THE ANTECEDENTS OF SUPPLY CHAIN PERFORMANCE: A CASE OF KWAZULU NATAL PROVINCE, SOUTH AFRICA

by

Daluxolo Mbambo

Submitted in fulfilment of the requirements

for the degree of

MASTERS IN PUBLIC MANAGEMENT
IN THE FACULTY OF MANAGEMENT SCIENCES

at the

DURBAN UNIVERSITY OF TECHNOLOGY

August 2019

APPROVED FOR FINAL SUBMISSION

23.08.2019

Supervisor: Prof P. Hove-Sibanda **Date**

DECLARATION

I, Daluxolo Mbambo, hereby declare that **THE ROLE OF TRRUST IN ENHANCING SUPPLY CHAIN PERFORMANCE: A CASE OF KWAZULU NATAL PROVINCE, SOUTH AFRICA** is my own work investigation and that all the sources that I have used have been documented and acknowledged by means of complete references.

_____ 22 August 2019___

MR D.M MBAMBO DATE

STUDENT NO.: 21448752

ACKNOWLEDGEMENTS

A study of this enormity depends on contributions from a wide range of people for its achievement.

I would like to take the opportunity to acknowledge the support and contribution of the following:

I would like to sincerely thank my supervisor, Prof P. Hove-Sibanda, for her invaluable guidance, encouragement and support throughout this study, and especially for her confidence in me. Thank you for taking interest in the research topic and contributing towards the success of the study.

To Osmoz Consulting, your invaluable assistance and support in data analysing of this study is much appreciated.

Durban University of Technology, for providing me financial assistance in order to complete the study successfully.

The SCM Management of the University of Zululand, for authorising to collect data from the suppliers registered under their suppliers' database. Thanks to all suppliers who contributed to the study.

KwaZulu-Natal Department of Health and their private suppliers of medical equipment. Thank you very much, your contributions are highly appreciated;

Ms Jeanne Enslin, for her editorial and language services.

To CDC staff (KZN), your contribution and encouragement will not go unnoticed; you inspired me a lot.

To my mother, Tholakele Mbambo, and my late father, Themba Mbambo, thank you for your understanding and encouragement in many ways. My family for their unwavering support and understanding that the darkest hour is the one that is close to dawn.

I would like to thank all the respondents for their time, as well as their interest in my study.

To my brilliant fiancée (Nokuthula), thank you for your valuable support and encouragement to complete my degree successfully, my two sons (Sandile & Wandile) and daughter (Simlindele), thank you for your continued understanding and support. It is greatly appreciated.

Thank you.

ABSTRACT

Over the past years, there has been a growing significance in supply chain management (SCM) as a vehicle through which many companies/firms can reach a competitive advantage. Despite the importance of supply chain within today's economy, little is known about how SCM mechanisms can contribute to firm performance. The main purpose of this study was to evince the influence of trust on supplier development, knowledge creation and supply chain performance (SCP) in KwaZulu-Natal (KZN) Province, South Africa (SA). It was a cross-sectional study that was conducted with different samples and several variables. This is a quantitative study which used a probability and non-probability approach. The study was conducted using both the simple random technique and convenience sampling. Descriptive analysis was performed using the IBM SPSS 25 software package. A sample size of 495 respondents was used in this study. In total, 310 questionnaires were received from all respondents who participated in this study. Results specified that trust does not have any direct impact on SCP. However, based on the beta coefficient values, trust predicts better knowledge creation than supplier development.

The empirical results show that an organisation/firm that has a high level of knowledge creation with its suppliers will yield greater performance within its supply chain (SC). As the supply chain performance enabled process was empirically defined, firms are therefore able to design appropriate collaborative strategies for their SC. Thus, the capability to integrate external knowledge from different sectors could be a major factor in firms' improvement capacity. This study recommends that the South African Government must provide training for firm owners and easy funding access for SMEs in KZN to be able to confront competition from local and foreign competitors. Furthermore, this study suggests that staff development and training for public and private sector institutions as well as individual career management enhancement initiatives must be implemented. Collaboration with suppliers and other supply chain associates is strongly recommended, which should increase the chance to gain strengths, trust, knowledge creation, information sharing and technological proficiencies.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATIONS

ANOVA	analysis of variance
BBBEE	Broad-Based Black Economic Empowerment
BEE	Black Economic Empowerment
CSCMP	Council for Supply Chain Management Professionals
CSM	Customer service management
DTI	Department of Trade and Industry
EE	Employment Equity
EGD	economic growth and development
GCI	Global Competitiveness Index
GDP	gross domestic product
GEM	global entrepreneurship monitor
GSCF	Global Supply Chain Forum
IBM SPSS	International Business Machines Corporation Statistical Package for the Social Sciences
JIT	just in time
KZN	KwaZulu-Natal
LKBV	learning and knowledge based view
LKP	learning and knowledge perspective
MFM	Manufacturing flow management
PDC	Product development and commercialisation
PSAs	product and service agreements

RBV	resource-based view
SA	South Africa
SC	supply chain
SCC	Supply Chain Council
SCM	supply chain management
SCOR	Supply Chain Operations References
SCP	supply chain performance
SCRM	supply chain risk management
SECI	socialisation externalisation combination internalisation
SECI	socialisation externalisation combination internalisation
SEDA	Small Enterprises Development Agency
SMEs	small and medium-sized enterprises
SMMEs	small, medium and micro enterprises
SRM	supplier relationship management
TBR	trust-based rationalism
UNDP	United Nations Development Programme
VIF	variance inflation factor
VRIN	Valuable, Rare, In-Imitable, and Non-Substitutable
WEF	World Economic Forum

CHAPTER ONE: INTRODUCTION AND RATIONALE OF THE STUDY

1.1 INTRODUCTION

Organisations in the contemporary business world increasingly depend on having effective supply chains, or networks, to successfully compete in the global market economy (Lambert 2008). As such, supply chain performance (SCP) is now viewed as a significant cause of not only firm competitiveness, but also a significant driving force to an individual firm's performance worldwide. In modern years, there has been growing change in businesses to increase their product and service contributions for the objective of providing more consumer choice and creating more opportunities to beat competitors (Um, Lyons, Lam, Cheng and Dominguez-Pery 2017). In this study, supply chain performance is defined as the supply chain's ability to respond timeously to customers' needs, deliver the right quantities and minimise production and inventory cost (Hove 2015). Supply chain is crucial for generating value. Furthermore, value can created if there is a development in the performance of a supply chain. Yeung and Coe (2015) confirmed that, when there is an increase in supply chain performance, value is formed through management and administration on a broad scale.

1.2. BACKGROUND OF THE STUDY

Previous studies have linked supply chain performance to various factors and these include, among other things, information sharing (Fawcett, Osterhaus, Magnan and McCarter 2007; Sezen 2008), trust (Panayides and Venus-Lun 2009; Capaldo and Giannoccaro 2015), knowledge creation (Wu 2008) and supplier development (Eon-Kyung, Sungdo and Sheung-Kown 2000). Various firms are shifting away from traditional "arm's length" business relationships and are building closer and more collaborative ties with their supply chain partners through initiatives such as supplier development and joint knowledge creation. It can only be logical for firms to invest in developing their suppliers, to improve both supply chain performance through enhanced supplier performance. Supplier development as defined by Lysons and Farrington (2016) refers to any activity that a buying organisation undertakes to improve a supplier's performance and capabilities to meet the buyer's short or long-term supply needs.

In the SCM perspective, as mentioned by different scholars, buying firms and suppliers must have a governance mechanisms with a set of interaction principles that specify the manner and tasks that should be performed by the buying firms and suppliers in order to achieve equally agreed goals and objectives (Um and Kim 2018; Fawcett, Fawcett, Jin and Magnan 2017). However, for firms to develop their suppliers, trust needs to exist through long-term relationships and contracts, especially in the contemporary business world where supply chain are becoming global, and are continuously connecting firms from various institutional contexts (MacDuffie 2011). While a strategic orientation in SCM is considered as a key aspect for competitiveness (Yeung 2008), trust has been pointed out as an asset for long-term partnerships (Cannon, Doney, Mullen and Petersen 2010). In other words, a relationship based on teamwork and trust is the key to survive in the market place. Different scholars mentioned that trust plays a crucial role in SC relationships (Ramanathan and Gunasekaran 2014; Chen and Paulraj 2004; Li and Lin 2006).

Supply chain partnership is defined as long-term relationships between trading partners in the supply chain that are enabled by mutual trust, organisational compatibility, top management support and information sharing, as mentioned by Youn, Yang, Hong and Park (2013). Consequently, when a collaborative relationship has been established, trust and commitment will adopt a serious role in the relationship's improvement (Kumar, Banerjee, Meena and Ganguly 2017). Knowledge creation is yet another key source of improving supply chain performance the world over. The effective creation of knowledge (especially tacit social knowledge) hinges on the strength of trust and relationships among both firm and supply chain members, especially where these two factors lead to supplier development (Kumar *et al*., 2017). Hence, supply chain partnerships create benefits including reduced lead time, development of distinctive capabilities, increased flexibility and increased end-customer satisfaction, market share and profits. If supply chain performance is to be improved, trust and commitment are important in supply chain partnerships as mentioned by Ramanathan and Gunasekaran (2014).

Giannakis (2008) regarded a firm's knowledge creation, mutual assistance, along with the implementation of other good business practices, as by-products of the successfully managed supplier development-driven productivity of SC partnerships. In addition, a firm's knowledge creation capabilities play a crucial role in generating innovations and through

networking, firms are able to create and share new knowledge more efficiently in a SC (Hallikas 2009). In light of the above, the role of successful supplier development and knowledge creation capabilities remains important in the current global landscape, mainly because of the trends of global sourcing and the value-added functions associated with external functions (Jayaram and Tan 2010: 262). More so, there seems to be a gap in literature in terms of the influence of trust on supplier development, knowledge creation and supply chain performance. Thus, a detailed study on the trust effects on supplier development, knowledge creation and supply chain performance stands to contribute towards literature both within and outside SA.

1.3 PROBLEM STATEMENT

Insufficient trust amongst SC partners leads to inefficient and ineffective operations in the SC, and consequently impacts negatively on the SC's competitive advantage (Covey 2008), as confirmed by other scholars that competition is no longer amongst companies but between SC's (Botes, Niemann and Kotzé 2017: 143; Roussel 2013: 301). There is a gap in literature that focuses on the influence of trust on supply chain performance, with supplier development and knowledge creation as the mediators. It is clear that supply chain performance is not well investigated. As such, it is essential to be informed of trust on supplier development, knowledge creation and supply chain performance. So far little attention has, however, been paid to the effect of trust, supplier development and knowledge creation on supply chain performance. In addition, little is known about supplier development and knowledge creation, particularly as mediator variables, for the relationship between trust and supply chain performance. Hence, the main purpose of this study was to evince the influence of trust on supplier development, knowledge creation and supply chain performance.

As the government through its policies, frameworks and regulations such as the Black Economic Empowerment (BEE), (which scores firms in accordance to their supplier development capabilities among other things) continues to drive firms in most industries, the fundamental problem driving the study was therefore, the need to know whether the implementation of supplier development and knowledge creation (mediating variables) influenced by the trust (predictor variable) constrains or enhances supply chain

performance (outcome variable) in South Africa. The research problem for this study arose from a gap which exists as a result of a dearth in literature that examines the influence of trust on supplier development, knowledge creation and supply chain performance, which exists theoretically and pragmatically. Therefore, this research investigated the compatibility and prevalence of trust and supply chain performance by focusing on supplier development and the creation of knowledge among supply chain member firms in KwaZulu-Natal (KZN) Province, SA.

1.4 RESEARCH QUESTIONS

Specifically, this study attempted to answer the following research questions:

- What nature of influence does trust have on supply chain performance?
- What nature of influence does trust have on supplier development?
- What nature of influence does trust have on knowledge creation?
- What nature of influence does knowledge creation have on supply chain performance?
- What nature of influence does supplier development have on supply chain performance?

1.5 OBJECTIVES OF THE STUDY

1.5.1 Primary objective

The primary objective of this research was to investigate the influence of trust on supplier development, knowledge creation and supply chain performance in KZN, SA.

1.5.2 Secondary objectives

- To outline the influence of trust on supply chain performance.
- To examine the influence of trust on supplier development.
- To ascertain the influence of trust on knowledge creation.
- To assess the influence of knowledge creation on supply chain performance.
- To examine the influence of supplier development on supply chain performance.

1.6 RESEARCH FRAMEWORK AND HYPOTHESES

From the conceptual framework in Figure 1.1 below, trust is the predictor variable, while supplier development and knowledge creation are the mediating variables. Supply chain performance is the outcome variable for this study.

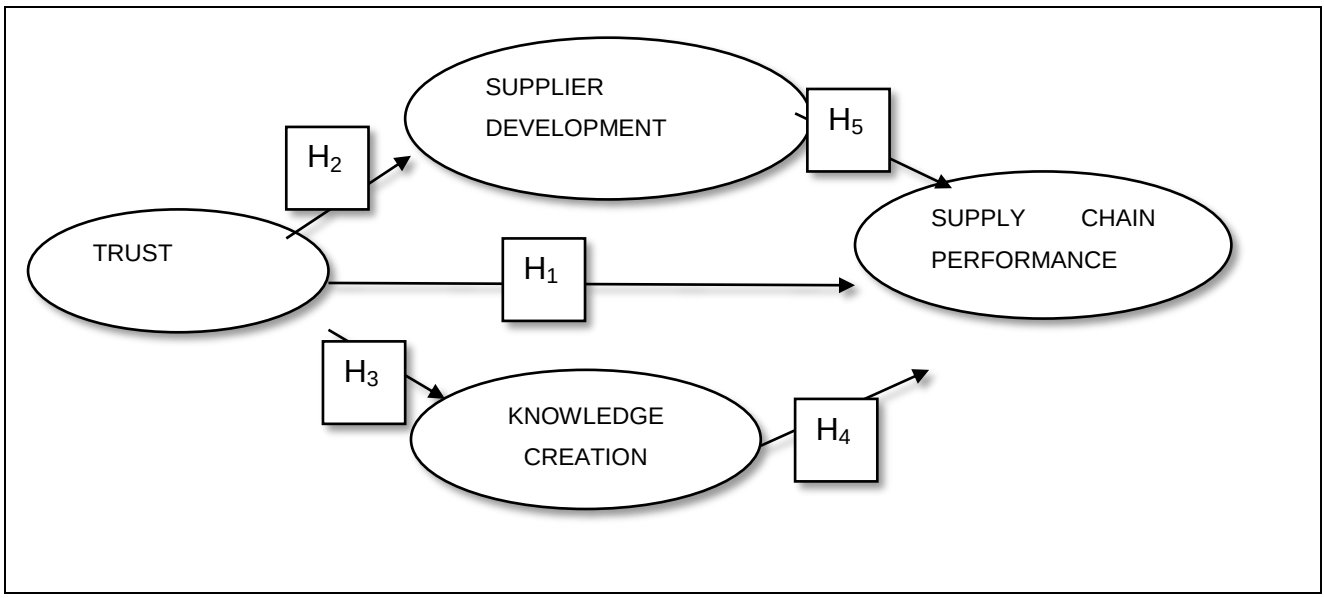


Figure 1.1: Conceptual framework

Source: Author's own

From the conceptual framework above, trust is the predictor variable, while supplier development and knowledge creation are the mediating variables. Supply chain performance is the outcome variable for this study.

1.6.1 Hypotheses statements

- $H0_1$:Trust has a negative influence on supply chain performance.
- H_1: Trust has a positive influence on supply chain performance.
- $H0_2$: Trust has a negative influence on supplier development.
- H_2: Trust has a positive influence on supplier development.
- $H0_3$: Trust has a negative influence on knowledge creation.
- H_3: Trust has a positive influence on knowledge creation.
- $H0_4$: Knowledge creation has a negative influence on supply chain performance.

- H_4: Knowledge creation has a positive influence on supply chain performance.
- $H0_5$: Supplier development has a negative influence on supply chain performance.
- H_5: Supplier development has a positive influence on supply chain performance.

1.7 RESEARCH DESIGN AND METHODOLOGY

1.7.1 Research design

This research used a quantitative approach which proceeds from descriptive to correlational analysis (Creswell and Clark 2011: 204). Descriptive study can be defined as research of which the main objective is the precise interpretation of the characteristics of persons, circumstances or groups; however correlational or explanatory study tests the correlations between research variables and make inferences (Polit and Hungler 2004: 716; Sekaran, Bougie 2016: 111). A quantitative study method was used because it simplified the objective dimension of the variables of importance and defining the possible relations between them (Leedy and Ormrod 2015).

1.7.2 Methodology

This is a quantitative study which used a probability approach. It is a descriptive and correlational study.

1.7.3 Target population

A target population, as used in most research studies, can be defined as the group of people, places of things from which the researcher obtains information required for the study. Saunders, Lewis and Thornhil (2016) confirmed that a researcher may redefine the target population as something more manageable and to which the researcher would ideally like to generalise their results. Jooste (2010: 302), in support, assert that study population is the whole group of individuals who are of interest to the researcher. The primary focus of this study was to examine the influence of trust on supplier development, knowledge creation and supply chain performance within the DoH and its medical suppliers.

In the current study, the target population comprised both public and private sector institutions in KZN. The respondents included officials in all the identified institutions, who

work in the units designated for SCM. The study was conducted in the KZN Provincial Hospitals which included Inkosi Albert Luthuli Central Hospital, Stanger Hospital, Ngwelezana Hospital and Lower Umfolozi Hospital. All the mentioned hospitals perform different functions. The main focus for the private suppliers was on the supply of hospital goods, equipment and furniture, among other things. The target private suppliers were those who work closely with the Department of Health and who supply medical equipment and furniture. These suppliers included Ecomed Medical, SSEM Mthembu Medical (Pty) Ltd, BioClin Solutions cc, Respiratory Care Africa, Delta Surgical SA Pty (Ltd) and Siyakhanda Medical Services. The study investigated the influence of trust between the Department of Health and the private sector, and how it influences knowledge creation and sharing, supplier development and supply chain performance.

This study also focused on the formal small and medium-sized enterprises (SMEs) and the sample size was drawn from the University of Zululand database, KZN. Small and medium-sized enterprises (SMEs), referred to as small business, play an important role in an economy. SMEs have the ability to make a meaningful reduction in the high level of unemployment and contribute to the gross domestic product (GDP) of the local economy in SA. The economic growth and development of the SME sector in SA continues to be affected by various challenging factors. According to a study by the Global Entrepreneurship Monitor (GEM) Reports (2001- 2010), SME survival is one of the lowest in the world (Herrington, Kew and Kew 2010). Fatoki and Odeyemi (2010) confirmed that in South Africa 75% of small and medium enterprises (SMEs) that fail within two years of operation. Supply chain performance can be increase when SMEs engage in networking as partnership and collaboration (Kumar *et al*., 2017; Lin, Parlaktürk and Swaminathan 2014; Youn, Yang, Hong and Park 2013). A lot of factors increase their influence, causing a huge effect on the success of SMEs (Cacciotti and Hayton 2015). Yet, little research is available on the opportunities and challenges faced by SMEs in the context of the BEE strategy, and on their potential contribution to socio-economic transformation.

