of elements that are {1,2,3,4,5} and {6,7,8,9,10}. The categories experience high correlation within their subsequent group. However, it displays a secondary correlation to categories of the other elements. Therefore, the following rules of thumb were applied: α > 0.9 (Excellent), > 0.8 (Good), > 0.7 (Acceptable), > 0.6 (Questionable), > 0.5 (Poor), and < 0.5 (Unacceptable) (Schrepp, 2020; Malkewitz, Schwall, Meesters & Hardt, 2023). The figure reveals that the minimum acceptable α value is 0.7. It is expected, therefore, that the α values for all the measurement scales used in the study were above the 0.7 threshold.

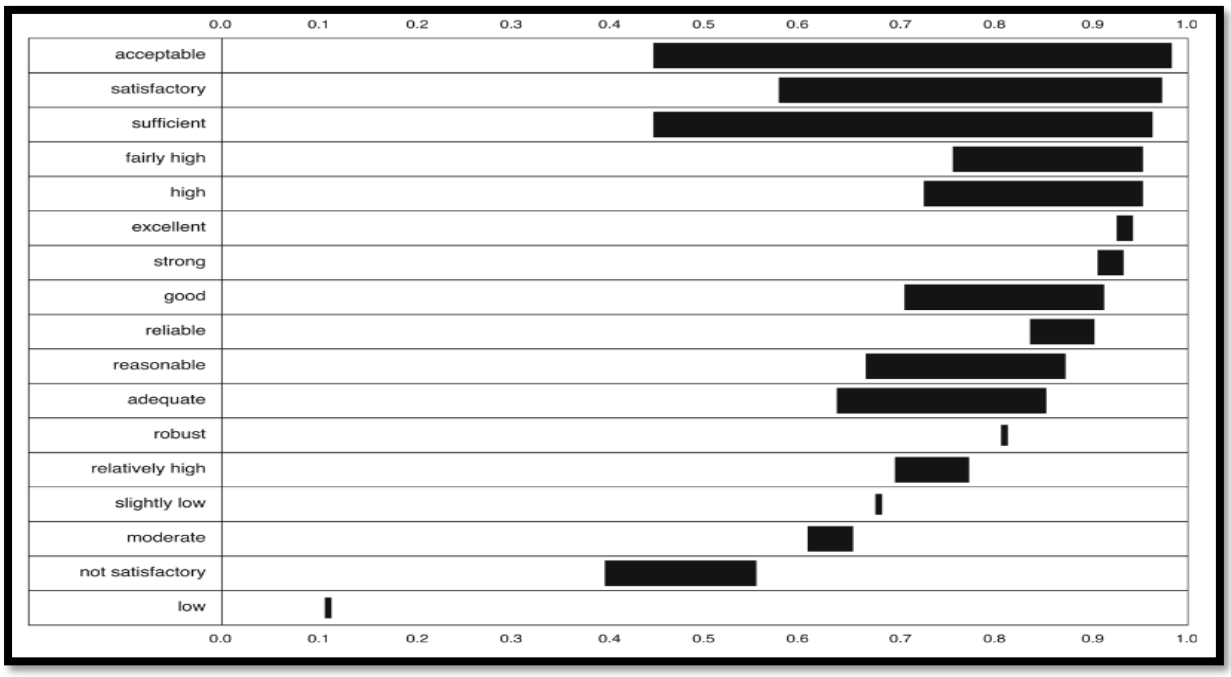
5.9.4.5 Item-total correlations

The item-total correlation is a correlation between the question score (i.e., 0 or 1 for multiple choice) and the overall assessment score (i.e., 67%); it is expected that if a participant gets a question correct, they should, in general, have higher overall

assessment scores than participants who get a question wrong (Glen, 2020; Pope 2020). All the anomalies and unreliable items were regarded as redundant and discarded. This discarding of garbage items was expected to produce enhancement of reliability in a process called scale purification or cleansing to validate the accuracy of data.

In applying the purification of data to check for reliability, the current study employed the guidelines presented in Figure 5.5.

Figure 5.5: Item-total correlation range



Source: Robertson & Evans (2020)

5.9.4.6 Composite reliability

Composite reliability (CR) measures the internal consistency of indicator variables loading on the latent variable (Bell, Chalmers & Flora 2023). The CR greater than 0.7 proves that indicator variables loading onto the latent variable share variance among them (Crossman, 2019; Glen, 2020). Therefore, the critical and creative thinking skill instrument model satisfies the criteria for construct validity and reliability using confirmatory factor analysis (Mulyono, Suranto, Yamtinah & Sarwanto, 2023). Section 6.8 refers to the findings of CR; all indicator variables found in this study were greater than the 0.7 threshold, proving the model fit acceptance.

5.9.4.7 Rho_A statistic

The Rho_A statistic measures the dependency of the composite scale and must meet or exceed the 0.7 threshold (Crossman, 2019*;* Pope, 2020). This is established by the sum of the extracted average variance (AVE) and the squared correlations of the items with each other (Creswell, 2014). Section 6.8 details the finding of this study wherein 0.7 is achieved.

5.10 Validity

Validity in quantitative research refers to whether one can draw meaningful and useful inferences from scores on particular instruments (Creswell, 2014). In this study, three forms of validity were tested. The first form was facing validity, measured using a review of the questionnaire by a panel of faculty experts in management sciences. The second form was content validity, tested using a pilot study of the questionnaire. The pilot study involved requesting between 40 and 50 respondents to complete the questionnaire and then analysing their responses to determine whether any gaps could be corrected before the final survey was conducted. The third form was constructing validity, tested through an analysis of the correlations between the research constructs. The fourth form was convergent validity, which tests whether two indicators of a construct that could be related were, in fact, related. The fifth form was discriminant validity, which tests the extent to which measures of different traits are unrelated. According to Fraering and Minor (2006), the existence of positive correlations between these constructs served as a confirmation of acceptable construct validity.

5.10.1 Face validity

Face validity refers to the extent to which a test is subjectively viewed covering the concept it purports to measure; the transparency or relevance of a test as it appears to test participants α provides a window into the internal validity within the current study's population, a population that may not replicate the results of published work (Holden, 2010; Robertson & Evans, 2020). Therefore, in the assessment of what the questionnaire superficially appears to measure in this study, face validity was established through a review of the questionnaire by the supervisor and three members of industry who are practitioners from three sectors in the South African automotive industry (i.e., automotive component manufacture, retail motor industry, vehicle manufacturer and sales) in which

the study was positioned. After reviewing the questionnaire, each of the three reviewers provided feedback enhancing improvements of the questionnaire through implementing some changes (i.e., technical aspects, questionnaire structure and wording).

5.10.2 Content validity

Content validity refers to the magnitude to which the items on a test are equally illustrative of the whole sphere to which the test seeks to measure/quantify (Salkind, 2010). To make sure that items are fairly presented, a pilot study was conducted. This is a small-scale introductory study employed by researchers to enhance decision-making on how best to conduct a large-scale research project (Crossman, 2019). The pilot study helped the researcher to recognise or improve a research question and evaluate all the usefulness of the planned methods (i.e., estimate how much time and resources to complete the study on a bigger scale, among others). The predetermined sample for the current study had a size of n = 500 target respondents. Ten (50) cases were considered sufficient for the pilot sample size; also, the questionnaire will be adapted using the feedback attained from the pilot sample.

5.10.3 Construct validity

Content validity is identified by the degree to which elements of an assessment instrument are relevant to and representative of the targeted construct for a particular assessment purpose (Haynes, Richard & Kubany, 1995; Mathieu *et al*., 2020). It is essential in research as the subdimension's relations to 13 higher-order constructs are considered in the study, giving it an overall research dimension (Mathieu *et al.,* 2020). While many researchers acknowledge many types of construct validity, two construct validities (namely, convergent validity and discriminant validity) were discussed and tested in the study.

5.10.4 Convergent validity

Convergent validity is a measure of constructs that theoretically should be related to each other and are, in fact, observed to be related to each other. In short, it is a correspondence or convergence between similar constructs (Trochim, 2020). This is achieved through the use of the correlation coefficient; with the correlation being a single number that best describes the degree of relationship between two variables (Hair *et al.,* 2014; Carrión *et*

al., 2017; Trochim, 2020). Convergent validity will be regarded as satisfactory if each item loading is at least 0.5 (Hair *et al.,* 2014). All items with loadings less than 0.5 will be discarded from the scales because they are a threat to convergent validity. A minimum cut-off value of 0.4 was employed to determine convergent validity, as well as the approximate degree to which any two measures are related to each other: two types of correlation coefficients, namely Pearson's product-moment correlation and Spearman's rank-order correlation (rho) were used.

5.10.5 Discriminant validity

Discriminant validity is a measure of constructs that theoretically should not be related to each other, which, in fact, are observed to not be related to each other; in other words, discriminate between dissimilar constructs (Trochim, 2020). As with the convergent validity, to achieve discriminant validity, the use of a correlation coefficient will be considered, when convergent correlations are always higher than the discriminant ones (Owens, Wooten & Tavakoli, 2020; Mehdipour *et al.,* 2020; Trochim, 2020). Correlations below 1.0 between the constructs were considered as a gauge for determining the adequacy of discriminant validity; also, the approximate degree to which any two measures are related to each other, and two types of correlation coefficient, namely Pearson's product-moment correlation and Spearman's rank-order correlation (rho) were used.

5.10.6 Model fit analysis

The aim of model fit analysis is to check the extent to which the hypothesised model is well-fitting. Regression model outcome-predicted values' results may be close to the observed data values (Grace-Martin, 2020; Zhang *et al.,* 2020). Considering no informative predictor variables in the current study, the fit of a proposed regression model should, therefore, be better than the fit of the mean model (Grace-Martin, 2020). However, the standardised root mean square residual (SRMR), the squared Euclidean distance (*d_LS*) and the geodesic distance (***d_G***) analysis are done before conducting EFA to calculate the suitability of data, and composite reliability (CR) test to examine the consistency of all construct items (Zhang *et al.,* 2020). The following tests were employed: chi-square/degrees of freedom; root mean square (RMS_theta); normed fit index (NFI); regression to evaluate model fit; R-squared; the overall P-test; and the root mean square

(RMS_theta). Different combinations of these two values provide different information about how the regression model compares to the mean model (Grace-Martin, 2020). The table with acceptable thresholds that were applied for each of the above model fit indices is indicated in Table 5.17.

Table 5.16: Model fit indicator and thresholds

Model fit indicator	**Acceptable threshold**
Chi-square (CMIN/DF)	≤3
RMS_theta	<0.08
Normed fit index (NFI)	>0.9

Source: Adopted from Robertson & Evans (2020), Trochim (2020), and Pugh (2021)

5.10.7 Path analysis

Path analysis is the second part of the SEM procedure and is performed after CFA. It is a form of multiple regression statistical analysis that is used to evaluate causal models by examining the relationships between a dependent variable and two or more independent variables. It is important in a research method to determine and estimate both the magnitude and significance of causal connections between variables (Crossman, 2019). Consequently, the magnitude and significance of the dependent and independent variables hypothesis casual connections were determined and shown through the path (beta) coefficients, following the significance connections confirmation through p-values. Furthermore, the standardised root mean square residual (SRMR) = standardised root mean square residual for exact model fit d_ULS and d_G were used, and normed fit index (NFI) and RMS_theta were used (refer to Table 6.8). The same CFA parameters were considered to test the structure of the model as well as data good fit to the model.

5.11 INTERPRETATION OF RESULTS

The intention was to affirm the hypotheses made in the current study, or whether the data will refute it. The interpreted results sought to reiterate the research problem being examined and compare dissimilarities of the findings with the research questions fundamental to the current study.

5.11.1 Description of trends, comparison of groups, or relationships among variables

The description of any trends that emerged from the analysis was explained, and all unanticipated and statistically insignificant findings resulting from the empirical data were detailed. The group's comparisons dealt with a specific focus on OEMs, RMI and ACMs. Notwithstanding the relationships from the conceptual model considering the mediating variables was also explained. All seven cooperate diversity areas considered under the study, namely policy, HR practices, top management support, demographic diversity, leadership, culture and attitude about diversity were analysed to further establish and/or understand the relationship among them.

5.12 ETHICAL CONSIDERATIONS

South Africa previously had obvious challenges between the law and the ethical principles as a result of apartheid laws' implementation. All research studies should be conducted ethically, morally and soundly, and sensitive findings must be reported in such a way that they do not harm the relationship between the parties involved (refer to Appendix 4) (Akaranga & Makau, 2016; Dhai, 2020). Four ethical research principles were considered, namely informed consent, protection from harm and victimisation, confidentiality and anonymity as well as permission to conduct the study (refer to Appendix 2). These four are the main ethical concerns relevant to quantitative studies (Hammersley & Traianou, 2012; Traianou, 2020).

It is important to consider ethical issues in research that involves human subjects as this may help guarantee trust from the respondents who may be motivated to contribute more openly to the research (Koller, 2008). A letter of information and consent was provided to respondents before their participation (refer to Appendix 2). The informed consent was in the form of a cover letter signed by the researcher that assures respondents that the

information they provide will be kept confidential (refer to Appendix 1). Additionally, the anonymity and confidentiality of respondents and the data they provided will be safeguarded by ensuring that respondents are discouraged from identifying themselves and their organisations. Respondents were treated with respect and courtesy during the entire research process. Deceptive methods of obtaining data from respondents, such as giving them incentives for participating were avoided. Respondents were allowed to withdraw from the study at any time without being victimised for doing so. Permission letters from the organisation were granted before the commencement of the study (refer to Appendix 4)

5.12.1 Informed consent and voluntary participation

It is important to consider ethical issues in research that involve human subjects as this may help guarantee trust from the respondents who may be motivated to contribute more openly to the investigation (Kotter, 2008). A letter of information and consent (refer to Appendix 2) was provided to respondents before their participation. The informed consent was in the form of a cover letter (refer to Appendix 1) signed by the researcher that assures respondents that the information they provided will be kept confidential. Additionally, the anonymity and confidentiality of respondents and the data they provided were safeguarded by ensuring that respondents were discouraged from identifying themselves and their organisations. Respondents were treated with respect and courtesy during the entire research process. Deceptive methods of obtaining data from respondents, such as giving them incentives for participating, were avoided. Respondents were allowed to withdraw from the study at any time without being victimised for doing so.

5.12.2 Ensuring confidentiality and anonymity

The researcher ensured that the research preserved its ethical integrity by distributing a letter of information and consent to respondents before participation (refer to Appendix 4); not annexing the confidentiality of the respondents; recognising all references used in the study; not engaging in any deceptive means to gather data from respondents; and ensuring that the respondents were treated with respect and courtesy during the research process.

Regarding the safeguarding of information, the researcher ensured safeguarding of anonymity and confidentiality by not requiring respondents to identify themselves or their organisations; not asking participants' e-mail addresses, and by providing a covering letter, signed by the researcher, assuring participants that the information provided was kept confidential, and will be destroyed after a period of five years. Safeguarding the anonymity and confidentiality of participants and the data they provided were two ways in which the well-being and interests of respondents can be protected (McGivern, 2006; Gray, Williamson, Karp & Dalphin, 2007).

5.12.3 Protection from victimisation

Research practitioners should note the importance of protecting respondents from any form of harm or victimisation, either by moral standards or by the laws of countries (Pillay, 2014; Dhai, 2020). Therefore, all completed questionnaires were kept and guarded in a safe place at all times, and respondents' details were not revealed or archived together with the completed questionnaires. All respondents were informed and assured that the research was conducted for academic purposes only.

5.12.4 Ensuring permission is obtained

Ethical clearance application form was submitted to the ethics committee at the UNISA Graduate School of Business Leadership. The researcher conformed to all ethical compliance to gain ethical clearance. The survey questionnaire (refer to Appendix 1) examined and was approved by the research committee before it was distributed to respondents. All letters permitting the researcher to conduct the study in the automotive industry in South Africa were obtained from NAAMSA, NAACAM and RMI (refer to Appendix 4). These letters were forwarded to the ethics committee of UNISA Graduate School of Business Leadership.

5.13 CHAPTER CONCLUSION

This chapter described the methodology and design of the research study. It began by restating the concepts such as research reasoning, research paradigms, research approach, research design, research strategy, and a brief literature review outline, sampling design, and data collection. Descriptions of the research design and its strategies were provided. The study took the form of a quantitative nature norming to correlational research design. The correlational design is appropriate since the study is primarily intended to examine how diversity practices interact with innovation culture and company performance in the automotive industry in South Africa; consequently, deductive reasoning to this research has been chosen with the view of a specific timeframe and hence the cross-sectional time horizon will be used. Stratification design sampling has been chosen. A stratified random technique will be utilised to ensure that respondents are scattered in various provinces; a sample size of n = 500 respondents was in the predetermined form. Three forms of validity were discussed and adopted for testing; also, reliability was tested using the Cronbach alpha coefficient. The PLS-SEM technique, encapsulating CFA to test the psychometric properties of the measurement scales, and path analysis to test the predetermined hypotheses were employed to perform the main data analysis. The chapter also defined the target population, data collection procedures, data interpretation procedures and limitations, and delimitations of the study. Therefore, all ethical considerations as discussed will be adhered to. The following chapter will deal with the graphical and numerical in percentages details; also, all the data gathered will be analysed and discussed.

CHAPTER 6
DATA ANALYSIS AND INTERPRETATION OF RESULTS

6.1 CHAPTER OVERVIEW

Data analysis denotes examining, purging, and decoding, in lieu of data to observe the information supporting decision-making and research conclusions. Chapter 5 detailed a summary of the approaches, methods and techniques to be employed in collecting the research data. The interpretation of results has different levels and methods surrounding diverse techniques under a variety of research terms used in various business, science, and social science domains; critical in ensuring that the gathered data can be analysed and correlated with other variables (Koomey, 2006; Friese, 2019; Kaphle, 2020). The questionnaire was used to gather primary data concerning the current study from a targeted population within the automotive industry (i.e. component sector, retail sector and vehicle assembly sector). The interpretation of results addresses the research problem under examination.

This chapter first provides the results of the descriptive analysis of the collected data. It starts with a presentation of the response rate of the survey. This is followed by a presentation of the descriptive statistics using frequencies and percentages, which were applied to analyse the demographic data based on Section A of the questionnaire to establish profiles of the respondents and the participating companies. Descriptive statistics, using the mean scores and the SDs of each measurement scale, were computed to determine the perceptions of the respondents towards each construct. The exploratory factor analysis (EFA) was applied in the scale purification process, which determined the structure of the collected data for all measurement scales. Further analysis was performed using inferential statistics in the form of structural equation modelling (SEM), based on the participation least squares (PLS) technique. In this regard, the chapter reports on the results of the confirmatory factor analysis (CFA) performed to analyse the accuracy of the measurement scales, followed by path analysis, where the hypothesised relationships were tested. The chapter also reports on the link between the study results and the research theories, namely the systems theory and the disruptive innovation theory. These were the tools used to analyse the data included in the SPSS and SMART PLS.

6.2 **PILOT STUDY**

Section 5.8 discussed content validity involving the use of a pilot study to ensure that the measurement scales are usable in the actual survey. Pilot studies are conducted before the main research to provide preliminary evidence to assist the researcher in either proceeding with the investigation or not (Sabharwal, Jalloh, Levin & Morris, 2022). Pilot studies are important for improving the quality, and efficiencies of research and to have a specific design feature; it is conducted on a smaller scale than the main or full-scale study (In, 2017). In this study, questionnaires were distributed on experimental grounds resulting in a total of 53 respondents drawn from the South African automotive firms in various South African provinces. A questionnaire code from the analysis of the pilot study result regarding attitude about diversity (AaD) changed to diverse attitude (DA), and was observed and continued throughout the whole survey. The results of the pilot study are reported in Table 6.1.

Table 6.1: Pilot study results

Measurement scale	Sample number	Mean	Standard deviation	Average item-total correlation	Number of items	Number of items deleted	Cronbach alpha
DP	53	4.965	1.283	0.573	6	0	0.800
HRP	53	4.577	1.425	0.622	6	0	0.907
TMS	53	5.104	1.548	0.809	5	0	0.924
DD	53	4.589	1.492	0.778	5	0	0.912
LD	53	4.807	1.440	0.795	4	0	0.907
CD	53	5.035	1.393	0.809	5	0	0.926
DA	53	5.777	1.052	0.745	5	0	0.897
IC	53	5.517	1.195	0.691	5	0	0.912
PV	53	5.573	0.904	0.725	5	0	0.885
CL	53	5.522	0.867	0.544	5	0	0.861
MP	53	5.392	0.919	0.713	5	0	0.878
FP	53	5.475	0.930	0.673	5	0	0.855
EP	53	5.340	0.954	0.543	5	0	0.771

Measurement scale	Sample number	Mean	Standard deviation	Average item-total correlation	Number of items	Number of items deleted	Cronbach alpha
Acronyms: **DP** = Diversity policy; **HRP** = Human resource policy; **TMS** = Top management support; **DD** = Demographic diversity; **LD** = Leadership diversity; **CD =** Cultural diversity; **DA** = Attitudes about diversity; **IC** = Innovation Culture; **PV =** Perceived value; **CL =** Customer loyalty; **MP =** Market performance; **FP =** Financial performance**; EP =** Environmental performance**.**							

Source: Author's own compilation

As Table 6.1 shows, the overall mean score range of the measuring scale is from 4.589 to 5.777 with a standard deviation range from 0.904 to 1.548 underlying greater agreement for the structured report of the study (Granata *et al.,* 2022). The average item-total correlation results obtained range from 0.543 to 0.809, which are above the 0.3 minimum cut-off value recommended by most scholars (Henseler, Ringle & Sarstedt, 2015; Hair *et al.,* 2017a; Ali & Konrad, 2017; Timothy *et al.,* 2018; Hamid, Anwar & Lumoindong, 2019; Sudibjo & Prameswari, 2021). The closer the Cronbach alpha (α) coefficient is to 1.0, the greater the internal consistency of the items in the scale (Hidayat, & Patras, 2022). An alpha coefficient of $(\alpha) \geq 0.9$ is considered excellent, $\alpha \geq 0.8$ good, $\alpha \geq 0.7$ acceptable, $\alpha \geq 0.6$ questionable, $\alpha \geq 0.5$ poor and $\alpha < 0.5$ unacceptable (Granata *et al.,* 2022). In the pilot study, measurement scale items mostly obtained alpha values higher than 0.8, except for environmental performance (EP), which achieved an alpha value of 0.771 (Hidayat & Patras, 2022). However, the Cronbach α for EP is above the acceptable (i.e. $\alpha \geq 0.7$) threshold; therefore, no item was discarded, and the same measurement scales were then applied in the main study.

6.3 **RESPONSE RATE**

Response rate is the number of valid replies received from a given campaign and/or research, typically expressed as a percentage (Clardie, 2021). The numerator is then easy to calculate, being an observed count, whereas the denominator is the total number of questionnaires distributed. Table 6.2 presents the response rate for participating companies drawn from each of the three professional associations in the automotive industry in South Africa, namely NACAAM, NAAMSA and NADA.

Table 6.2: Response rate

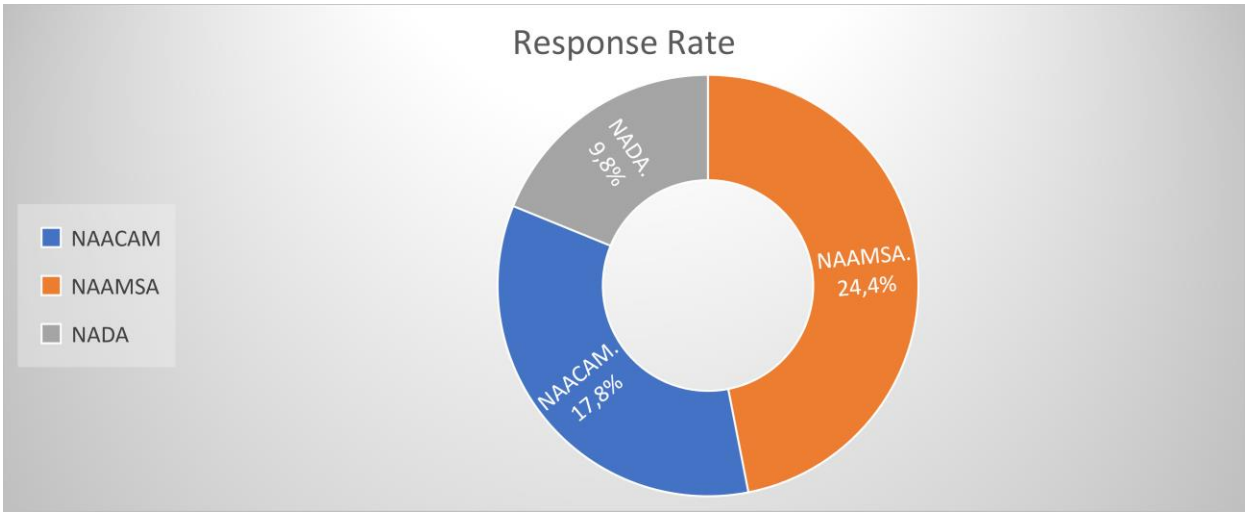
Description	NACAAM	NAAMSA	NADA	FREQUENCY
Total target population	135	41	1369	1545
Total number of questionnaires distributed	370	205	970	1545
Total number of questionnaires returned	69	56	107	232
Total number of questionnaires not returned	301	149	863	1313
Usable responses discarded	3	6	8	17
Valid questionnaires retained	66	50	99	**215**
Response rate percentage	17,8%	24,4%	9,8%	13,9%

Acronyms: NACAAM | National Association of Automotive Component and Allied Manufacturers; **NAAMSA |** National Association of Automobile Manufacturers of South Africa; **NADA |** National Automobile Dealers Association

Source: Author's own compilation

From NAACAM-affiliated companies consisting of ACMs, a response rate of 17.8% (n = 66) was attained. From NAAMSA companies, representing vehicle manufacturers, the response rate was 24.4% (n = 50), and of NADA a division of the RMI group, representing the auto retailers (dealerships), a 9.8% (n = 99) response rate was attained. These results are shown in Figure 6.1.

Figure 6.1: Response rate



Source: Author's own compilation

A total of 1 545 questionnaires were distributed, and 232 were returned. Of the returned questionnaires, three were discarded because they were incomplete and unusable. The overall response rate for the study is 13.9% (n=215). This response rate is consistent with other previous studies conducted in the automotive industries in various regions of the world. For instance, Hanaysha and Alzoubi (2021) worked with a response rate of 5.43% from a target population of 1 160 units. Other researchers/studies undertaken (Mayr *et al*., 2016; Brownlee, 2018; Hanaysha & Alzoubi, 2021; Dalmaijer *et al*., 2022; Um *et al.,* 2022; Christensen *et al.*, 2022) suggest response rates ranging from 5 to 70%, which are applicable to quantitative studies. Moreover, DeBell (2022) argues that there is currently no consensus about the ideal response rate and highlights that there are numerous rules of thumb that may be followed. Therefore, the response rate used in the current study is considered useful to yield meaningful research results, while Christensen *et al.* (2022) maintain that “when feasible, future surveys are encouraged to consider the increasing preference for completing web-questionnaires in surveys in order to increase or maintain the response rate.”

6.4 DATA PRESENTATION AND ANALYSIS

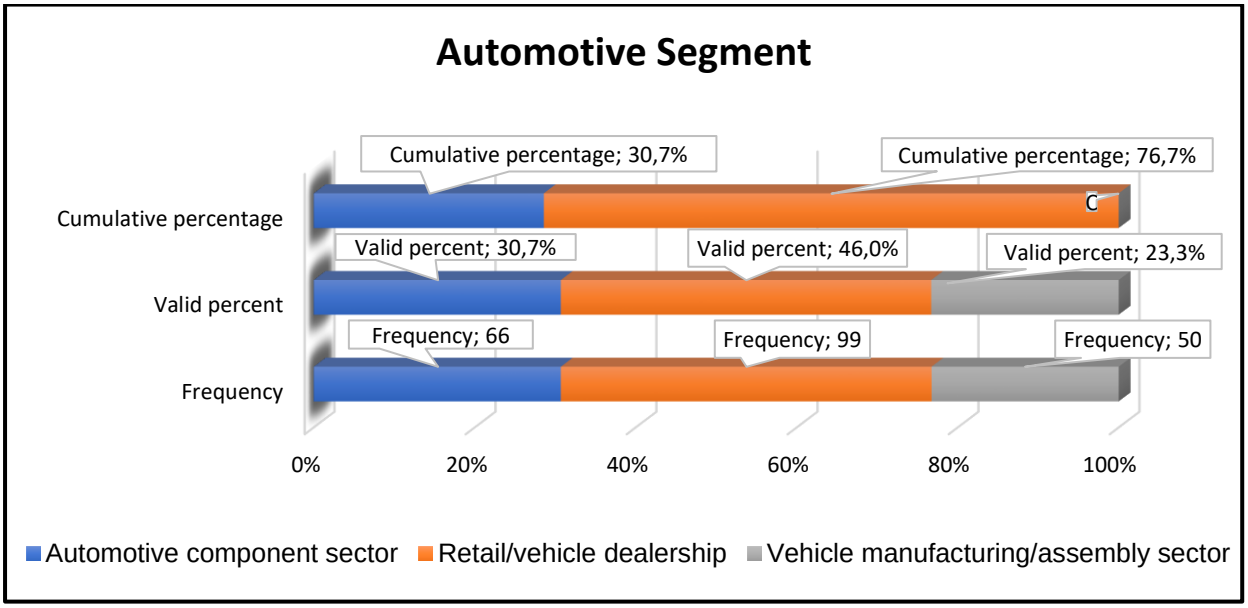
The current section discusses the results drawn from the descriptive statistics of Section A of the questionnaire, which seeks to establish the demographic details of respondents. The data presentation includes the position employed within the firm, location of the firm, gender, age, race, highest qualification, number of years employed, type of contract, occupational area and position held in the firm.

Figures 6.2 to 6.10 are followed up with graphical representations respectively and narrative descriptions of the statistics.

6.4.1 The automotive segment

The distribution of firms by the automotive industry category is presented in Figure 6.2.

Figure 6.2: Automotive segment



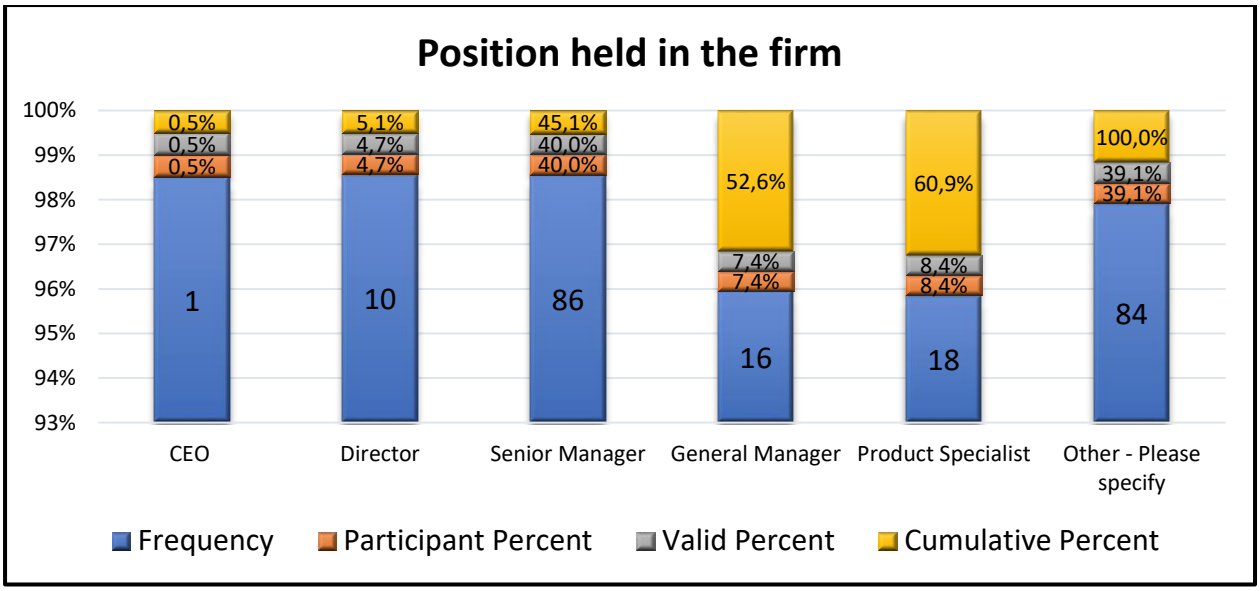
Source: Author's own compilation

As shown in Figure 6.2, a total of 46% (n = 99) of the respondents were drawn from the automotive retail sector, while 30.7% (n = 66) were from the components manufacturing sector and 23.3% (n = 50) were recruited from the vehicle assembly sector.

6.4.2 Position held within the firm

The positions held by respondents in their firms are presented in Figure 6.3.

Figure 6.3: Position held in the firm



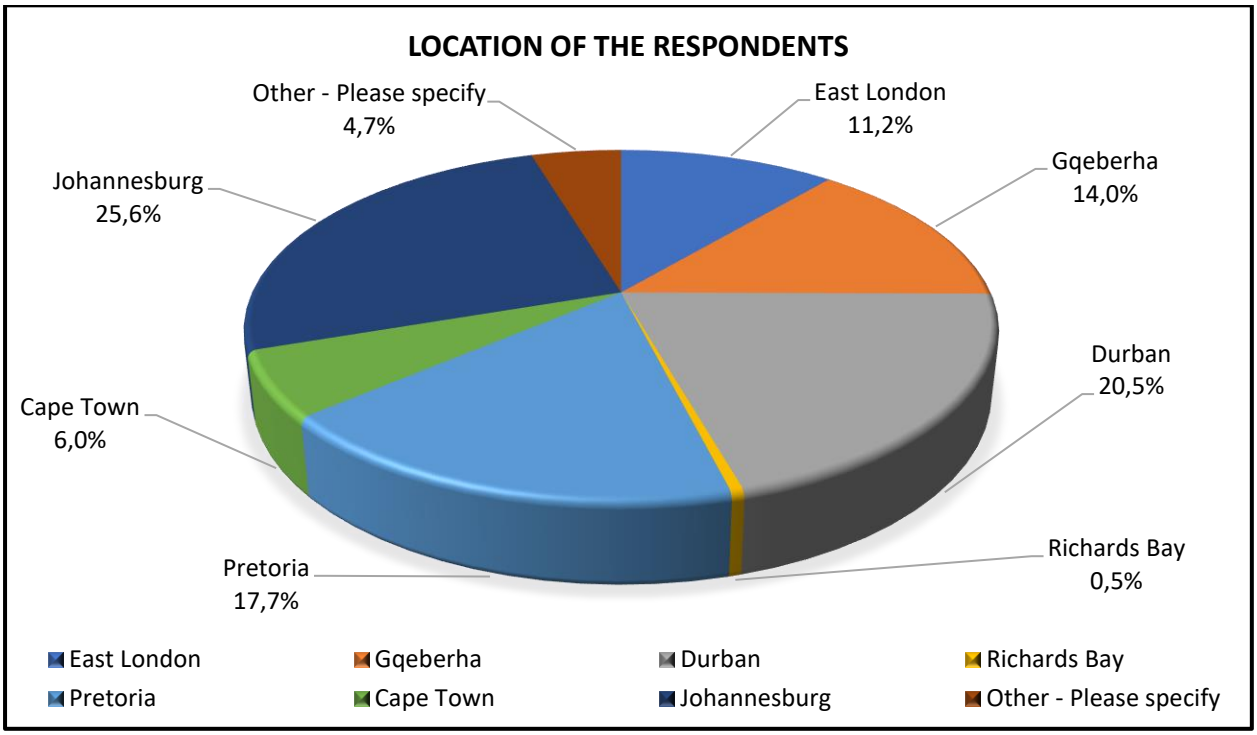
Source: Author's own compilation

Figure 6.3 reveals that only one respondent was a chief executive officer (CEO). At least 40% (n = 86) of the respondents were senior managers in their firms, while 8.4% (n = 18) were product specialists and 7.4% (n = 16) were general managers. A total of 4.7% (n = 10) of the respondents were directors in their firms. Finally, 39.1% (n = 84) of the respondents indicated other positions such as sales executives, supply chain professionals and engineering professionals.

6.4.3 Location of the respondents

Figure 6.4 indicates the geographical locations (cities/towns) of the respondents.

Figure 6.4: Location of the respondents



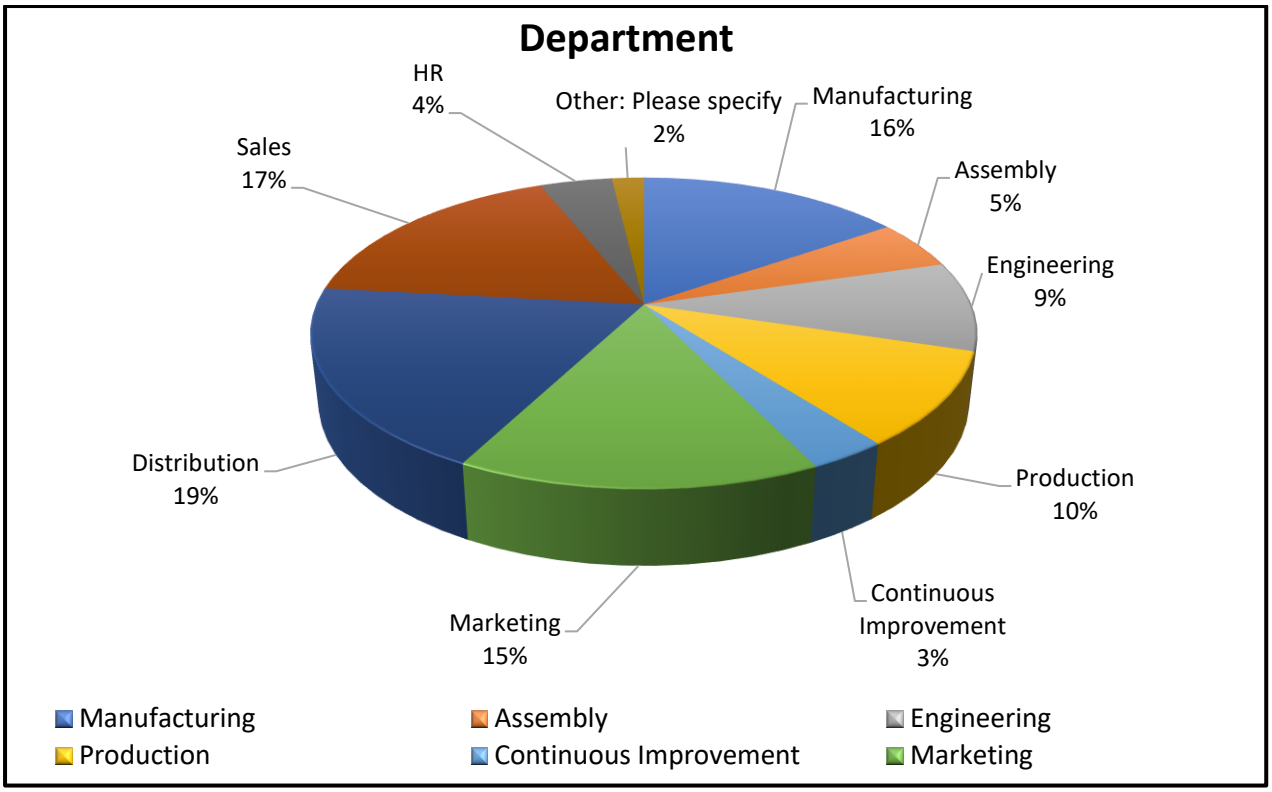
Source: Author's own compilation

As depicted in Figure 6.4, 25.6% (n = 55) of the respondents were based in Johannesburg, followed by 20.5% (n = 44) in Durban, 17.7% (n =3 8) in Pretoria, 14.0% (n = 30) in Gqeberha, 11.2% (n = 24) are based in East London, 6.0% (n = 13) are drawn from firms in Cape Town, showing, 4.7% (n = 10) gfrom Mthatha, Brits, & Centurion and 0.5% (n = 1) are based in Richards Bay.

6.4.4 Department

The departments where respondents were employed are depicted in Figure 6.5.

Figure 6.5: Department where respondents were employed



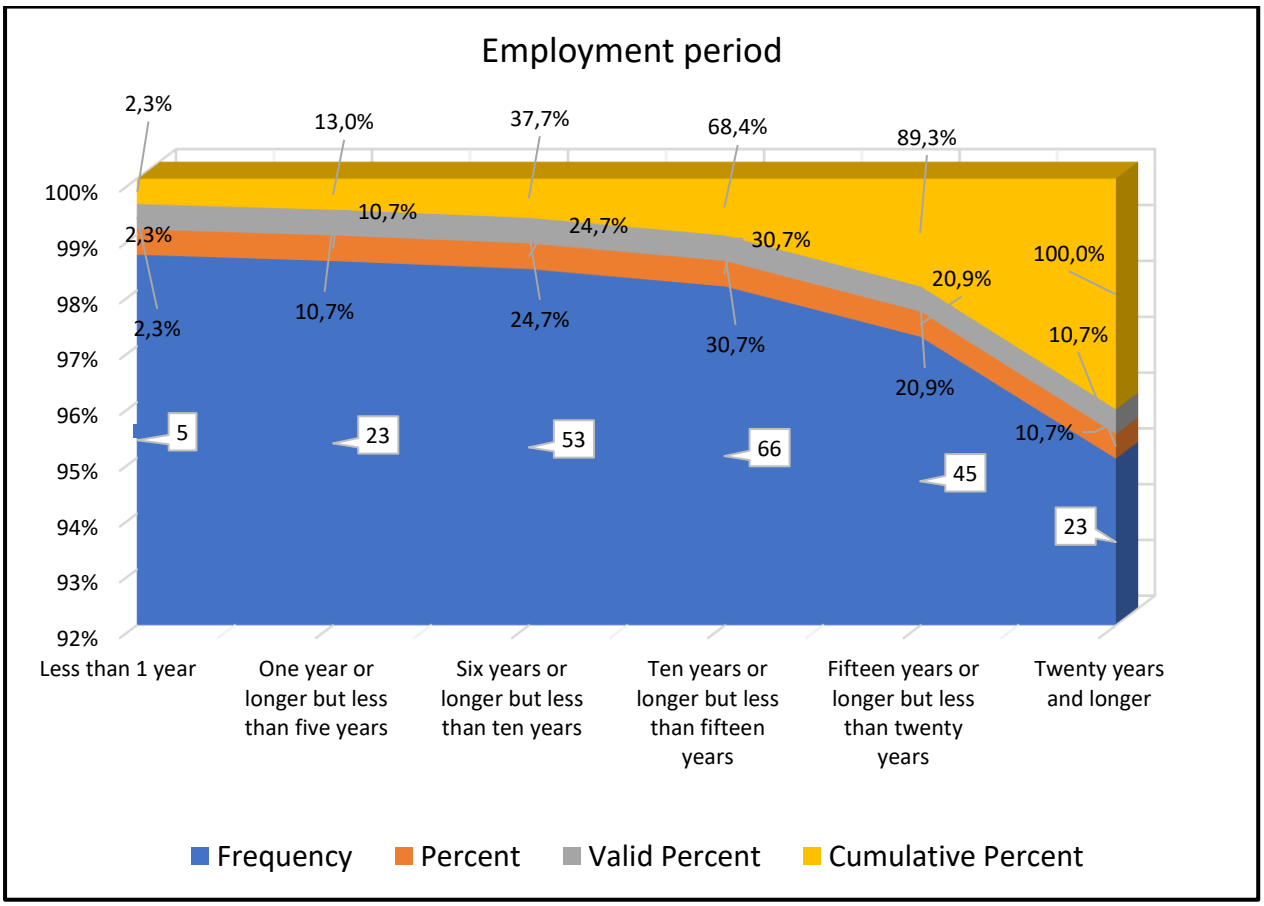
Source: Author's own compilation

Figure 6.5 reveals that 19% (n = 41) of the respondents worked in the distribution department, closely followed by 32% (n = 69) who worked in sales and marketing. A further 16% (n = 33) of the respondents worked in the manufacturing departments, while 10% (n = 21) were in production.

6.4.5 Employment

The employment period of the respondents is presented in Figure 6.6.

Figure 6.6: Employment period



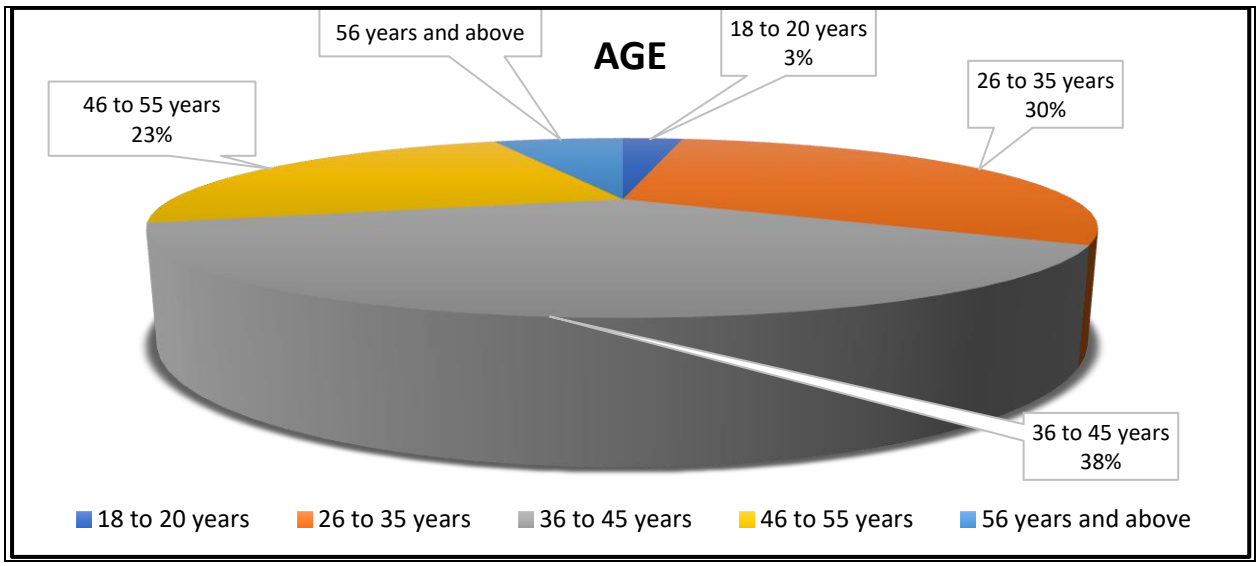
Source: Author's own compilation

Figure 6.6 shows that 30.7% (n = 66) had worked in the automotive sector for 10 to 15 years, followed by those who had worked in the sector for six to nine years (24.7%; n = 53). A further 20.9% (n = 45) had worked in the sector for 16 to 19 years. The least represented group 2.3% (n=5) had worked in the sector for less than one year.

6.5 AGE GROUPS OF RESPONDENTS

The distribution of respondents by their age groups is presented in Figure 6.7.

Figure 6.7: Demographic profile of respondents



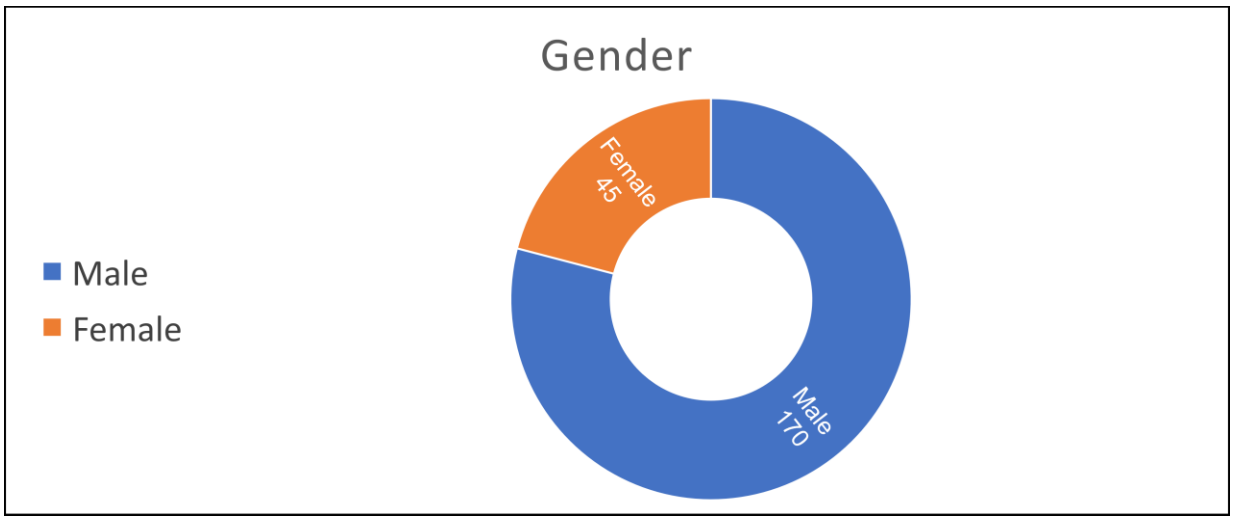
Source: Author's own compilation

As shown in Figure 6.7, at least 38% (n = 81) of the respondents were aged between 46 and 45 years. A further 30% (n = 65) of the respondents were aged between 26 and 35 years, while 23% (n = 50) were aged between 46 and 55 years. Those younger than 20 years old (3%; n = 6) were the least represented group in the sample.

6.6 RESPONDENTS' GENDER

The distribution of respondents by gender is presented in Figure 6.8.