1.7.4 The sample

As mentioned by Dawson (2002:53), “in probability samples, all the people within the research population had a specifiable chance of being selected”. Probability samples are used if the researcher wishes to explain, predict or generalise data to the whole research

population. Barbie (2010: 116) asserted that a sample is selected among the data that was collected and studied. This study was conducted using both the simple random technique and convenience sampling. Simple random allows each member an equal probability of being chosen, it is unbiased.

Convenience sampling is a kind of non-probability or non-random sampling in which members of the target population, as Dörnyei (2007) mentioned, are selected for the purpose of the study if they meet certain practical criteria, such as geographical proximity, availability at a certain time, easy accessibility, or the willingness to volunteer. The study was conducted in the KZN Provincial Hospitals, includes Inkosi Albert Luthuli Central Hospital, Stanger Hospital, Ngwelezana Hospital and Lower Umfolozi Hospital. The target private suppliers were those who work closely with the department of health supplying medical equipment and furniture include Ecomed Medical, SSEM Mthembu Medical (Pty) Ltd, BioClin Solutions cc, Respiratory Care Africa, Delta Surgical SA Pty (Ltd) and Siyakhanda Medical Services. This study also focused on the formal SMEs. The current population of hospitals in the KZN Province is 73, based on the KZN Department of Health (DOH) database and the current population of the formal SMEs registered with the University of Zululand is 3000.

1.7.5 Sampling method

There are two types of sampling methods, probability samples and non-probability samples. The quantitative method which was selected for this study relies more on probability sampling techniques. Probability or random sampling is one in which each person in the population has the same known probability to be representatively selected which permits the researcher to compute an estimate of the accuracy of the sample even before the study is done (De Vos, Strydom, Fouche and Delport 2011). The reason why this method and sample size were selected is because all members of the population had an equal opportunity to be selected. The study was conducted in the KZN Provincial Hospitals which consist of 73 Hospitals, (including Inkosi Albert Luthuli Central Hospital, Stanger Hospital, Ngwelezana Hospital and Lower Umfolozi Hospital. As aforementioned, the target private suppliers were those who work closely with the Department of Health and who supply medical equipment and furniture. These suppliers included Ecomed Medical, SSEM Mthembu Medical (Pty) Ltd, BioClin Solutions cc, Respiratory Care Africa,

Delta Surgical SA Pty (Ltd) and Siyakhanda Medical Services, among others). Moreover a sample size of 495 respondents was used in this research. A total of 105 questionnaires were distributed to SC managers/officials from the hospitals and 78 of these were completed and returned. 350 questionnaires were distributed to SME owner/managers of formal SMEs registered with the University of Zululand and 217 of these were completed. For medical suppliers 40 questionnaires were distributed and 15 were completed and returned. In total, 310 questionnaires were received from all respondents who participated in this study.

1.7.6 Data collection procedures

This study used one instrument to collect the information, namely a questionnaire with a 5-point Likert scale. Barbie (2010: 274) defined a questionnaire as an instrument specifically designed to elicit information that is useful for analysis. The advantage of the questionnaire is that it provides a relatively simple and straightforward way to the study of attitudes, values, beliefs and motives. Questionnaires were self-administered. The questionnaire accompanied by a letter of consent was distributed via emails along with Survey Monkey. A telephonic follow up was made to the respective institutions. The research questionnaire that was used for this study is attached in Appendix A.

1.7.7 Operationalisation and measurements

For the purpose of this study, the research measurements were adopted and operationalised, primarily on the basis of previous works and consultation with field and academic experts. A review of the relevant literature resulted in four main constructs, i.e. trust, supplier development, knowledge creation and supply chain performance. Minor modifications were made in order to suit the current research context/purpose and the opinions of experts. Trust was measured from two dimensions (supplier credibility and supplier benevolence) using a seven-item instrument adopted from Hoejmose, Brammer and Millington (2012). Supplier development was measured from three dimensions (basic supplier development, moderate supplier development and advanced supplier development) using an adapted 12-item instrument from Sanchez, Hemsworth, and Martínez (2005).

Knowledge creation was categorised into three dimensions (accessibility of knowledge, quality of knowledge and responsiveness). It was measured using 15 adapted items used by O'Reilly (1982), Kohli, Jaworski and Kumar (1993). Finally, supply chain performance was measured from three dimensions (flexibility performance, resource performance and output performance), using an adapted 15-item instrument used by Sezen (2008: 235), Liu (2009: 286), Kocoglu, Imamoglu, Ince and Keskin (2011: 1639) and Hove (2015). All the adapted measurement items for all the four research variables have 5-point Likert scales where the anchors are: strongly disagree; disagree; neutral; Agree; strongly agree (for 5-point Likert scale).

1.7.8 Data analyses

Data analysis and interpretation is the process of bringing order, structure and meaning to collected data through the grouping of responses and identification of patterns and trends (Tredoux and Durrheim 2010: 19). As already mentioned, the method that was used to collect data was quantitative. Descriptive analysis for personal and company information of the SC member firm managers was performed using the IBM SPSS 25 software package. The analysis presents the following outputs: reliability analysis, correlation and multiple linear regression, to determine whether there is a negative or positive relationship between the variables. A multicollinearity test was conducted to assess if there were strong correlations between variables. Multicollinearity was assessed by examining the tolerance and variance inflation factor (VIF). Before running the regression analysis, a correlation test was conducted to ensure the variables considered in the research model are somehow related.

1.7.9 Delimitations and limitations

The study was conducted in the Province of KZN, with the focus on the influence of trust on supplier development, knowledge creation and supply chain performance in both public and private firms of all sizes across all industries in KZN, SA. The respondents were SC managers/officials from different levels and units in public hospitals and private sector firm and owners/managers of SMEs registered with the University of Zululand. Limitations of the study were that a long process was involved to gain access to government provincial hospitals because of the procedures they follow. Each institution delayed the process as

their ethics committee had to provide approval that took them three months, after which provincial approval was required, which also took some time.

1.7.10 Validity and reliability

1.7.10.1 Validity

Validity is defined as a measure of truth or falsity of a description, clarification and interpretation of the data obtained through using the research instrument (Maxwell 2013: 122). Validity encompasses the entire experiment concept and establishes whether the results obtained meet all of the requirements of the scientific research method. This suggests that there must be a clear relationship between research objectives and applied instruments in the research.

1.7.10.2 Reliability

Reliability is the degree of consistency with which a research instrument shows consistent outcomes (Wakari 2012). Reliability can be attributed to the extent to which an instrument produces consistent results. Creswell (2003) believes that the consistency with which questionnaire items are answered or individual scores remain relatively the same can be determined through the test-retest method. Joppe (2000) agreed with Creswell's assertion and further argued that there are two ways in which reliability is tested which are test/retest and internal consistency. The use of the test-retest method has a greater potential of showing reliability of results. This means the result must be retested and produce a similar outcome. The analysis presents the following outputs: reliability analysis, correlation and multiple linear regression – in order to determine whether there is a negative or positive relationship between the variables.

1.8 THESIS CHAPTER OUTLINE

Chapter 1: Introduction and rationale of the study

The introduction chapter provides an outline/overview of the study and the objectives. It also provides a framework upon which the research was conducted, and is presented in this thesis.

Chapter 2: Supply chain management theories

This chapter examines and reviews theories of the study. The chapter discusses SCM theories that are relevant to the current study's hypothesised linear relationships.

Chapter 3: Supply chain management and performance

This chapter provides an overview of SCM and supply chain performance in the public and private sectors of KZN Province and reviews literature surrounding it. It also outlines small and medium-sized enterprises in supply chain, the significance of SCM to SMEs, popularising organisational learning, knowledge creation, the concept of trust and supplier development.

Chapter 4: Research methodology

The research methodology chapter provides a detailed conceptual framework, within which the research was conducted, methods of data collection, analysis and interpretation of data. It defines the research paradigm, research design, research strategy, sampling design, data collection, analysis techniques, reliability and validity, and ethical consideration of this study.

Chapter 5: Empirical results of the study

This chapter presents an interpretation of the findings using descriptive statistics, such as Linear-regression analysis conducted on IBM SPSS version 25, multicollinearity, tolerance and variance inflation factor (VIF). Summary tables and graphs are also presented.

Chapter 6: Conclusions and recommendations

This final chapter provides the conclusions and recommendations of the study. Thus, this chapter also focuses on the conclusions obtained from the analysis and interpretation of research findings. In addition, recommendations are made on how to mitigate the reported challenges.

CHAPTER TWO: SUPPLY CHAIN MANAGEMENT THEORIES

2.1 INTRODUCTION

This chapter examines three theories, namely the learning and knowledge perspective theory, resource-based view as well as trust based rationalism theory. Successful supply chain performance is based on a high level of trust and a strong commitment among SC partners (Suh and Kwon 2003). Therefore, an effective supply chain, based on learning and knowledge sharing, trust among partners and supplier development is an essential requirement for successful SCM (Suh and Kwon 2003). Hence, as noted in the previous chapter (Chapter One), the objectives of this study were to outline the effect of trust on supply chain performance, to examine the impact of trust on SD, to ascertain the influence of trust on knowledge creation, to assess the influence of knowledge creation on supply chain performance and to examine the influence of supplier development on supply chain performance.

This chapter (Chapter 2) presents the theoretical framework of SC. Therefore, in this chapter, the learning and knowledge perspective theory is used to explain the relationship between trust and knowledge creation as well as the link between knowledge creation and supply chain performance. The relationship between supplier development and supply chain performance is explained using the resource-based view (RBV) theory. The trust-based rationalism (TBR) theory is then used to explain the relationship between trust and supply chain performance; trust and knowledge creation, along with the relationship between trust and supplier development. The chapter unfolds as follows: a discussion on the learning and knowledge perspective (LKP) theory, the RBV theory, and from the resource-based to the knowledge-based view of the firm. The chapter then concludes by elaborating on trust in supply chains from a trust-based rationalism theory's perspective.

2.2 THEORETICAL FRAMEWORK

In the extant literature, different perspectives and theories have been used to explain SCM variables. The focus of this chapter is to examine the hypothesised linear relationships between trust, supplier development, knowledge creation and supply chain performance

by means of the following three theories: TBR, RBV and LKP. A detailed discussion of the LKP theory is provided in the next section.

2.2.1 The learning and knowledge perspective theory

The LKP theory which emerged from the RBV theory by Penrose (1959) focuses on resources (that is, the tangible and intangible resources and core competences). Cao (2007) mentioned that the LKP theory assumes that SC allies create networks or union relationships to adventure chances that disclose knowledge creation and organisational learning. In the LKP theory, knowledge is the most significant resource. As pointed out by different authors, the LKP theory is the knowledge-based view theory postulated by Wernerfelt (1984) and modified by Barney (1991) along with Conner (1991), which views knowledge as an important resource of the firm and a source of competitive advantage that improves firm performance (Davenport and Prusak 1998; Grant 1996; Kogut and Zander 1996; Spender 1996). They also confirmed that in the LKP theory, both public and private institutions are viewed as distributed repositories of tacit and explicit knowledge of which heterogeneous knowledge bases are the key determinants of sustained competitive advantage (Kogut and Zander 1996; Spender 1996).

Exploitation learning outcomes from the SC collaboration accomplishments are targeted at developing an organisation's existing capabilities; however, exploration learning outcomes from SC collaboration accomplishments intend to determine new chances for the firm or organisation, for instance developing an organisation's absorptive size (Subramani 2004). Different scholars confirmed that companies with little absorptive size will not only find it problematic to distinguish the significance of new thoughts generated from close relationships with its suppliers, but might also lack adequate capability to assimilate ideas into product improvement (Tavani, Sharifi and Ismail 2013). Michailova and Jormanainen (2011) in support of this argued that the aptitude of a firm to share knowledge depends on its ability to distinguish the importance of local knowledge and improve mechanisms for knowledge transfer suitable in the local context. Therefore, learning and sharing of knowledge with suppliers plays an important role in inter-firm buyer supplier relationships. This is mainly because suppliers may possess resources that complement those of the focal firm. This may generate positive externalities and allow the firm to capture these

spillovers from its suppliers through organisational learning, which will ultimately enhance the performance of the entire SC.

Michailova (2011) stressed that knowledge transfer comprises a set of active procedures that depends on intellectual preferences, structural situations, historical inheritances and ideological circumstances and should thus not be appointed in systematic and de-contextualised ways. Other scholars advised that as knowledge transfer is mainly challenging, the buying firm, buyer and seller should collaborate and use suitable channels to simplify it (Nagati and Rebolledo 2011). Different scholars observed that while studies have been directed in the sphere of absorptive volume, it involves additional research and consideration, and scholars have thus hypothesised a model that entails additional testing. Knowledge creation leads to organisational learning, which will in turn improve the entire supply chain's performance. Knowledge creation can also promote partnerships and trust-based relationships. The relationship between trust and knowledge creation can be bi-directional. However, for this study, the focus was only on the influence of trust on knowledge creation, and this is discussed in the last sections of this chapter. The next section provides a discussion on the relationship between supplier development and supply chain performance from an RBV theory's perspective.

2.2.1.1 Resource-based view theory

The foundation of the RBV of the firm was proposed by Penrose (1959) who considered the firm as an administrative organisation and a collection of productive resources, both physical and human. It holds that resources internal to the firm are sources of competitive advantage. Such resources should be valuable, rare, inimitable and difficult to substitute (Barney 1991). Thus, Barney (1991) also mentioned that resources believed to be valuable are those that are capable of facilitating conception or implementation of strategies that improve performance, exploit market opportunities or neutralise impending threats. As explained by Rantakari (2010), the RBV theory is where the outsourcing decision is based on the client company's abilities to invest in internal capabilities and thus sustain competitive advantage. In this strategic RBV theory, a firm is viewed as a collection of physical and intangible resources that enable it to compete with other firms (Rantakari 2010). To provide sustained competitive advantage, a resource must have four qualities and an RBV to be regarded as heterogeneous resources, and can be classed

as Valuable, Rare, In-Imitable, and Non-Substitutable (VRIN). Barney (1991) and Talaja (2012: 51-64) confirmed that a company that possesses VRIN and exploits its capabilities will certainly achieve sustainable competitive advantage and above-average performance as shown in Figure 2.1 below.

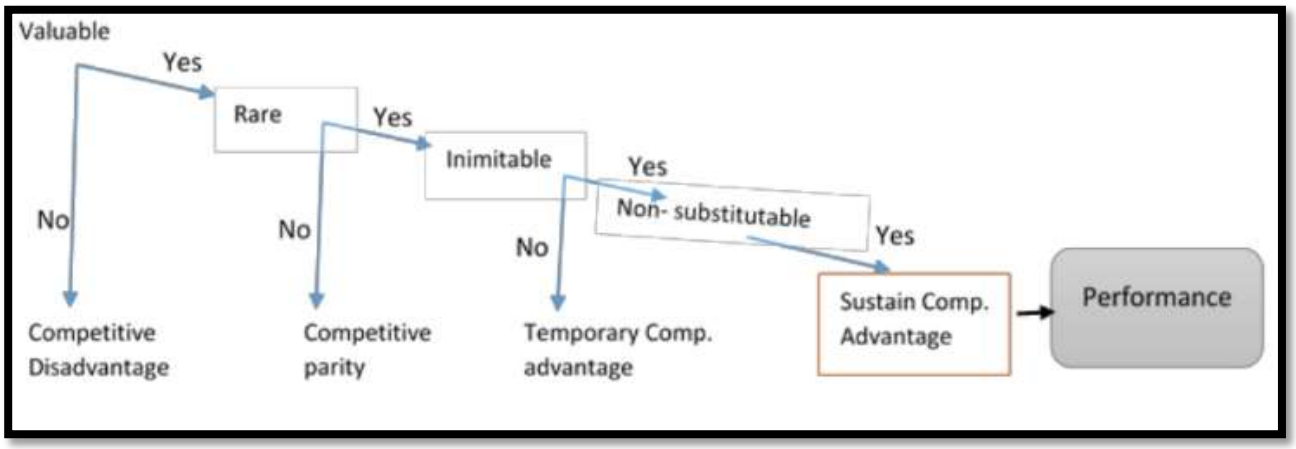


Figure 2.1: VRIN

Source: Talaja (2012) and Barney (1991)

Barney, Brahma and Chakraborty (2011: 9) argued that if the factor market resources are perfectly competitive, it is not possible for a firm to get economic rent even if it is successful in creating an imperfect product-market because the price paid to such resources will be equal to its value that the resource will create in the product-market. The RBV is a theory centred on the nature of firms based on their resources, as opposed to theories such as transaction cost economics, which seek to explain the reason why firms exist (Lockett, Thompson and Morgenstern 2009). The RBV theory emphasises the importance of internal organisational capabilities in formulating strategy and strategic choice to achieve competitive advantage.

Previous scholars in support of this indicated that intangible assets such as knowledge management, organisational learning and market orientation allow an organisation to develop those abilities that enhance competitive advantage, leading to superior market performance (Day 1984). Tan, Mavondo and Worthington (2011) in their study of organisational capabilities and relationship quality performance implications specifically considered market orientation as one of the organisation capabilities. The ability to

develop suppliers and create new knowledge can be viewed as the outcomes of trust and commitment between the buying firms and their suppliers. As such, supplier development and knowledge creation can be regarded as resources and core competences from an RBV theory perspective.

The RBV theory has mostly been used to explain SC partnerships in previous studies, and the current study also adopted it for explaining SC relationships. Barney (1991) mentioned that the key concepts of the RBV theory are resources, capabilities, and strategic assets. According to the RBV, organisational resources are developed into capabilities that help an enterprise to manage its environment and enhance performance (Kozlenkova, Samaha and Palmatier 2013: 3). Aminu and Mahmood (2015: 443) confirmed that resources can be assets, processes, information and knowledge, while technology, customers and capabilities include organisational processes and routines rooted in knowledge. Resources are developed through a routine of collaborative planning and SC integration. The RBV theory postulates that enterprises share their resources by integrating their functions and plans to create inimitable capabilities that will improve their competiveness and performance by either sharing their resources, raw material and ideas through integration and collaborative planning to maintain a strong competitive advantage (Garg and De 2014: 312).

2.2.1.2 Resource-based to the learning and knowledge-based view of the firm

It is mostly confirmed by different scholars that the learning and knowledge-based view (LKBV) of the firm is an extension of the RBV of the firm. The LKBV of the firm considers knowledge as the most important strategic resource and in that sense, this perspective is an extension of the RBV of the firm (De Carolis 2002). The interpretation of knowledge as a resource establishes the theoretical connection between the RBV and the LKBV (Ariely 2003). The LKBV of the firm is a recent extension of the RBV of the firm and the capabilities made that extension possible (Malerba and Orsenigo 2000). The logic of the RBV of the firm suggests that unique characteristics of the intangible resources (especially knowledge) should determine the focus of research (Rouse and Daellenbach 2002). Knowledge resources are particularly important to ensure that competitive advantages are sustainable, as these resources are difficult to imitate, they are the foundation for sustainable differentiation (Wiklund and Shepherd 2003).

Regarding the RBV of the firm, literature justifies the existence of differences in performance between organisations as a consequence of knowledge irregularities (capabilities and competences). As a result, an important LKBV of the firm proposition states that the organisation exists to create, transfer and transform knowledge into a competitive advantage (Kogut and Zander 1992). Conner and Prahalad (2002) argued that clearly there is a body of literature that considers LKBV of the firm as being the essence of the RBV of the firm. According to these authors, there is a developing planned management literature on the RBV that points out knowledge as the basis for competition. They advocated that the RBV of the firm should incorporate the temporal evolution of its resources and the capabilities that sustain the competitive advantage (Helfat and Peteraf 2003). Therefore, the LKBV of the firm is regarded as the logical evolution of the RBV of the firm considering that it is a way to incorporate the temporal evolution of its resources and the capabilities that sustain the competitive advantage (Helfat and Peteraf 2003).