Figure 6.8: Gender of the respondents



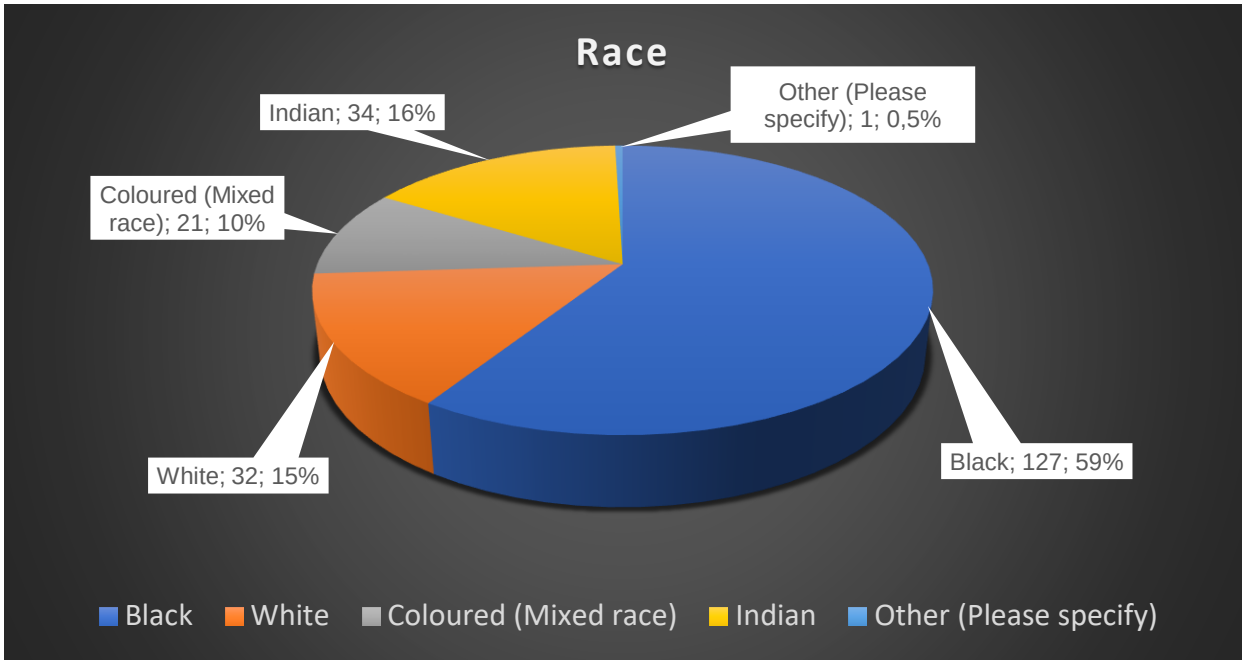
Source: Author's own compilation

Figure 6.8 shows that most of the participants, i.e. 79.1% (n= 170) were males, while 20,9% (n = 45) were female.

6.7 RACIAL PROFILE

The racial profile of respondents is presented in Figure 6.9.

Figure 6.9: Respondents' distribution by race



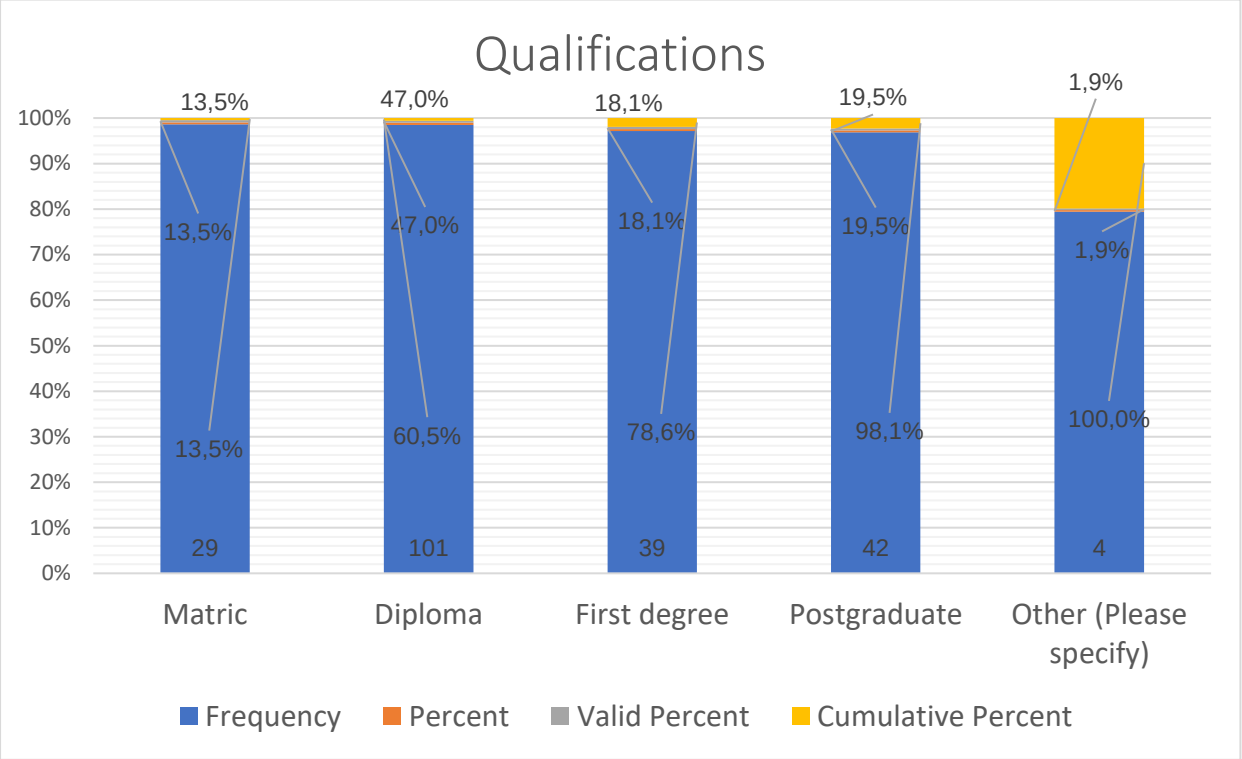
Source: Author's own compilation

As indicated in Figure 6.9, the majority of respondents 59% (n = 127) were black, while 16% (n = 34) were Indian, 15% (n = 32) were white, and 10% (n = 21) were coloured (mixed race).

6.8 EDUCATIONAL LEVELS

The educational levels of respondents, as shown through their qualifications, are indicated in Figure 6.10.

Figure 6.10: Qualifications



Source: Author's own compilation

Figure 6.10 shows that 47.0% (n = 101) of the employees were holders of diploma qualifications, with 19.5% (n = 42) possessing postgraduate qualifications. At least 18.1% (n = 39) of the respondents held first degrees, while 13.5% (n = 29) were matriculants (senior certificate holders), and 1.9% (n = 4) held other forms of qualifications (i.e. on-job certificates & trade certificates).

6.9 DESCRIPTIVE STATISTICS FOR PREDICTOR CONSTRUCTS: CORPORATE DIVERSITY

Section 5.8 discussed the use of descriptive statistics in quantitative studies. In the present study, mean scores and SDs were employed to assess the perceptions of respondents towards the research constructs within the automotive sector. Table 6.3 presents the results of the analysis of descriptive statistics regarding corporate diversity practices in the automotive sector.

Table 6.3: Descriptive statistics for predictor constructs: Cooperate diversity

Study Constructs	Sample size (N)	No of items	Means	Minimum statistics	Maximum statistics	Standard deviation	$\bar{x}$ rank
	Predictor Variables						
DP	215	5	4.956	1	7	1.683	6
HRP	215	5	5.192	1	7	1.241	4
TMS	215	5	5.429	1	7	1.256	2
DD	215	5	4.659	1	7	1.502	7
LD	215	4	5.117	1	7	1.559	5
CD	215	5	5.353	1	7	1.357	3
DA	215	5	5.567	1	7	1.147	1

DP = Diversity policy; **HRP** = Human resource policy; **TMS** = Top management support; **DD** = Demographic diversity. **LD** = Leadership diversity; **CD =** Cultural diversity; **DA** = Attitudes about diversity **Scale**: 1= Strongly disagree, 2=Disagree, 3=Somewhat disagree, 4=Neutral, 5=Somewhat agree, 6=Agree & 7=Strongly Agree

Source: Author's own compilation

The individual results for each corporate diversity construct, as indicated in Table 6.3, are discussed in sections 6.5.1 to 6.5.7.

6.9.1 Responses towards diversity policy (DP)

An analysis of Table 6.3 with reference to the responses towards diversity policy shows a mean score of 4.956: SD = 1.683, which is close to the 'somewhat agree' point on the Likert scale. This result implies that respondents confirmed that written policies on diversity and employment equity exist in their firms, the implementation of these policies is monitored through available systems and that consequence management is followed in cases of infringement. These firm-specific policies are based on national legislative frameworks that were created to ensure economic transformation through monitoring employment practices within industries. Examples of these legislative frameworks include the Broad-Based Black Economic Empowerment (B-BBEE) Act of 2003, the Employment Equity Act 55 of 1998 and the Affirmative Action Act of 1998.

The results suggest that automotive firms have managed to formalise the implementation of diversity policies within their organisations in line with existing legislative frameworks

and incorporate them into their strategy. Additionally, systems designed to support corporate diversity have also been put into place. These systems are demonstrated through the availability of corresponding policies on diversity and employment equity, as well as monitoring and consequence management. Such an approach is likely to lead to an increase in motivation among employees and, as such, enhanced productivity within the workplace. This may be attributed to the positive impact diversity has on performance, as noted by various researchers (Burger & Jafta, 2010; Juggernath, Rampersad & Reddy, 2011; April & Govender, 2022; Kuitunen, 2022). Therefore, the firms that participated in the study discussed above have embraced diversity as a fundamental pillar that undergirds their strategic direction and, in addition, managed to design, develop and implement mechanisms made use of to support its implementation.

6.9.2 Responses towards human resource practice (HRP)

Table 6.3 shows that the HRP construct attained a mean score of 5.192 with a SD of 1.241. This result indicates that respondents 'somewhat agreed' with the questionnaire items regarding the implementation of HRP practices. Additionally, it suggests that respondents concur with the questionnaire items, affirming that there is inclusion, tolerance and fairness in the hiring or promotion of employees in their workplaces regardless of religion, race, gender and ethnicity. Furthermore, compensation benefit policies are applied objectively, and training, as well as development opportunities, are offered with impartiality to all employees. Winarno, Prasetio, Luturlean and Wardhani. (2022) state that effective HRP designed to meet the needs of employees has a direct influence on organisational support and employee engagement. The results regarding HRP in the present study imply that firms can, through the implementation of equity-centred policies, improve the quality of work life among their employees. An enjoyable work atmosphere, when created, enhances career paths and development opportunities, leading to increased job satisfaction (Singh, Nandan & Chawla, 2015). Therefore, the automotive firms that participated in this study have effective HRPs in place, which may be beneficial.

6.9.3 Responses towards top management support (TMS)

The responses towards top management support depict a mean score of 5.429 with an SD of 1.256, which is close to the 'somewhat agree' indicator on the Likert scale. These results suggest that respondents who are part of top management (e.g. presidents, chief executive officers, directors [CEO], heads of divisions [HoDs] and general company management), support the promotion of diversity among employees. This diversity is exhibited through the representation of employees from different cultures, backgrounds, races, ages, genders and religions within their firms. This kind of leadership affirms commitment to creating a safe and welcoming environment for all potential as well as current employees.

Firms whose top management supports diversity are likely to realise a host of benefits. The most notable of these relates to cultivating a culture of innovation (Belderbos, Lokshin, Boone & Jacob, 2022). Hemmert, Cho and Lee (2022) mention other benefits such as gender diversity, which positively relates to innovation performance, and openness to external information as well as cognitive proficiencies. Top management teams play a pivotal role in steering both induced (top-down) and autonomous (bottom-up) strategic processes; shaping a firm's innovation culture and strategic renewal capability as well as its long-term performance (Hemmert *at al.,* 2022; Belderbos *et al.,* 2022). The value offered by top management teams within firms is an outcome of the intensity of corporate diversity practices. As such, firms that offer top management support towards diversity management tend to perform relatively better when compared to those that do not because they are more innovative, which is a result of the support offered by top management.

6.9.4 Responses towards demographic diversity (DD)

The demographic diversity construct attained a mean score of 4.659 and an SD of 1.502. This result demonstrates that respondents somewhat agreed with the statements on the DD scale. They indicated that demographic diversity plans exist, and demographic equality implementation plans are integrated within their organisations' comprehensive business strategy. The respondents further indicated that their firms were recruiting women for management positions. Moreover, the interests of minority employees are given due attention and preference. Similarly, several previous studies (Van Knippenberg,

Dawson, West & Homan, 2011; Qu *et al*., 2016; Ancarani, Ayach, Di Mauro, Gitto & Mancuso, 2016; Mo, Ling & Xie, 2019) directed at various economic sectors also confirm that firms are increasingly recognising the importance of DD as a key success factor. According to Fazelpour and Steel (2022), firms that cater for demographic diversity in their strategic intent are more likely to yield improvements in areas such as innovation, productivity, and overall performance. Therefore, by acknowledging the essential nature of DD, firms in the South African automotive sector are effectively placing themselves at an advantage point where they can realise multiple returns in most areas of their business value chain.

6.9.5 Responses towards leadership diversity (LD)

The leadership diversity construct achieved a mean score of 5.117 with an SD = 1.559, indicating that respondents somewhat agreed with the questionnaire items. This result depicts that there are notable attempts to encourage leadership diversity within the workplace and that there are committees that oversee equality and diversity issues. These committees encompass all gender formations of senior managers, executives and team leaders. The championing of equality through leadership diversity is assigned to senior managers who ensure the inclusion of the entire workforce within the organisation. Likewise, previous literature (Chaudhry, 2021; Chuks & Chuks, 2022; Van Knippenberg & Van Ginkel, 2022) has shown that having a diverse leadership and one that affirms the importance of workplace diversity is critical for firm success. The likely positive outcomes of having such diversity-oriented management include improved synergy, product development, process improvement and financial management (Grigoryan & Schwartz, 2021). Therefore, leadership diversity strategy enhances critical thinking in management processes using differences and similarities found in employees to add value for the betterment of organisation direction.

6.9.6 Responses towards cultural diversity (CD)

For cultural diversity, a mean score of 5.353 and an SD =1.357 were attained, indicating a ‘somewhat agree’ response on the Likert scale. This result suggests that automotive firms promote cultural diversity in the workplace. As such, teams and subdivisions consist of culturally diverse employees (i.e. different languages, backgrounds, ethnic groups and races). Additionally, cultural differences are viewed as important intangible assets for

firms. As suggested by McMillan and Zeufack (2022), firms that cherish cultural diversity tend to be more productive, as they benefit from access to talent, knowledge and cultural perspectives. Cultural diversity is also critical for preventing and solving group interaction challenges in both business organisations and society (Amaram, 2007). This being the case, automotive firms in South Africa are receptive and geared up policies towards the management of cultural diversity that is inclusive of all cultures of the country's inhabitants.

6.9.7 Responses towards diverse attitudes (DA)

A mean score of 5.567 and an SD = 1.147 were observed for the DA scale, indicating that respondents were in agreement with the statements. The results show that automotive firms have embraced a wide range of cultures existing in South Africa and that the attitudes towards such diversity are generally positive. Such attitudes tend to breed meaningful and insightful work relationships, grow and strengthen organisational values, foster enjoyable workplace dynamics and enhance innovation (Fatmawati, 2021; Grigoryan & Schwartz, 2021). Therefore, it is the acknowledgement of a person's behavioural normative and control beliefs, which are prejudiced by diverse circumstantial factors such as individual features, social influences and the information available to the leadership.

Overall, an analysis of the ranking of mean scores for the corporate diversity practices reveals that DA attained the highest mean score of 5.567 when compared to the other (DP, HRP, CD, DD, LD &TMS) dimensions of corporate diversity. This implies that DA is more established in the automotive firms than the other corporate diversity practices since respondents were more agreeable towards them than in the other dimensions.

6.10 DESCRIPTIVE STATISTICS FOR THE MEDIATING CONSTRUCT: INNOVATION CULTURE

Organisations that strategically focus on innovation culture are more likely to have better innovation performance. Innovation culture, in this study, as a mediator construct of cooperate diversity for perceived increased company performance, has been rightly placed. Table 6.4 deals with the outcome of the respondents.

Table 6.4: Descriptive statistic for mediator construct: Innovation culture

Study constructs	Sample size (N)	No of items	Means	Minimum	Maximum	Standard deviation	x̄ rank
	Predictor Variables						
IC	215	6	4.579	1	7	1.786	N/A
IC = Innovation Culture; Scale: Scale: 1= Strongly disagree, 2=Disagree, 3=Somewhat disagree, 4=Neutral, 5=Somewhat agree, 6=Agree & 7=Strongly Agree							

Source: Author's own compilation

An investigation of the responses towards innovation culture from Table 6.4 demonstrates a mean score of 4.579 and an SD = 1.786, indicating the 'somewhat agree' point on the survey questionnaire Likert scale. This response suggests that the orientation of firms towards investments leading to modern technologies to create new processes for new product manufacturing is the greatest focal point. Likewise, employees in these firms are encouraged to make innovative suggestions to improve the status quo of the company; moreover, firms who have strategically focused on innovation culture are more likely to see the impact on business (i.e. workplace environment, productivity and job satisfaction). A firm's success relies on process innovation and awarding creativity and innovative ideas. To achieve a competitive edge in today's market, corporate managers need to focus on generating extra value for their customers while striving to cut costs and increase their productivity (Zeb-Obipi & Maduabuchi, 2021). Researchers (Chandler & Krajcsák, 2021; Fuad, Musa & Hashim, 2022) maintain that innovation culture enhances market performance through customer satisfaction, thereby increasing sales revenue. Innovative culture conveys the positive effects of innovation on market, production, and financial performance. Therefore, business leaders of the firms should give additional importance

to innovation culture for better organisational performance in creating new processes, new products and consequently a higher perceived company performance in the marketplace.

6.11 DESCRIPTIVE STATISTICS FOR THE OUTCOME CONSTRUCT: PERCEIVED COMPANY PERFORMANCE

As indicated, section 4.3 delves into hypothesis relationships wherein innovation culture mediates company diversity and perceived company performance. Companies that invest in the innovation of products, processes, and administration reap higher market performance. Moreover, it increases efficiencies and quality, and there is less wastage in service delivery, which is essential for a competitive environment.

Table 6.5: Descriptive statistic for outcome constructs: Perceived company performance

Study constructs	Sample size (N)	No of items	Means	Minimum	Maximum	Standard deviation	$\bar{x}$ rank
	Predictor Variables						
PV	215	5	5.802	1	7	0.827	3
CL	215	5	5.889	1	7	0.699	1
MP	215	5	5.792	1	7	0.793	4
FP	215	5	5.851	1	7	0.802	2
EP	215	5	4.619	1	7	1.772	5

PV = Perceived value; **CL =** Customer loyalty; **MP =** Market performance; **FP =** Financial performance**; EP =** Environmental performance**.** Scale: 1= Strongly disagree, 2=Disagree, 3=Somewhat disagree, 4=Neutral, 5=Somewhat agree, 6=Agree & 7=Strongly Agree

Source: Author's own compilation

Table 6.5 provides descriptive statistics of the participants' responses, which indicate preference choices from the Likert scale, mean scores of perceived values (PV), customer loyalty (CL), market performance (MP), financial performance (FP) and environmental performance (EP) discussed in the following section, and discussed further in sections 6.7.1 to 6.7.5.

6.11.1 Responses towards perceived value (PV)

The analysis in Table 6.5 has a mean score of 5.802 with an SD of 0.827 displayed, a score that is close to 'agree' on the Likert scale. This implies that customer perceptions of the perceived value of the firms participating in this study are high, meaning customers feel that the product offered is worth the monetary value and refer other customers to generate new business. Furthermore, these firms argue that value addition to products increases the value of the companies. Scholars (Geng, 2019; Grigoryan & Schwartz 2021; Uzir *et al*., 2021) maintain that the ability to deliver promptly has become a defining success, and therefore the relationships between customer perceived value and satisfaction are partially mediated by the trust factor for online businesses. Therefore, respondents in this research indicate that value addition is driven mostly by service quality, trust, customer satisfaction and prompt deliveries of the products.

6.11.2 Responses towards customer loyalty (CL)

The responses towards customer loyalty from Table 6.5 establish a mean score of 5.889 and an SD of 0.699, indicating the 'agree' point on the survey questionnaire Likert scale. This result suggests that firms that developed delivery schedules for ordered product assortments are processed on time to the customers. Customer enquiries are responded to with accurate information and flexible delivery schedules that are customised. Big brands in a dealership in an automotive shopping mall/centre attract consumers to the dealership due to brand reputation, abundant assortments, and retail power (Wei, Huo, Xu, Kadirov & Fam, 2021; Chung *et al*., 2021), while online e-commerce provides a retail-based variation through internet sales traffic increasing sales revenue of the firms (Chen, Yu, Yang & Wei, 2018). Therefore, customer-centric focus attracts customers to dealerships, specifically some very distinctive, unique, and niche automotive brands (i.e. Haval, Mahindra, First Automotive Works [FAW]) that could pull customers to dealership centres, and lead to brand loyalty due to customer satisfaction.

6.11.3 Responses towards market performance (MP)

The current research detected a mean score of 5.792 and an SD of 0.793, which are remarkably close to 'agree' on the Likert scale, as shown in Table 6.5. These findings indicate that the respondents concur with the firms' market performance in customer satisfaction, product, and service delivery. Likewise, these companies are customers'

preferences owing to brand durability, excellent service and market performance. Additionally, factors such as service delivery, market share, human interaction, location convenience and warranty positively influence consumers (Chen *et al.,* 2018). These factors require innovation as important and integral in the acceptance of modern technologies (i.e., e-commerce, mobile APP advertising/ordering, social media platforms etc.) to enhance the global competitiveness of the South African automotive industry (Lee & Lyu, 2016). Accordingly, multinational companies (MNCs) operating in South Africa adhere to their global marketing strategies, providing high-level competition to the local automotive firms (Black *et al.,* 2018). However, participants in this study indicated that their firms have higher market share gain, satisfaction of customers in both products and services, and an excellent overall competitive market advantage in the marketplace.

6.11.4 Responses towards financial performance (FP)

This study's responses towards financial performance, are shown in Table 6.5, with a mean score of 5,851 and an SD of 0,802, which is 'agree' on the Linkert scale. The result proposes that firms who participated in the study have high returns on investments, high shareholder value and high profits consistently. These firms have the ability to develop and use computerised systems to track and record financial transactions in facilitating management decision-making, internal controls, and quality of the financial report (Kludacz-Alessandri & Cygańska, 2021; Gofwan, 2022). The computerised systems provide statistically significant profit and loss (P&L), return on assets (ROA) and earnings before interest and taxes (EBIT); companies implementing innovation culture as part of their strategy had significantly high values (Kamin & Morton, 2015; Kludacz-Alessandri & Cygańska, 2021). Accordingly, respondents of this study agree that enterprise value to earnings before interest, taxes, depreciation, and amortisation ratio (EV EBITDA) has satisfactory performance. Therefore, South African automotive value chain financial performance is profitability looking at EBITDA, and the EV EBITDA allows desirable investments.

6.11.5 Responses towards environmental performance (EP)

An analysis of the results indicated a mean score of 4.619 with an SD of 1.772, as shown in Table 6.5. Participants in this study opted for ‘somewhat agree’ from the Likert scale. These findings suggest that firms emphasise the environment (nature preservation) and business environment friendliness. Nature conservation, product design, product distribution channels and product recycling are as per environmental legislation. Conformance to remanufacturing and disposal of products is pursued. Correspondingly, renewable energies and optimised setups for disassembly operations (i.e. tyre manufacturing, brake pads & industry, vehicle battery manufacturing sectors etc.) are monitored and audited by the International Organisations Standard (ISO). A comprehensive environmental performance measure covering eight dimensions, namely clarity, environmental management, environmental liabilities, environmental costs, environmental investments, environmental performance, reliability and system implementation to improve the generalisability is followed (Nguyen, Elmagrhi, Ntim & Wu, 2021). Albeit, the stock market reaction to new information on the environmental performance of individual firms provides a preliminary analysis of which comes first (i.e. good financial performance or good environmental performance) (Kamin & Morton, 2015). Additionally, the stock market reacts to the business environment (location and surroundings), and firms’ legislated environments. The notion that environmental performance is an important component of competitive advantage has found acceptance by a growing number of corporate leaders over the last several years. Consequently, environmental legislation and/or regulations of the South African automotive firms and multi-national automotive firms are adhered to, and as such, the industry is pursuing legislation framework EURO 5. Similarly, the volatile operating business environment measured by the JSE due to the South African currency (rand [R]) is given attention by management and leaders of the firms who participated in this study.

6.12 **SCALE ACCURACY ASSESSMENT**

The degree of proximity of observed value to theoretical value can be defined as the accuracy of a scale, which measurement is achieved by research techniques with psychometric characteristics (i.e., reliability and validity) that inhabit an unbiased assessment (Trochim, 2020). A measure can be reliable but not valid if it is measuring something very consistently but is consistently measuring the wrong construct. Likewise, a measure can be valid but not reliable if it is measuring the right construct, but not doing so in a consistent manner (Bhattacherjee, 2012). Therefore, the psychometric properties indicated by reliability and validity must include scientific measuring tools and/or a procedure to confirm the data outcome from data analysis (Jin *et al.,* 2017). These scientific measuring procedures include but are not limited to, internal consistency (Cronbach's α and composite reliability), convergent validity (average variance extracted [AVE]), and discriminant validity (Trochim, 2020). Table 6.6 below shows the representation of the results and criteria, and the factor loading column shows grey highlighted single star values not meeting the minimum threshold, while values with double stars were discarded.

Table 6.6: Accuracy analysis statistics

Research construct		Cronbach's test		Rho A	CR	AVE	$\sqrt{\text{AVE}}$	Factor loading
		Item-total	α					
DP	DP1	0,849	0,876	0,902	0,909	0,669	0,818	0,860
	DP2	0,838						0,833
	DP3	0,879						0,869
	DP4	0,863						0,854
	DP5	0,778						0.655*
HRP	HRP1	0,809	0,878	0,900	0,920	0,708	0,841	Removed**
	HRP2	0,864						0,936
	HRP3	0,869						0,948
	HRP4	0,826						0,899
	HRP5	0,671						0,875
	HRP6							0.435*
TMS	TMS1	0,788	0,928	0,945	0,945	0,776	0,881	0,850
	TMS2	0,841						0,899
	TMS3	0,865						0,890

Research construct		Cronbach's test		Rho A	CR	AVE	$\sqrt{AVE}$	Factor loading
		Item-total	α					
	TMS4	0,776						0,839
	TMS5	0,820						0,925
DD	DD1	0,859	0,912	1,003	0,931	0,733	0.856	0,926
	DD2	0,869						0,879
	DD3	0,873						0,867
	DD4	0,887						0,892
	DD5	0,747						0,699
LD	LD1	0,847	0,908	0.930	0,934	0,781	0,884	0,863
	LD2	0,872						0,880
	LD3	0,894						0,900
	LD4	0,863						0,891
CD	CD1	0,480	0,898	0,952	0,931	0,775	0,881	0,626
	CD2	0,746						0,961
	CD3	0,815						0,947
	CD4	0,774						0,943
	CD5	0,739						Removed**
DA	DA1	0,707	0.900	0.922	0.924	0.710	0.842	0.797
	DA2	0,843						0.890
	DA3	0,752						0.779
	DA4	0,738						0.878
	DA5	0,758						0.862
IC	IC1	0,872	0,913	0,923	0,935	0,742	0,861	0,854
	IC2	0,884						0,819
	IC3	0,917						0,909
	IC4	0,888						0,859
	IC5	0,896						0,868
	IC6	0,864						Removed**
PV	PV1	0,655	0,814	0,824	0,889	0,728	0,853	0,870
	PV2	0,654						0,844
	PV3	0,696						0,845
	PV4	0,687						Removed**
	PV5	0,647						Removed**
CL	CL1	0,557	0,872	0.886	0,908	0,665	0,815	0.815
	CL2	0,685						0.898
	CL3	0,672						0,848
	CL4	0,581						0,833
	CL5	0,503						Removed**

Research construct		Cronbach's test		Rho A	CR	AVE	$\sqrt{\text{AVE}}$	Factor loading
		Item-total	α					
MP	MP1	0,591	0,843	0.848	0,906	0,763	0,874	0,868
	MP2	0,719						0,930
	MP3	0,668						0,819
	MP4	0,545						Removed**
	MP5	0,646						Removed**
FP	FP1	0,544	0,841	0,836	0,845	0,584	0,764	0,706
	FP2	0,694						0,586
	FP3	0,677						0,959
	FP4	0,654						0,756
	FP5	0,623						Removed**
EP	EP1	0,840	0,783	0,805	0,858	0,603	0,776	Removed**
	EP2	0,884						0,783
	EP3	0,892						0,828
	EP4	0,919						0,814
	EP5	0,837						Removed**

DP = Diversity Policy; **HRP** = Human Resource Policy; **TMS** = Top Management Support; **DD** = Demographic Diversity; **LD** = Leadership Diversity; **CD** = Cultural Diversity; **DA** =; **IC** = Innovation Culture; **PV** = Perceived Value; **CL** = Customer Loyalty; **MP** = Market Performance; **FP** = Financial Performance; **EP** = Environmental Performance.

** =item discarded

*=not meeting minimum threshold (i.e., <0,5 factor loading)

Source: Author's own compilation

6.12.1 Internal consistency

Internal consistency refers to the tools/methods of measurements in scientific research to confirm scale reliability, scientific measuring procedures in the current study, as pre-laid in Chapter 5, including item total correlations, Cronbach α, Rho, and composite reliability.

6.12.1.1 Item total correlations results

Section 5.8 of Chapter 5 details that the item-total correlation test is conducted to crisscross if any item in a multi-item scale is erratic with the averaged performance of the others, and thus can be removed, as indicated in Table 6.6 (Pope, 2009; Ali *et al.,* 2022). This crisscross activity refers to purification and data cleansing owing to eradicating 'trash'

items prior to determining the factors that represent the construct, in other words, known as the averaged measure (Glen, 2020; Pope, 2020). Many researchers (Creswell, 2014; Smith *et al.,* 2015; Snyder, 2019; Trochim, 2020) consider the correlation coefficients greater than 0.3 as satisfactory. The scale item-total correlation results are shown in Table 6.6 and display a relationship of items with the dimensions. Items revealed acceptable scores above 0.3 and ranged from 0.480 to 0.919; therefore, the results submit that all measurement scales were internally consistent.

6.12.1.2 Cronbach alpha (α) results in the study

In Chapter 5 section 5.8, Figure 5.5 shows that the minimum acceptable α value is 0.7. It is expected, therefore, that the α values for all measurement scales to be used in the study will be above the 0.7 threshold, as determined by some researchers (Yeo, 2006; Leveson *et al.,* 2009; Ali & Konrad, 2017; Timothy *et al.,* 2018). The current research attained results of Cronbach α ranges from 0.783 to 0.928, proving to be above the 0.7 threshold and satisfactory for the study.

6.12.1.3 Rank-order correlation (rho) results of the study

Within contexts where the reliability of partial least square (PLS) is measured, a number of tests or questions are given to measure constructs using rho; for reliability to exist, a value between 0 and 1 should be observed to confirm the reliability of rho and composite reliability. In Table 6.6, the observed reliability analysis confirmed the scale measurement depicting rho value ranges of 0.805 to 1.003. The rho value is above 0.8, indicating good internal consistency, while 0.7 represents the lower limit of adequacy (Smith *et al.,* 2015). The higher the measure, the greater the reliability in the item scale. This study found rho scores greater than the recommended value of 0.7 (Trochim, 2020). Consequently, the findings of this study authenticate acceptable composite reliability levels.

6.12.1.4 Composite reliability (CR) results of the study

The examination of internal consistency reliability to regulate the ability of the research constructs in measuring the dormant construct is known as CR (Canatay, Emegwa, Lybolt & Loch, 2022). Construct reliability researchers (Connell *et al.,* 2018) define it as composite reliability (CR). According to Almanasreh, Moles and Chen (2019), the total amount of true square variances compared to the total score variance is a result of

composite reliability; composite reliability values of 0.6 to 0.7 are considered good reliability, and the expected Cronbach's α value is above 0.7 (Peterson & Kim, 2013; Hair *et al*., 2017). The measures for such assessment are composite reliability and Cronbach's α (Hidayat & Patras, 2022). These quantitative analyses of composite reliability values derived from empirical investigations detailed in Table 6.6 range from 0.845 to 0.945 and thus exceed the acceptable range of 0.6 to 0.7 (Hair *et al*., 2017b). Therefore, the attained results are dependable and should be accepted.

6.12.2 Validity analysis

Chapter 5, section 5.8 discussed validity analysis, considering five forms of validity to be explored in this research before testing the statistical model.

- The first form is face validity, measured using a review of the questionnaire by a panel of faculty experts in management sciences (Bhattacherjee, 2012).
- The second form is content validity, evaluated using a pilot study of the questionnaire (Connell *et al.,* 2018).
- The third form is construct validity, assessed through an analysis of the correlations between the research constructs (Hair *et al.*, 2017a).
- The fourth form is convergent validity, which evaluates whether two indicators of a construct that should be related are, in fact, related (Almanasreh *et al.,* 2019).
- The fifth form is discriminant validity, which tests the extent to which measures of different traits are unrelated.

The researcher first tested data validation, data cleansing, data reliability, and the normality of the data in alignment with the above five validity points (Hidayat & Patras, 2022), following further discussion on the above detail the action, findings, and tabular presentation of the results.

6.12.2.1 Face validity

Face validity discussed in section 5.8 of Chapter 5, and refers to whether an indicator is a reasonable measure of its underlying construct (on its face) (Bhattacherjee, 2012). A UNISA colloquium through consultation with the DBL coordinator reviewed this study methodology. The supervisor provided grammatical corrections of the questionnaire, length of the questionnaire and statistical philosophies (i.e. technical layout, question

wording, Likert scale, question grouping etc.). Meetings dated 15 June 2021, 24 June 2021 and 26 June 2021, were held with three industry experts from NAAMSA, NAACAM, and RMI, respectively, and provided content, industrial knowledge, and engagement strategies with the target population. Furthermore, the questionnaire was reviewed by the researchers' peers in the field of the automotive industry to ensure that the questions measured what they intended to measure. All recommendations were implemented prior to the pilot study.

6.12.2.2 Content validity

Section 5.8 of Chapter 5 defined content validity. The pilot study of the questionnaire was undertaken to validate the content of the constructs. The researcher opted for a combination of electronic and physical distribution of the 50 questionnaires to randomly selected automotive industry personnel (i.e. NAAMSA, NAACAM & RMI). The electronic Google link guided the respondents to an online version of the questionnaire. The returned questionnaires from the pilot sample were examined to verify whether respondents had experienced challenges and/or difficulties in responding/answering to the questions. Given the impression from the pilot study, respondents found the questions easy to answer and had succeeded in responding/answering the questions comprehensively within the required time of 10 to 20 minutes. The pilot study resulted in allowing space to provide specification, i.e., electronic version of the questionnaire (measurement scale options), option i.e. 'Other' (please specify) did not provide a space to write the specification. The pilot data sample was subjected to a validity and reliability test resulting in measurement scales of Cronbach alphas above 0.7 and item-total correlations above 0.3. Therefore, no items were removed from the questionnaire as it showed that its content was valid and reliable. The exclusion of respondents who participated in the pilot study from the main survey was observed, and thereby the pilot study findings suggested the suitability of the survey instrument for this study.

6.12.2.3 Convergent validity

Convergent validity is discussed in Chapter 5, section 5.8 as a sub-type of construct validity. Most researchers (Henseler *et al.,* 2015; Hair *et al*., 2017; Hidayat & Patras, 2022) regard construct validity as a measure designed to evaluate the accuracy of latent constructs (i.e. behaviour) against other constructs. This measurement is achieved by

two tests that are supposed to measure the same construct and prove that they are related (Hair *et al*., 2017); convergent validity is a process that allows the researcher to measure the level of correlation of multiple correlations (Maydeu-Olivares *et al.,* 2017) of the same construct that agree (Carrión *et al*., 2017). Convergent validity in this study was established through factor loadings of items and the average variance extracted (AVE) (Shipley, 2016). As depicted in Table 6.6, the factor loadings of all items exceeded the cut-off value of 0.50 (Cangur & Erkan, 2015) and ranged from 0.625 to 0.961, while Prasojo and Abu-Siada (2021) recommend the AVE of constructs presented values equal or greater than 0.50, yet this study achieved a range of 0.764 to 0.884 based on Table 6.6. This study therefore satisfies convergent validity as the AVE value has already exceeded 0.5 (Hair *et al*., 2017b). An AVE value of 0.5 or more justifies the construct's appropriateness to explain 50% or more of the item variance (Hidayat & Patras, 2022), submitting that the attained results of the study verified the convergent validity.

6.12.2.4 Discriminant validity

Discriminant validity provides evidence in a sense that constructs that should not be related do not, in fact, have any relationship whatsoever (Reinecke & Pöge, 2020); it helps to illuminate test score interpretations beyond the information provided solely through convergent evidence (Sireci, 2007; Zumbo, 2007). Consequently, discriminant validity specifies that two test measures that are not related are, in fact, unrelated (Almanasreh *et al.,* 2019). Attaining discriminant validity, a correlation coefficient was considered (Owens *et al.,* 2020), with convergent correlations being greater than the discriminant ones (Mehdipour *et al.,* 2020; Trochim, 2020). In data analysis techniques using Smart PLS 3, three criteria were conducted to assess the models' outer, namely: (i) convergent validity, which can be seen from the loading factor and AVE; (ii) the discriminant validity can be seen from the square root value AVE and the correlation between latent constructs; and (iii) the test reliability can be seen from the composite reliability value and Cronbach's α (Hamid, Anwar & Lumoindong, 2019). In other words, the evaluation of discriminant validity of constructs in the Smart PLS model for this study, according to Almanasreh *et al.* (2019) uses Fornel and Larcker's criterion to compare the square root of each AVE in the diagonal with the correlation coefficients for each construct in the relevant rows and columns can be observed from Table 6.7. The highlighted cells indicate the AVE values. A latent construct must explain better the variance of its own indicators

rather than the variance of other latent constructs. Therefore, the square root of each construct's AVE must have a greater value than the correlations with other latent constructs. It can be concluded therefore that the correlations between constructs do not exceed the value of the square root of the AVE of each construct.

Table 6.7: Discriminant validity analysis

Research Construct	CD	CL	DA	DD	DP	EP	FP	HRP	IC	LD	MP	PV	TMS
CD	0.881												
CL	0.403	0.815											
DA	0.214	0.266	0.842										
DD	0.690	0.318	-0.037	0.856									
DP	0.627	0.344	0.256	0.769	0.818								
EP	0.468	0.223	0.228	0.461	0.368	0.776							
FP	0.240	0.448	0.052	0.214	0.033	0.146	0.762						
HRP	0.681	0.384	0.036	0.823	0.714	0.388	0.061	0.841					
IC	0.577	0.416	0.340	0.419	0.431	0.585	0.258	0.433	0.862				
LD	0.647	0.441	-0.029	0.862	0.752	0.343	0.143	0.831	0.374	0.884			
MP	0.330	0.602	0.159	0.274	0.137	0.233	0.760	0.197	0.391	0.272	0.874		
PV	0.318	0.559	0.361	0.020	0.094	0.251	0.347	0.037	0.366	0.071	0.552	0.853	
TMS	0.743	0.451	0.059	0.848	0.748	0.304	0.297	0.794	0.485	0.813	0.398	0.169	0.881

DP = Diversity Policy; **HRP** = Human Resource Policy; **TMS** = Top Management Support; **DD** = Demographic Diversity. **LD** = Leadership Diversity; **CD** = Cultural Diversity; **DA** = ; **IC** = Innovation Culture; **PV** = Perceived Value; **CL** = Customer Loyalty; **MP** = Market Performance; **FP** = Financial Performance; **EP** = Environmental Performance.

Source: Author's own compilation

6.12.2.5 Model fit analysis

Section 5.8 of Chapter 5 alluded to the aim of the model fit and described the relationship between a response variable and one or more predictor variables (Schuberth, Rademaker & Henseler, 2022). To assess the overall model fit of composite models, researchers can use a statistical test and several fit indices known through structural equation modelling (SEM) with latent variables (Schuberth *et al.*, 2022; Grace-Martin, 2020). This is achieved by means of a distance function considering the sensible assumption of a consistent estimator since it produces a consistently estimated model-implied variance-covariance

matrix (Schuberth *et al.,* 2022); a distance function in cases where an estimator is used does not minimise such a distance function (Devlieger, Talloen & Rosseel, 2019). However, at this stage, the threshold values up to which the discrepancy in the model fit is regarded as acceptable remain unclear (Schuberth *et al.,* 2022).

Schuberth *et al.* (2022) recommend reporting fit indices along with the results of the test for exact model fit because they can provide additional information. However, Marsh, Hau and Wen (2004) caution against the widespread practice of comparing fit indices to threshold values derived by simulation studies to judge whether the fit of a composite model is acceptable because this approach suffers from logical inconsistency (Schuberth *et al.,* 2022). Currently, the literature on PLS-PM takes divergent stands on the overall fit assessment, while proponents follow the reasoning known from SEM with latent variables (Henseler, Hubona & Ray, 2016; Henseler, 2017; Benitez, Henseler, Castillo & Schuberth, 2020). If the model is an acceptable representation of reality, the data should be consistent with the model and thus with a researcher's theory from which the model is derived (Hair, Howard & Nitzi, 2020). Furthermore, composite models can be evaluated by the use of the overall model fit criteria that are based on the model-implied, variance-covariance matrix appropriate to be assessed (Lohmöller, 1989; Hair *et al.,* 2017, Hair *et al.*, 2019a, 2019b, 2020). However, the variance-covariance matrix implied by the composite model must be applied (Hair *et al.,* 2017a). Similarly, composite models estimated by PLS-PM can be assessed by means of distance functions even though PLS-PM does not minimise such a function to obtain the parameter estimates (Hair *et al.,* 2020). Consequently, the PLS-SEM technique, summarising CFA to test the psychometric properties of the measurement scales and path analysis to test the predetermined hypotheses (Hair et al., 2017, 2019a, 2019b and 2020), was employed to perform the main data analysis; the model fit findings are presented in Table 6.8.

Table 6.8: Model fit

Squares	Saturated model	Estimated model
SRMR	0.111	0.139
d_ULS	20.431	32.105
d_G	n/a	n/a
Chi-Square	11340.663	11460.220
NFI	0.162	0.153

Source: Author's own compilation

Based on Table 6.8, to meet the model fit criteria, the following should be observed:

Standardised root mean square residual (SRMR)

The Smart PLS method is a convincing and applicable statistical tool for analysing complex relationships between variables (Santoso, Sunarjo & Fadli, 2023). The value of the SRMR or standardised root mean square should be < 0.10 or < 0.08 (Hamid & Anwar, 2019) for a good fit. In order to achieve efficiency and effectiveness in future projects, comprehensive guidelines are required that encompass appropriate and measurable implementation methods (Kalbuadi, & Yuwono, 2023). Therefore, the achieved SRMR, the saturated model value of 0.111, is compared to the estimated model value of 0.139. Notwithstanding this achievement of these values; when the precise fit considers, albeit SRMR> 0.08, the model should be considered well fitting (Ramayah *et al*., 2017; Asparouhov, & Muthén, 2018).

Exact model fit (d_ULS and d_G)

The are two different ways to process inconsistency in the exact model fit, known as the *d_LS* (i.e., the squared Euclidean distance) and ***d_G*** (i.e., the geodesic distance) (Henseler, Hubona & Ray, 2016; Maina, Lawrence & KyaloTeresia, 2023). Whereas, the discrepancy is significant (p < 0.05), model fit has not been established dULS and dG< than the 95% bootstrapped quantile (HI 95% of dULS and HI 95% of dG) (Dijkstra & Henseler 2015a; 2015b; Henseler *et al.,* 2016; Asparouhov, & Muthén, 2018). The model being tested, and the experimental correlation matrix being insignificant owing to sampling error, consequently, the difference between the correlation matrix roundabout model being tested and the experimental correlation matrix should be non-significant (p > 0.05) (Ramayah *et al*., 2017; Santoso, Sunarjo & Fadli, 2023). Moreover, the model fits well if the variance among the correlation matrix is obscured by the difference between the correlation matrix implied by this experimental model and the empirical correlation matrix should be non-significant (p > 0.05). Therefore, the results achieved in this study satisfied all the criteria.

Normed fit index (NFI)

A normed fit index (NFI) greater than 0.9, goodness of fit (GoF), Consequently, the NFI results in values between 0 and 1. The closer the NFI to 1, the better the fit. NFI values above 0.9 usually represent acceptable fit. Based on the two criteria for assessing the fit

of the model, this model does not satisfy the criteria (Hidayat, & Patras, 2022) – the value for the normed fit index (NFI) should be > 0.9 (Hamid & Anwar, 2019).

Chi² and degrees of freedom

The NFI refers to 1 minus the Chi-square (Chi²) value of the projected model divided by the Chi² values of the null model (Schuberth *et al.,* 2022), and the observed value for NFI is 0.162, which is < 0.9 (Rivera, 2015). Therefore, NFI could ignore the Chi² taken as covered by NFI.

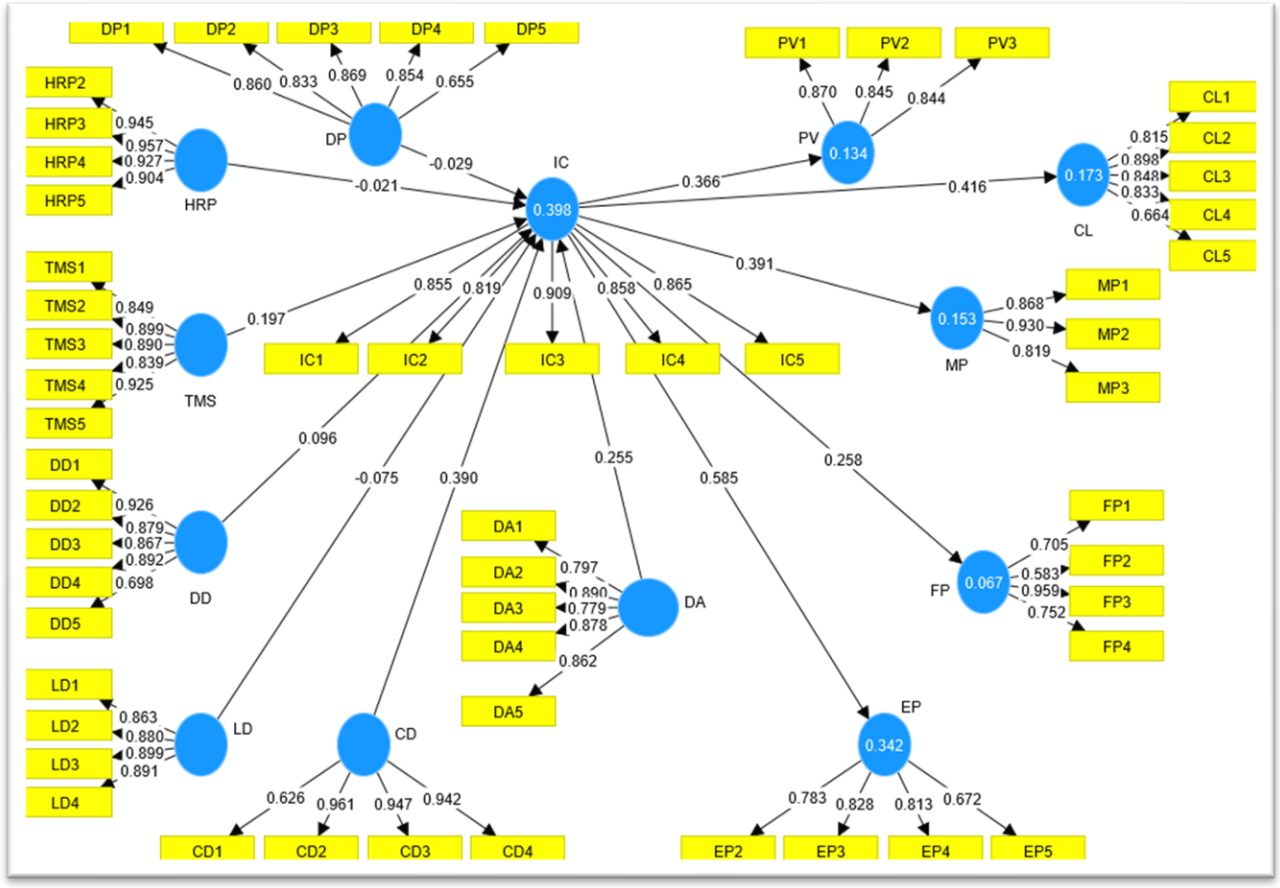
RMS_theta

The RMS_theta assesses the degree to which the outer model residuals correlate, the value for root mean square (RMS), Theta or RMS Theta should be < 0.102. The measure should be close to zero to indicate good model fit, because it would imply that the correlations between the outer model residuals are very small (close to zero). According to the fit model criteria, the value for RMS Theta or root mean square Theta is 0.111.

6.12.2.6 Construct validity

The new research construct validity model is demonstrated in Figure 6,12. Construct reliability refers to measuring the reliability of the latent variable construct (Hidayat & Patras, 2022). Values considered reliable must be above 0.70 (Hair *et al*., 2017), where construct reliability is considered similar to Cronbach α; after fulfilling the requirements of construct validity, the next step is to analyse it. The value of the construct validity criteria on the outer loading for each latent variable is > 0.7 (Sudibjo & Prameswari, 2021). The value for measuring the reliability constructs if the value of Cronbach's α, Rho A, and composite reliability shows > 0.7 (Hair et al., 2017) submits that the hypothetical relationships formulated in Chapter 4 do exist, following the path analysis chart in Figure 6.11.

Figure 6.11: Path analysis chart



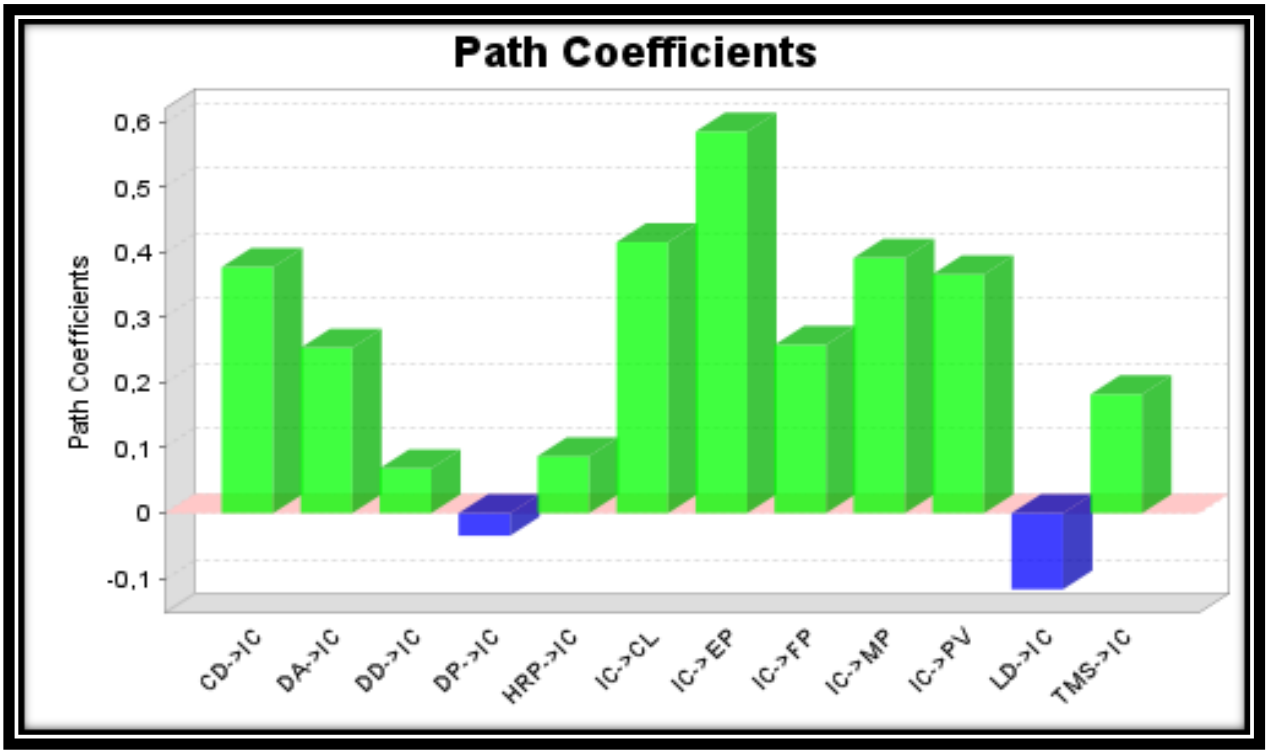
DP = Diversity Policy; **HRP** = Human Resource Policy; **TMS** = Top Management Support; **DD** = Demographic Diversity; **LD** = Leadership Diversity; **CD** = Cultural Diversity; **DA** =; **IC** = Innovation Culture; **PV** = Perceived Value; **CL** = Customer Loyalty; **MP** = Market Performance; **FP** = Financial Performance; **EP** = Environmental Performance.