2.2.2 Trust-based rationalism theory

Different scholars confirmed that the trust-based rationalism (TBR) theory which relies on trust is a key factor for the expansion of partnerships among the different representatives of a SC, distinguished between interpersonal and inter-firm trust (Johnston, Mccutcheon, Stuart and Kerwood 2004). Hence, TBR employs a behavioural assumption of trustworthiness, fair play, responsibility, and humanity instead of betrayal, self-interest, and resourcefulness. It focuses on partnership and support rather than politics and conflicts as the primary interaction modes. Trust, relationship and social capital are the key concepts in TBR. Continuing supply chain collaboration is based more on trust and equity than on monitoring and control capabilities (Kim, Umanath and Kim 2005). Social capitals and relationships between partners arise from the foundation of trust. The creation of trust in inter-firm relationships can be related to a country's cultural context (Dyer and Chu 2003; Sako 1992; Zaheer and Zaheer 2006). In this intellect, Dyer and Chu (2000) in their commendable study, found important levels of supplier trust in the US, Japan and Korea. These differences are related to the institutional environment. These authors suggested that supplier trust depends on frequency and long-term interactions (which they called process based trust).

As mentioned by Harisalo and Miettinen (2010), trust is a two-way interrelationship; and learning to trust is usually slow. The TBR theory describes the trust creation process as a situation where parties involved share ideas, knowledge, feelings and opinions, which leads to the building of shared social understanding. The creation of connections based on exchange, understanding, and common interest can be seen as a necessity of a fruitful partnership (Harisalo and Miettinen 2010). As confirmed by Harisalo and Miettinen (2010), trust builds up gradually and slowly, but can be lost at once if one of the parties feels that the other one acts unscrupulously. This might make the buying organisation invest their resources in developing their suppliers.

This will also badly affect the creation of knowledge, which will in turn constrain supply chain performance. As such, trust is a major source for a firm's core competences such as supplier development and knowledge creation, which in turn affects supply chain performance. The consequences of this are that trust is delicate and requires (social) institutions and high level of morality to be preserved. Trust creates value in organisations in several ways; it enhances information flow and knowledge quality (Chiu, Hsu and Wang 2006). As information sharing is transparent to the parties, and their key operations are strategically aligned, they can plan the production together logically and improve their operations.

As clarified by Kwon and Suh (2004), trust is a critical factor fostering the commitment among supply chain partners. The atmosphere of trust decreases the need for contracting and monitoring. A trust-based partnership by nature benefits both parties, while ensuring stability, lesser organisational conflicts, and inclination and intention of working together and sharing information as well as benefits (Sahay 2003). Trust is affirmed when collaborative relationships go beyond contractual obligations to include knowledge sharing, enhancing skills of SC partners and joint strategy formulation (Fawcett, Jones, and Fawcett 2012). Therefore, trust building should be emphasised when building strategic relationships.

2.3 CHAPTER SUMMARY

The theories discussed above are useful to the public and private sector institutions but have insufficient information involving SC. There is a huge gap in literature relating to SC

development. The LKP and the knowledge-based theory of the firm share the same view that knowledge is a key resource of the firm and a source of competitive advantage that improves the firm and supply chain performance. From this theoretical perspective, firms are viewed as distributed repositories of tacit and explicit knowledge whose heterogeneous knowledge bases are the key determinants of sustained competitive advantage. The ability of organisations to create and manage knowledge can deliver a sustainable competitive advantage that has substantial effects on organisational performance

Trust, relationship, and social capital are the key concepts TBR. Based on a behavioural assumption of trustworthiness rather than opportunism, trust-based rationalism concentrates on trust, equity, and embeddedness rather than power and politics as the primary interaction mode in SC. The next chapter (Chapter Three) focuses on the overview of SCM and supply chain performance and elaborates on the variables of this study such as knowledge creation, the concept of trust and supplier development.

CHAPTER THREE: SUPPLY CHAIN MANAGEMENT AND PERFORMANCE

3.1 INTRODUCTION

Organisations are facing different kinds of challenges in their effort of competing in today's dynamic global markets. To remain competitive, organisations must recognise the importance of SC practices that improve organisational performance, but also coordinate with SC partners to improve joint performance. The best SC practices are the initiatives that influence the whole SC. SC fulfils various functions that contribute, to a greater or lesser extent, to the success of the chain. Any link in the chain that does not perform optimally can reduce the overall competence of the entire supply chain (Chopra and Sodhi 2014). An SC is composed of a number of connections between numerous firms. As mentioned by Thomas and Esper (2010), connections between firms over time are usually more unequal than symmetric, unnecessary than equal and different than the same.

SCM covers all the connections involving customer and supply companies in the delivery of products to consumers. Supply chain performance is a benefit equally generated by two or more organisations that cannot be created by any one of those organisations alone (Carter, Kosmol and Kaufmann 2017). This definition describes performance as a result of the management of inter-organisational relationships, encompassing two dimensions: a business process orientation and a customer service orientation. This chapter focuses on the overview of SCM and supply chain performance in the public and private sectors in KZN Province and reviews literature surrounding it. It also outlines small and medium-sized enterprises in SC, the significance of SCM to SMEs, popularising organisational learning, knowledge creation, the concept of trust and supplier development.

3.2. OVERVIEW OF SUPPLY CHAIN MANAGEMENT AND SUPPLY CHAIN PERFORMANCE

3.2.1 Supply chain

The classification of SC seems to be mutual across authors, which is not quite the case with the definition of SCM. SCM is difficult to understand because it involves many different flows of activities, mechanisms, purposes, and role-players. In order to understand SCM it is important first to understand the concept of SC. As clarified by Chen and Gong (2013), SC is a set of facilities, providers, clienteles, products and approaches of monitoring inventory, purchasing and distribution. They also mentioned that it links suppliers and customers in all processes involved to transform raw materials into the finished products. SC and SCM are inter-related concepts; SCM is basically the management of SCs. Several scholars have defined SC as the network of organisations involved through upstream and downstream linkages, in the different processes and activities that produce value in the form of products and services in the hands of the ultimate customer (Erturgut and Soysekerci 2011). A number of authors (Tang, Ke, Jie and Eugene 2016; Carter *et al*., 2017) have argued that SC can be considered as a network of companies or independent business units, working together to exploit business opportunities from the original supplier to end customers, based on common interest and partnership.

3.2.2 Supply chain practices

According to Stock and Boyer (2009), SC practices provide a framework of methods and practices that help an organisation in effectively integrating various stake-holders of SCM, namely suppliers, manufacturers, distributors and customers, thereby resulting in the long run progress of the organisation and their overall performance. The best SC practices help an organisation in representing a distinct picture based on various market indicators such as demand forecasting, product availability, inventory management and distribution (Chopra and Meindl 2007). Hence, it is not surprising that organisations driven by best SC practices achieve superior supply chain performance. However, it has been well established that internal and external cross-functional collaboration of suppliers and customers results in superior organisational performance (Thakkar and Deshmukh 2008).

3.2.3 Supply chain concerns

SC concerns have been defined as the issues that prevent an organisation from accomplishing the full potential of their SCM (Tan 2002; Chow, Madu, Kuei, Lu, Lin and Tseng 2008). An important element of effective SCM includes downstream integration and upstream collaboration of firms' partners and customers in an effective and efficient manner. Thus, companies which have developed and implemented a supplier assessment system in order to effectively and efficiently manage suppliers, have failed miserably (Sachan and Datta 2005).

3.2.4 Supply chain competence

SC competence is defined as a compulsory pre-requisite for firms to react to market and financial uncertainties and to manage and sustain their supply chain performance and organisational performance (Gubi, Arlbjom and Johansen 2003). SCM is completely stable only when it is completely endorsed by stakeholders of the organisation. Furthermore, supply chain performance is the ability of the organisation to be in total power and control of SC operations and performance in spite of external and internal environmental issues. As noted by Yang and Su (2009), Sauber, McSurely and Tummala (2008), the essential capability of organisations is a reflection of the joint learning of the organisation over a period of time and their ability to coordinate the diverse skills through an efficient foolproof technical system. Other authors defined supply chain performance as a portfolio of organisational, managerial, technical and strategic capabilities and skills developed by enterprises over time (Tracey, Lim and Vonderembse 2005; Wong and Wong 2011; Chow *et al*. 2008).

3.2.5 Supply chain drivers

Various scholars confirmed that every organisation defines its own competitive business strategy, overall competitive business strategy and overall directions (Badenhorst-Weiss, Strydom, Strydom, Heckroodt, Howell, Cook, Phume, Gideon and Horn 2014). Respectively, SC also has its own commercial strategy that describes how the SC should be arranged and operated in order to be competitive. Thus, to be successful, it is significant for each organisation that operates in a consistent SC to ensure that the business strategy that it implements is in position with the overall business strategy of that

specific SC. This position is achieved through the proper placement of what are known as SC drivers.

These drivers cooperate and cartel to form the pillars of, and effective tools for, implementing SC strategies and permitting SC partners to carry out their processes successfully (Badenhorst-Weiss *et al*. 2014). Most significantly, the drivers must be organised in such a manner that they allow an organisation to achieve a balance between responsiveness to customer demand and lowest cost, thus allowing an organisation to be competitive in its selected business strategy (Chandrasekaran 2012: 58-59). The six SC drivers by Badenhorst-Weiss *et al*. (2014) are discussed next. The first three are referred to as logistical drivers and the remaining three as cross-functional drivers. By means of linking these six drivers properly, SC partners achieve best responsiveness and efficiency in a precise SC.

3.2.5.1 Facilities

Different scholars identify facilities as the physical locations or sites in the SC network at which products are manufactured, processed, assembled or stored. Therefore, the fundamental trade-off that managers face when making facility decisions is between the cost of the number, location, capacity and type of facilities on the one hand, and the level of responsiveness and customer service that these facilities allow an organisation to provide to its customers on the other hand. Enhancing the provision of facilities in an SC in terms of efficiency and responsiveness and saving in logistics costs such as transport and warehousing, requires the management of organisations to make several strategic decisions (Badenhorst-Weiss *et al*. 2014).

3.2.5.2 Inventory

According to researchers, inventory comprises all raw materials, work-in process (unfinished) goods and finished goods within an SC (Badenhorst-Weiss *et al*. 2014). Inventory belonging to an organisation is reported as the organisation's assets. It exists in the SC mainly because of an inconsistency between supply and demand. An accidental mismatch due to bad planning and poor SCM often results in organisations holding unnecessary stock. This is costly and must be avoided at all times. For inventory to play a significant role in the SC, it is important that the SC can always satisfy demand by having

the required product ready and available when the customer wants it. The form, location and quantity of inventory determine whether service delivery in an SC is very low-cost but possibly high cost.

3.2.5.3 Transportation

Transportation is a value making activity in an SC. Thus it comprises moving inventory of products from one location to another. It uses various modes of transport, such as rail, road, sea and air, and stretches over various routes, each with its own specific performance characteristics. Therefore, transport choices affect SC efficiency and responsiveness. An organisation that advertises its products online can offer an approachable and effective service to prospective customers, but the products may be delivered incompetently when delivered by means of overnight express services. Hence, there is always a trade off when making transport decisions in an SC.

3.2.5.4 Information

Information is very significant and plays a key role in SC. It entails data and analysis about product availability, suppliers, facilities, costs, prices and the availability of transportation throughout the SC. Consequently, the correct flow of information both up and down SC, is significant because it communicates details about both the physical and financial limits of supplies, goods and services moving upwards and downwards in the SC.

3.2.5.5 Sourcing

Sourcing refers to the process of making strategic decisions and choices about who will perform specific SC activities and functions such as production, storage, transportation and information management. Sourcing decisions influence the approachability and efficiency of an organisation’s service delivery level. As far as information and sourcing are concerned, Kruger, Ramphal and Maritz (2013: 42) argued that there has been an increased focus on subcontracting and the use of information technology in the past 20-30 years and consequently, globalisation has had a significant impact. Information technology and the internet also assist organisations around the globe to source their required input suppliers and products on international market.

3.2.5.6 Pricing

As determined by the economic forces of demand and supply, price plays a vital role in the trade-off between effectiveness and responsiveness in an SC. The management of an organisation needs to be very careful with its pricing policy, as it affects the behaviour of the customer. For example, charging too much can undermine responsiveness – consumers cannot buy the products, thereby negatively affecting supply chain performance.

3.3 SUPPLY CHAIN MANAGEMENT

SCM is well-defined as a set of three or more entities continuously involved in the upstream and downstream flow of products, services, finances, and information from source to customer (Mentzer, DeWitt, Keebler, Min, Nix, Smith and Zacharia 2001). SCM is the documentation, procurement and managing resources that an institution needs or possibly requirements in the success of strategic objectives (Institute for SCM 2014). It is a set of approaches used to manage the SC. A number of viewpoints and definitions have been provided about SCM. The Council for Supply Chain Management Professionals (CSCMP) (2015) defined SCM as encircling the planning and management of all activities involved in sourcing and procurement, conversion, and all logistics management activities. Prominently, it also comprises coordination and collaboration with channel partners, which can be suppliers, intermediaries, third-party service providers, and customers. SCM integrates supply and demand management within and across companies. Quayle (2003) mentioned that SCM has become a key feature for promoting efficient management and developing important competitive advantages of suppliers.

Organisations need suppliers with high performance and efficient contribution for the value of their whole SC. Actively participating in SC of firms, SMEs more and more have significant impacts on supply chain performance and can serve the roles of suppliers, distributors, producers and customers (Hong and Jeong 2006). Quayle (2003) confirmed that there is a dearth of literature regarding the use of SCM practices and their effect on the performance of SMEs. South African SMEs in particular face numerous risks that pose a significant threat to the survival of the businesses. The South African SME also experience crime and low productivity which includes the challenges of access to

electricity and technology, cultural communication barriers and the lack of skilled labour, difficult access to markets, finance and credit, the need to develop customer relationships and reputation, and sourcing knowledge and government support (Sunjka and Sklar-Chik 2012). SMEs have fewer competitive advantages and are generally more vulnerable (O'Gorman 2001). Despite the large number of SMEs and their essential role in SC, the literature around SMEs and SCM practices within them is still limited and disconnected (Quayle 2003).

3.3.1 Small and medium-sized enterprises in supply chain

Little is known about the SMEs' context. SMEs are widely regarded as the vehicle for employment generation, economic growth and development of the economy of countries. According to Ahmad and Alaskari (2014: 477), SMEs are the most significant driver of the economy and this is reflected in the kind of policy instruments meant to promote and support SMEs. Despite the aforementioned fact, many studies have struggled to provide insight into understanding SME performance and thereby contributing to the body of knowledge in this area (Sidik 2012 and Gronum 2015). The United Nations Development Programme report (UNDP 2014:5) specified that failure of SMEs to flourish in SA may be attributed to a number of factors, such as limited market access and limited integration with other businesses. The success of SMEs in SA is delayed by a variety of encounters, which comprise the insufficient funding, shortage of skills and the inadequacy of formal organisational structures, amongst others (Cant and Wiid 2013; Kengne 2016).

The Small Enterprises Development Agency (SEDA) (2016) specifies that about 71% of SMEs in SA fail. These initiatives then need to find devise a different strategy in order to survive. Regarding competitiveness in the SME sector, the World Economic Forum (WEF) (2016) stated that SA is one of the weakest performers in this sector. SCM has both positive and negative effects on the performance of SMEs. On the one hand, SCM can provide quality, cost, customer service, leverage and even risk reduction benefits for the SMEs, while on the other side, it exposes the SME to greater management and control threats while reducing its private differentiation advantages (Arend and Winser 2004).

3.3.2 Significance of SCM to SMEs

Fatoki (2014) mentioned that the SA government has made substantial steps to support the sustainability of SMEs; he also mentioned that incidences of failure are still high. Peyper and Liesl (2013) confirmed that an estimated 71% of SMEs in SA fail to survive processes beyond one year. This positions SMEs in SA as some of the lowest in terms of survival rate in the world (Cant and Wiid 2013). According to Mohanty and Prakash (2014), managing production costs and improving operational skills are critical for SMEs' sustainability. Correspondingly, Urban and Naidoo (2012) recognised comprehensive effective strategies as active components for the existence of SMEs. The Global Competitiveness Index (GCI) has acknowledged the troubling challenges of manufacturing SMEs and graded SA as one of the weakest developing markets in terms of manufacturing effectiveness (WEF 2016). The main focus of SCM is to provide the right product to the right customers at the right time, with the right quality, right cost and right quantity (Basher 2010). Measured benefits of SCM include lower SC costs, overall productivity, inventory reduction, forecast accuracy, delivery performance, fulfilment cycle time and fill rates (Mohanty and Deshmukh 2005).

SMEs form a possible economic backbone of many regions and make a larger contribution to employment than large firms (Peng 2009). One of the significant characteristics of a flourishing and growing economy is a prosperous and blooming SMEs sector (Fida 2008). According to Fida (2008), SMEs play a significant role in the development of a country's economy. They contribute to economic development by creating employment for the growing labour force in rural and urban areas; they also generate income, thereby providing desirable sustainability and innovation for the economy as a whole and eventually, leading to the reduction of poverty. Maas and Herrington (2006) confirmed the aforementioned as a significant component of the solution to SA's development issues, which include poverty, income inequality and unemployment. Moreover, a study conducted by Abor and Quartey (2010) estimated that 91% of formal business entities in SA are SMEs and these SMEs contribute between 51 and 57% of the GDP and provide about 61% employment. Van Scheers (2011) also confirmed these statistics.

3.4 EIGHT SUPPLY CHAIN MANAGEMENT PROCESSES

SCM can be defined as the integration of key business processes from end-user through original suppliers that provide products, services and information that add value for customers and other stakeholders. This view of SCM is illustrated in Figure 3.1 (Drucker 1998), which depicts a simplified SC network structure, the information and product flows and the SCM processes that integrate functions within the company as well as other firms across the SC. The eight SCM processes identified by the Global Supply Chain Forum (GSCF) presented in Figure 3.1 below.