Source: Author's own compilation

The exploratory factor analysis is a statistical method that is used to identify latent variables that underlie a set of a larger number of manifest variables. The term 'exploratory factor analysis' (EFA) stems from the need to differentiate from the confirmatory factor analysis (CFA) (Bollmann, Zeigler-Hill & Shackelford, 2018). The most important assumption test in SEM (structural equation modelling) is the normality of the data, which is carried out using the critical skewness ratio of + 2.58 (Hair *et al.,* 2017a) at a significance level of 0.05 (5%). As such, CD2, CD3, CD4 cultural diversity CD1 discarded for cross-loading, also PV1, PV2, PV3 are the ones that remain due to PV4 and PV5, whereas HRP1, HRP2, HRP3, HRP4 were not unlike HRP5 and HRP6, which were discarded due to cross-loading. MP3 MP4 and MP5 remained, while MP1 and MP2

were discarded. FP1, FP3, and FP4, endured though FP2 and FP5, were discarded. DD1, DD2, DD3, and DD4 remained, while DD5 and EP5 were also discarded. Table 6.9 of this research reveals that the outer loading value of all items or indicators is > 0.5, whereas those of several items are < 0.7 (Hamid *et al.,* 2019). The outer loading value limit of > 0.5 is still acceptable, provided that the validity of the research construct satisfies the requirements, and the conceptual model is still fresh or being developed (Hamid *et al.,* 2019). Figure 6.12's path coefficient chart details the correlations between the constructs. Items that do not meet the expected norms of factor loading (same-factor loadings higher than 0.60, and cross-factor loadings less than 0.30) should be dropped at this stage (Bhattacherjee, 2012).

Figure 6.12: Path coefficients



DP = Diversity Policy; **HRP** = Human Resource Policy; **TMS** = Top Management Support; **DD** = Demographic Diversity; **LD** = Leadership Diversity; **CD** = Cultural Diversity; **DA** = ; **IC** = Innovation Culture; **PV** = Perceived Value; **CL** = Customer Loyalty; **MP** = Market Performance; **FP** = Financial Performance; **EP** = Environmental Performance

Source: Author's own compilation

The path coefficients between constructs are outlined in Figure 6.12 and based on these results, discriminant validity between constructs was well established. A path coefficient specifies the direct effect of a variable assumed to be a cause on another variable

assumed to be an effect, the true nature of cause-and-effect relationships (Bhatt, 1973; Srivastava & Singh, 2012; Mahalingam *et al.,* 2020). The following are the results discussion of the construct relationship in this study.

6.13 **DISCUSSION OF THE RESULTS**

Examination of the hypothesis relationship in this study considers the beta values, ranging from 0 to 1 magnitude and P values ≤ 0,5 whether accepted or rejected (Du *et al.,* 2010; Hair, Hollingsworth, Randolph & Chong, 2017a). The presentation of hypotheses test results in Table 6.9 is analysed and followed by a detailed discussion.

Table 6.9: Hypotheses test results

Path	Hypothesis	Beta	T statistic	P value	Outcome
DP→IC	**H1**	-0.029	0.118	0.906	Not supported
HRP→IC	**H2**	-0.021	0.090	0.928	Not supported
TMS→IC	**H3**	0.197	0.693	0.489	Not supported
DD→IC	**H4**	0.096	0.239	0.811	Not supported
LD→IC	**H5**	-0.075	0.252	0.801	Not supported
CD→IC	**H6**	0.390	1.197	0.049	Supported
DA→IC	**H7**	0.255	1.973	0.102	Confirmed but not supported
IC→PV	**H8**	0.366	2.972	0.003	Supported
IC→CL	**H9**	0.416	2.867	0.004	Supported
IC→MP	**H10**	0.391	3.026	0.003	Supported
IC→FP	**H11**	0.258	0.838	0.402	Confirmed but not supported
IC→EP	**H12**	0.585	5.555	0.000	Supported

DP = Diversity Policy; **HRP** = Human Resource Policy; **TMS** = Top Management Support; **DD** = Demographic Diversity; **LD** = Leadership Diversity; **CD** = Cultural Diversity; **DA** = ; **IC** = Innovation Culture; **PV** = Perceived Value; **CL** = Customer Loyalty; **MP** = Market Performance; **FP** = Financial Performance; **EP** = Environmental Performance.

Source: Author's own compilation

In the hypothesis analysis from Table 6.9, DP's relationship with IC has an inversely proportional relationship outcome and is therefore rejected. Similarly, LD's relationship with IC has been rejected due to these inverse proportional relationships, which is

contrary to the initial proposition in Chapter 4.4, whereas other constructs are accepted. The following is the detailed hypothesis statement analysis.

6.13.1 Relationship between corporate diversity practices and innovation culture

Corporate diversity in this study, known as the predator variable, has dimensions of diversity policy (DP) – H1; human resource policy (HRP) – H2; top management support (TMS) – H3; demographic diversity (DD) – H4; leadership diversity (LD) – H5; cultural diversity (CD) – H6; diverse attitudes (DA) – H7 and mediator variable innovation culture (IC).

Hypothesis one (H1)

The first hypothesis of the study suggested a positive relationship between DP and IC. The path analysis results, however, show that there is no relationship between the two constructs (β = - 0,029; t = 0,118; p = 0,906), and so H1 is not supported by the results of this study. This result implies that DP has no influence on IC in the automotive industry in South Africa. This result contradicts previous studies by (OECD 2016; Cui, Jiao & Jiao 2016; Cui, Jiao & Jiao 2016; Abdi *et al.,* 2017; Iskandar & Ariffin 2019) where it was found that positive relationships between policy and innovation culture exist.

The fact that DP exerts no influence on IC in the automotive sector deserves further scrutiny to understand the reasons for this phenomenon. Firstly, it could be that the existing DPs are ill-devised/designed such that they do not speak to IC. For instance, as mentioned by Barnes *et al.* (2017), well-developed policies should stimulate innovation, which has become a cornerstone activity in many organisations. It is also possible that where well-developed DPs are available, there is a lack of monitoring of the implementation of the policies. For instance, the implementation of B-BBEE, which has received much interpretation, has led to confusion and disillusionment by some firms. Some sentiments in the automotive sector believe that this B-BBEE policy is too short-sighted and has inefficiencies. As a policy, it needs to be decisive and change gears to bridge the gap in economic transformation. In these cases, the policies cannot impact positively on IC.

Hypothesis two (H2)

The second hypothesis of the study proposed a positive relationship between HRP and IC. Table 6.9 shows that there is no relationship between the HRP and IC, evidenced by (β = -0.021; t = 0.090; p = 0.928), thus H2 is not supported. This result suggests that HRP has no influence on IC in the automotive industry in South Africa. Figure 6.12 details (>0 but <0.1) an insignificant relationship between human resource practice (HRP) and IC. Some scholars, however, i.e. Makó *et al.* (2018); Van Esch *et al.* (2018) and Jaehrling *et al.* (2018) found that a relationship exists. However, there has been indoctrination by the multinational companies (MNCs) towards the South African industry to adopt the host country's HR systems and practices instead of the country of operation (Kotter, 2008; Bak, 2016; Calitz *et al.,* 2017; Kweku *et al.,* 2017). Therefore, even through MNCs, South African automotive industry firms should be allowed to have HRP and systems that are relevant to the South African automotive industry and its inhabitants.

Evidence leading to no relationship between HRP and IC could be because of South African automotive industry labour challenges owing to past economic segregation practices. Apartheid was a complex and sophisticated system for excluding black people from any meaningful participation in the economy. Nowadays, albeit almost three decades later, it is exceedingly rare to find black CEOs and presidents in the management of the automotive firms. HRP recruitment, promotion and remuneration policies are still in favour of white males. Additionally, the education offerings to a black child do not enhance meaningful/insightful participation in this important business value chain. These inequalities promoted by the past leave huge gaps between HRP and IC.

Hypothesis three (H3)

The third hypothesis of the study proposed a positive relationship between TMS and IC. However, findings show that there is no relationship between the two constructs (β = 0,197; t = 0,693; p = 0,489), such that H3 is not supported. Additionally, DP influences IC in the automotive industry in South Africa. The relationship between top management support (TMS) and IC (>0 also < 0.2) has small margins, as shown in Figure 6.13. This is in alignment with the study by Chekanov *et al.* (2017) and Lee *et al.* (2018), who determined the existence of the relationship between TMS and IC. However, Black *et al*. (2018) argued that TMS could enhance the mindset orientation of managers towards

innovation culture. Therefore, TMS's stance on innovation culture, technologies, and R&D in maintaining a special work pattern could be improved (García-Sánchez *et al*., 2017), making this leak of work relations unsatisfactory.

TMS has a weak relationship with IC, which resulted in TMS having small margins of influence on IC. All business leaders should be picking up the South African flag as they deal with multi-national companies (MNCs) from across borders and holding it high. Top management have not embraced their role as a force for positive change in the South African automotive industry. The lessons learnt and success achieved in diversity management by top managers could be accentuated through the automotive industry business value chain. The country's demographic effects on innovation culture are built on the cultural and racial divide. However, conflicts associated with these diversities have negative effects such as inequality and racial discrimination. The automotive industry is not isolated from these effects, and therefore the transformation of senior management in many organisations appears to be slow-moving.

Hypothesis four (H4)

The fourth hypothesis of the study proposed a positive relationship between DD and IC. Findings show that there is no relationship between the two constructs ($\beta = 0{,}096$; $t = 0{,}239$; $p = 0{,}811$), hence H4 is backed up by this study's results. This result signifies that DD has an influence on IC in the automotive industry in South Africa. Figure 6.12's analysis between DD and IC (<0 but > 0.1) shows an insignificant magnitude. These findings contrast with the studies by Dayan *et al.* (2017) and Kagzi and Guha (2018), who found that DD's relationship with IC exists. Innovation culture should be embraced to accommodate economic transformation to all its demographics and increase productivity (OECD, 2017). The adverse effect of the nonexistence of a DD and IC relationship is evident by insufficient new product creativity (NPC), thereby no South African automotive vehicle brand, technological follower or demographic diversity index participates in the NPC.

The nonexistence of the relationship between DD and IC could be that firms have not developed a diversity programme that distinguishes among the various minority subgroups they desire to target and consider the contextual factors that will act as a hindrance or impediment in enabling them to achieve targets (Orlando *et al.*, 2013).

Moreover, challenges posed by social integration, such as ethnic diversity, pose risks in unifying and maintaining the DD relationship with IC. Additionally, failure to manage diversity in higher learning institutions filters through the employment sector, and the automotive industry is not exempted from these deviations (Mampane, 2019). Therefore, the South African automotive industry does not promote an enabling condition for the flourishing of the talents of all people. DD's weak relationship with IC impedes the harnessing of skills and developing productive potential, owing to the exclusion of some subgroups. Notwithstanding, there is nonparticipation of subgroups to ensure that they play a leading role in the allocation of national resources and that they get their due in the country's wealth.

Hypothesis five (H5)

The fifth hypothesis (H5) of the study proposed a positive relationship between LD and IC. However, findings show that there was no relationship between the two constructs (β = -0.075; t = 0,252; p = 0.801), and therefore H1 is not supported. This result implies that LD has no influence on IC in the automotive industry in South Africa. Likewise, in Figure 6.12, leadership diversity (LD) and IC (<0 also < -0.1) show the nonexistence among these characters. On the contrary, Sethibe and Steyn (2015) with Khalili (2016) found the existence of the relationship between DP and IC, albeit that role modelling in support of innovation directly and indirectly forecasts an innovation culture (Villaluz & Hechanova, 2019). Therefore, the exact impact of innovation culture through innovation strategy from leadership cannot be established.

The fact that that the relationship between LD and IC could be attributed to failure to scrutinise the comparative methods of different leadership, its impact on innovation culture and neglect of broader national cultural values (Bracht *et al.,* 2023). For example, Hughes *et al*. (2018) and Lee *et al.* (2020) observed challenges faced by Google in driving global innovation and the link between leadership and innovation in that the neglect or lack of knowledge of different forms of leadership suppressed diversity, creativity, and job satisfaction in the workplace. Additionally, a different form of leadership could result in job losses and disinvestments; for instance, South African automotive has recently seen General Motors exit and BMWs, Volkswagens, Toyotas, Fords and Mercedes-Benzes will no longer be accepted as imports by Europe from South Africa (Planting, 2022).

The EU has made it explicitly clear that BMWs, Volkswagens, Toyotas, Fords and Mercedes-Benzes that are manufactured in South Africa will no longer be accepted as imports.

Hypothesis six (H6)

The sixth hypothesis H6 of the study proposed a positive connection between CD and IC. This proposition was confirmed in the path analysis, as a positive and significant result between the two constructs was observed (β = 0,390; t = 1,197; p = 0,049). As such, Hypothesis H6 is supported. This result demonstrates that the strengthening of CD has a positive impact on IC in the automotive industry in South Africa. Figure 6.12 shows a highly significant and positive association between cultural diversity (CD) and innovation culture (IC), evidenced by > 0.3 from the path coefficient chart. This is supported by Castells and Himanen (2014) as well as Ferraris *et al.* (2017), who found that a company's diverse cultural features on innovation have consequences in a substantial innovation process and thus have a strong positive relationship between CD and IC. Consequently, this study's results are satisfactory, acquiescing to the relationship between CD and IC. This is consistent with previous research (Castells & Himanen, 2014; Ferraris *et al.,* 2017; Calitz *et al.,* 2017; Gordon, 2018), where a positive link between these two constructs was observed. These results imply that there is teamwork, inspiration, innovation, and job satisfaction in firms cultivated by an innovation culture.

Hypothesis seven (H7)

The seventh hypothesis of the study proposed a positive relationship between DA and IC. Results show a positive relationship between the two constructs (β = 0.255; t = 1.637; p = 0.102). However, hypothesis H7 is confirmed but not supported because the t value is lower than 1.96 and the p value is higher than 0.05. The beta value of 0.255 implies that DA positively influences IC in the automotive industry in South Africa. This result is consistent with the findings of some diversity scholars (Muller & Seligson, 1987; Alesina & Perotti, 1996; Acemoglu & Robinson, 2001; Dutt & Mitra, 2008; Timothy *et al.,* 2018). Maintaining a good diverse attitude in support of an innovation culture is critical for the firm's competitiveness (Radas & Božić, 2009; Abdil *et al*., 2017). The levels of competition in new product idealisation, innovation hubs, and creating leading technological advances in the world automotive industry have disadvantaged the South African automotive

industry owing to attitudes about diversity. Therefore, policymakers introduced B-BBEE, EE and AA to further regulate the unwillingness towards transformation within the South African automotive industry.

There are several reasons why DA influence is in small margins on IC. In the first instance, historical facts do not at all favour diversity in workplaces in South Africa. The country experienced a prolonged period of racial segregation known as ‘apartheid’ that alienated and disenfranchised most indigenous groups. It took an equally long struggle to bring the racial segregation to an end. Although over two decades have passed, the effects of apartheid are still felt and experienced in many environments in South Africa, and these include workplaces. Some of the remaining effects of apartheid include racial and tribal mistrust and animosity, even in workplaces where teamwork is required. The automotive industry is not immune to these dysfunctional legacies. For example, the automotive industry in SA is dominated by white males, which is exhibited through demographic profiles and compositions of the various associations within this sector. Efforts by the government to enforce transformation through various legislations such as B-BBEE, AA, and EE etc, have only worsened the existing mistrust and animosity between the diverse groups in the auto industry.

Hypothesis eight (H8)

The eighth hypothesis of the study proposed a positive relationship between IC and PV. Findings show that there is a positive relationship between the two constructs (β = 0,366 t = 2,972; p = 0,003), and so H8 is supported. This result signifies that IC has a positive impact on IC in the automotive industry in South Africa. The path coefficient of 6.13 confirms a positive relationship between IC and perceived value (>0.3 but <0.4). Significantly, innovation culture moderates perceived company performance and cooperate diversity. Furthermore, research by Hollinger (2016) and Calitz *et al.* (2017) confirmed this positive insightful relationship between IC and PV. Therefore, an optimistic view on job creation is enhanced by the growing South African automotive industry due to top firms’ perceived value, which is delightful news to the labour forces.

Hypothesis nine (H9)

The ninth hypothesis of the study proposed a positive relationship between IC and CL. Results revealed that there is a positive relationship between the two constructs (β = 0.416; t = 2.867; p = 0.004), and so H9 is supported. This result implies that IC has a positive influence on IC in the automotive industry in South Africa. Figure 6.12 depicts that customer loyalty (CL) with IC exists, as results of >0.4 were observed. These findings are consistent with the studies by Berger (2014) and Konrad and Wangler (2017), who found the existence of a relationship between IC and CL. This means that CL's buying decision favours certain technology, resulting in customer satisfaction (Tolmay, 2019). Customers should therefore continue their technology and e-commerce exposure since it might be important to maintain loyalty to their preferred brands and retail outlets.

Hypothesis ten (H10)

The tenth hypothesis of the study proposed a positive relationship between IC and MP. Findings show that there is a positive relationship between the two constructs (β = 0.391; t = 3.026; p = 0.003), thus H10 is supported. This result implies that IC has a positive impact on IC in the automotive industry in South Africa. Market performance (MP) and IC, from Figure 6.12, show a satisfactory positive relationship (>0.3 but <0.4). Moreover, these findings are consistent with the study results by Konrad and Wrangler (2017). Additionally, Klaus (2017) accentuates that business models correspond to the needs of these markets, and therefore firms in emerging markets must acclimatise their innovation strategies. For competitive advantage in the worldwide market, the South African automotive industry needs to make use of the good relationship between IC and MP.

Hypothesis eleven (H11)

The eleventh hypothesis of the study proposed a positive relationship between IC and FP. Similarly, results show that there is a relationship between the two constructs (β = 0.258; t = 0.838; p = 0.402). However, the hypothesis is not supported because the t value is lower than 1.96, while the p value is higher than 0.05. The beta value of 0.258 implies that IC has an influence on FP in the automotive industry in South Africa. Additionally, the study results are consistent with the findings by Barnes *et al.* (2017), Horwitz (2014) and Mkhize (2019). The South African automotive industry's prospects in generating

sustainable growth in innovation culture are therefore eminent, and these findings confirm the generous contribution towards the country's GDP.

Hypothesis twelve (H12)

Hypothesis 12 of the study proposed a positive relationship between IC and EP. Results show that there is a positive relationship between the two constructs (β = 0,585; t = 5,55; p = 0,000), and so H12 is supported. IC has a positive impact on IC in the automotive industry in South Africa. IC and EP results from Figure 6.12 detail that there is an optimistic relationship (>0.5 = 0.6). The two aspects of environmental performance, namely natural resources preserved by climate change and the business environment are determined by market regulations. The current study's findings are consistent with the research findings of most scholars (Tice *et al.,* 2005; Swiling *et al.,* 2015; Thompson & Valentinov, 2017). Innovation has its origins in the quest to understand and exploit the natural environment as well as the business environment that should not promote global warming. Similarly, considering the business environment, the finding conforms to the studies done by some researchers (Kahn, 2006; Erdil *et al*., 2018). For competitiveness of the South African automotive industry, this good relationship is most important. Consequently, both business and natural climate change environments are moderated by innovation culture. The quicker the South African automotive industry pursues EURO 6 regulations, the better the conformance will be. Therefore, the correlation between IC and EP is satisfactory and needs to be carefully considered in business strategies.

6.14 LINKING THE RESULTS TO THE RESEARCH THEORIES

This section discusses the link between observed results and theories anchoring the study, which were discussed in Chapter 1 and Chapter 3. The fundamental chosen theories appealing to the current study are the systems theory and disruptive innovation theory.

6.14.1 Systems theory (ST)

The functioning and interrelated responsibilities (i.e., interconnected, interdependent and interacting problems) within the transdisciplinary context for a concurrently critical and prescriptive investigation of the relationship between perceptions and conceptions can be inferred as 'systems theory' (Naqshabandi & Kaur, 2015; Sage & Zebrowski, 2016; Vemić & Molnar, 2019). This study considered that cooperate diversity, innovation culture and company performance are interlinked, interrelated, and interdependent, thereby forming systems theory. Cooperate diversity practices (i.e. DP, HRP, TMS, DD, LD, CD & DA) are perceived to be a system within a system in a short sub-system. Similarly, the interdependence/interconnectedness is construed from the five dimensions (i.e. PV, MP, CL, FP & EP) of company performance. Table 6.10 details the observed findings followed by a discussion.

Table 6.10: Outcome of systems theory

Path	Hypothesis	Beta	T statistic	P value	Outcome
DP→IC	**H1**	-0.029	0.118	0.906	Not supported
HRP→IC	**H2**	-0.021	0.090	0.928	Not supported
TMS→IC	**H3**	0.197	0.693	0.489	Not supported
DD→IC	**H4**	0.096	0.239	0.811	Not supported
LD→IC	**H5**	-0.075	0.252	0.801	Not supported
CD→IC	**H6**	0.390	1.197	0.049	Supported
DA→IC	**H7**	0.255	1.973	0.102	Confirmed not Supported
DP = Diversity Policy; **HRP** = Human Resource Policy; **TMS** = Top Management Support; **DD** = Demographic Diversity; **LD** = Leadership Diversity; **CD** = Cultural Diversity; **DA** = Diverse attitudes					

Source: Author's own compilation

Table 6.10 shows the rejection of the relationship between **DP→IC,** which might be due to the policy's (i.e., of B-BBEE) failure to bridge economic transformation. B-BBEE's

policies are too ill-considered and continually create inefficiencies, confusion, and disillusionment (Naude, 2013; Van Niekerk, 2016). The weak monitoring system of these policies (i.e. B-BBEE, AA and EE) results in malfunctioning of cooperate diversity, thereby weakening the sub-system's theory. Additionally, impediments could be attributed to the legacy of apartheid. Following injustices of the past in South Africa, the **HRP→IC** relationship in some firms fell short of bringing about business transformation that can lead to developing new human resource competencies and making better use of the sub-systems theory (Bak, 2016). The failure of existing human resource capabilities to realign the way staff work, how the organisation is structured, and the core product or service portfolio has weakened the sub-systems theory, as shown by the findings of this study.

In a systematic manner, the **TMS→IC** relationship is unable to change the mindset of operationally-oriented managers from trying to be self-righteous towards justifiable actions (Schoemaker *et al.,* 2018). The weak support from top managers in this regard has resulted in the misalignment of cooperate diversity dimensions, rendering disappointment to sub-system theory. Coordinated with the adoption of the country's fiscal and monetary policies, the **DD→IC** relationship has failed to maintain economic stability while bringing economic transformation. These policies are skewed and not applicable to all demographic habitants in the South African automotive sector, bearing an adverse effect on the sub-system theory. The failure of collective organisational skills from the **LD→IC** relationship pursued systematically results in new business models and strategic leadership (Astuty *et al*., 2022). The automotive sector worldwide is on the verge of change to electric vehicles requiring new business models to accommodate this change. South African electricity supply challenges (i.e. load shedding) have resulted in slow progress by the **LD**, and punitively affecting it. There seems to be a scarcity of literature in addressing the **DA→IC** relationship (Abdil *et al.,* 2017). However, policy shortcomings and inadequacy have resulted in a lack of confronting attitudes toward diversity, which has led to the weakening of the cooperate diversity sub-system theory. It can be seen from the results that only one dimension (i.e. **CD→IC**) out of seven has been accepted and is aligned with the sub-system theory of cooperate diversity, while all company performance dimensions have been accepted, proving the alignment of the systems theory. In this study, CD is composed of seven dimensions with an understanding that if one of them fails/is rejected, the sub-system theory would be malfunctioning. Additionally, firms post-Covid-19 are disintegrating within automotive

firms in South Africa. It can be concluded that systems theory hinges on the current study, albeit weakly, due to the cooperate diversity sub-systems theory, which is malfunctioning. Moreover, the findings between cooperate diversity, innovation culture and company performance are dyadic, and aligned with the systems theory. Therefore, these results are partially confirming and at the same time contradicting the systems theory.

6.14.2 Disruptive innovation theory (DIT)

Disruptive innovations theory could be broadly classified as 'disruptive technology' (i.e. include technologies, services, and business innovation models) used to penetrate lower-end and new markets by means of disruptive innovations (Christensen & Raynor, 2003; Dan & Chieh, 2008). Disruption innovation theory is the inflow and outflow of knowledge from innovation culture to company performance. Some scholars (Beltagui *et al.,* 2020; Nakamori, 2020) explain the disruptive innovation theory as using incremental innovation and radical innovation. Incremental innovation is regarded as the improvement of existing technologies, whereas radical innovation is known as the introduction of modern technologies replacing the existing technology (Saadatmand, & Daim, 2019). These two types of innovation can be measured by new products, new markets, modern technologies, better financial performance, and environmental performance. Consequently, Table 6.11 displays the findings of the five dimensions of company performance interacting with innovation culture.

Table 6.11: Outcome of disruption innovation theory

Path	Hypothesis	Beta	T statistic	P value	Outcome
IC→ PV	**H8**	0.366	2.972	0.003	Supported
IC→ CL	**H9**	0.416	2.867	0.004	Supported
IC→ MP	**H10**	0.391	3.026	0.003	Supported
IC→ FP	**H11**	0.258	0.838	0.402	Confirmed Not Supported
IC→ EP	**H12**	0.585	5.555	0.000	Supported

IC = Innovation Culture; **PV** = Perceived Value; **CL** = Customer Loyalty; **MP** = Market Performance; **FP** = Financial Performance; **EP** = Environmental Performance.

Source: Author's own compilation

The analysis from Table 6.11 shows that all five dimensions are influenced by innovation culture. Inflow and outflow of information between innovation culture and company

performance were observed. The exclusion of H8 as mentioned earlier gave way to the analysis of the five practices' (PV, CL, MP, FP & EP) correlations between IC and PCP. The findings imply that South African automotive firms are willing to innovate. The firms' PV, CL, MP, and EP increase, due to careful association with disruptive theory. On the other hand, innovation comes at a cost to the firms, and some of the results confirmed the willingness to innovate. Additionally, these firms' ability to improve their product excellence, brand consistency, agility in services, innovation, and cost-effectiveness is as a result of disruptive innovation theory alignment (Black *et al.,* 2018; Beltagui *et al*., 2020). Therefore, DIT is aligned to perceived company performance.

6.15 **CHAPTER CONCLUSION**

This chapter starts with a presentation and analysis of the response rate of the survey. A total of 232 questionnaires were included with a response rate of 13.9% (n=215) observed from the South African automotive value chain in the current research. The descriptive statistical analysis in Table 6.8 detailed the demographic profile such as age, gender, race, and qualifications of the participants. Interestingly, the dominant age group is 36 to 45 years, while the least dominant group is 18 to 20 years, and most of these participants are in senior management. Regarding gender results, 170 male participants in comparison to 45 female participants were observed, who are split racially; 59.1% black followed by 15.8% Indian, closely followed by 14.9% white, and coloured (mixed-race) at 9.8%. Those participants (1.9%) were those who chose option 5 (other – please specify) from the questionnaire. Most of the respondents (n=101: 47,0%) chose option 2 in the questionnaire, indicative of a diploma qualification, while n=42 (19.5%) opted for option 4, signifying a postgraduate degree qualification; also n=39 (18.1%) chose a first degree from the questionnaire, followed by matric (n=29: 13,5%) and other participants chose option 5 (n=4: 1,9%), suggestive of 'other – please specify'. Moreover, during the descriptive statistics analysis of constructs, cooperate diversity (predator variable) with its seven dimensions, namely: (1)diverse policy; (2) human resource practice; (3) top management support; (4) demographic diversity; (5) cultural diversity and ; (6) innovation culture (mediator variable); and (7) perceived company performance with its five dimensions, namely: (1) perceived value; (2) customer loyalty; (3) market performance; (4) financial performance; and (5) environmental performance were presented and analysed. It seems as if participants affirmed these dimensions by choosing 'somewhat agree' and 'agree' from the Likert scale. Furthermore, the presented analysis of the research scale accuracy confirmed the correctness of the measuring scale used in this study, looking at the internal consistencies (validity, reliability etc.) and the model fit. The two chosen theories (i.e., systems theory and disruption innovation theory) are aligned with the study. The next chapter deals with recommendations and conclusion of this study.

CHAPTER 7
CONCLUSION AND RECOMMENDATIONS

7.1 CHAPTER OVERVIEW

In this chapter, the conclusion of the study and the recommendations are presented. Furthermore, the chapter includes the final analysis and explanation of the results. It presents the review of the whole study from Chapter 1 to Chapter 7. It further provides the conclusion to the theoretical objectives and discusses the conclusions drawn from the empirical objectives. Additionally, it presents a model for application in the South African automotive industry. The chapter then provides some recommendations for the South African automotive industry (i.e., manufacturing, assembly & dealership/sales) in line with the results. Lastly, the limitations and suggestions for further research, and some final remarks, are provided.

7.2 REVIEW OF THE STUDY

The study aimed to examine the nexus between corporate diversity, innovation culture and perceived company performance in the automotive industry in South Africa. This study consists of seven chapters and the following are brief reviews of these chapters.

Chapter 1 dealt with the introduction and background to the study, and outlined the problem statement, research objectives, a summary of research hypotheses, the research model, a brief discussion of the research hypotheses, a brief research methodology, statistical analyses, ethical considerations, definitions of terms and chapter outline. The chapter further detailed the thesis timelines with specific milestone deadlines.

Chapter 2 reviewed relevant literature regarding the automotive industry in South Africa. It sketched the environment of the automotive industry in the country and described its components from the legislation framework (i.e., B-BBEE, AA, EE, APDP, MCEP & 2035 plan). Moreover, the chapter evaluated automotive economic participation in South African GDP contributions and further explored its challenges (i.e., labour, technology, and cost). Additionally, it linked and highlighted the relevant studies conducted in the South African automotive manufacturing industry. This chapter pointed out the gaps in the legislation framework BBBEE; one major gap being the monitoring of the BEE Act scorecard. Furthermore, it investigated the perception that the industry is male-

dominated, which suggests that AA and EE are inadequate for the South African automotive industry.

Chapter 3 evaluated the relevant literature on the research theories, such as the systems theory (ST) and disruptive innovation theory (DIT). Additionally, the conceptualisation of cooperate diversity practices, known in this study as DP, HRP, TMS, DD, LD, CD, and DD, was presented. Moreover, it dealt with the conceptualisation of the mediator construct (i.e., innovation culture [IC]). Consequently, it delved into the outcome construct known in this study as perceived company performance practices, which are PV, CL, MP, FP and EP. The findings of this chapter suggest that corporate diversity increases company performance moderated by innovation and innovation culture.

Chapter 4 discussed the conceptual framework and hypothesis formulation. It reviewed the relevant literature that asserted the declaration of the hypothesis statement development and the relationships between the considered variables (i.e. corporate diversity, innovation culture and perceived company performance). Furthermore, it discussed the conceptual framework creation and provided literature supporting the 13 hypothesis statements on which this study is focused, namely: H1 to H13 and their relationships. The chapter that found innovation culture mediates the positive relationship between corporate diversity and company performance.

Chapter 5 significantly discussed the research methodology used in this study. It detailed the concepts of research reasoning, research paradigms, research approach, research design, research strategy, and a brief literature review outline, sampling design, and data collection. Moreover, the models of reasoning that influence this research study, namely inductive, and deductive reasoning, were also discussed, i.e. the choice of deductive reasoning with the view of a specific timeframe and the cross-sectional time horizon. The chapter also defined the target population, data collection procedures, data interpretation procedures and limitations and delimitations of the study. Consequently, a stratified design sample was chosen and a sample size of n=500 respondents was the predetermined form. Other topics covered in the chapter include the methods of reliability and validity and ethical considerations.

Chapter 6 focused on the data analysis and interpretation: focusing on data presentation; descriptive statistics of the constructs; data validation; hypothesis statements discussion; and linking the empirical results to chosen theories, namely ST and DIT. The chapter evaluated the response rate, factorability and normal distribution of the study. Also, testing using exploratory factor analysis, the application of the skewness and kurtosis tested whether the data collected was factorable and whether it was normally distributed. Moreover, it discussed the descriptive statistics of the research constructs, followed by the inferential statistics and testing of construct relationships through the CFA. Furthermore, the analysis of the psychometric properties of the measurement scales is based on reliability, validity and model fit. Thereafter, the chapter presented the path analysis results, regression analysis, and hypotheses test results. The chapter confirms the chosen research theories' fit in the study, namely systems theory and disruption innovation theory.

Finally, Chapter 7 of this study discusses conclusions and recommendations. This chapter lays out a review presentation of the study and is trailed by conclusions drawn from the literature review and from experimental conclusions based on the literature review as well as the empirical study undertaken. Moreover, recommendations and contributions of the study are discussed. The chapter finally details limitations and suggests further research followed by the final observations.

7.3 **CONCLUSIONS BASED ON THEORETICAL OBJECTIVES**

Chapter 1, section 1.3 presented the theoretical objectives of the study. The following four theoretical objectives were set for the study:

i. Conduct a review of the literature on the automotive industry in South Africa;
ii. Examine literature on corporate diversity and seven of its practices, namely policy, human resources (HR) practices, top management support, demographics diversity, leadership, cultural, and diverse attitudes;
iii. Conceptualise the innovation culture from literature; and
vi. Analyse literature on perceived company performance using five of its dimensions, namely perceived value, customer loyalty, market performance, financial performance and environmental performance.

The current section presents the conclusions based on the theoretical objectives.

7.3.1 **Literature on the automotive industry in South Africa**

The first theoretical objective was aimed at reviewing the literature on the automotive industry in South Africa. This objective was addressed in the second chapter of the thesis, where an extensive background of this industry was provided. The literature showed that the automotive industry in South Africa is classified into three segments, namely original equipment manufacturers (OEM), automotive component manufacturers (ACMs), and the independent aftermarket (e.g. the retail motor industry). The chapter also reviewed the legislative framework of the automotive industry in South Africa. Several pieces of legislation were found to be relevant to the industry. These are broad-based black economic empowerment (B-BBEE), employment equity (EE) and affirmative action (AA). Moreover, a number of programmes, such as the Automotive Production and Development Plan (APDP), Manufacturing Competitiveness Enhancement Programme (MCEP) and the South Africa Master Plan 2035 were identified as essential in stimulating the growth of the automotive industry. Additionally, the literature indicated that the automotive industry is an important contributor to the South African and global economies. These contributions are in several areas that include: (1) employment (2) creation, (3) innovation, (4) skills development, and (5) improving GDP, among others. Furthermore, the literature reviewed showed that the industry faces different challenges such as the need to keep abreast with the rapid technological advancements of today, high production costs, volatile labour relations, and the lack of skills. From the review of literature an important research gap was identified. This gap pertains to the paucity of previous studies in the automotive industry in South Africa that involved all three segments of this sector, namely: OEMs, ACMs and RMI.

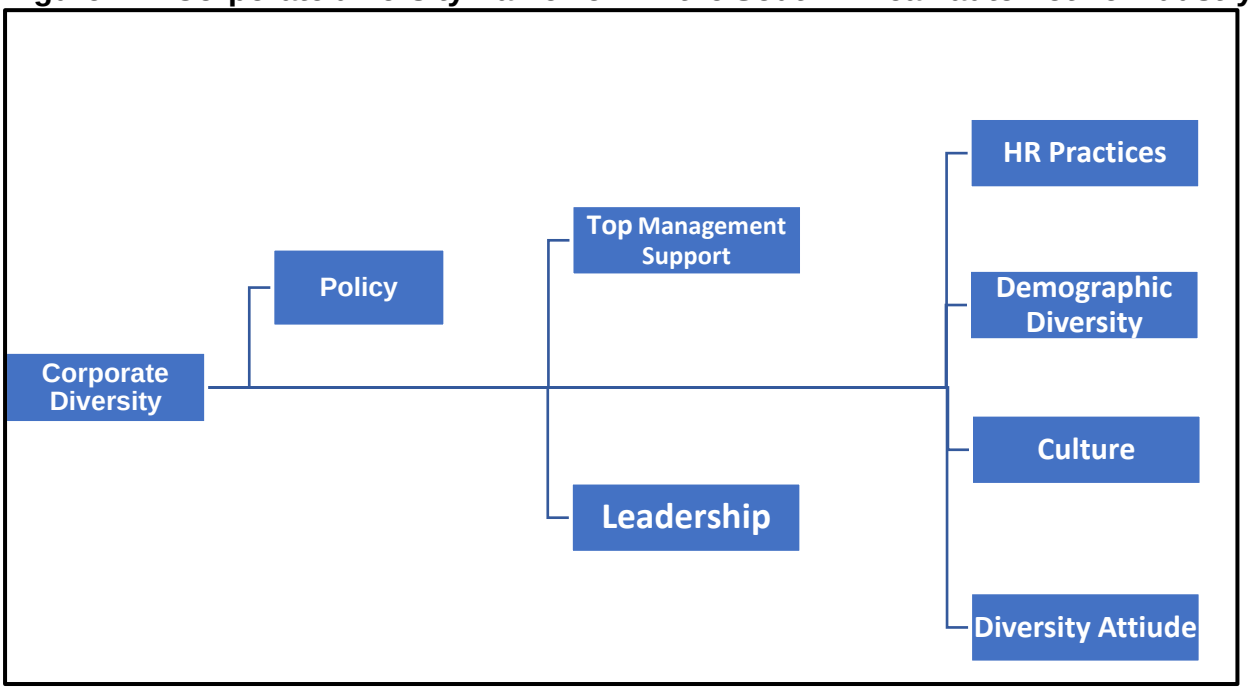
7.3.2 **Literature on corporate diversity**

The second theoretical objective was to examine literature published focusing on corporate diversity and seven of its practices that were covered in Chapter 3. The literature concluded that corporate diversity is associated with an open mindset of individuals in an organisation who are more pro-diversity having equal opportunity without restrictions of cultural, age, gender and racial exclusion. This is in consideration of group demographics that refer to all inhabitants who are multi-/inter-/trans-disciplinary working together on the fair treatment of everyone enhancing future innovative efficiency, even after controlling for endogeneity. The literature pointed out the factors influencing or

drivers of corporate diversity such as organisations' mission, adaptability, compatibility, and involvement. This follows the seven unique corporate practices in this thesis, namely policy, human resources (HR) practices, top management support, demographics diversity, leadership, cultural, and diverse attitudes. The literature review revealed that corporate diversity exists and is validated in automotive industry organisations as a result of democratic dispensations ushered in 1994. However, literature detailed problems affiliated with this existence of corporate diversity as undermined by perceptions of government legislation such as B-BBEE, AA, and EE, due to a lack of visible consequence, implementation confusion and discrepancies in monitoring (i.e. scorecard).

The literature brought forth the relevance of each of the corporate diversity practices with a focus on the following topics: definition of corporate diversity; factors/drivers of corporate diversity; the organisational expectation of corporate diversity exposed the agility of literature; bankruptcy of applied studies of corporate diversity in the automotive value chains, especially in South Africa. Ultimately, literature enhances the development of the conceptualisation of corporate diversity in South African automotive industry organisations. The researcher drew a hierarchical framework for corporate diversity that links all seven practices of the study. Figure 7.1 below depicts corporate diversity and the hierarchical framework model.

Figure 7.1: Corporate diversity framework in the South African automotive industry



Source: Author's own compilation

Figure 7.1 displays the hierarchical framework of corporate diversity in the South African automotive industry. It puts the policies at the centre of influence towards corporate diversity, wherein HR practices derived from the company diversity policies driven by leadership with top management support play a significant role. In ensuring demographics and organisational culture adherence to the corporate diversity framework, all employees' diverse attitudes should be assessed and acknowledged. The following findings focus on each of the seven dimensions of corporate diversity in this study.

7.4 CONCLUSIONS BASED ON EMPIRICAL OBJECTIVES

Section 1.3 outlined the empirical objectives. The current section presents the conclusions intended to address the empirical objectives. The following seven empirical objectives were developed namely:

I. To measure the degree of corporate diversity within the automotive manufacturing industry in South Africa;
II. To measure the scope of innovation in the automotive manufacturing industry in South Africa;
III. To assess the level of company performance within the automotive manufacturing industry in South Africa;
IV. To establish the connection between corporate diversity and innovation culture in the automotive manufacturing industry in South Africa;
V. To establish the connection between the innovation culture and perceived company performance in the automotive manufacturing industry in South Africa;
VI. To determine whether innovation culture mediates the relationship between corporate diversity practices and perceived company performance, and
VII. To develop a model through which corporate diversity can be applied to improve innovation culture and company performance in the automotive manufacturing industry in South Africa.

7.4.1.1 Empirical conclusion drawn from constructs

The first empirical objective was aimed at measuring the degree of corporate diversity within the automotive manufacturing industry in South Africa. Descriptive statistics in the form of minimum and maximum values, mean scores, and standard deviations were applied to each cooperate diversity practice (i.e. DP, HRP, TMS, LD, CD, DD, DA, PV,

MP, CL, FP & EP) to address the first empirical objective. Following are the findings of the corporate diversity practices.

Diversity policy: The study confirms that written policies on diversity and employment equity exist in automotive firms. The implementation of these policies is monitored through available systems, and consequence management is followed in cases of infringement. Transformation policies such as BBBEE, AA and EE serve as the bases for the implementation of diversity policies. Furthermore, automotive firms have managed to formalise the implementation of diversity policies within their organisations in line with existing legislative frameworks and have incorporated them into their strategy.

HR practices: The results confirmed the implementation of HRP by firms affirming inclusion, tolerance and fairness in the hiring or promotion of employees in their workplaces regardless of religion, race, gender and ethnicity. Additionally, compensation benefit policies are applied objectively. Therefore, effective HRPs are in place.

Top management support: It was found that diversity is exhibited through the representation of employees from different cultures, backgrounds, races, ages, genders and religions within their firms. TMS is at the height of this exhibition as they affirm commitment to creating a safe and welcoming environment for all potential as well as current employees. Therefore, top management of firms supports diversity. It was concluded that TMS plays a pivotal role in steering both induced (top-down) and deductive (bottom-up) strategic processes, shaping a firm's innovation culture and strategic renewal capability.

Demographic diversity: Plans exist, and demographic equality implementation plans are integrated within firms' comprehensive business strategy. Moreover, the interests of minority employees are given due attention and preference. This is achieved by acknowledging the essential nature of DD. Therefore, firms that have embraced DD in the South African automotive sector are realising multiple returns in most areas of their business value chain.

Leadership diversity: These results found notable attempts to encourage leadership diversity within the workplace; for example, there are committees that oversee equality and diversity issues. These committees encompass all gender formations of senior managers, executives and team leaders. Supporting equality through leadership diversity

is assigned to senior managers to ensure the inclusion of the entire workforce within the organisation.

Cultural diversity: It was established that automotive firms promote CD in the workplace, to the extent that teams and subdivisions consist of culturally diverse employees ranging from different languages, backgrounds, ethnic groups, and races. Therefore, the automotive sector in South Africa is receptive and has geared up policies towards the management of cultural diversity that are inclusive of all cultures of the country's inhabitants.

Diverse attitudes: It was observed that the automotive firms' sectors have embraced a wide range of cultures existing in South Africa and that the attitudes towards such diversity are generally positive. The mean score plus its SD revealed a much higher positive acceptance rating compared to other corporate diversity practices. This implies that DA is more established in the automotive firm sector than the other corporate diversity practices since respondents were more agreeable towards them than the other dimensions.

Perceived value: This study found customer perception of the PV is sentimental and anchored by emotions/feelings, meaning, when customers feel that the product or service offered is worth the monetary value, they will refer other customers to generate new business. Therefore, this study concluded that firms' value addition on products increases the value of the companies. Additionally, this value add is driven mostly by product, service quality, trust, and customer satisfaction.

Customer loyalty: This study found that firms developed systems and delivery schedules to process customer orders and manage on-time deliveries. This system is ensuring customer inquiries are responded to with accurate information and customised service delivery. Moreover, it was found that the ongoing emotional relationship between customers and firms is established by customer willingness to continually engage with the firm's product or service. Additionally, the positive experience between customers and the firm is manifested by trust through customer loyalty.

Financial performance: It was established that firms in the automotive sector have high returns on investments with higher shareholder value, and consistently high profits. This means that the enterprise value to earnings before interest taxes, depreciation and

amortisation ratio (EV EBITDA) has improved. Additionally, the South African automotive value chain's financial performance is profitability looking at EBITDA, and the EV EBITDA allows desirable investments. Therefore, investment into innovation culture and innovation hubs is possible.

Market performance: The results indicate that firms' market performance, in customer satisfaction, products, and service delivery is satisfactory. Moreover, the alignment of firms and customer preferences, owing to brand durability's excellent service and market performance, was observed. This alignment marketing team's objective was measured by key performance indicators from selected metrics (i.e. cost of sale, return on investment, brand, and customer loyalty).

Environmental performance: The study measured firms on nature preservation of the environment and business environment resilience. It was found that nature conservation regarding product recycling is as per the environmental legislation. Additionally, firms conform to remanufacturing and environmental legislation and/or regulation of the South African automotive sector and multinational automotive firms, and as such, the industry is pursuing legislation framework EURO 5 in some areas. Similarly, the volatile operating business environment measured by the JSE due to the South African currency (rand) is given attention by management and leaders of the firms.

7.4.2 **Relationship among corporate diversity practices and innovation constructs**

The fourth empirical objective was to establish the connection between corporate diversity and innovation culture. This objective was addressed by analysing structural equation modelling (SEM) results to test the hypothesised relationships between the seven corporate diversity practices in this study, namely policy (DP) – H1; human resource policy (HRP) – H2; top management support (TMS) – H3; demographic diversity (DD) – H4; leadership diversity (LD) – H5; cultural diversity (CD) – H6; diverse attitudes (DA) – H7; and innovation culture (IC). Table 7.1 details the outcomes of this connection between corporate diversity and innovation culture.

Table 7.1: Relationship outcome: Corporate diversity practices (CDP)

Construct relationships	Hypothesis	Beta	Relationship outcome
DP→IC	H1	-0.029	No influence
HRP→IC	H2	-0.021	No influence
TMS→IC	H3	0.197	No influence
DD→IC	H4	0.096	No influence
LD→IC	H5	-0.075	No influence
CD→IC	H6	0.390	Accepted influence
DA→IC	H7	0.255	Accepted minor influence
DP – Diverse policy; **HRP** – Human resource practices; **TMS** – Top management support; **DD** – Demographic diversity**; LD** – Leadership diversity; **CD** – Cultural diversity; **DA –** Diverse attitude; **IC** – Innovation culture			

Source: Author's own compilation

The first hypothesis (H1) sought to examine the influence of DP on IC in the South African automotive industry. The results of the study indicate that DP has no influence on IC and the relationship is insignificant (β = -0.029). This result demonstrates that although DP is essential for CD, it did not emerge as a predictor of innovation culture in the automotive industry sector of South Africa. This leads to the conclusion that DP has no effect on innovation culture.

Regarding the second hypothesis (H2), the results of the study indicate no relationship between HRP and IC (β = 0.021). Therefore, HRP has no impact on IC in the South African automotive industry.

Pertaining to the third hypothesis (H_3), indicating the influence of TMS towards the IC (β = 0.197) in the South African automotive industry, it was observed that TMS has an insignificant positive influence on IC by implication no changes can be considered on IC if initiated by top management. This observation leads to the conclusion that the TMS in

the South African automotive industry has an indirectly proportional relationship to innovation.

The results of the fourth hypothesis (H4) of the study, dealing with the influence of DD on IC (β = 0.096), indicated that there is no relationship between DD and IC. Moreover, DD has no influence on IC in the South African automotive industry. Additionally, the insignificant margin that measured the strength and predictive power of the relationship confirms the non-relational stance of this study. Therefore, the conclusion is that the quality of the information exchanged between South African automotive firms and their innovation IC has no bearing effect on CD.

With reference to the fifth hypothesis (H5), suggesting that LD influences IC (β = -0.075), a negative relationship was observed between the two constructs. Findings explicitly reveal that LD does not significantly predict corporate diversity in the South African automotive industry. Therefore, LD has no relationship with IC.

The sixth hypothesis (H6) alludes to the relationship between CL and IC, and the results of the study found that CL influences IC. The results indicate that CL is one of the foremost predictors of SP (β = 0.390). Consequently, it is concluded that CL is a crucial practice that shapes and enhances the innovation culture in the South African automotive industry. Moreover, CL exerted the highest impact on IC when compared to the other corporate diversity practices considered in the study.

Regarding hypothesis seven (H7), pertaining to the influence of DA on IC in the South African automotive industry, the findings of the study depict that there is a relationship between the two constructs. Specifically, DA does influence and predict IC (β = 0.255). In line with this result, the study concludes that DA has marginal importance to innovation culture in the South African automotive industry as it does not develop or add value to their performance.

7.4.3 **Relationship between innovation and company performance practices**

Regarding the fifth empirical objective (H5) aimed at discovering the nexus between IC and CP, structural equation modelling (SEM) results to test the hypothesised relationships between the five company performance practices in this study namely: innovation culture (IC) and perceived value (PV) – H8; customer loyalty (CL) – H9; market performance (MP) – H10; financial performance (FP) – H11; environmental performance (EP) – H12 were used to address this objective. Table 7.2 details the outcomes of this connection between IC and CP.