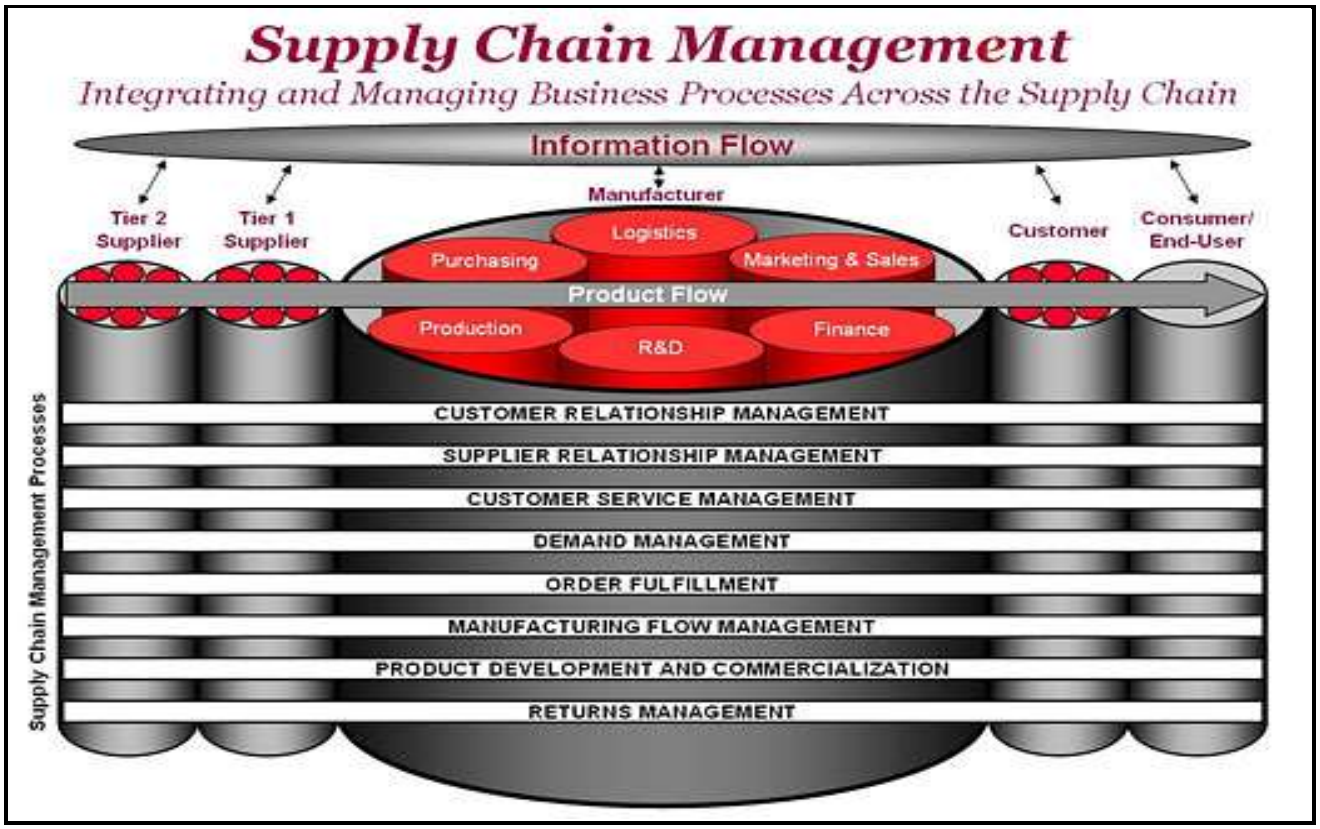


Figure 3.1: Eight supply chain management processes

Source: Lambert (2008)

3.4.1 Customer relationship management

Customer relationship management provides the firm's face to the customer, including management of the product and service agreements (PSAs), and provides a single source of customer information. Customer relationship management delivers the structure for how the relationships with customers will be developed and maintained. Management identifies

key customers and customer groups to be targeted as part of the firm's business mission. The goal is to segment customers based on their value over time and increase customer loyalty by providing customised products and services. Customer teams tailor PSAs to meet the needs of key accounts and for segments of other customers. The PSAs specify levels of performance. Customer teams work with key customers, improve processes and eradicate demand inconsistency and non-value added activities. Therefore, performance reports are designed to measure the effectiveness of individual customers as well as the financial impact on the customer (Lambert and Pohlen 2001).

3.4.2 Supplier relationship management

Supplier relationship management (SRM) provides the structure for how relationships with suppliers are developed and maintained, including the establishment of PSAs between the firm and its suppliers. SRM is relates to how a firm cooperates with its suppliers. For a firm to ensure good relations with its clients, it must foster relations with its suppliers. In client relationship management, a firm will build relationships with few of its suppliers, but avoid relations with others. Therefore, suppliers are considered based on numerous extents such as their influence and criticality to the organisation. In enterprises where processes range global, sourcing must be managed on a worldwide basis. Long-term corporations are established through a minor essential collection of suppliers. The intention is to achieve is a win-win relationship to the benefit or all.

3.4.3 Customer service management

Customer service management (CSM) provides the firm's face to the customer, including management of the PSAs, and provides a single source of customer information. CSM is thus the company's appearance to the client. It offers the vital point of communication for managing the PSA. Therefore, customer service provides the buyer with real-time facts on assured delivery dates and product obtainability over interfaces with the company's functions such as manufacturing and logistics. The client service procedure may also comprise helping the client with product applications.

3.4.4 Demand management

Demand management provides the structure for balancing the customers' requirements with the capabilities of the SC. Significantly, inventory comprises work in process in

manufacturing complex and products in the tube running from one location to another. There is a variety stock because of the modification in progress, supply and demand. Therefore, customer demand is the largest source of inconsistency and it shoots from irregular directive designs. Given this contradiction in buyer ordering, demand management is essential for SCM to be effective. Thus, demand management is the SCM method that balances the buyers' requirements with the abilities of the SC.

3.4.5 Order fulfilment

Order fulfilment encompasses all activities essential to describe customer requirements, design the logistics network and fill customer orders. Order fulfilment is a significant procedure in handling the SC. Thus, it is buyers' instructions that initiate the SC process and results in a successful initial phase in providing client service. However, the order fulfilment method encompasses much further than just filling orders. It comprises designing a system and a process that authorises a company to encounter consumer requests but also reduces the overall delivered cost.

3.4.6 Manufacturing flow management

Manufacturing flow management (MFM) consists of all activities necessary to move products through the plants and to obtain, implement and manage manufacturing suppleness in the SC. Manufacturing processes need to be flexible in order to reply to market changes. Orders are managed on a JIT basis in the smallest amounts. Production's main concern is determined by vital delivery dates. Changes the during production process lead to smaller phase periods meaning developed responsiveness to consumers. MFM is the SCM method that contains all activities crucial to move products over the plants and to acquire, implement and control manufacturing flexibility in the SC.

3.4.7 Product development and commercialisation

Product development and commercialisation (PDC) provides the structure for developing and bringing to market new products jointly with customers and suppliers. If new products are the core of a business, then product improvement is the essence of a firm's new products. Buyers and service providers must be jointly involved during product development in order to decrease time to market. Consequently, in order to stay competitive in a market, the right products must be improved and successfully launched in

a shorter time frame. Administrators of the PDC development must guarantee the following:

- Coordinate with management responsible for clients in order to classify consumer articulated and unarticulated needs.
- Choose materials and providers in combination with the SRM procedure.
- Grow production technology to manufacture and incorporate into the greatest supply chain movement for the product/market combination.

3.4.8 Returns management

Returns management is the SCM method by which accomplishments related with returns, converse logistics, gatekeeping and expectation are achieved in the firm and through key members of the SC. Operative returns management is a significant section of SCM and offers a chance to reach a maintainable competitive advantage. In several countries, organisations' concern regarding this process might be the outcome of legislation interest. Furthermore, effective returns management allows documentation of output development chances and innovation projects. Each SCM process has both strategic and operational sub-processes. The strategic sub-processes deliver the structure for how the process will be implemented and the operational sub-processes provide the detailed steps for implementation. The strategic process is a necessary step in integrating the firm with other members of the SC and it is at the operational level that the day-to-day activities take place (Lambert 2008).

3.5 FRAMEWORKS AND CATEGORISATIONS FOR SUPPLY CHAIN MANAGEMENT

Frameworks have also been developed to exemplify the constructs of SCM forcefully. The existing frameworks differ in scope, focus and intended use. The Supply Chain Council (SCC) (2013) developed a model to assist the SCM function by providing a set of practical guidelines for analysing SCM practices. It is one of the most well-known reference models for the SCM and is called the Supply Chain Operations Reference (SCOR) model. The SCOR model is organised around five main components: Plan, Source, Make, Deliver, and Return. The SCOR model provides a complete reference guide for SCM. The model is

intended to be a management tool. It is characteristically used to improve SC processes by identifying, measuring, and reorganising them.

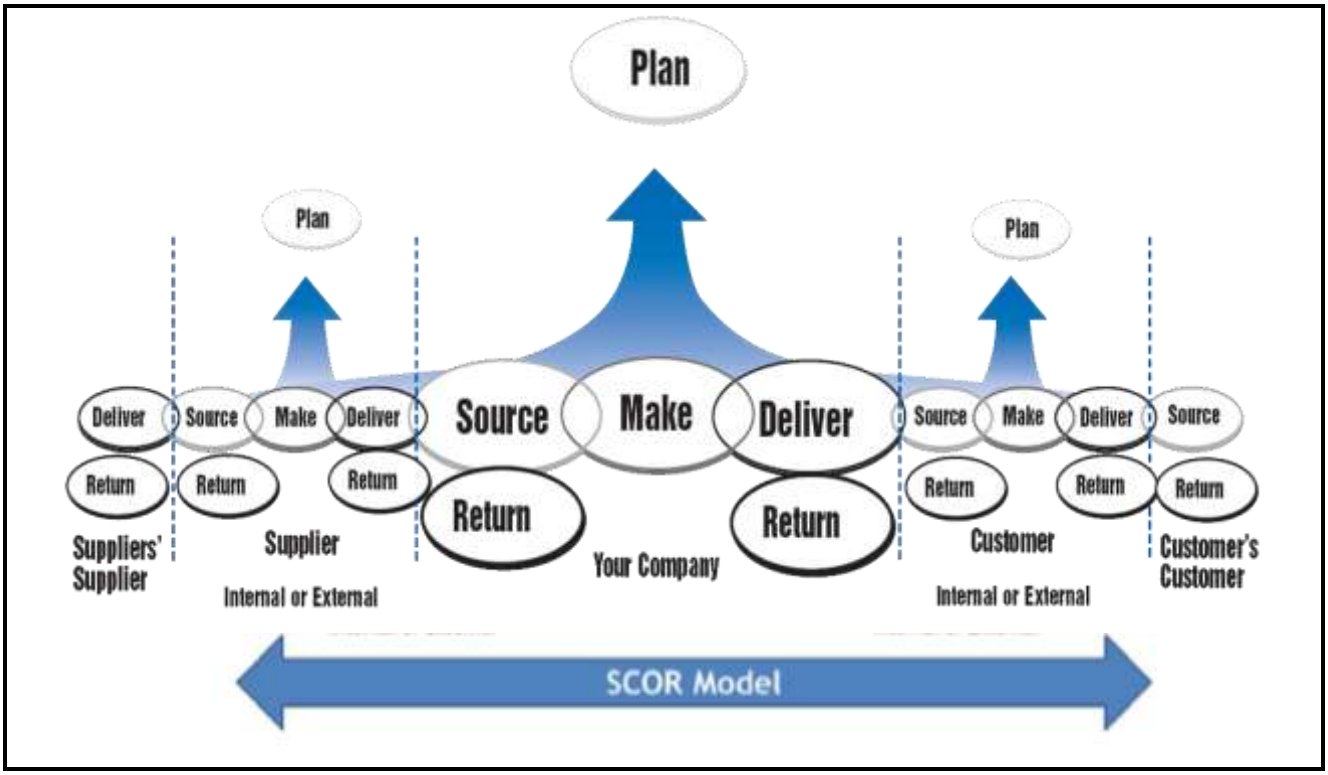


Figure 3.2: SCOR Model

Source: The SCOR Model adapted from The Supply Chain Council (2013)

3.6 SUPPLY CHAIN PERFORMANCE

Different scholars have been assessed supply chain performance in a different manner to assist firms in measuring their SC. Several authors (e.g. Bode, Wagner, Petersen and Ellram 2011) defined supply chain performance as the ability of the SC to deliver quality products and services in precise quantities and at precise times and to minimise total cost of products and services to the ultimate customers of the supply. They also mentioned that in several companies, the accountability for business performance depends on management's abilities. Other authors confirmed that, in modern times, how well an organisation performs depends on the performance of the SC in which the company operates as a partner (Abu Bakar, Lukman, Chong and Lin 2010; Jiang, Stephan and Naudé 2011; Hoejmose, Roehrich and Grosvold 2014). Nevertheless, other authors

declared that a resourceful SC can lead to a range of benefits that comprise cheap costs, better market shares and maintainable relations with buyers, amongst others (Brandenburg, Govindan, Sarkis and Seuring 2014).

Various authors agreed that improving supply chain performance has become one of the critical issues in sustaining competitive advantages for companies (Cai, Liu, Xiao and Liu 2009; Estampe, Lamouri, Paris and Brahim-Djelloul 2013; Trkman, Budler and Groznik 2015). Odongo, Dora, Molnár, Ongeng and Gellynck (2016) confirmed that supply chain performance is the effective measure that contributes to the development of the complete SC as an outcome of cooperative relations between SC members. The SCC framed the SCOR model. The model provided a unified process-oriented approach of communicating among the different SC partners in various decision areas like planning, sourcing, making, and delivering (Gunasekaran, Patel and McGaughey 2004).

Table 3.1: Distinct management processes

SCORE Process	Definitions
Plan	Processes that balance aggregate demand and supply to develop a course of action which best meets sourcing, production and requirements.
Source	Processes that procure goods and services to meet planned or actual demand.
Make	Processes that transform a product to a finished state to meet planned or actual demand.
Deliver	Processes that provide finished goods and services to meet planned or actual demand, typically including order management, transportation management, and distribution management.
Return	Processes associated with returning or receiving goods returned for any reason. These processes extend into post-delivery customer support.

Source: Supply Chain Council, SCOR Version 7 (2005:7)

Most organisations lack a clear vision to improve effective performance metrics for supply chain performance (Shepherd and Günter 2006). Sukati, Hamid, Baharun and Yusoff (2012) reasoned that validating the supply chain performance should include three different types of performance measurement, namely resources measurement, output measurement and flexibility. Each of these types is equally important in measuring the supply chain performance of manufacturing firms. Supply chain performance comprises the effective processes that add to the development of the whole SC as an outcome of cooperative relations between SC members (Gagalyuk, Hanf and Hingley 2013; Nyaga, Lynch, Marshall and Ambrose 2013; Odongo *et al*. 2016). Supply chain performance stimulates teamwork between members of the SC and warrants constant growth of

effectiveness and efficiency of procedures (Anand and Grover 2015; Sundram, Chandran and Bhatti 2016).

3.6.1 Supply chain performance effectiveness

As stated by Haron and Harashid (2007), there are two underlying approaches to the concept of effectiveness in organisation theory, namely external and internal approaches. The external approach to organisational effectiveness, the most extensively used efficiency criterion of a goal attainment model, describes organisational effectiveness as the achievement of a set of organisational goals and objectives (Haron and Harashid 2007). The internal approach to organisational effectiveness, on the other hand, is based on a well-managed system and competent internal processes. An organisation has a well-managed system if its members are highly integrated, information flows smoothly and employees achieve good performance, enjoy job satisfaction and are committed to the organisation.

3.6.2 Organisational performance

Various scholars confirmed that no standardised definition has been established about organisational performance by researchers (Ou, Liu, Hung and Yen 2010). Some authors have measured the organisational performance of manufacturing enterprises using accounting data like return on investment (Hsu, Tan, Kannan and Keong 2009), while other authors have used marketing performance indicators like product quality and new product development (Lin, Chow, Madu, Kuei and Pei Yu 2005). In a study conducted by Kristal, Huang and Roth (2010), the authors presented an argument of economists not using financial data to assess organisational performance. They argued that organisational performance will reflect through financial data, which actually reflects the value of securities of the firm, which will have a bearing on the firm's value. Organisational performance has been demarcated as how well a firm achieves its market-oriented goals as well its financial goals (Hsu *et al.* 2009; Deshpande 2012; Kannan and Tan 2005; Tan, Handfield and Krause 1998).

3.6.3 Risk management

Several authors (Walker, Bourne and Rowlison 2008; Colicchia and Strozzi 2012; Miemczyk, Johnsen and Macquet 2012) believe that companies engaging in the field of

sustainability and implementing SCM practices are disposed to different and sometimes even higher risks than conventional SCM. These hazards include the likelihood of SC disruption due to a smaller supplier base or the risk of loss of reputation when shortcomings are made public by non-governmental organisations (Markley and Davis 2007, Seuring and Müller 2008). The most common risk reduction mechanism is the adoption of standards and requiring the same from suppliers, sometimes even customers (Vachon and Klassen 2008; Seuring and Müller 2008; Gold, Seuring, Beske 2010). At the same time, supplier base reduction and increased cooperation are means to reduce the complexity and uncertainty of an SC which ultimately leads to risk reduction (Sarkis, Zhu, Lai 2011, Colicchia and Strozzi 2012).

3.6.3.1 Risks in supply chains

Various scholars confirmed that, in order to last in a modern business environment, SCRM is authoritative (Kern, Moser, Hartmann and Moder 2012). Sodhi, Son and Tang (2012) defined SC risk as an aspect that allows effective flow of information and products amongst SC associates. The many complex SC risks comprise policy misalignment, guiding requirements, deviations in customer favourites and destruction of crucial assets (Lavastre, Gunasekaran and Spalanzani 2012). Additional risks comprise lack of skills, untrustworthy suppliers, technical and social elements, together with information security, amongst others (Blome *et al*., 2014). Consequently, the core of SCRM is that risks must be dealt with in order to reduce their influence on business accomplishments (Grose and Richardson 2014).

While risk management is widely considered in the context of single firms, risk management in SC is a growing stream of research. Therefore, in order to cope in the contemporary business world, SC risk management is authoritative (Kern, Moser, Hartmann and Moder 2012). SC risk refers to any aspect that delays or limits the permitted stream of information, raw materials amongst SC associates (Sodhi, Son and Tang 2012). SC risks are numerous and complex such as strategy misalignment, regulatory requirements, changes in consumer preferences and deficiency of significant assets (Lavastre, Gunasekaran and Spalanzani 2012). In addition, there are risks such as economic risks, unreliable suppliers, lack of skills, technological and social factors, as well as information security, amongst others (Blome, Schoenherr and Eckstein 2014). Hence,

the core of SCRM is that much effort is required to deal with each of these risks so as to reduce their influence on business achievement (Grose and Richardson 2014).

3.6.3.2 Supply chain vulnerabilities

The competitive advantages of an SC are made possible by the effective mismanagement of its network design and the efficiency of its operational processes. Nevertheless, the threats to the SC make it more vulnerable as its risk exposure is altered by its structure and practices. SC structure globalisation, although a major attribute of an SC structure, is not an exclusive characteristic of SC. However many firms have overseas suppliers and market their products in foreign countries, while other SCs operate purely on a domestic level. The empirical results of Thun and Hoenig (2011) show that globalisation is the most prominent SC risk driver perceived by the respondents of their study. Inactivity risks are associated with lack of responsiveness to changes in the business environment and market conditions.

3.6.3.3 Collaborative risk management

Risk management should be regarded as a key business process that draws the contributions of the different firms of the SC as well as the input from their respective divisions. In SC, the firms work closely to manage the chain as one entity having a channel wide inventory, cost evaluation, planning and risk sharing. In a study conducted by Servaes, Tamayo and Tufano (2009), 63% of the participating companies acknowledge the benefits of a firm's wide approach to risk management. Companies may even incur losses when individual functional divisions attempt to implement risk management approaches in isolation from other departments.

3.7 POPULARISING ORGANISATIONAL LEARNING

Organisational learning and organisational knowledge creation are often tracked as autonomous themes in research. The relations between them incline to be unclear in the literature by scholars who seek to contribute to distinct schools of thought, in particular because they find it hard to reunite fundamental assumptions about knowledge, information, environment, and learning (Argote, McEvily and Reagans 2003; Easterby-Smith and Lyles 2011; Meier 2011). In the complex and messy reality of organisations,

organisational learning and organisational knowledge creation are inevitably going to be mutually dependent. Other scholars confirmed that organisational knowledge creation involves making knowledge created by individuals available, amplifying it in social contexts, and selectively connecting it to existing knowledge in the organisation (Nonaka and Von Krogh 2009).