Table 7.2: Relationship outcome: company performance

Construct relationships	Hypothesis	Beta	Relationship outcome
IC→ PV	**H08**	0.366	**Accepted influence**
IC→ CL	**H9**	0.416	**Accepted influence**
IC→ MP	**H10**	0.391	**Accepted influence**
IC→ FP	**H11**	0.258	**Accepted minor influence**
IC→ EP	**H12**	0.585	**Accepted influence**
IC – Innovation culture; **PV** – Perceive value**; CL** – Customer loyalty**; MP** – Market performance; **FP** – Financial performance; **EP** – Environmental performance			

Source: Author's own compilation

Innovation culture (IC) and perceived value (PV): The eighth hypothesis refers to the relationship between IC and PV, and the results of the study found that IC influences PV. The results indicate that PV is one of the foremost outcomes of IC (β = 0.366). Subsequently, the conclusion that PV is an essential practice enhanced by IC in the South African automotive industry is well placed. Moreover, IC exerted a positive impact on PV when compared to the other perceived company performance practices considered in the study.

Innovation culture (IC) and customer loyalty (CL): With reference to the ninth hypothesis dealing with the influence of IC on CL, the results of the study showed that there is a relationship between IC and CL. The significantly high margin that measured the strength and outcomes of IC's relationship with CL (β = 0.416) confirms the relational stance of

this study. Therefore, it was concluded that IC has a positive influence on CL in the South African automotive industry.

Innovation culture (IC) and financial performance (FP): The influence of IC on FP (β = 0.391) in the South African automotive industry depicts that there is a relationship between the two constructs. This result concludes that IC has a significant importance for FP in the South African automotive industry as it does not develop or add value to their performance.

Innovation culture (IC) and market performance (MP): Hypothesis 11 sought to investigate the influence of IC on MP in the South African automotive industry. The results of the study indicate that IC has an influence on MP (β = 0.258). This leads to the conclusion that IC has a positive relationship with MP. Innovation culture is essential for market performance as one of the key enablers of company performance in the South African automotive industry.

Innovation culture (IC) and environmental performance (EV): Regarding the 12th hypothesis, it indicated that IC influences EP (β = 0.585), and this indicated a positive relationship observed between the two constructs. Findings showed that IC has a positive influence on EP. Therefore, it was found that IC's influence on EP is essential to company performance in the South African automotive industry.

7.4.4 Innovation mediating the relationship between corporate diversity practices (CDP) and company performance practices (CP)

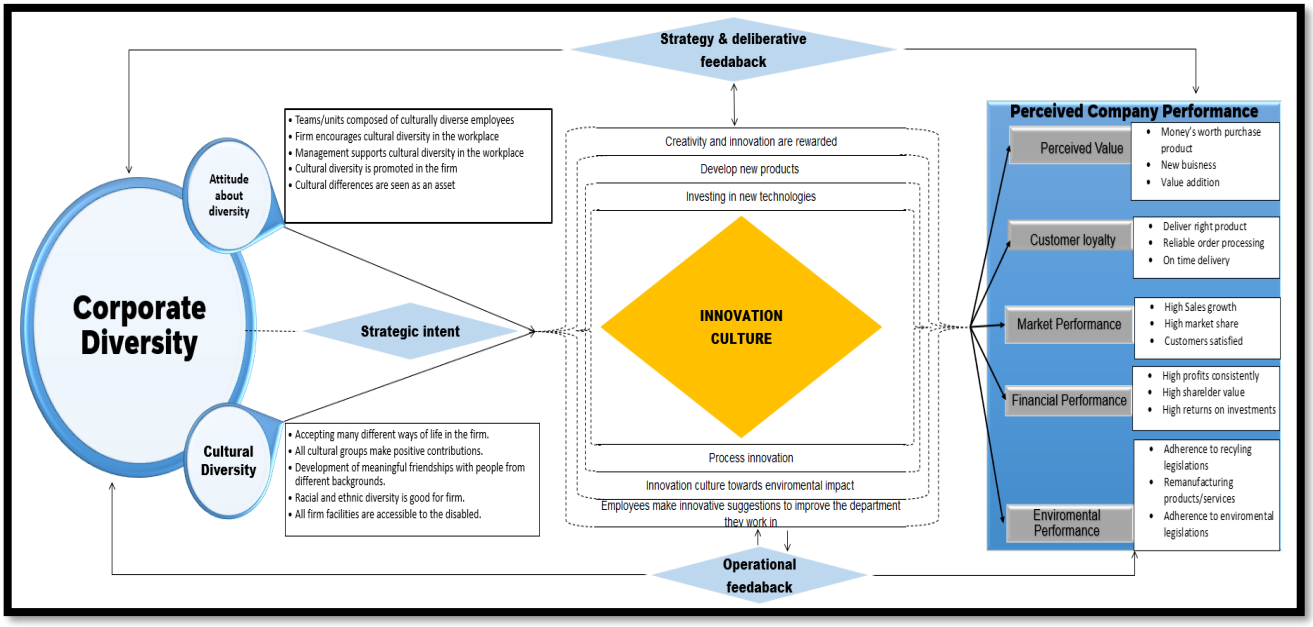
The findings revealed that cultural diversity (CD) and diverse attitude (DA) are the most important practices of CD compared to other practices considered in this study. The positive relationships between these two corporate diversity practices and IC are of significant value and indicate the influence on IC, and that IC exerted the same influence on these practices. Notably, the other corporate diversity practices, namely TMS and DD have no influence on IC, and this is shown by the small margins of positive influence on IC. While DP, HRP and LD have a negative relationship with innovation culture, these practices (DP, HRP and LD) play some role in CD. In this study, it shows that this relationship is inversely proportional to IC, meaning, that an increased effort in these practices may result in a decrease in IC initiatives, regardless of the order of importance. With regard to perceived CP practices, all have a positive, strong relationship with IC.

This relationship produces a high level of influence by all these constructs on IC and *vice versa.* These observations lead to the conclusion that corporate diversity practices are mediated by IC and therefore the outcome is perceived as company performance.

7.4.5 Development of model

The seven objectives of the study propose the creation of a model that can be used in the South African automotive industry based on the nexus between CD, IC and perceived company performance (PCP). The model is depicted in Figure 7.2.

Figure 7.2: The model development



Source: Author's own compilation

The model developed in the study (Figure 7.2) demonstrates the evidence that CD and DA can be influential to IC or *vice versa*. DA characteristics are:

- Team/units composed of culturally diverse employees,
- firm encourages cultural diversity in the workplace,
- management supports cultural diversity in workplace, and
- cultural diversity is promoted in the firm and cultural differences are seen as assets.

While CD physiognomies are:

- Accepting many different ways of life in the firm,
- all cultural groups make positive contributions,

- developing meaningful friendships with people from different backgrounds,
- racial and ethnic diversity is good for the firm, and
- all firm facilities are accessible to the disabled.

This means that CD and DA can improve IC and *vice versa* in the South African automotive industry. However, there should be a strategic intent about CD. Moreover, this view is preceded by the significant positive relationships between CD, DA and IC and a valuable impact on CDP.

The model (Figure 7.2) shows that perceived company performance practice (i.e., PV, CL, MP, FP and EP) has a relationship with IC. In this study, PV attributes are money's worth purchasing products, new businesses and value addition. CL displays on-time delivery, reliable order processing and delivery of the right product. MP is seen by high sales; high market shares and customers being satisfied. FP is demonstrated by high profits, high market share and high return on investments. EP is driven by adherence to recycling legislation, remanufacturing of products or services and adherence to environmental legislation. The visibility of this influence is demonstrated in both operation and strategic feedback loops. Notwithstanding the strategic features of IC, which are:

- rewarding creativity and innovation initiatives,
- development of new products, and
- investing in new technologies.

concurrently, the operation feedback is seen through:

- process innovation,
- innovation culture towards environmental impact, and
- employees making innovative suggestions to improve the department they work in.

Therefore, it is concluded that IC does influence the perception of company performance in the South African automotive industry. Additionally, for CD to exist in the country's automotive industry, firms should make a strategic intent. In considering this strategy feedback in operational to both company performance and company performance. The South African automotive industry's competitive advantage lies in leveraging IC, which is predicted by cooperate diversity practices, namely CD and DA to improve company performance.

7.5 RECOMMENDATIONS

The main objective of this study was to investigate the nexus between corporate diversity practices (CDP), innovation culture (IC) and company perceive performance (CPP). This investigation was undertaken to understand the influence of CDP, IC and CPP on each other. In the process of determining these relationships, the study suggests several recommendations that can be taken into consideration to improve the performance of the South African automotive industry. These recommendations may be beneficial in the value chain of the South African automotive industry.

7.5.1 **Recommendations regarding corporate diversity practices (CDP)**

From the study findings, the link between CDP and IC does promote corporate diversity in the South African automotive industry. However, taking note of apartheid's negative influence, it was shown that the industry is not immune due to a lack of information sharing; no commitment to diversity policy legislation by the industry; confusion about the country's transformation policies; and a lack of top management support. It is essential to explore strategic means to understand how the relationship between these CDs and ICs can be enhanced.

The results of the study accepted CD, TMS and DA practices that influence IC and *vice versa*. Consequently, the results suggest that this CDP moderated by IC may lead to improved company performance in the South African automotive industry. Therefore, it is necessary to propose some recommendations that organisations adopt and implement in the automotive industry of South Africa.

7.5.1.1 Encourage and promote a culture of sharing critical information

Importantly, the South African automotive industry should reward the sharing of critical information with their value chain (ACMs, OEMs, and RMI) to increase trust and commitment. It was shown that the three segments of the automotive industry value chain are operating in silos, and that no platform has been created to encourage information sharing for the value chain existed. Therefore, the South African automotive industry could create one body with a representative from each of the three segments and develop the effective exchange of information by their automotive industry professionals and competition.

7.5.1.2 Develop digital communication platforms

Digitisation has taken space in fast and effective communication by most industries. The long-term effective business bond in the three segments of the South African automotive industry provides an opportunity for equal partnership to be leveraged by digital communication. Noting that ACMs supply OEMs, and OEMs supply RMIs, communication platforms could also be used for negotiation activities. However, industry organisations note that aggressive negotiation activities with suppliers will likely undermine trust and turn the relationship into a combative and resentful one. Therefore, public sector organisations should treat and consider suppliers with respect and as an extension of the internal organisation.

7.5.1.3 Increase commitment to diversity legislation by the industry

It is recommended that some firms, especially from the South African township automotive industry, require guarantees/acknowledgement by OEMs in the supply chains. Moreover, these firms require guarantees that they are and will be paid fairly and in a timely fashion for the product or service they provide. In other words, the South African automotive industry partnership (i.e. township industries), with government, should honour their contracts and promote acceptable work ethics that encourage constructive contract relationships. This is essential since a healthy contract relationship enables all stakeholders to understand and uphold their obligations.

7.5.1.4 Confusion to country's transformation policies

Corruption in implementing the BEE Act, EE and AA resulted in behavioural issues with much confusion in the South African automotive industry. These transformation policies have some gaps, i.e., the monitoring of B-BBEE score without financial consequence has invited some delays. Therefore, this act should be reported separately and the B-BBEE scorecard should invite more tax from SARS. It is therefore recommended that reporting of B-BBEE compliance in three months measured by the scorecard should be used to measure adherence.

7.5.1.5 Top management support for cultural diversity enhances innovation culture

To create successful collaboration programmes, automotive top managers should develop programmes such as innovation hubs and reward excellent ideas/concepts. These hubs can be developed in the three segments (i.e. ACMs, OEM and RMI) and the best idea can be taken up. It is then recommended that the South African automotive industry should encourage professionals to innovate and be innovation managers within these segments. This will enable the South African automotive industry to leverage on technologies from these innovation hubs. Additionally, trend-scouting capabilities to revolve, identify new technologies, and thereby improve manufacturing systems are suggested, while new technology enhances new routes to the market, thereby increasing company performance of the South African automotive industry. It is therefore recommended that building and developing the right capabilities through technological advances will enhance and assess the South African automotive industry's capabilities and their suppliers' work and identify opportunities for improvement.

7.5.2 Influence of innovation culture (IC) among company performance (CP)

With input from corporate diversity practices, namely CD, TMS and DA, innovation culture exerts some influence on company performance and its practices (i.e. PV, CL, MP, FP and EP). Therefore, for innovation to mediate corporate diversity input in the South African automotive industry, certain recommendations are made towards innovation culture. These recommendations will be discussed below.

7.5.2.1 The degree of innovation in South African automotive industry

The South African automotive industry's growth strategies are concentrated on collaboration with the global automotive organisation and trade environment while increasing foreign direct investment. These strategies had little to do with innovation and innovation information sharing culture between global entities and local firms. The improvement of global ranking in the South African Automotive Masterplan (SAAM) 2021-2035 requires taking innovation seriously in that innovation hubs are more focused on. The South African Automotive Industry Master Plan 2035's (SAAM) objective is to produce 1% of global vehicle production, or 1.4 million vehicles, per annum in South Africa by 2035 and therefore innovation and artificial intelligence (AI) are at the heart of this

objective. This study recommends that innovation will significantly improve the South African automotive industry's perception and thereby improve global vehicle production ranking. Attracting foreign direct investment is perilous to drive innovation growth strategies and in creating jobs in the country's economy. Therefore, the Government enables the business environment through a policy regime whereby automotive manufacturers and retail sectors waive customs and duties to allow the cost-effective import of low-volume models not manufactured in the country.

7.5.2.2 The value of innovation culture in the automotive industry in South Africa

The IC in developed countries (i.e. global countries) automotive industries can be transferred to the South African automotive industry. Recommendations from the current study to analyse the operations innovation systems of South Africa's national innovation hubs, and local innovation potential by car assemblers are required. Also, the industry innovation culture enables strategic sets of agents within the industry, namely: (i) the surrounding technologies, (ii) mobile applications, and (iii) social media platforms.

7.5.2.3 Company performance driven by innovation culture in the automotive industry in South Africa

This study confirmed that the main driver for competitive and profitable growth for companies, which are operating innovatively, in supplying products or services, is IC, and that this enhances the country's company performance. Innovation culture (IC) also assists in challenging a range of global technology, environment, and competitiveness, while dealing with depressed domestic and regional market conditions. Therefore, it is recommended to sustain the South African automotive value chain (i.e. ACM, OEM/OES IAM and RMI) innovation culture to be at the heart of the company's operating strategies. Moreover, the South African automotive industry requires CD driven by the country's transformation policies and the South African automotive industry should also develop its CD system. Moreover, the South African automotive industry should utilise IC to combat the volatile environment of market dynamic business environment caused by changing market demands, weakening product or service lifecycles, and technological complexities, creating and sustaining a competitive advantage, which is a difficult achievement for most organisations.

7.5.2.4 Increase collaborations

An increase of collaborative activities within the South African automotive industry's value chain, namely ACM, OEM/OES and RMI, and aftermarket sales, can serve as a means through which the automotive industry can increase company performance. The expectation of these collaborations is to provide the automotive industry with equal skills, free exchange of knowledge, and strengthened strategic partnerships. Moreover, it encourages an innovation culture within the automotive industry in South Africa wherein the design of new products, new processes and service innovation are adopted. Additionally, it enables access to end-to-end supply chain inventory data and supplier capacity constraints. Therefore, automotive firms are achieving an IC by leveraging some innovation and invention initiatives that need to work together.

7.6 CONTRIBUTIONS OF THE STUDY

The contributions of the present study are towards literature as a body of knowledge and literature contributions, such as an apprehension of the pertinence of gaining theoretical knowledge cited during literature review, were made. On the other hand, empirical practical contributions were linked to the outcomes of results/findings of the study to the automotive industry, professionals and other automotive stakeholders.

7.6.1 **Literature contributions**

The present study contributes to the existing body of knowledge as mostly being of theoretical value in terms of the concepts of CD, innovation and company performance available in the automotive industry literature. The literature study's contribution was linking seven corporate diversity practices (i.e. DP, HRP, TMS, LD, DD, CD and DA), IC and five perceived company performance practices (i.e. PV, CL, MP, FP and EP) in the South African automotive industry. Additionally, these practices have been conceptualised, and motivators identified for the beneficiation of the South African country's automotive industry.

Moreover, the literature study provided a specific conceptualisation of the relationship between CDP and IC, which was the mediating construct. Choosing, stipulating and describing alignments of the IC theory within the South African automotive industry context had not been conducted in previous studies. The hierarchy of CDP has been defined and applied in the South African automotive industry.

Furthermore, the literature study's contribution to the literature is regarding the examination of the relationship between IC and perceived company performance (PCP). Findings from the literature study indicated that there was an observed existence of a relationship between IC and PCP. Examples of previously undertaken, as well as studies from various countries confirmed and supported the findings of the current research study. Therefore, this literature study was critical in understanding the relationship between the practice of IC and PCP. Additionally, the current literature study could also be used as a source of information for innovation, diversity and as well as research methodology in the automotive industry in general.

7.6.2 **Practical contributions**

This research project provided some useful in-depth insights regarding the hypothesised relationships between corporate diversity practices (CDP, IC, and perceived company performance) in the South African automotive industry. Moreover, this study indicated the effects of factors, such as the benefits compensation of respondents; race; and gender of the respondents. Furthermore, the measurement of the impact of demographic factors such as gender, position held in the firm, location of the firm, education qualification and salary on the proposed relationships could have further confirmed the results of the study by showing how such factors moderate the proposed relationships. From the results of this study, the beneficiation of the South African automotive industry professionals concerning the improvement of CD, IC and company performance has been revealed.

The study observed the importance of CDP in improving company performance in the South African automotive industry. The results indicated that three (TMS, DC and DA) practices out of seven initial hypotheses do indeed influence the IC and *vice versa*. The automotive value chain and all its stakeholders ranging from professionals to all recognised affiliations and associations are to ensure the effective implementation of the corporate diversity practices while enhancing the IC for better improvement of company performance.

The current research study detailed the importance of CDP influencing IC for better company performance. The study further indicated that it is crucial for the South African value chain (e.g., ACMs, OEM/OES and RMI/IAM) to embrace CD as it leads to better IC. It was also revealed that IC enhances competitiveness and can improve South Africa's global ranking in manufacturing, vehicle assemblies and the RMI/IAM in global markets. Therefore, the embracement of transformation policies by the South African automotive industry positioned the industry for future technological advances. It also established that the South African automotive industry has some considerable strides to make with regard to the preparation of the fourth industrial revolution (4IR) and is ready to usher in AI. However, South African electrical challenges are well on the way to access all of these gains. Importantly, greater attention should be directed to CD, which exerts a higher influence on IC than the other two practices of CD.

Moreover, it is crucial for firms in the automotive industry to ensure that products, services and activities enhancing IC aimed at improving the company's performance are devised and implemented. Innovation culture (IC) gives the ability to organisations to be resilient in responding to the original set strategy after abnormal operations due to disturbances such as socio-political unrest (as happened in Durban), COVID-19, and economic volatility (rand weakness). Additionally, the results prove that the innovation that is happening indicates the strong relationship between IC and five perceived company performance practices.

7.7 LIMITATIONS OF THE STUDY

The research study investigated the nexus between corporate diversity practices (CDP), innovation culture (IC) and perceived company performance (PCP).

The first limitation is the setting of the study. Although the study was set in the whole country, the automotive manufacturing activities that were included were only those in the Eastern Cape (EC), KwaZulu-Natal (KZN), Gauteng (GP), Western Cape Province (WP) and Northwest Province (NW). Therefore, the study's focus could be viewed as biased to the five provinces. An expansion of the scope of the study to the other four provinces namely Limpopo (LP), Mpumalanga (MP), the Northern Cape (NCP), and Free State (FSP), given their economic contributions and size, could have yielded more informative results.

The second limitation of the current study is that the study did not test for, among others, the mediating effect of factors such as the salary of respondents or the gender of the respondents. Measurements of the impact of demographic factors such as race, gender, position, and salary and their proposed relationships could have further substantiated the results of the study by showing how these factors could moderate the proposed relationships.

The third limitation is that the study was restricted to a sample size of 215 respondents who are in management decision authorities, namely presidents, executive officers and senior managers and their participation was therefore based on the approval of their organisation. Even though invitations seeking permission to conduct this research study were sent out, some organisations' responses, especially in the last four provinces (LP, MP, NCP, and FSP), were not significant, while others declined this invitation, thereby reducing the number of respondents. Likewise, the sample size was reduced by an increased difficulty in identifying eligible respondents since there is no universal list for South African automotive professionals in the South African automotive industry. This prompted the researcher to use convenience and judgemental sampling techniques, which also increased the susceptibility of the research sample to sampling bias. Therefore, caution should be exercised when generalising the results of the study.

The fourth limitation is that the accuracy of the responses could not be determined because respondents had to complete the questionnaires in their own time, in the

absence of the researcher, which made the study susceptible to response bias. The researcher was not able to have a face-to-face engagement with each respondent to monitor the completion of the questionnaires (refer to Appendix 2).

The fifth limitation is the lack of previous studies conducted in the South African automotive industry regarding the nexus between corporate diversity, IC and perceived company performance for reference on research methodology and data comparison. The literature review of the study cited a gap in which theoretical foundations of this research project investigation could be referenced. Therefore, no access to literature regarding the nexus between corporate diversity, innovation culture and perceived company performance could be found.

7.8 PROPOSALS FOR FUTURE STUDIES

Noting and acknowledging the limitations of this research, a discussion of some possible ways to overcome these limitations in future studies are as follows. Firstly, since this current study examined the nexus between corporate diversity practices (CDP), innovation culture (IC) and perceived company performance (PCP) in the South African automotive industry, a follow-up study should focus on CDP in the automotive industry emphasising RMI/IAM with little or no consideration of automotive manufacturing activities.

Secondly, future studies should explore the impact of the relationship between corporate diversity practices, namely DP, HRP, TMS, LD, DD, CD and DA, and company performance practices, namely PV, CL, MP, FP and EP. Such an investigation outcome could pave the way for different results regarding the impact of the four practices that were statistically insignificant in this study, namely: DP, HRP, LD and DD.

Thirdly, it may be valuable to test the role of the IC's role in these corporate diversity practices.

Fourthly, since the research project was based on quantitative methodology, a different view would be to perform similar research using a mixed-methods approach, which involves the qualitative approach where, for example, interviews are conducted. The results of such a study would prove to be informative since the views of respondents can be included and compared, plus, the response rate may be adequate.

Fifthly, the practices known as DP, HRP, LD and DD relationships could not be ascertained, hence consideration of future studies could be done to evaluate if the pattern is aligned with the findings of this study. Researchers may therefore involve other corporate diversity practices that were excluded from this project. Other practices could be focusing on job satisfaction, salary benefits, workplace culture, compensation, and flexible work, which could measure factors influencing innovation and company performance.

The sixth recommendation is for future studies to test the influence of AI on IC and its contribution to the fourth industrial revolution (4IR). This will be to test whether AI will change the landscape of the 4IR. It would prove to be interesting to see how the influence

impacts the South African automotive industry considering the ongoing challenges, such as load shedding, political interference in business, and infrastructure.

Lastly, to investigate the transformation policies' relevance in the company performance of the South African automotive industry, the global market is highly competitive and most of the competition is based on skills competencies, company infrastructure, and investment opportunities or technological leverage. An investigation into the likelihood of corporate diversity is how it could lead to the improvement of company performance, and its correlation to corporate diversity can be undertaken. This could lead to determining the likelihood that could occur and lead to the improvement of the South African automotive industry's global rankings.

7.9 FINAL REMARKS

In this final chapter of this study, an overall overview of the study and a recapping of the theoretical and empirical objectives of the study were detailed. From the theoretical objective of the study, conclusions from the literature review were drawn. Additionally, the corporate diversity practices (CDP) hierarchy framework in the South African automotive industry was developed. The reviewed literature identified a gap in awareness of innovation hubs in the South African automotive industry. It also established that there is no innovation culture framework aligned with global technological advances in the local automotive industry. Furthermore, the literature applicable to the South African automotive industry – to set an innovation culture at the heart of the organisation's strategies for greater global competitiveness and better organisational performances was found.

The reviewed literature on corporate diversity made four main findings: (i) executive officers, including board members' diversity, as measured by race, gender and nationality, has a positive effect on corporate diversity and boosted financial performance; (ii) the relationship between board/executives' diversity and corporate performance is more effective in better-governed firms than their poorly governed counterparts; (iii) diversity policies driven by top management and leadership influence results in better corporate diversity; and (iv) board diversity, as measured by director gender, ethnicity, and nationality, enhances the pay-for-performance sensitivity but not the actual executive pay.

Reviewed literature on company performance highlighted the need for the South African automotive industry to promote innovation by creating innovation hubs and facilitating an innovation culture framework. It was established that the alignment of technological advances to e-commerce platforms and customer relations management (CRM) strategies to boost brand loyalty resulting in better market performance are significant. Moreover, companies that embrace an innovation culture have high perceived value compared to those who have not. Additionally, the literature reviewed classified environmental performance into two categories, namely: (i) business environment (i.e. market penetration), and (ii) nature preservation (i.e. reduction of carbon emissions).

From the empirical observation, it was established that the relationship between corporate diversity practices, innovation culture and perceived company performance does exist.

The study exposed that leadership diversity (LD), demographic diversity (DD), top management support (TMS), human resource practices (HRP) and diversity policy (DP) have no influence on innovation culture (IC) and *vice versa*. Evidence of the relationship between attitude about diversity (DA) and cultural diversity (CD), however, was positive with CD playing a crucial role in influencing corporate diversity practice (CDP) to IC and *vice versa*. Additionally, all perceived company performance (CPP) is moderated by IC. This has been proven by the evidence of strong positive influences between these two constructs. The chapter also develops a model through which CD can be applied to improve IC, resulting in better company performance in the South African automotive industry.