3.8 KNOWLEDGE CREATION

It is very important to understand the concept of knowledge before knowledge creation. As outlined by Civi (2000), knowledge is the intelligence centre of a company, while Yang (2004) explained knowledge as the limitations covering job-related entities and persons' understandings and their historical working knowledge which is related to their present job. There are many classifications that specify various kinds of knowledge. The most fundamental distinction is between tacit and explicit knowledge. Tacit knowledge inhabits the minds of people and is, depending on one's interpretation of Polanyi's (1966) definition, either impossible or difficult to articulate. Some knowledge is embedded in business processes, activities, and relationships that have been created over time through the implementation of a continuing series of improvements. Knowledge creation is the procedure of learning new knowledge; this knowledge may be explicit or implicit, revealed from information, or by working on preceding knowledge. When knowledge creation is regarded as a process, it refers to the creativities and accomplishments commenced to the generation of new concepts (Mitchell and Boyle 2010: 67).

3.8.1 Organisational knowledge

Organisational knowledge is another concept of which very little information currently exists within literature. As explained by Hatch (2010), organisational knowledge is when the collection of information from several collections is combined and used to create new knowledge, with the resulting tacit and explicit knowledge called organisational knowledge. Spender (1996) defined knowledge as the basis for a dynamic theory in the company. This approach understands knowledge as socially constructed. Spender's (1996) approach outlines organisational knowledge by setting out the meaning of collective knowledge as opposed to individual knowledge.

Spender (1996) considered knowledge as a process rather than as a resource. Spender (1996: 62) differentiated between the knowledge developed by individuals and shared with others, whose chief exponent is Nonaka (1994) and the knowledge that forms a part of the social system. They proposed a key concept to understanding the development of organisational knowledge through language, which refers to the process in which language is not only maintained, but is constantly being developed, based on previous language. These authors argued that organisational knowledge is very dynamic and fragile, and that it develops through a simultaneously open and closed self-referencing process.

3.8.2 Organisational conditions

Organisational conditions are one type of environmental effect which influences the way employees perform tasks, and communicate each other. Several authors confirmed that organisational conditions have a significant effect on the SC partnership (Yap, Das, Burbridge and Cort 2006). Different people and different organisations have different cultures. Sometimes, those heterogeneous cultures do not work together easily and it is necessary for organisations to use specific organisational mechanisms to facilitate ongoing dialogue among the participants. As outlined by Von Krogh (1998), the organisational culture is the carrier of tacit knowledge in an organisation, and cultures with a quality of care facilitate organisational members' communication and sharing of knowledge.

3.8.3 Technology adoption

To facilitate the development of SC strategies and new sources of competitive advantage, an important input factor for SC firms today is their technology strategies and infrastructure. The focus of enterprise systems is shifting from an internal to an external orientation. Liu, Zhang and Hu (2005) claimed that collaborative SCM systems can be supported by enhanced information sharing and collaborative planning among partners and are supported primarily through mechanisms such as information integration and process coordination. In the digital era, an integrated system of information such as enterprise resource planning that treats the functional and different business units of a firm as a cohesive whole would definitely help businesses to excel in achieving the competitive priorities set by SC firms.

3.8.4 Typologies of knowledge and knowledge creation

Several authors mentioned that among the studies concerning knowledge typologies, the difference between explicit and tacit knowledge is the main concept in the literature (Polanyi 1966, Nonaka and Takeuchi 1995, Senker 1995). According to Nonaka and Takeuchi (1995), tacit knowledge is personal, context specific, and therefore hard to formalise and communicate, while explicit knowledge can be described as knowledge that is transmittable by informal or systematic language. Nonaka and Konno (1998) proposed a socialisation externalisation combination internalisation (SECI) model that describes a dynamic process in which explicit and tacit knowledge are exchanged and transformed. Four modes of knowledge creation have been identified in the SECI model.

The socialisation mode (from tacit to tacit) involves sharing tacit knowledge between individuals. The externalisation mode (from tacit to explicit) relies on similarities, metaphors, hypotheses and models expressed through articulated language. The combination mode (from explicit to explicit) involves converting explicit knowledge into more complex sets of explicit knowledge. Finally, the internalisation mode (from explicit to tacit) conveys explicit knowledge into tacit knowledge. In addition, it will be beneficial to consider the conditions and environments that facilitate knowledge creation. Nonaka went further and identified knowledge management processes as presented in figure 3.3 below:

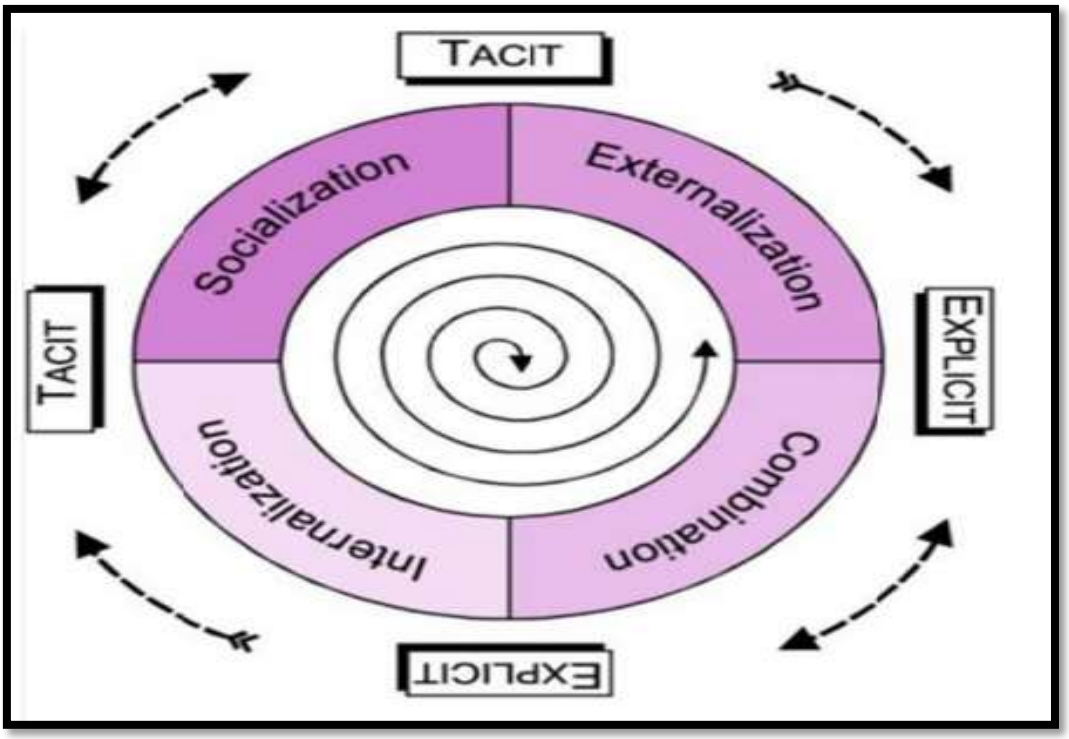


Figure 3.3: SECI model

Source: Nonaka (2007:17)

3.8.4.1 Socialisation

As defined by Takeuchi and Nonaka (2004: 60), knowledge creation usually commences when individuals, through direct contact, share information. Harsh and Nold (2009) confirmed that socialisation outlines a setting where people share private experiences, mental modes, beliefs, perspectives and tacit knowledge when there is individual direct contact. Therefore, in businesses the workers share their knowledge, principles and perceptions, thus allowing the experienced and senior staff to share tacit knowledge with their juniors (Harsh and Nold 2009). They also mentioned that, when workers leave the firm, knowledge can be still held by other employees.

3.8.4.2 Externalisation

Nonaka and Takeuchi (1995: 64) clarified externalisation as a technique of articulating tacit knowledge into unambiguous concepts. They further confirmed that, over externalisation, tacit knowledge develops explicit knowledge. Externalisation is a technique whereby tacit knowledge is adapted in such a way that it can be conveyed to others outside of the

immediate group. This can be done via various techniques such as e-mails, and any other systems of media that communicate knowledge broadly (Nold 2009: 10). Further, Nord (2009) also provided samples of externalising knowledge over communication with different people, writing, drawing a diagram, giving a presentation. Externalisation ensures that tacit knowledge is conveyed and organised into explicit knowledge in order to easily convey it to additional workers, hence permitting knowledge to stay in the firm even if the experienced workers leave the organisation.

3.8.4.3 Combination

Combination means that knowledge is changed to clear, direct knowledge in order to form new explicit knowledge. Nord (2009: 9) confirmed that combination is a procedure whereby people who are not part of the immediate group of personal contact obtain knowledge that has been shared over common media to mix the communal knowledge through current tacit knowledge. It is a system of merging new knowledge from present explicit knowledge (Nonaka and Takeuchi 1995: 67).

3.8.4.4 Internalisation

Internalisation comprises altering explicit knowledge into tacit knowledge. Nold (2009: 9) simplified this by stating that when people obtain new knowledge they process it through their personal tacit knowledge and by integrating knowledge from internal and external sources generate a completely new piece of knowledge. Nonaka and Takeuchi (1995: 69) confirmed that people's exposure to socialisation, externalisation and combination results in assets when they are adopted into individuals' tacit knowledge sources through sharing of knowledge and skills. Through documentation people can internalise their skills, which in turn enhances their tacit knowledge. According to Jennex (2007: 11), through manuals explicit knowledge can be is transferred successfully to other, which indirectly provides them with the experiences of others. Retaining and transferring knowledge takes place when people interchange tacit and explicit knowledge (Jennex 2007: 8).

3.8.5 Types of knowledge

3.8.5.1 Explicit knowledge

Several authors on knowledge management agree that one of the two comprehensive scopes of knowledge is explicit knowledge (Sanchez 2005). Kim (2000) defined explicit

knowledge as rule-based knowledge that is used to tie activities to circumstances by raising suitable guidelines. As outlined by Tagger (2005), explicit knowledge can be defined as knowledge that is learnt and that the holder can deliberately obtain. It may also refer to information that has been learnt from explicit guidelines or by means on constant repetition. Explicit knowledge is the kind of knowledge that monitors the behaviour of responsible performance.

3.8.5.2 Tacit knowledge

Sanchez (2005) also mentioned that other comprehensive measurement of knowledge is tacit. As mentioned by Kim (2000), tacit knowledge comprises the hands-on skills, greatest practices, special know how and perceptions. Chisholm and Holifield (2003) outlined tacit knowledge as quiet information with implicit knowledge concerning know-how within an institution or firm which has not been written down or officially articulated but is nonetheless vital to the effective processes of that company. Tagger (2005) observed tacit knowledge as a main feature of a professional who can act, work and decide about matters without having to directly reference the declarative knowledge behind the decisions. The expert works without any explicit theory defining how to work in that particular way, they just perform skilfully without any serious deliberation or hesitation.

3.8.6 Knowledge assessment

Knowledge assessment includes enquiring about a clear account of the knowledge resources available in firms, with a view to allow the companies to know the knowledge resources that they own and be able to align their strategic goals with the accessible knowledge resources (Musana 2006). Dixon (2000) confirmed that knowledge assessment involved investigating a company to classify their knowledge resources and determine how they are being leveraged. Hylton (2002) defined knowledge assessment as an efficient and technical inspection and assessment of the explicit and tacit knowledge resources of a firm in order to determine threats relating to loss of corporate knowledge or indeed existing benefits from the knowledge resources available in the firm.

3.9 THE CONCEPT OF TRUST

As confirmed by Laeequddin, Sahay, Sahay and Waheed (2012), trust is not a compulsory attitude; it is a matter of choice. A firm/organisation has to compare a level of trust and a level of perceived risk and then decide to engage in the relationship. Therefore, the stronger the relationship between entities, the higher self-trust is. Other scholars believe that when partners of an SC have access to both parties' information sharing and complete knowledge, then trust is not required (Laeequddin *et al*. 2012). Hence, to get to this point, companies have to take care of their relationship and create a suitable level of trust.

There are few studies comparing the level of trust existing in SC partnerships established in different countries, as noted by Dyer and Chu (2011). These authors recommended that future research should explore the conditions in which trust occurs. Other authors have conceptualised the influence several factors have on trust (Laeequddin *et al*. 2012) but have not explored the potential influence of SC characteristics, such as supply involvement in new product development and quality of buyers' products. Trust in SC is very important since it is becoming global and is continuously connecting companies from different institutional contexts (MacDuffie 2011; Laeequddin *et al*. 2012). A strategic orientation in SCM is a key aspect to be competitive (Yeung 2008) and trust has been pointed out as an asset for long-term partnerships (Cannon, Doney, Mullen and Petersen 2010). However, there are still some gaps in the literature on SCM. The components discussed next are very important within the context of trust in SC.

3.9.1 Supply chain collaboration

According to various scholars, the value of collaboration is as a strategic preference in increasing in today's extremely globalised and competitive SC (Cao and Zhang 2011; Hudnurkar, Jakhar and Rathod 2014; Hingley, Lindgreen and Grant 2015). Therefore, different SCM scholars Ramanathan and Gunasekaran 2014; Hingley *et al.* 2015) support this opinion as they reckon it involves moving from a transactional mode to one which involved collaborative operation. Bolstorff and Rosenbaum (2012) clarified that reason for moving to SCC is the synergistic value which is the outcome of SC partners' networks. Therefore, networking and partnerships between SC associates results in effective lead

times in procurement, production competence and combined asset operation, which eventually converts into value-added monetary performance (Nyaga, Whipple and Lynch 2010; Hudnurkar *et al*. 2014). It is confirmed that SCC is an extensive conception including combined planning, information sharing, communication, risk management and benefit sharing (Fawcett *et al*., 2012). Thus, to have maintainable competitive advantage and cut risk experience, relationship longevity, trust and communication are vital factors to ensure success (Miocevic and Crnjak-Karanovic 2012; Kumar and Nath 2014; Hingley *et al*. 2015).

3.9.2 Supplier communication

As clarified by different scholars, with thorough competition characterised via time-based rivalry, the tactical character of communication in SCC is broadly recognised (Wang, Ye and Tan 2014; Han and Dong 2015). Lotfi, Mukhtar, Sahran and Zadeh (2013) mentioned that SC communication contains clear information sharing on procurement, inventory management, demand and sales forecasting, order processing and technical proficiency. As stated by different scholars, communication diminishes doubt and resourceful conduct, diminishes new product growth prime times and allows SC associates to be more receptive to market necessities than competitors (Han and Dong 2015; Wang *et al*. 2014). Thus, scholars confirmed that competitive advantage might only be reached if SC associates communicate frankly, frequently and their communication is grounded on accurate updated information. It is essential for SC associates to include effective information-sharing structures when working together.

3.9.3 Supplier trust

Scholars mentioned that trust is considered as a critical interactive aspect that improves the development of enduring combined collaboration between SC associates (Yeung, Selen, Zhang and Huo 2009; Kumar and Nath 2014). Thus, cooperative associations entrenched in trust produce trustworthiness in information distribution, diminish opportunistic conduct, lessen publicity to threat and uphold improvement among SC associates (Chen, Daugherty and Landry 2009). Chowdhury (2012) clarified that trust will lead to SC associates planning together which in turn will ensure knowledgeable mandate predicting, lessening of doubt and controlling of conflicts of interest. Trust is confirmed when cooperative relations move beyond predetermined responsibilities to contain

knowledge sharing, improving abilities of SC partners and combined policy creation (Fawcett *et al*. 2012). These mechanisms need be entrenched in SC relations to confirm that long-term trust is developed.

3.9.4 Relationship longevity

Liu, Luo and Liu (2008) stated that longevity of the SC relationship indicates how long the relationship among customers and suppliers has existed. In long-term relationships, this partnership thus benefits SC partners due to aspects such as information and skill sharing (Cao and Zhang 2011). Through a long-term association, the SC partners can determine the size and flexibility of the shared system, control operational costs, and improve the value of products and facilities together with supply chain performance (Nyaga *et al*. 2010). The benefits of cultivating jointly valuable long-term associations with SC associates by far surpass the threats, and thus ensure a worthwhile business.

3.10 SUPPLIER DEVELOPMENT

In the intense business competitive environment, companies are relying more on their SC as a source of competitive advantage. Different scholars describe supplier development as a firm's endeavour to form and uphold a system of knowledgeable suppliers (Rajendra, Mahajan and Joshi 2012). Suppliers have a significant role to play in enterprise development. Therefore, when suppliers perform well it is to the advantage of the purchasing firm's position in the market whereas those performing poorly will inhibit the performance (Dalvi and Kant 2015; Modi and Mabert 2007). Suppliers have played strategic roles in organisations and have significantly engaged in creating a competitive advantage and their actions have a positive impact on the organisation's performance (Jabbour and Jabbour 2009). Various studies have suggested strategies to improve supplier performance.

A number of studies have described strategies that buying firms should adopt in order to improve the rate of supply, indicating that this can be addressed by organisations becoming increasingly involved in supplier development programmes to improve their supplier performance and build competitive advantage (Modi and Mabert 2007; Alaez-Aller and Longas-Garcia 2010). Supplier development is when buying firms aim to develop the

functioning of their suppliers. Friedl and Wagner (2012) mentioned that initiative comprises assets and associations being maintained by effective contracts between parties, in this case – the buyers and suppliers. Hence, the purchasing company has to consider supplier development creativity that is eccentric, which implies that that business started with one supplier cannot simply be moved from another relationship between buyer and supplier (Friedl and Wagner 2012).

3.10.1 Supplier integration

There is growing evidence in SC research that the higher the level of integration of supplier and customer in the SC, the greater the potential benefits. Integrated SC is enabling organisations to reduce inventory and costs, add product value, extend resources, accelerate time to market and retain customers. Therefore, in today's dynamic and complex business environment, inter-firm business relationships are regarded as having huge implications for the firm's business and competitiveness since an individual firm is no longer able to deal with all business operations without involving other business relationships (Kato and Nunes 2012).

The role of supplier development is considered to be significant, as without active and positive participation of supplier(s), it is difficult to develop a successful SC network (Chavhan, Mahgan and Joshi 2012). To gain and maintain a competitive edge, companies strive to incorporate the activities of other partners of the SC. Integration can be virtual or vertical. In the case of virtual integration, there is a network or partnership and SC networks, whereas vertical integration is based on hierarchical solutions dealt by the ownership. Consequently, the importance of network or virtual integration becomes more prominent.

3.10.1.1 Black Economic Empowerment development construct

Black Economic Empowerment (BEE) in SA was originally Broad-Based Black Economic Empowerment (BBBEE) which was subsequently amended to BEE in 2014 to serve a more integrated purpose as a government strategy of rectifying the imbalances of the past. BEE was named by Davies in 2014 as an economic imperative in the Government Gazette of 27Jan 2014, leading to the signing of the act by the President to be used in the public sector. BEE has been scarcely equated to the improvement of an entrepreneur class

focusing on inspiring black owners in the business world. Therefore, the policy is intended to increase control of ownership and management of possessions by black people in an unbiased and sustainable manner in all sectors of employment and governments. As observed by Andrews (2008), BEE in SA should be implemented based on the organisational theory which entails various intra and inter-firm relational structures which established networks that influence citizens to participate in the economic well-being activities. Hence, BEE in SA should restructure socio-economic statuses of the previously disadvantaged people despite their racial backgrounds.

BBBEE has become not only a developing problem for SMEs in SA, it is a critical concern on the SA government's agenda (Kruger 2011). Chingwaru (2014) and Kruger (2011) agreed that policies such as BBBEE are focused at eradicating the benefaction of past regime. The DTI (2016a) specified that the purposes of BBBEE policy are mainly to overcome the imbalances of apartheid, and thus warrant that significantly more black people own and manage enterprises. Thus, the aims of the BBBEE approach comprise increasing the number of black individuals in managerial and high-ranking positions and to guarantee improved salary levels of black people in qualifying BBBEE firms (DTI 2016a; Republic of South Africa 2014).

The National Youth Policy (2015) declared that the National Development Plan (NDP) expects that by 2030 there will be 90% new jobs created in small and expanding firms. It was established that SMEs in SA have been massively impacted by BBBEE, which expects firms to place a higher emphasis on investment in black ownership and control (Steyn 2015). Other scholars specified that some business leaders urge the BBBEE Act to be reviewed because it has failed to meet its objectives (Benjamin 2014; Luiz and Gaspari 2007). Moreover, Benjamin (2014) acknowledged that both black and white business leaders have identified that the policy has failed, and its legislation has done nothing to support small businesses. The purpose of this study is to assist policy makers to identify gaps that arise from the BEE Act. Chingwaru (2014) recommends that there must be a review and modification of the BBBEE legislation to become investor friendly. Thus, based on the Small Business Project (SBP 2015), Love and Roper (2015) identified that SMEs are the biggest employers on a global scale. Consequently, BBBEE strategy management is authoritative in contributing towards the success rate of SMEs.

Consequently, SMEs are exposed to the advantages and disadvantages of BBBEE agreement, with the benefits encompassing financial improvement and the inadequacies being administrative problems (Oosthuizen and Naidoo 2010; Van der Nest 2004). Therefore, it is noted that there are insufficient local studies piloted on BBBEE within SMEs in SA (Janse van Rensburg and Roodt 2005; Moloto, Brink and Nel 2014; Oosthuizen and Naidoo 2010). Most studies have focused on Employment Equity (EE), BEE and Affirmative Action (AA) and not exactly on BBBEE. Chinyamurindi (2012, 2016, and 2017) specified that it is necessary to grasp the role of such legislation qualitatively, as this has been conferred to help understand skills holistically in helping to make sense of BBBEE. There are three concepts of BEE which are interrelated, in that the BBBEE legislation is the outcome of the social inequalities of the past and such biases are affecting SMEs in the SA economy.

3.10.1.1.1 Social justice

Different scholars agree that social justice is predominately articulated as the human rights, equality and democracy of an economy (Rawls 1999; Theoharis 2007). BBBEE is a sample of one of the strategies that has been implemented to maximise the significance of the country's citizens. Burger and Jafta (2010), Human (2006) mentioned that the BBBEE strategy was formulated with valuable purposes for the economy; however, the implementation and accomplishment of its objectives may only remain an untruth. Pooe (2013) declared that government cannot depend on SA citizens to self-regulate for the implementation of such a precarious transformational policy and also distinguishes that the importance of equality specified in the constitution of SA may not be the greatest technique to attain social justice.

3.10.1.1.2 Small and medium enterprises

Love and Roper (2015) confirmed that there are two terms used interchangeably in the corporate environment in SA, namely SMEs and small, medium and micro enterprises (SMMEs). Various scholars confirmed that SMEs in SA are registered enterprises with less than 250 workers (Le Fleur *et al*. 2014). As mentioned by Van Wyk (2010), SMEs encompass micro (very small) SMEs. Therefore, micro enterprises are small businesses that have fewer than five compensated employees, and precise small enterprises have fewer than ten paid workers. The Department of Trade and Industry (DTI) (2017) and

Gordhan (2013) confirmed that small enterprises comprise less than 50 paid people working for them, while medium enterprises have a maximum of 100 workers, excluding certain firms where the restriction is 200 workers.

Moreover, big businesses are also essential for economic development as they employ more than 250 workers (Amra, Hlatshwayo and McMillan 2013; Kushnir, Mirmulstein and Ramalho 2010). Other scholars argued that if small there are no small businesses, the economy would not grow (Cant and Wiid 2013). Hence, SMEs do not only contribute to economic development, they also make open doors for the previously disadvantaged groups through BBBEE.

3.10.1.2 Broad-Based Black Economic Empowerment

As mentioned by DTI (2016b), BBBEE involves the role of all black individuals in SA. Hence, the words 'black people' do not just mean the black race. Van Wyk (2010) described it as black individuals, diverse races and Indians. The DTI (2016a) further mentioned that the term 'black people' comprises women, employees, youth and local people living with disabilities and those living in rural areas. Diverse academics have stated that the contemporary SA regime implemented BBBEE policy as an economic transformation where the strategy permits for growth in the number of black people who endeavour to own businesses in the state although reducing the perceptions that exist in income (Emuze and Adam 2013; Tait 2012).

Jeffery (2013) recognised that although various people SA criticise the BBBEE policy, the African National Congress government seems more determined than ever to execute the strategy. It has further been acknowledged that the policy would not work properly since resources such as skills, funds and entrepreneurship are rare (Jeffery 2013). Therefore, the SME strategy was developed as a means to rescue the SA economy, but the BBBEE regulation fails to serve it purpose (Chingwaru 2014). Moreover, Wehmhoerner (2015) confirmed that BBBEE has not helped to eradicate the differences of the past. Thus, little growth regarding the BBBEE policy since the apartheid era is evident (Uppal 2014). There is not an indication of a framework for effective BBBEE in SA (Kasuto 2009).

Policies often fail because they are not effectively prepared and applied (De Klerk 2008). It has been acknowledged that a lack of consensus exists amongst scholars, legislators and

SA people regarding the application of BBBEE (Baloyi 2012; Ngwenya 2007; Pooe 2013). It was fundamentally recognised that BBBEE has a negative influence on the economy and production. Moreover, Kleynhans and Kruger (2014) acknowledged that BBBEE is influencing firms negatively because of the expensive charges related to BBBEE compliance. The BBBEE criticisers view it as a fraudulent programme and the positivists regard it as a strategy contributing to all SA people as one community, although it does not contribute to the reallocation of capital and middle class lifestyles (Thabe 2010), therefore authorising PDIs to be able to compete with all the race groups of SA equally.

3.10.1.3 BEE Skills development:

It is crucial that black people need to be trained to develop their skills in order to be employable in government organisations and private firms (DTI 2006: 9). The high number of low skilled personnel and high number of skilled labour force do not match the investment of skills in the labourers. For a solution to address or eliminate such a crisis, BEE demands appraised companies to inspire mentorship programmes within their companies. Mathura (2009: 47) mentioned that enterprises need to provide proof of the submission and implementation of these programmes in their companies and this must be depicted in their annual BBBEE reports. Failure to comply in this classification renders a zero score. As declared by Mathura (2009: 48), partnership and joint venture of emerging entrepreneurs and small businesses are encouraged for enterprise development. Therefore, fostering partnerships is significant for modifying wealth to black communities through sharing skills and investment techniques. Black-owned firms and recognised firms can enter into jointly beneficial partnerships which may entail outsourcing of labour to execute massive programmes (DTI 2014: 31).

3.11 CHAPTER SUMMARY

This chapter proposed a framework of the relationship between SCM and supply chain performance. Organisations are facing different kinds of challenges in their effort of competing in today’s dynamic global markets. To remain competitive, organisations must recognise the importance of SC practices that improve organisational performance, but also coordinate with SC partners to improve joint performance. Organisations are driven by four major factors of forecasting, planning of inventory, SC efficiency and information accuracy. Effective management of these factors helps the organisation to distribute the

product or service to their customer at the right time, place and price in an effective and efficient manner. The basic objective of SCM is to optimise performance of the chain to add as much value as possible for the least cost possible. In other words, it aims to link all the SC agents to jointly cooperate within the firm as a way to maximise productivity in the SC and deliver the most benefits to all related parties. However, there are still some gaps in the literature on SCM and SME's.

In today's increasingly globalised economy, SMEs are now considered to be the major source of dynamism, innovation and flexibility in emerging and developing countries, as well as to the economies of most industrialised nations. Most organisations lack a clear vision to develop efficient performance metrics for supply chain performance. In SCs, the firms work closely to manage the chain as one entity having a channel-wide inventory, cost evaluation, planning and risk sharing. Knowledge is growing in importance as a key to a sustainable competitive advantage for all successful organisations. To facilitate the development of SC strategies and new sources of competitive advantage, an important input factor for SC firms today is their technology strategies and infrastructure. In the intense business competitive environment, companies are relying more on their SC as a source of competitive advantage.

CHAPTER FOUR: RESEARCH METHODOLOGY

4.1 INTRODUCTION

This study investigated the influence of trust on supplier development, knowledge creation and supply chain performance. SC has become an important focus of competitive advantage for business organisations. SCM cuts across several disciplines such as logistics, operations management, marketing, purchasing, and strategic management, to name but a few. SCM is of a fragmented and multidisciplinary nature. The previous chapters (Chapters Two and Three) discussed the theoretical and empirical literature of the current research variables constructed on the study problem and its objectives correspondingly.

This chapter (Chapter 4) provides a discussion on the research methodology, which emanates from translating the current study's research conceptual framework into varied research procedures. The chapter starts with a discussion on the research methodology, followed by the research paradigm, research design, research strategy, and the research approach. The chapter then proceeds with a discussion on the sample design (including, the target population, sampling frame, sampling technique, and sample size), data collection (including the research instruments, operationalisation and measurements), data analysis, reliability and validity. The chapter then concludes with ethical considerations pertaining to the research.

4.2 METHODOLOGY

Different scholars described methodology as the events by which researchers go about their work of describing, explaining and predicting phenomena (Rajasekar, Philominaathan and Chinnathambi 2013: 5). A methodology delivers a piece of research with its philosophy, the values and assumptions which drive the foundation for the investigation as well as the standards that are utilised for the interpretation of information and the drawing of conclusions (Bailey 1994). This includes the overall approach to a problem that could be put into practice in a research process, from the theoretical underpinning to the collection and analysis of data. The choice of a research methodology depends on the primary

drivers, topic and the specific research questions. Saunders, Lewis and Thornhill (2009) describe research methods as techniques and procedures used to obtain and analyse data, and stated that the research methodology is the theory of how research should be undertaken. A research approach consequently assists both the investigator and the reader to understand what the study involves.

4.3 RESEARCH PARADIGM

According to Collis and Hussey (2009), a research paradigm is a philosophical framework that guides how research should be conducted, based on people's philosophies and their assumptions about the world and the nature of the knowledge. They introduce philosophies as the use of reason and argument in seeking truth. Consequently, any research would belong to a philosophy. Easterby-Smith, Thorpe and Lowe (2012) recognised research philosophies as the base for effective research design and argued that failing to adhere to philosophical issues can affect the quality of the research harmfully. It helps to clarify the research design, it helps the researcher to identify which research designs will work and which research designs will not work under different circumstances and it also helps the researcher to identify and create research designs that may be outside their past experience.

The word paradigm comes from the Greek term paradeigma meaning pattern and was first used by Kuhn (1962) to indicate a theoretical structure which provided a suitable framework for researchers to investigate problems and find solutions. The philosophical underpinning of methodology falls between Nomothetic and Ideographic stances. Nomothetic theory depends on the scientific method, where the researcher follows a protocol and testing of hypotheses by using quantitative techniques. As clarified by Gill and Johnson (2002), the ideographic approach assumes that one can understand the social world only by obtaining first-hand knowledge of the subject under investigation. Since this is a quantitative study it will only focus on positivism. As confirmed by Saunders, Lewis and Thornhill (2007), in positivism the researcher can duplicate the findings and emphasise on quantifiable observations that lend themselves to statistical analysis.

4.3.1 Positivism

The positivist paradigm of exploring social reality is based on the philosophical ideas of the French philosopher, August Comte. According to him, observation and reason are the best means of understanding human behaviour; true knowledge is based on experience of senses and can be obtained by observation and experiment. At the ontological level, positivists assume that the reality is objectively given and is measurable using properties which are independent of the researcher and their instruments. In other words, knowledge is objective and quantifiable. Positivistic thinkers adopt scientific methods and systematise the knowledge generation process with the help of quantification to enhance precision in the description of parameters and the relationship among them. Positivism is concerned with uncovering truth and presenting it by empirical means (Henning, Van Rensburg and Smit 2004: 17).

Walsham (1995) specified that the positivist position maintains that scientific knowledge consists of facts while its ontology considers the reality as independent of social construction. If the research study consists of a stable and unchanging reality, then the researcher can adopt an objectivist perspective: a realist ontology, a belief in an objective, real world and a detached epistemological stance based on a belief that people's perceptions and statements are either true or false, right or wrong; a belief based on a view of knowledge as hard, real and acquirable; they can employ a methodology that relies on control and manipulation of reality.

Positivism is in agreement with the pragmatist interpretation that information comes from human involvement. It has an atomic, ontological interpretation of the world that involves separate, noticeable components and events that interrelate in a recognisable, determined and consistent way (Saunders, Lewis and Thornhill 2012). Furthermore, in studies on positivism, the researchers are self-governing from the research and there are no human benefits in the study. Crowther and Lancaster (2008) advised that as a common regulation, positivist research frequently accept a rational method, while the inductive study method is typically related to a phenomenology viewpoint. Furthermore, in positivism studies, the investigator needs to focus on facts, but phenomenology focuses on the explanation and makes provision for human attention.

The five key values of the positivism viewpoint can be summarised as follows:

i) No differences exist in the research logic across the various sciences.

ii) The investigation must aim to clarify and predict.

iii) The study must be empirically visible through human minds. Inductive thought must be used to improve testimonials (hypotheses) to be verified through the study method.

iv) Science and common sense are not the same thing. The researcher must not allow common sense to influence their findings.

v) Science has to be value-free and only logic should be used to judge it (Crowther and Lancaster 2008).

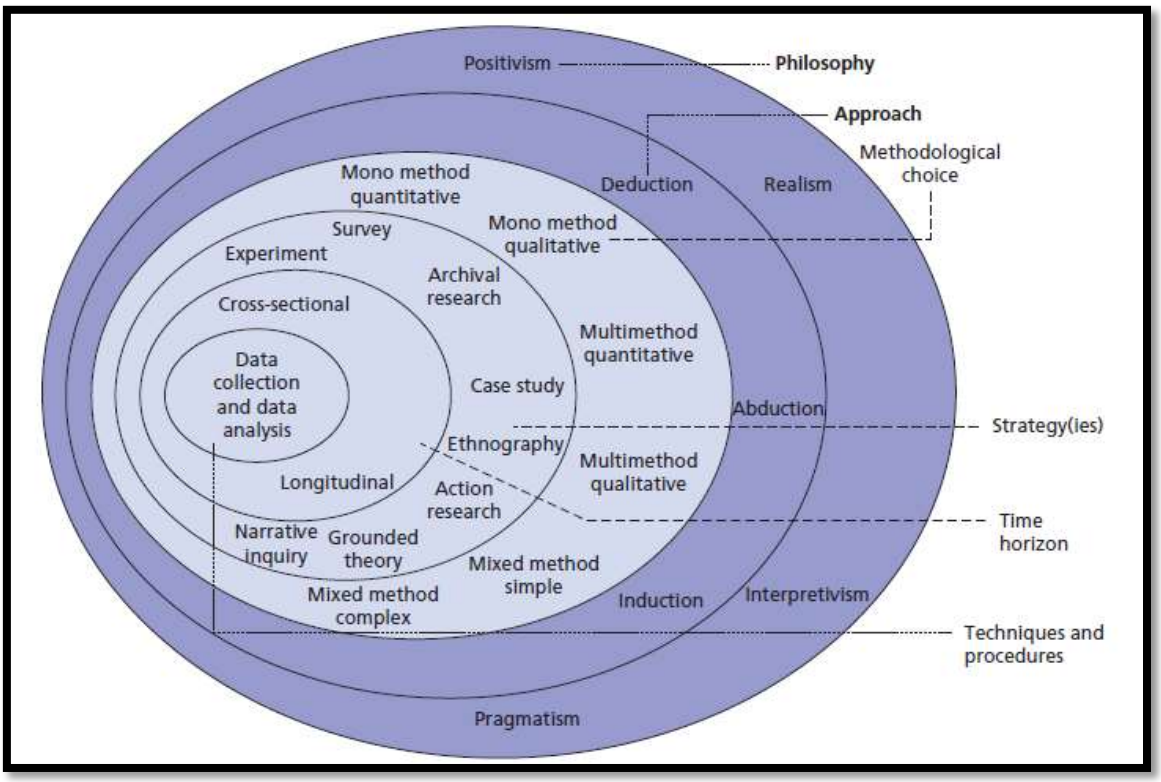


Figure 4.1: Research methods

Source: Saunders, Lewis and Thornhill (2012)

As shown in Figure 4.1, positivism and interpretivism are two jointly exclusive models about the environment and bases of information. Scholars, generally knowledgeable academics, often modify the adapted theoretical expectations (Collis and Hussey 2014).

4.4 RESEARCH DESIGN

Research design is developed once the background, rationale, problem statement, research questions and objectives are dealt with. The researcher needs to find a method for answering the research questions of the study. The researcher chooses a technique to conduct a research and also chooses the kind of study. According to Denzin and Lincoln (2011), research designs are types of inquiry within qualitative, quantitative, and mixed methods that provide specific direction for procedures in a research design, which leads to them being called strategies of inquiry. This study adopted a quantitative research design. The study particularly utilised descriptive statistics. Engel and Schutt (2010: 09, 2013: 18), Morris (2006: 96) stated that descriptive questions are normally overarching and involve the gathering of facts. As confirmed by different scholars, such as Adler and Clark (2008:14), Marlow (2005:32) and Rubin and Babbie (2010: 41), descriptive research comprises large quantitative studies in which survey research within the correct sampling framework is attempted. This kind of data is normally displayed in graphs, tables, frequency distributions, scatter and circle diagrams (Gomm 2009: 92).

Various authors (Babbie 2010: 80; Babbie and Mouton 2010: 80; Struwig and Stead 2001:8) corroborated that both quantitative and qualitative data can be gathered from a descriptive approach. One can, however, say that descriptive studies would focus more on quantitative data where large numbers of participants are involved. In descriptive studies one might find a relationship between two variables, but still not be able to say why this relationship exists (Mitchell and Jolley 2010: 205). Babbie (2010: 93) and Barker (2003: 116) added that in descriptive studies there is thus no indication of determining cause and effect relationships, but the aim rather is to describe situations and events and to determine accurately what the real situation is. Barker (2003: 116), Gravetter and Forzano (2003: 131), Mertens (2009: 145) and Monette, Sullivan and Dejong (2011: 4) view this kind of research as an attempt to discover facts or to describe reality accurately as it exists naturally in order to gain an overview of the current status of a situation. Mertens (2009: 146) mentioned that descriptive data is typically derived from the collection of needs assessment data before an intervention takes place, or when a potential revision of a programme may be planned.

4.5 RESEARCH STRATEGY

Research strategy describes the directions in which research is conducted. However, research methods refer to ways of testing the validity of hypotheses. Yin (2009) classified three conditions that have to be considered when selecting the appropriate research strategy. They are the type of research questions posed, the extent of control an investigator has over the actual behavioural events, and the degree of focus on a contemporary event. A research strategy also depends on the philosophical stances on human nature, ontology, methodology and epistemology.