All CDP mean scores received a positive correlation rate from the Likert scale ranging from “somewhat agree” to “agree”. Therefore, all CDPs have been measured and found to have a high degree of support for CD in the South African manufacturing automotive industry.

The chapter highlighted some recommendations wherein findings predict that the IC mediating CD leads to enhanced company performance in the South African automotive industry. Various recommendations for improving company performance through corporate diversity practices were presented.

Moreover, the chapter revealed that the current study makes a number of significant contributions to the body of knowledge, namely literature and empirical outcomes. Therefore, the chapter highlighted that, despite the study limitations in different ways, several proposals for future studies can be drawn in preparation for more directed research projects.

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APPENDIX 1: SURVEY QUESTIONNAIRE

The nexus, between corporate diversity, innovation culture and perceived company performance in the automotive industry in South Africa

1. Introduction

I, Xola Bradley Qhogwana, am conducting a research study with Prof. Chengedzai Mafini, a head of the Department of Logistics and Supply Chain Management at the Vaal University of Technology. My study focuses on corporate diversity, innovation culture and corporate performance in the automotive industry. The study will lead to a doctoral degree in Business Leadership at the University of South Africa's School of Business Leadership. Presently I have a relationship with the institution as a third-year doctoral student. You have been chosen to participate in the study based on your experience in the automotive sector. I, therefore, believe that you will provide relevant information.

The information obtained during this survey will be treated confidentially and will be used for no other purpose than academic research. The survey will only take **10 to 20 minutes** of your time.

Researcher: Xola Bradley Qhogwana

Supervisor: Prof. C Mafini

Contact: 083 484 2554

Thank you for participating in this survey. If you would like to receive the results of this study, kindly provide your e-mail address which will be confidentially kept.

49270206@mylife.unisa.ac.za

The questionnaire comprises four sections. When answering questions, place an X in an appropriate box. Thank you for participating in this survey.

Section A: Demographic Information

This section of the questionnaire refers to the background or biographical information of the respondents. The researcher is aware of the sensitivity of the questions asked; hence, respondents are reminded to note that this information will allow the researcher to compare responses amongst the different groups. Once more, respondents are assured that their responses will remain anonymous.

Please select one from the following by crossing (X) in the relevant block:

I understand my right to choose whether to participate in the study or not, and that the information furnished will be handled with confidentiality. I am aware that the results of the study may be used for purposes of publication.

I wish to participate in the study	**A**	**1**
I do not wish to participate.	**B**	**2**

If you have chosen A, carry on completing the rest of the questionnaire. If you have chosen B, do no complete the questionnaire. Submit it back.

South African Automotive industry is segmented into the three mainstreams; please choose the relevant sector of your participation.

Component Manufacturing Sector	**A**	**1**
Retail Motor industry - Aftermarket	**B**	**2**
Vehicle manufacturing & sales sector	**C**	**3**

1.1) What is your position within the firm? (If applicable, choose both)

President	1
CEO	2
Director	3
Senior Manager	4
General Manager	5
Product Specialist	6
Other Specify: _____	7

1.2) Location of your offices

East London	1
Port Elizabeth	2
Durban	3
Richards Bay	4
Pretoria	5
Cape Town	6
Johannesburg	7
Other Specify: _____	8

1.3) Department/Division where you are based (Choose one only).

Manufacturing	1
Assembly	2
Engineering	3
Production	4
Continuous Improvement	5
Marketing	6
Distribution	7
Sales	8
HR	9
Other: please identify: _____	10

1.4) How long have you been employed in your firm?

Less than 1 year	1
1 year or longer but less than 5 years	2
6 years or longer but less than 10 years	3
10 years or longer but less than 15 years	4
15 years or longer but less than 20 years	5
20 years and longer	6

1.5) Indicate your age range

18 to 20 years	1
26 to 35 years	2
36 to 45 years	3
46 to 55 years	4
56 years and above	5

1.6) Indicate your gender

Male	1
Female	2

1.7) Indicate your race

Black	1
White	2
Coloured (Mixed race)	3
Indian	4
Other (Please specify)	5

1.8) Indicate your highest qualification

Matric	1
Diploma	2
First degree	3
Postgraduate	4
Other (Please specify)	5

SECTION B: COROPRATE DIVERISTY PRACTICES

We would like to find out a little more about your views regarding sustainable corporate diversity in your firm. Please indicate the extent to which you agree or disagree by ticking the corresponding number between 1 (Strongly disagree) and 7 (Strongly agree). A rating of (4) point towards a neutral view of the statement. Corporate diversity practices consist of seven factors under consideration, which are sustainable Policy (P); HR practices (HRP); Top management support (TPS); demographics diversity (Dd); leadership (L) cultural (C); attitude about diversity (AaD).

CORPORATE DIVERSITY PRACTICES		**Strongly disagree**	**Disagree**	**Somewhat disagree**	**Neutral**	**Somewhat agree**	**Agree**	**Strongly agree**
Policy								
P1	The firm has a formal written policy on employment equity	1	2	3	4	5	6	7
P2	There is a written statement of the consequences of not adhering to employment equity policy	1	2	3	4	5	6	7
P3	The firm has a formal written policy on managing diversity	1	2	3	4	5	6	7
P4	A system exists which identifies positions for which employment equity goals have been set but have not been achieved	1	2	3	4	5	6	7
P5	My firm has a system that monitors minority representation in management jobs	1	2	3	4	5	6	7
HR practices								
HRP 1	Managers in this firm have a track record of hiring and promoting employees fairly regardless of religion, sect, or ethnicity	1	2	3	4	5	6	7

HRP 2	Employees here are treated fairly regarding promotion without consideration of their religion, sect, or ethnicity	1	2	3	4	5	6	7
HRP 3	Compensation and benefits policies are applied objectively to all employees regardless of religion, sect, or ethnicity	1	2	3	4	5	6	7
HRP 4	In this firm, there is a general atmosphere of inclusion, tolerance, and acceptance of the other	1	2	3	4	5	6	7
HRP 5	Training and development opportunities are offered to employees objectively regardless of religion, sect, or ethnicity							
Top Management Support								
TPS 1	Administrative leadership (which refers to Directors, Division Heads, and other company management personnel) encourages appreciation of group differences at this company.	1	2	3	4	5	6	7
TPS 2	Administrative leadership is committed to creating an environment that welcomes all employees.	1	2	3	4	5	6	7
TPS 3	Administrative leadership emphasises the importance of attracting diverse employees.	1	2	3	4	5	6	7
TPS 4	Administrative leadership is concerned with making this firm an firm that welcomes employees from different cultural groups.	1	2	3	4	5	6	7
TPS 5	Administrative leadership talks about the value of having a diverse firm.	1	2	3	4	5	6	7
Demographic diversity								
DD1	My firm is committed to a workforce representative of all segments of society	1	2	3	4	5	6	7
DD2	Demographic equality and diversity are integrated into overall business strategy	1	2	3	4	5	6	7
DD3	A demographic diversity plan exists	1	2	3	4	5	6	7
DD4	My firm proactively recruits women for all management positions exists.	1	2	3	4	5	6	7
DD5	There is a minority employees' interest group	1	2	3	4	5	6	7

Leadership								
L 1	My supervisor/team leader encourages diversity in my current workplace.	1	2	3	4	5	6	7
L 2	A senior manager is designated to champion equality and diversity in my firm	1	2	3	4	5	6	7
L 3	Leadership in my firm is inclusive of all gender formations	1	2	3	4	5	6	7
L 4	A committee comprised of senior managers/executives that oversees equality and diversity issues exists	1	2	3	4	5	6	7
Cultural								
C 1	My team/unit is composed of culturally diverse employees	1	2	3	4	5	6	7
C 2	I believe that my firm encourages cultural diversity in the workplace	1	2	3	4	5	6	7
C 3	I believe management supports cultural diversity in the workplace	1	2	3	4	5	6	7
C 4	I believe cultural diversity is promoted in the firm	1	2	3	4	5	6	7
C 5	Cultural differences are seen as an asset to my firm	1	2	3	4	5	6	7
Attitude about diversity								
AAD 1	Accepting many different ways of life in the firm will strengthen the South African automotive industry.	1	2	3	4	5	6	7
AAD 2	All cultural groups make positive contributions to the South African automotive industry.	1	2	3	4	5	6	7
AAD 3	People should develop meaningful friendships with people from different backgrounds.	1	2	3	4	5	6	7

AAD 4	Racial and ethnic diversity is good for firm.	1	2	3	4	5	6	7
AAD 5	It is very important that all firm facilities are accessible to the disabled.							

SECTION C: INNOVATION CULTURE

We would like to find out a little more about your views regarding innovation culture (IC) in your firm. Please indicate the extent to which you agree or disagree by ticking the corresponding number between 1 (Strongly disagree) and 7 (Strongly agree). A rating of (4) point towards a neutral view of the statement.

Innovation Culture		**Strongly disagree**	**Disagree**	**Somewhat disagree**	**Neutral**	**Somewhat agree**	**Agree**	**Strongly agree**
IC 1	The firm is constantly developing new products	1	2	3	4	5	6	7
IC 2	The firm is orientated towards investing in new technologies	1	2	3	4	5	6	7
IC 3	The firm has been successful in process innovation	1	2	3	4	5	6	7
IC 4	The firm encourages innovation culture towards environmental impact	1	2	3	4	5	6	7
IC5	Employees in my company are encouraged to make innovative suggestions to improve the department they work in	1	2	3	4	5	6	7
IC6	Creativity and innovation are rewarded	1	2	3	4	5	6	7

SECTION D: COMPANY PERFORMANCE

We would like to find out a little more about your views regarding the performance of your firm. Please indicate the extent to which you agree or disagree by ticking the corresponding number between 1 (Strongly disagree) and 7 (Strongly agree). A rating of (4) point towards a neutral view of the statement. Company performance consists of five elements under consideration, which are perceived value (PV), customer loyalty (CL), market performance (MP), financial performance (FP), and environmental performance (EP).

Perceived value		**Strongly disagree**	**Disagree**	**Somewhat disagree**	**Neutral**	**Somewhat agree**	**Agree**	**Strongly agree**
PV 1	Our customers perceive that they receive their money's worth when they purchase our products.	1	2	3	4	5	6	7
PV 2	Our customers feel that we offer products with high value.	1	2	3	4	5	6	7
PV 3	The company is generating new business through customer referrals.	1	2	3	4	5	6	7
PV 4	We work with each customer to develop a delivery schedule that is acceptable.	1	2	3	4	5	6	7
PV 5	We emphasise value addition.	1	2	3	4	5	6	7
Customer Loyalty								
CL 1	We deliver the assortment of products ordered.	1	2	3	4	5	6	7
CL 2	We offer customers a reliable order processing time.	1	2	3	4	5	6	7
CL 3	Orders submitted to us are delivered on time, as defined by the customers.	1	2	3	4	5	6	7
CL 4	We respond with accurate information to a customer inquiry concerning an order.	1	2	3	4	5	6	7
CL 5	We are flexible in developing delivery schedules.	1	2	3	4	5	6	7

Market Performance								
MP 1	Our sales growth position is high	1	2	3	4	5	6	7
MP 2	Our market share gain is high	1	2	3	4	5	6	7
MP 3	Our overall competitive position is good	1	2	3	4	5	6	7
MP 4	Our customers are satisfied with our products	1	2	3	4	5	6	7
MP 5	Our customers are satisfied with our service	1	2	3	4	5	6	7
Financial Performance								
FP 1	Our firm makes high profits consistently	1	2	3	4	5	6	7
FP 2	Our shareholder value is high	1	2	3	4	5	6	7
FP 3	The economic value added by our operations is high	1	2	3	4	5	6	7
FP 4	Our firm has high returns on investment	1	2	3	4	5	6	7
FP 5	Our firm’s investments are high	1	2	3	4	5	6	7
Environmental Performance								
EP 1	Our firm follows the product take-back and recovery legislations	1	2	3	4	5	6	7
EP 2	Our remanufacturing operations conform to the environmental regulations	1	2	3	4	5	6	7
EP 3	Our firm emphasises products designed for disposal	1	2	3	4	5	6	7
EP 4	We have optimised setup costs for disassembly operations	1	2	3	4	5	6	7
EP 5	Our firm has an increased rate of introduction of remanufactured products and services	1	2	3	4	5	6	7

Thank you for participating in this survey. If you would like to receive the results of this survey, kindly provide your e-mail address in the space provided below, which will be kept confidential.

Email Address (optional)	

APPENDIX 2: PARTICIPANT INFORMATION SHEET

29 August 2020

THE NEXUS BETWEEN CORPORATE DIVERSITY, INNOVATION AND PERCEIVED COMPANY PERFORMANCE IN THE AUTOMOTIVE INDUSTRY IN SOUTH AFRICA

Dear Prospective Participant

I, Xola Bradley Qhogwana, am doing research with Prof. Chengedzai Mafini, a head of the department of Logistics at the Vaal University of Technology. My study is being focuses in the area of corporate diversity and innovation culture towards, doctorate degree in Business Leadership option Management at the University of South Africa's School of Business Leadership. Presently I have a relationship with the institution as a second-year Doctoral student.

This research project is intended to develop a relationship model involving corporate diversity, innovation culture and company performance in the automotive manufacturing industry of South Africa. The study is targeting responses from approximately 500 participants; the research questionnaire is divided into three sections comprising closed ended questions and its completion should take approximately 10 - 20 minutes. The primary objective of this study will be to develop and test a model for corporate diversity, innovation culture and perceived performance in the automotive manufacturing industry in South Africa. Furthermore, the study suggests that for company performance to grow in this industry, corporate diversity must be optimised, which will stimulate innovation, which in turn lead to improved company performance.

Respondents' identities, their names and other personal details will be treated with strict confidentiality; you are requested to avoid writing your name anywhere on the questionnaire, this is to ensure that your name remains anonymous. You are requested to sign a consent form which shows that you participated in the research with full knowledge and that your participation is voluntary. You have the right to withdraw from the study at any given time with no adverse consequences. Yet, it should be noted that you will not be able to withdraw once the questionnaire is submitted to the researcher. Your role will assist in ensuring that this study achieves its aim of bridging the existing knowledge and information gaps on relationships that have a significant impact on

corporate diversity, innovation culture and perceived company performance. Furthermore, your participation will assist in producing results that can be used by policy makers in the automotive industry in South Africa and government officials to address corporate diversity through the reshape/confirmation of broad based black economic empowerment (B-BBEE), affirmative action (AA), employment equity (EE) and other incentive programme guidelines such as automotive production and development programme (APDP) and manufacturing competitive enhancement programme (MCEP). You must also be informed that there are no foreseeable risks of harm to you or any participants.

Data will be collected by the researcher. It will be kept in a safe and locked cabinet accessible to the researcher only. Data will be disposed of after 5 years. Data will be analysed by a statistician, who will be required to sign a confidentiality agreement so as to promote confidentiality. The results of this study will be used for academic purposes only and may be published in an academic journal, individual participants will not be identifiable in such an academic journal and research report. No financial costs will be incurred by the participants. No compensation, gifts or incentives will be provided to the participants.

The researcher has complied with UNISA ethical clearance process. A copy of the letter from research ethics committee of the college of economic and management sciences, UNISA can be requested from the researcher. If you would like to be informed of the final research findings, please contact Mr. Xola Bradley Qhogwana on 0834842554 or email 49270206@mylife.unisa.ac.za. The findings will be available as soon as the researcher completes the DBL program. Please do not use home telephone numbers. Departmental and/or mobile phone numbers are acceptable. Should you require any further information or want to contact the researcher about any aspect of this study, please contact the researcher on the above-mentioned contact details. Alternatively, you may contact Prof. Chengedzai Mafini on 016 9509520 or email: chengedzaim@vut.ac.za should you have concerns about the way in which the research has been conducted.

Thank you for taking time to read this information sheet and for participating in this study.
Thank you
X.B. Qhogwana (Mr.)

APPENDIX 3: LETTER TO CONFIRM THAT THE THESIS WAS EDITED

Dear Mr / Ms

Re: Language editing of thesis (Empirical modelling of corporate diversity, innovation

To whom it may concern

Cecile van Zyl
Language editing and translation
Cell: 072 389 3450
Email: Cecile.vanZyl@nwu.ac.za

and company performance in the automotive industry in South Africa)

I hereby declare that I language edited the above-mentioned thesis by Xola Qhogwana (student number: 49206270).

Please feel free to contact me should you have any enquiries.

Kind regards

Cecile van Zyl

Language practitioner

BA (PU for CHE); BA honours (NWU); MA (NWU)
SATI number: 1002391.

APPENDIX 4: SAMPLE LETTERS OF GRANTED PERMISSION TO CONDUCT THE STUDY

naamsa
LEADING THE SA AUTOMOTIVE INDUSTRY

+27 12 807 0152 | 0086
+27 12 807 0671
info@naamsa.co.za
naamsa.co.za

Alenti Office Park | Block F | 457 Witherite Street
THE WILLOWS X82 | PRETORIA
P. O. Box 74166 | LYNNWOOD RIDGE | 0040
PARTNERSHIP | CONSISTENCY | TRUST

27h August, 2020

PERMISSION TO CONDUCT RESEARCH

Dear Mr. Xola Bradley Qhogwana

I, Dr Norman Lamprecht, the Executive Manager of **naamsa** grant permission to collect data at this association for your research project titled: **The nexus between corporate diversity, innovation culture and perceived company performance.**

I grant this permission as the authorised person to so in this association and am aware of the following;

1. The study is conducted as a UNISA researcher and remains the property of UNISA
2. You can use the name of the company in your research project
3. All data and information collected will be used solely for the purpose of this research
4. I will require feedback of the research.
5. The research may be published in the public domain under the supervision of the supervisor

I wish you the best and success in this research

Dr Norman Lamprecht

Executive Manager: Trade, Exports and Research

Mobile: 082 829 1692

E-mail: norman@naamsa.co.za

To Whom It May Concern

Private Bag X118
Midrand
1685
15th Road
Randjespark
Midrand
Tel: +27 11 651 9600

10 April 2015

Dear Sir/Madam

Xola Qhogwana our employee is currently conducting research as part of his studies towards PhD, under the supervision of Professor C. Mafini at University of South Africa. The title of the study: **THE NEXUS BETWEEN CORPORATE DIVERSITY, INNOVATION AND PERCEIVED COMPANY PERFORMANCE IN THE AUTOMOTIVE INDUSTRY IN SOUTH AFRICA**. As his employer, supporting his studies, we wish to assist him in completing his studies, hence this research project. We therefore appeal to you to please allow him to collect data in the South African automotive industry wherein your association is part of, therefore allowing him to collect data within the members of the association you lead.

Please note that this is an independent research study and participation is voluntary. The researcher promises that responses will be treated as strictly confidential, and the anonymity of companies and respondents is assured. We assure that your feedback will not be used for any purpose other than this intended research project. You are not obliged to disclose your's or your company name or any other confidential information you are not at liberty to share/disclose. In return for your participation in this research study, once completed you will be eligible to receive a copy thereof.

It would be appreciated if you could give written consent for Mr. Xola Qhogwana authorising him to collect data within your members/associates.

Yours Sincerely,
Robert Bosch (Pty) Ltd.
Penny Hlubi

Director: Human Resources

Xola Bradley Qhogwana

15 Sep 2020

National Association of
Automotive Component
and Allied Manufacturers
Postnet Suite#597 Pvt Bag 29
Gallo Manor 2052
Building5, Allhart Park,
152 Western Service Rd,
Woodmead, Gauteng
Tel: +27 (0)11 392-4060
E-mail: renai@naacam.co.za

RE: PERMISSION TO CONDUCT RESEARCH

Dear Mr Qhogwana

I, Renai Moothilal, the Executive Director of NAACAM, grants permission to collect data through this association for your research project titled: **The nexus between corporate diversity, innovation culture and perceived company performance.**

I grant this permission as the authorised person to so in this association and am aware of the following;

1. The study is conducted as a UNISA researcher and remains the property of UNISA
2. You can use the name of the company in your research project
3. All data and information collected will be used solely for the purpose of this research
4. I will require feedback of the research.
5. The research may be published in the public domain under the supervision of the supervisor

I wish you the best and success in this research

Renai Moothilal
Executive Director

27 August 2020

Dear Mr Xola Bradley Qhogwana

PERMISSION LETTER FOR RESEARCH

I am pleased to inform you that I permit you to conduct your research around the nexus between corporate diversity, innovation culture, and perceived company performance in the Automotive Industry in South Africa.

Best wishes for success in this research.

Yours faithfully
For the Retail Motor Industry Organisation

JJ OLIVIER
CHIEF EXECUTIVE OFFICER
RETAIL MOTOR INDUSTRY ORGANISATION

SUBARU SOUTHERN AFRICA (PTY) LTD

Corner Ayrshire Avenue and Hereford Street
Longmeadow Business Park, Edenvale, 1609

P.O. Box 9, Linbro Park, 2065
Phone +27 11 608 0116
www.subaru.co.za

3 August 2021

RE: PERMISSION TO CONDUCT RESEARCH

Dear Mr. Xola Bradley Qhogwana

I, Morne Viviers, the General Manager of Subaru Southern Africa grant permission to collect data at this site for your research project titled **"The nexus between corporate diversity, innovation culture and perceived company performance."**

I grant this permission as the authorised person to so in this company and am aware of the following;

The study is conducted as a UNISA researcher and remains the property of UNISA

You can use the name of the company in your research project

All data and information collected will be used solely for the purpose of this research

I will require feedback of the research.

The research may be published in the public domain under the supervision of the supervisor

I wish you the best and success in this research

Morne Viviers

General Manager

Mobile: 083 633 1531

E-mail: mornev@subaru.co.za

Kia South Africa (Pty) Ltd
5, Herman Road, Meadowvale, Germiston, 1401
P.O. Box 311, Edenvale, 1610
T +27 11 457 0200
Directors: G. Scott (CEO), O. Arbee, O. Janse van Rensburg, S. Crosse, G. Cumming, P. Kadathlal, S. Lugebu **Company Secretary:** M. Mugisha
Company Registration Number: 1968/003273/07

15 August 2021

RE: PERMISSION TO CONDUCT RESEARCH

Dear Mr. Xola Bradley Qhogwana

I, GARY SCOTT, the CEO of this company grant permission to collect data at this site for your research project titled *"The nexus between corporate diversity, innovation culture and perceived company performance."*

I grant this permission as the authorised person to so in this company and am aware of the following;

1. The study is conducted as a UNISA researcher and remains the property of UNISA
2. You can not use the name of the company in your research project
3. All data and information collected will be used solely for the purpose of this research
4. I will require feedback of the research.
5. The research may be published in the public domain under the supervision of the supervisor

Gary Scott
CEO

John Moffat Prolock (Pty) Ltd
Natal Gaskets (Pty) Ltd
Level 4 B-BBEE | 63% Black Owned

Company Registration : 1999/021897/07
VAT Registration : 4780103018

30 July 2021

RE: PERMISSION TO CONDUCT RESEARCH

Dear Mr. Xola Bradley Qhogwana

I, Christo Rootman, the CEO of John Moffat Prolock (PTY) LTD grant permission to collect data at this site for your research project titled **"The nexus between corporate diversity, innovation culture and perceived company performance."**

I grant this permission as the authorised person to so in this company and am aware of the following.

1. The study is conducted as a UNISA researcher and remains the property of UNISA
2. You can use the name of the company in your research project
3. All data and information collected will be used solely for the purpose of this research
4. I will require feedback of the research.
5. The research may be published in the public domain under the supervision of the supervisor

I wish you the best and success in this research

Regards 30/7/2021

Christo Rootman

CEO

FIRST NATIONAL BATTERY
A Division of Metindustrial (Pty) Ltd
Reg. No. 1949/031259/07

P.O. Box 5015, Benoni South, 1502
South Africa

Tel: +27 11 741-3600
Fax: +27 11 421-1625
email: marketing@battery.co.za
www.battery.co.za

12 August 2021

RE: PERMISSION TO CONDUCT RESEARCH

Dear Mr. Xola Bradley Qhogwana,

I, Andrew Webb, the Automotive Director of First National Battery, grant permission to collect data from myself, collated in the form of the attached questionnaire to assist in your research project titled **"The nexus between corporate diversity, innovation culture and perceived company performance."**

I grant this permission in my capacity as automotive Director at FNB, and am aware of the following;

1. The study is conducted as a UNISA researcher and remains the property of UNISA.
2. You **cannot** use the name of the company in your research project.
3. All data and information collected will be used solely for the purpose of this research.
4. I will require feedback of the research.
5. The research may be published in the public domain under the supervision of the supervisor.
6. Any published information **may not** bear the company name (First National Battery), and should be generic in nature.

I wish you the best and success in this research.

Signature

Name: Andrew Webb

Organisational Title: Director Automotive

APPENDIX 4: TURNITIN COVER PAGE

XOLA QHOGWANA DBL TURNITIN

ORIGINALITY REPORT

13%	7%	9%	2%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

1	vital.seals.ac.za:8080 Internet Source	1%
2	dspace.nwu.ac.za Internet Source	1%
3	Konstantin Konrad, Leo Urban Wangler. "Tailor-made Technology: The stretch of Frugal Innovation in the Truck Industry", Procedia Manufacturing, 2018 Publication	1%
4	Andre P. Calitz, Paul Poisat, Margaret Cullen. "The future African workplace: The use of collaborative robots in manufacturing", SA Journal of Human Resource Management, 2017 Publication	<1%
5	researchspace.ukzn.ac.za Internet Source	<1%
6	Supply Chain Management: An International Journal, Volume 10, Issue 3 (2006-09-19) Publication	<1%