Saunders, Lewis and Thornhill (2009) elaborated that in addition to the research questions, objectives and the philosophical underpinnings of the research, the choice of research strategy will be directed by the extent of existing knowledge and the amount of time along with other resources available. Research strategies commonly used by business and management researchers are experiments, surveys, case studies, action research, and ethnography (Easterby-Smith, Thorpe and Jackson 2012; Remenyi, Williams, Money and Swartz 2003 and Saunders *et al*., 2009). Experiment and survey methods reside closer to the positivism end of the continuum. Therefore, the survey research strategy was considered appropriate for the present study since data was collected by means of a questionnaire from a large sample (Malhotra 2010: 312).

4.6 RESEARCH APPROACH

Cohen, Manion and Morrison (2011) confirmed that there are three research approaches: quantitative, qualitative, and mixed-methods research. Each research approach reflects a set of ontological and epistemological assumptions. Qualitative researchers assume that social reality exists independent of the knower and knowledge is subjective and personal. Hence, they regard themselves as insiders and aim at interpreting individual experiences in a unique social context. Mixed methods research has been defined in a variety of ways which can make it a difficult concept to understand (Niglas 2009). It has been referenced as the type of research in which a researcher combines elements of both qualitative and quantitative research approaches for the comprehensive purposes of extensiveness and depth of understanding and validation (Johnson, Onwueegbuzie and Turner 2007).

Creswell and Clark (2011) declared that this approach enables a greater degree of understanding to be formulated than if a single approach were adopted for specific studies.

This research used a quantitative approach which proceeds from descriptive analysis to inferential approach (Creswell and Clark 2011: 204). Therefore, quantitative studies allow for statistical tests and estimates about relationships between research constructs as well as generalising inferences about the defined target population. Thus, since the main focus of this study was to examine the influence of trust on supplier development, knowledge creation, and supply chain performance in both the public and private sectors in KZN, the research approach was quantitative in nature.

Quantitative research is also considered as an inferential approach towards research (Rovai, Baker and Ponton 2014). Quantitative researchers tend to employ measurement, experiment, and statistical analysis to answer the research questions, whereas qualitative researchers prefer observations, interviews, and content analysis. Verial (2015) confirmed that quantitative data is data in number form. As Botti (2005: 188) clarified, quantitative researchers aim to adhere to the scientific model and to use increasingly sophisticated statistical techniques to measure social phenomena. Data collection in quantitative research is guided by the fundamental principles that the gathering is conducted in a way that it is independent from the expectations of the observer and that the data is a true representation of a phenomenon (Botti 2005: 188).

Botti (2005:188) also identified the following objectives of quantitative data collection:

- **Empiricism:** Encompasses observation and measurement that can be replicated by others.
- **Measurement:** Deals with careful and explicit definition of the tools (scales or questionnaires) or devices (instruments such as sphygmomanometer) used to measure phenomena.
- **Replicability:** Deals with ensuring that the results obtained can be repeated in replication studies by other investigators.
- **Objectivity:** Comprises seeking to eliminate any biases in the way data is collected and interpreted so that conclusions reflect the true facts about a phenomenon.

4.7 SAMPLE DESIGN

Sampling is a consideration in both qualitative and quantitative research. A sampling design includes a target population, sample frame, sampling techniques, and sample size. A sample is a group of people, objects, items, or units taken from the larger population. In other words, researchers only select a portion of the population to represent the entire population.

4.7.1 Target population

Saunders, Lewis and Thornhil (2016) confirmed that a researcher may redefine the target population as something more manageable and to which the researcher would ideally like to generalise their results. It is the group (usually people) about whom a researcher would like to draw a conclusion. The current study targeted the KZN provincial hospitals which include Inkosi Albert Luthuli Central Hospital, Stanger Hospital, Ngwelezana Hospital and Lower Umfolozi Hospital. Since the study was conducted in both the public (provincial hospitals) and private sector, the main focus for the private suppliers was on the suppliers of hospital goods, equipment and furniture.

The targeted private suppliers who work closely with the DoH and who supply medical equipment and furniture included Ecomed Medical, SSEM Mthembu Medical (Pty) Ltd, BioClin Solutions cc, Respiratory Care Africa, Delta Surgical SA Pty (Ltd) as well as Siyakhanda Medical Services. The study also focused on the formal SMEs and the sample was drawn from the University of Zululand database, KZN. The current population of hospitals in the KZN province is 73, based on the DoH (KZN) database and the current population of the formal SMEs registered with the University of Zululand is 3000.

4.7.2 Sampling frame

According to Neuman (2006), a sampling frame is the checklist that of all aspects of the population that need to be investigated. It is a set of elements from which a researcher can select a sample of the chosen populace (Fowler 2002). The population sample for this study was obtained from the 73 KZN provincial hospitals, registered on the DoH database and the formal SMEs on University of Zululand database, as stated above in Section 4.7.1. The study sample was also drawn from private suppliers who work closely with the DoH supplying medical equipment and furniture and included Ecomed Medical, SSEM

Mthembu Medical (Pty) Ltd, BioClin Solutions cc, Respiratory Care Africa, Delta Surgical SA Pty (Ltd) and Siyakhanda Medical Services. The sampling frame is essential for determining the probability samples. This is because most methods in probability sampling rely on the sampling frame being accessible and because the sampling frame ensures that generalisations to the population can be made.

4.7.3 Sampling technique

The sampling technique is divided into two categories, namely non-probability sampling and probability sampling. Figure 4.2 illustrates these sampling methods and techniques. In this research, simple random sample was used and is a type of probability sampling method and convenience sampling which is a type of non-probability sampling method. Simple random sampling is the purest and the most straightforward probability sampling strategy. The logic behind simple random sampling is that it removes bias from the selection procedure and should result in representative samples (Gravetter and Forzano 2011). The sample size should preferably be more than a few hundred so that simple random sampling can take place properly (Saunders and Thornhill 2012). Since this study utilised the quantitative approach, the quantitative paradigm relied more on probability sampling techniques. A probability random sampling method is one in which each person in the population has the same known probability to be representatively selected, which permits the researcher to compute an estimate of the accuracy of the sample even before the study is done (De Vos, Strydom, Fouche and Delport 2011).

Non-probability sampling is a process of selecting respondents for the study with less chance of participating in a study sample (Burns and Grove 2001: 301). In non-probability sampling, not all members of the population have a chance of being included in the study, such as convenience (accidental), quota, purposive and network sampling procedures (Burns and Grove 2001: 804). This study was conducted using both a simple random technique and convenience sampling. Simple random gives each member an equal probability of being chosen, and it is unbiased. Convenience sampling is a kind of non-probability or non-random sampling in which members of the target population, as Dörnyei (2007) mentioned, are selected for the purpose of the study if they meet certain practical criteria, such as geographical proximity, availability at a certain time, easy accessibility, or the willingness to volunteer.

In this study, both probability sampling and non-probability sampling were used (simple random and convenience sampling). The provincial hospitals and private sector hospital suppliers were sampled using non-probability sampling. Precisely, convenience sampling was used to select the respondents. KZN provincial hospitals were conveniently selected by the researcher due to proximity and because they know the researcher. Convenience sampling was used because questionnaires were distributed to SC managers or officials and to suppliers who work closely with the DoH and who supply medical equipment. In this case, it is clear that the samples were selected based on the availability. As clarified by De Vos (1998: 191), convenience sampling is the rational choice in cases where it is impossible to identify all the members of a population.

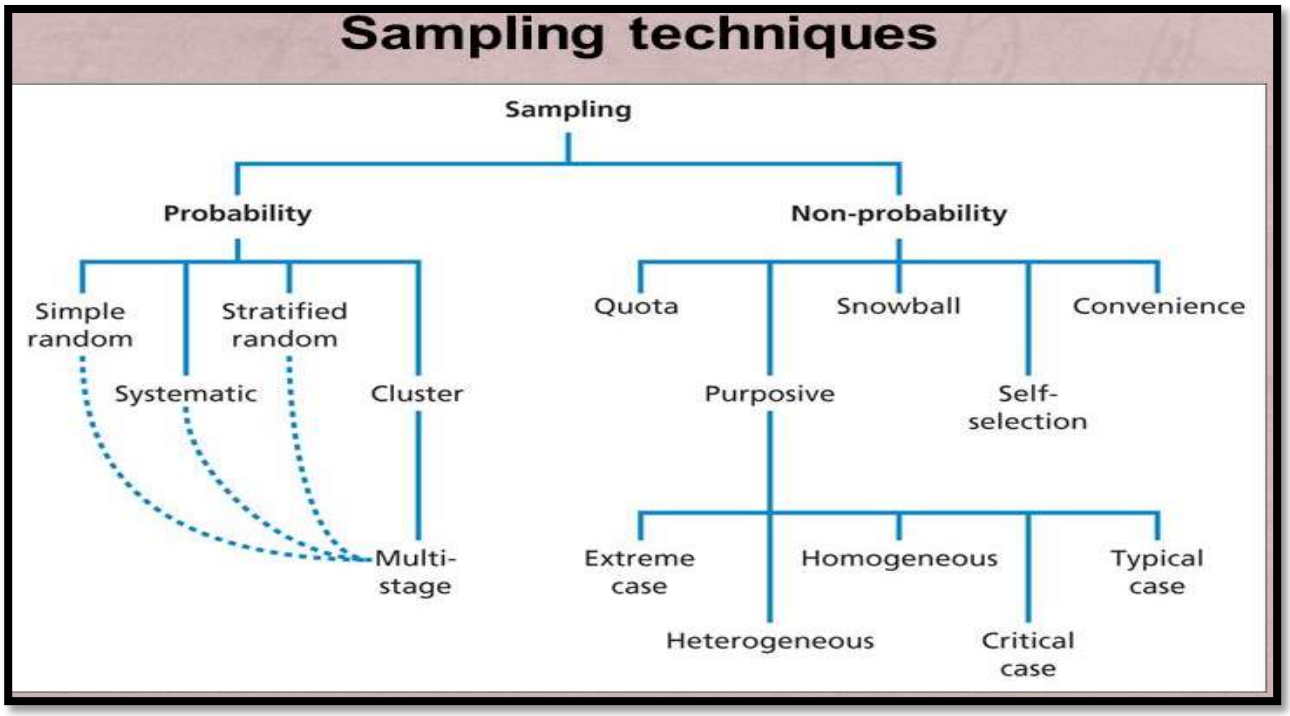


Figure 4.2: Sampling techniques

Source: Saunders *et al*. (2009)

4.7.4 Sample size

As mentioned by various scholars, a huge and adequate sample size is the most effective method to ensure that the data collected would provide a reliable basis for drawing inferences, making recommendations and supporting decisions (Bryman and Cramer 1998; De Vaus 1996; Sekaran 2000; Bryman and Bell 2003). Therefore, a big and

sufficient sample size would remove bias and meet the criteria required by the analytical methods used within the research. This means that a sample size must be correlated to the size of the population. Furthermore, Malhotra (2004) stated that the required sample size depends on certain factors such as the proposed data analysis techniques used to analyse the data. The data of this study was analysed through linear-regression analysis conducted on IBM SPSS version 25.

The purpose of linear-regression analysis was to evaluate if there is a statistically significant relationship between variables. Garson (2009) suggested that a sample size has to be more than 100. An initial sample size of 495 respondents was used in this research. A total of 105 questionnaires were distributed to supply chain managers/officials from the hospitals and 78 of these were completed; 350 questionnaires were distributed to SME owner/managers of formal SMEs registered with the University of Zululand and 217 of these were completed; for medical suppliers 40 questionnaires were distributed and 15 were completed and returned. In total, 310 questionnaires were received from all respondents who participated in this study.

4.8 DATA COLLECTION

Data collection can be divided into two categories, primary and secondary. This study used the primary methods to collect data. Primary data is the data collected specifically for the research project being undertaken (Saunders and Thornhill 2003: 486). The process of data collection is important for the successful completion of a study (Brink 2006: 394). Primary data collection methods can be divided into two groups, namely quantitative and qualitative. This study used quantitative methods to collect data. Quantitative data collection methods are based on mathematical calculations in various formats. Methods of quantitative data collection and analysis include questionnaires with closed-ended questions, methods of correlation and regression. Quantitative research entails the collection of numerical data and exhibiting the view of the relationship between theory and research as logical (Bryman and Bell 2005: 154). Close-ended questionnaires were used to gather the facts for this research.

In quantitative data collection there are four levels in which the variables can be measured: nominal, ordinal, interval and ratio (Botti 2005: 189 and Verial 2015). Verial (2015)

mentioned that nominal data takes the form of categories, which are assigned numbers for the purpose of analyses, for example gender or race. Ordinal data is ranked from a lowest to highest score, but it is not possible to know the difference between first and second scores and so on (Botti 2005: 189). Interval data takes the form of numbers which occur on a scale where the differences between the intervals of the scale are assumed to be equal (Botti 2005: 189 and Verial 2015). Ratio data measurements not only comprise equal intervals between different points of the scale but the ratio of the values is also meaningful.

4.8.1 Research instruments

This research used one instrument to collect the information which is a questionnaire with a 5-point Likert scale (see Appendix A). The Likert scale is an ordinal measurement scale. An ordinal scale is the scale that ranks the data into order (Kumar 2005: 151). With the 5-point Likert scale used in this study the respondents could choose one of the following options: 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree. According to Kumar (2005: 145), the Likert scale is based upon an assumption that each statement or item on the scale has equal importance, attitudinal value or weight in terms of reflecting an attitude towards the issue in question.

Guided by the reviewed literature and the purpose of the intended research, a questionnaire was prepared. This is because this type of data collection instrument is generally used to obtain facts and opinions about a phenomenon from people who are informed on the particular issue (Delport and Roestenburg 2011: 186). A questionnaire used to collect data in survey research contains recorded questions which people respond to directly, without the aid of an interviewer (Monette *et al*., 2011: 164). Barbie (2010: 274) defined a questionnaire as an instrument specifically designed to elicit information that will be useful for data analysis. The questionnaires used in this study were self-administered. The questionnaires were distributed via emails accompanied by a letter of consent and directly distributed to respondents due to the low response rate of emails. Using the questionnaire as research instrument has advantages and disadvantages as pointed out in Table 4.1 below.

Table 4.1: Advantages and disadvantages of questionnaires

ADVANTAGES	DISADVANTAGES
It is familiar to users and allows them to complete the questionnaire at their own convenience, while allowing some time to think about their answers.	Questionnaires often provide low response (return rates), time-consuming follow-up and data entry.
Questionnaires facilitate the collection of vast amounts of data with minimal effort.	Ease of production and distribution can result in the collection of far more data than can be effectively used.
The availability of a number of participants in one place makes possible economy of time and expense and provides a high proportion of useable responses.	Questionnaires are everywhere, competing for participants' time.
As research instruments, questionnaires can be used time and time again to measure differences between groups of people. They are thus reliable data gathering tools.	Lack of adequate time to complete the instrument may result in the return of superficial data.
The person administering the instrument has the opportunity to establish rapport, explain the purpose of the study and elaborate on the meaning of items that may not be clear.	Lack of personal contact (if the questionnaire is mailed) may mean that response rates suffer, necessitating the expense of follow-up letters, telephone calls and other means of *chasing* the participant.
Well- designed questionnaires can allow relationships between data to be identified. They are particularly useful to showing relationships with data that are easily quantifiable.	

Source: Wilkinson and Birmingham (2003: 39), Best and Kahn (2006: 313), Muijs (2011: 38).

As noted earlier, the questionnaire contained the covering letter and the measuring instrument was mailed electronically (Delport and Roestenburg 2011: 186). The quantitative data that the researcher collected were captured electronically to ensure order and easy access (Creswell as cited in De Vos 2005: 334; Neuman 2006: 14; Mitchell and Jolley 2007: 51). The respondents had to read the instructions and complete the questionnaires by themselves during their spare time and when convenient and if necessary, they could review personal records (Babbie 2001; Neuman 2006). The benefits of self-administered surveys are that they are not expensive and they are regarded as the simplest method of piloting surveys. Self-administered surveys are quite easy to arrange and therefore a single researcher can utilise them. Furthermore, it is evident that participants will more easily answer questions on complex matters in self-administered surveys than during an interview.

4.8.2 Operationalisation and measurements

Pedhazur and Schmelkin (1991) defined measurement as the assignment of a number to a characteristic of an object or event, which can be compared with other objects or events. It is the process of observing and recording the observations that are collected as part of a research effort. The scope and application of a measurement are dependent on the context and discipline. For the purpose of this study, the research measurements were adopted and operationalised primarily on the basis of previous works and consultation with field and academic experts.

The research instrument consisted of 57 items, with a level of measurement at a nominal or an ordinal level. The questionnaire was divided into five sections (A, B, C, D and E) which measured various themes. A review of the relevant literature resulted in four main constructs, i.e. trust, supplier development, knowledge creation and supply chain performance. Minor modifications were made in order to suit the current research context/purpose and the opinions of experts. All the adapted measurement items for all four research variables had 5-point Likert scales where the anchors were: 1=strongly disagree; 2=disagree; 3=neutral; 4=Agree; and 5=strongly agree. The questionnaire had five sections ranging from Section A to E (refer to Appendix A). Section A comprised eight statements on personal information of the respondent. Sections B to E of the questionnaire are discussed in the next sections.

4.8.2.1 Trust

Trust was measured from two dimensions (supplier credibility and supplier benevolence) using seven items adopted from Hoejmose *et al*., (2012). Section B of the questionnaire (see Appendix A) comprised seven statements on trust in supply chain.

4.8.2.2 Supplier development

Supplier development was measured from three dimensions (basic supplier development, moderate supplier development and advanced supplier development) using 12 items adapted from Sanchez *et al*., (2005). Section C in the questionnaire (see Appendix A) combined 12 items on supplier development.

4.8.2.3 Knowledge creation

Knowledge creation was categorised into three dimensions (accessibility of knowledge, quality of knowledge and responsiveness). It was measured using 15 items adapted from O'Reilly (1982), Kohli *et al*., (1993). Section D of the questionnaire included 15 statements, as shown in Appendix A.

4.8.2.4 Supply chain performance

Supply chain performance was measured from three dimensions (flexibility performance, resource performance and output performance), using an adapted 15-item instrument used by Sezen (2008: 235), Liu (2009: 286), Kocoglu *et al*. (2011: 1639) and Hove (2015). Section E of the questionnaire, as shown in Appendix A, comprised 15 statements on supply chain performance.

4.9 DATA ANALYSIS

Data analysis and interpretation is the process of bringing order, structure and meaning to collected data through the grouping of responses and identification of patterns and trends (Tredoux and Durrheim 2010: 19). It encompasses a number of closely related processes to be performed, with the purpose of summarising data collected and organising it in a proper manner that will answer the research variables and objectives. To reach the goal of the research, numerical analyses were executed using linear-regression analysis conducted on IBM SPSS version 25. The purpose of Linear-regression analysis is to evaluate a statistically important affiliation amongst variables. Statistical analysis used in this study included descriptive statistics. The analysis presents the following outputs: reliability analysis, correlation and multiple linear regressions, to determine whether there is a negative or positive relationship between the variables. Multicollinearity tests were conducted to assess if there was strong correlations between independent variables. Multicollinearity was assessed by examining the tolerance and VIF. Before running the regression analysis, a correlation test was conducted to ensure the variables considered in the research model were somehow related.

The researcher used descriptive approaches to define, examine, and summarise statistical data into key characteristics of the research so as to retain most of the valuable

information yet still ensuring it is simple and easy to handle and understand (Babbie and Mouton 2010: 459, Fouché and Bratley 2011: 251). To simplify ultimate handling of data, the researcher analysed quantitative data based on the varied themes of the measuring instrument (Delport and Roestenburg 2011: 196). As stated previously, the data analysis method that was used was quantitative in nature. Descriptive analysis for personal and company information of the SC member firm managers, as well as inferential statistics for testing the influence of trust on knowledge creation, supplier development and supply chain performance, were performed using IBM SPSS version 25 software packages.

4.9.1 Linear-regression analysis

Linear regression analysis is one of the most commonly used statistical techniques in social sciences which involves identifying and evaluating the relationship between a dependent variable and one or more independent variables, which are also called predictor or explanatory variables (Mohamed 2015: 13). A model of the relationship is hypothesized and estimates of the parameter values are used to develop an estimated regression equation. Various tests are then employed to determine if the model is satisfactory. If the model is deemed satisfactory, the estimated regression equation can be used to predict the value of the dependent variable given values for the independent variables.

Different scholars demarcated regression analysis is a statistical technique used to describe or investigate and model relationships among variables (Montgomery, Peck and Vinning 2012). Hence, the simplest case to examine is one in which a variable Y, referred to as the dependent or target variable, may be related to one variable X, called an independent or explanatory variable, or simply a regressor. Furthermore, if the relationship between Y and X is believed to be linear, then the equation for a line may be suitable. Example: $Y = \beta1 + \beta2X$, where $\beta1$ is an interrupt term and $\beta2$ is a slope coefficient. Thus, the purpose of regression is to try to find the best fit line that states the relationship between Y and X (Montgomery *et al.* 2012).

This linear relationship summarises the amount of change in one variable that is associated with change in another variable or variables. The model can also be tested for statistical importance, to determine whether the observed linear relationship could have

emerged by chance or not. The independent variable may be considered as causing deviations in the dependent variable, or the independent variable may occur prior in time to the dependent variable. However, if the investigator has reason to make one of the variables an independent variable, then the manner in which this independent variable is associated with changes in the dependent variable can be estimated. The following statistical tools and techniques are used in the linear regression analysis.

4.9.1.1 Simple linear regression

Scholars clarify that simple linear regression is a model with a single regressor X that has a relationship with a response Y that is a straight line (Montgomery *et al.* 2012). This simple linear regression model can be expressed as:

$$Y = \beta 0 + \beta 1x + \varepsilon$$

Consequently, the intercept β0 and the slope β1 are unknown constants and ε is a random error element.

4.9.1.2 Multiple linear regressions

Montgomery *et al. (*2012) specified that if there is more than one regressor, they are called multiple linear regressions. Mohamed (2015: 17) clarified that multiple regression is an extension of simple linear regression. Thus, it is used when a researcher want to predict the value of a dependent variable based on the value of two or more independent variables. Hence, multiple regression permits one to control the general fit of the model and the relative contribution of each of the predictors to the total variance explained.

4.9.1.3 Analysis of variance (ANOVA)

Analysis of variance (ANOVA) can be defined as a group of statistical models used in order to analyse the differences between group means and their associated procedures (Montgomery *et al.* 2012). Therefore, in the ANOVA setting, the observed variance in a particular variable is partitioned into mechanisms attributable to different sources of variation (Montgomery *et al.* 2012).

4.9.1.4 Statistical hypotheses

According to Iyanaga and Kawada (1980), statistical hypotheses are statements about relationships. The statistical hypothesis testing is the use of statistics to determine the probability that a given hypothesis is true. Moreover, the null hypothesis is denoted by H0. Wyllys (2003) confirmed that the alternative hypothesis is the nullification of the null hypothesis, signified by H1. Thus, the hypotheses are related to the importance of regression. Scholars clarified that if H0 is rejected, it implies that at least one βI shows an important relationship to Y (Montgomery *et al.* 2012).

4.9.1.5 Individual regression coefficients (t Test)

Scholars confirmed that the t-test is used to check the impact of individual regression coefficients in the multiple linear regression models (Montgomery *et al.* 2012). A significant variable to a regression model becomes more effective, although tallying an insignificant variable may cause the model to be of poorer quality.

4.9.1.6 P-value

P-value defined is the predictable probability of discarding the null hypothesis (H0) of a study question when that hypothesis is true (Montgomery *et al.* 2012).

4.9.1.7 Variance inflation factor (VIF)

It is clarified that in VIF, for each period in the model processes the joint result of the dependences among the regressors on the variance of the term. Thus, practical experience indicates that if any of the VIFs surpasses 5 or 10, it is a sign that the related regression coefficients are poorly assessed because of multicollinearity (Montgomery *et al.* 2012).

4.9.1.8 Correlation analysis

Correlation refers to a statistical measure that indicates the extent to which two or more variables vary together (Mohamed 2015: 4). A positive correlation indicates the range to which those variables rise or fall in parallel, while a negative correlation indicates the degree to which one variable increases as the other decreases. Furthermore, correlation is a statistical system that can show whether and how strongly pairs of variables are related. Correlation measures can refer to the degree and direction to which two variables are

interrelated (Mohamed 2015: 1). Therefore, correlation does not fit a line through the data points but solely figures a correlation coefficient that tells how much one variable tends to change when the other one does. Moreover, when r is 0.0, there is no relationship; then, when r is positive, there is a tendency that one variable goes up as the other one goes up. When r is negative, there is a movement – one variable goes up as the other one goes down. Using correlation, it doesn't have to consider about cause and effect. It doesn't matter which of the two variables is called dependent and which is called independent, if the two variables are swapped, the degree of correlation coefficient will be the same.

The sign (+, -) of the correlation coefficient shows the direction of the association. The greatness of the correlation coefficient specifies the strength of the association. Also, a correlation close to zero suggests no linear association between two continuous variables. Linear regression finds the best line that determines a dependent variable from an independent variable. The line that best predicts the independent variable from the dependent variable is not the same as the line that predicts the dependent variable from the independent variable in spite of both those lines having the same value.

4.10 RELIABILITY AND VALIDITY

Iacobucci and Churchill (2010: 258) defined reliability as the similarity of results provided by the independent but comparable measures of the same construct or object. Reliability issues are most often closely associated with subjectivity and once a researcher adopts a subjective approach towards the study, then the level of reliability of the work is going to be compromised (Wilson 2010). The collected data was through questionnaires and descriptive statistics. Reliability produces the research free from random error and accurate results.

4.10.1 Reliability

According to Bernard (2011: 42), reliability determines whether the researcher is able to get the same results when using an instrument to measure something multiple times. Reliability is the degree to which a study technique creates constant and reliable outcomes. In this study, Cronbach’s alpha test was conducted in order to assess the reliability of the measures. Chinomona (2011: 108) confirmed that a higher level of

Cronbach's coefficient alpha indicates a higher reliability of the measurement scale. The reliability analysis was conducted for each scale to measure the internal consistency of each construct. A specific measure is reliable if it is applied to measure the same thing more than once and always has the same result. Bernard (2011) stated that research reliability can be divided into four categories:

4.10.1.1 Test-retest reliability

Test-retest reliability is the degree of reliability achieved after the same test has been conducted several times over a period of time and each time with the same sample group.

4.10.1.2 Parallel forms reliability

Parallel forms reliability when one assesses one phenomena with the same sample group through more than one assessment technique.

4.10.1.3 Inter-rater reliability

Inter-rater reliability relates to the number of effects achieved by diverse evaluators using similar approaches. Benefits and significance of measuring inter-rater consistency can be clarified by the assessments which are subjective.

4.10.1.4 Internal consistency reliability

Internal consistency reliability evaluates variations within the test items which explore the same concept and produce the same results. It can be characterised in two key layouts, namely average inter-item correlation and split-half reliability. Inter-item correlation is an exact procedure of internal reliability that is found by relating the same concept to each item of the test, while split-half reliability is another kind of internal consistency which needs all items of a test to be divided in half. For this study, the reliability analysis was conducted for each scale so that the internal consistency of each construct could be determined. The researcher tested the internal reliability of each construct using Cronbach's alpha, where a higher level of Cronbach's coefficient alpha showed higher reliability of the measurement scale.

4.10.2 Validity

Validity encompasses the entire experiment concept and establishes whether the result obtained meets all of the requirements of the scientific research methods. A

multicollinearity test was conducted to assess if there were strong correlations between independent variables. Multicollinearity was assessed by examining the tolerance and VIF. The value of the tolerance is expected to be above 0.1 and the value of VIF is expected to be below 10. The validity is a concept of providing the true finding or result in a research study. It depends how the researcher tends to collect and analyse the data, whereas the reliability of the research looks for evidence that the researcher conducted the research in an appropriate way. Having a reliable study will provide validity of research and will ensure correct results and precision findings (Coates and Sloan 2008).

Research validity can be divided into two groups: internal and external. It can be specified that internal validity refers to how the research findings match reality, while external validity refers to the extent to which the research findings can be replicated in other environments (Pelissier 2008: 12). Oliver (2010) considered validity to be a compulsory requirement for all types of studies. Processes to confirm authority of a study comprise, but are not limited to, the following facts:

- Suitable period for the research has to be nominated;
- Suitable procedure has to be selected, taking into account the physiognomies of the research;
- The most appropriate sample technique for the research has to be selected;
- The participants must not be forced to select certain choices amongst the response sets.

There are different forms of research validity and the main ones are specified by Cohen, Manion and Morrison (2007) as sampling validity, criterion-related validity, construct validity, formative validity and face validity.

4.10.2.1 Sampling validity

Sampling validity (similar to content validity) ensures that the area of coverage of the measure within the research area is vast. No measure is able to cover all items and elements within the phenomenon, therefore, important items and elements are selected using a specific pattern of sampling method depending on the aims and objectives of the study (Cohen *et al*. 2007).

4.10.2.2 Criterion-related validity

This refers to comparing the test results with the outcome.

4.10.2.3 Construct validity

This deals with assessing whether the measurement tools are suitable to measure the phenomenon under study (Cohen *et al*. 2007). Application of construct validity can be effectively facilitated with the involvement of a panel of experts closely familiar with the measure and the phenomenon.

4.10.2.4 Formative validity

Formative validity refers to assessment of the effectiveness of the measure in terms of providing information that can be used to improve specific aspects of the phenomenon (Cohen *et al*. 2007).

4.10.2.5 Face validity

Face validity is the most basic type of validity and it is associated with the highest level of subjectivity because it is not based on any scientific approach (Cohen *et al*. 2007). Therefore, the researcher has to specify that a test is valid because it could appear effective, without an in-depth scientific validation.

4.11 ETHICAL CONSIDERATIONS

According to Leedy and Ormrod (2015), most ethical issues in research fall into the following classifications: safety from maltreatment, voluntary and informed involvement, the right to secrecy, and trustworthiness with proficient associates. Therefore, privacy and anonymity are definitely guaranteed by making sure that only the investigator knows the source of information received. Thus, the participants were assured of privacy and guaranteed of their confidentiality as a basic right. The respondents were advised that their participation in the research was voluntary and that if they wished to withdraw from the process they could do so at any point. As confirmed by Berg (2009: 60), rules for ethical concern are: authorisation to conduct the research, informed consent, privacy and voluntary participation. The participants' anonymity was assured and so was the

confidentiality of the information provided. Bryman and Bell (2007) mentioned the following philosophies of ethical consideration:

i. Study respondents must be protected from harm.
ii. Respect for the dignity of study respondents must be prioritised.
iii. Consent should be received from the respondents before conducting the study.
iv. The confidentiality of study respondents should be guaranteed.
v. Sufficient standard of privacy of the study information must be assured.
vi. Privacy of persons and firms participating in the study has to be assured.
vii. Any dishonesty or exaggeration about the aims and objectives of the study should be avoided.
viii. Any kind of relationships, bases of funding and any conflict of interest must be affirmed.
ix. Any kind of communication about the study must be completed with trustworthiness and transparency.
x. Any form of confusing data and representation of key information outcomes in a biased way, should be avoided.

Patton (2002) offered a checklist of general ethical issues to consider, such as reciprocity, assessment of risk, confidentiality, informed consent and data access and ownership.

4.12. LIMITATIONS OF THE STUDY

Limitations of the study were the delayed responses to questionnaires. There was a long process to get access to government provincial hospitals because of the procedure they follow. Each institution delayed the process as their ethics committee had to provide approval that took them three months, after which provincial approval was required, which also took some time. It was a big challenge to access the SMEs' database from the University of Zululand since the Durban Chamber of Commerce did not give consent to do the study at companies registered under their database because of their policies. The participants' response rate was a big problem. There was a challenge when communicating with participants before emailing the questionnaires to them, several of them were apologised about their heavy workload and said they did not have time to respond to questionnaires.

Various participants withdrew from the research and some specified that they would try but could not promise anything. Moreover, some complaints were that the questionnaires were excessively long with too many questions to answer. Regardless of all mentioned challenges, a satisfactory response ratio of 63% was reached. Bell (1999) mentioned that one of the main drawbacks of questionnaires served through electronic mail is often the low response rate. Incorrectly filled out questionnaires unavoidably had an effect on the data and had the potential to further lower the number of questionnaires that could be used.

4.13 CHAPTER SUMMARY

There are many different types of data collection methods that can be used in any evaluation. Each has its advantages and disadvantages and must be chosen in light of the particular questions, timeframe, and resources that characterise the evaluation task. This research was conducted using a quantitative approach which proceeded from descriptive analysis. The study was conducted in the KZN provincial hospitals, as stated earlier in the thesis. Since the study was conducted in both the public (provincial hospitals) and private sector, the main focus for the private suppliers was on the supply of hospital goods, equipment and furniture.

To answer the study's chosen research question, a quantitative data collection approach, constructing a questionnaire, and doing numeric analysis was a valid option. This research used one instrument to collect the information, which was a questionnaire with a 5-point Likert scale. Research philosophies are the core to a seminal piece of research. Thus, simple random sampling was used which is a type of probability sampling method and convenience sampling which is a type of non-probability sampling method. Linear-regression inquiry was chosen as the most appropriate data analysis method for this research. Respondents were advised that their participation in the study was on a voluntary basis and that if they so wish, they could withdraw from the process at any point. Their anonymity was assured and so was the confidentiality of the information provided. Therefore, it can be concluded that methodology is an umbrella term which includes methods. Research methodology is the key to conduct a social research. The next chapter (Chapter Five) presents and discusses the findings.

CHAPTER FIVE: EMPERICAL RESULT OF THE STUDY

5.1 INTRODUCTION

This chapter presents the results and discusses the findings obtained from the questionnaires in this study. The questionnaire was the primary tool used to collect data and was distributed to 495 participants. A final sample size of 310 respondents was used. The target population of this research consisted of SC officials including managers from five selected provincial hospitals (KZN), SME owners or managers and medical equipment supplier's managers. The results are presented by means of the descriptive statistics in the form of graphs, tables and other figures for the quantitative data that was collected. The findings of this research are provided according to the different questionnaire sections.

The data collected from the responses was analysed through multiple linear-regression analysis conducted using IBM SPSS version 25. The purpose of multiple linear-regression analysis was to evaluate if there is a statistically significant relationship between variables. The analysis presents the following outputs: reliability analysis, correlation and multiple linear regressions, to reach a conclusion on whether there is a negative or positive relationship and influence between the variables. In total, 495 questionnaires were despatched and 310 were returned which gave a 63% response rate. The research instrument consisted of 57 items, with a level of measurement at a nominal or an ordinal level. The questionnaire was divided into five sections (A, B, C, D and E) which measured various themes as illustrated below:

Table 5.1: Research instrument sections

A	**BIOGRAPHICAL DETAILS**	
B	TRUST	Supplier credibility
		Supplier benevolence
C	SUPPLIER DEVELOPMENT	Basic
		Moderate
		Advanced
D	KNOWLEDGE CREATION	Accessibility of knowledge
		Quality of knowledge
		Responsiveness
E	SUPPLY CHAIN PERFORMANCE	Flexibility performance
		Resource performance
		Output performance

5.2 BIOGRAPHICAL DATA

The participants were requested to specify their standard of education. The outcomes also show that of all race groups, black was the dominant racial group. Concerning to the questionnaires received, some participants ignored demographic questions and therefore, the totals will vary as per answers. The summary of the respondents who contributed in this research is presented in the next sections.

5.2.1 Gender

This section summarises the biographical characteristics of the respondents. It represents the gender of the supply chain officers or managers (from the selected provincial hospitals), the SME owners and managers (from University of Zululand SCM database), and managers or owners of medical equipment supplies in KZN, South Africa. Table 5.2 below indicates the overall gender distribution.

Table 5.2: Gender presentation

	Frequency	Valid percent
Male	152	49.0
Female	158	51.0
Total	310	100.0

The results show that of the total number of 310 respondents who participated in this research study, the majority were female (51.0%) and 49.0% were males. The following section discusses their education level.

5.2.2 Education level

The results show that of the 310 respondents, 152 (49.0%) had a diploma qualification, 34% had obtained degrees and only 17% of the respondents had a national senior certificate. Figure 5.1 below indicate the education levels of the respondents.

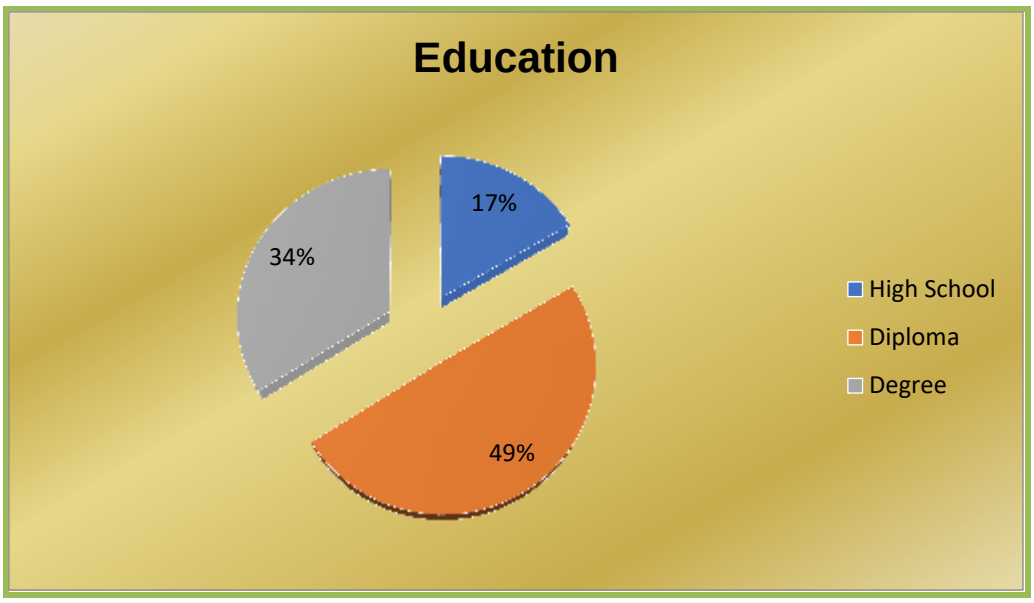


Figure 5.1: Education level

It is very clear from the above figure that the largest number of respondents were diploma holders (49%), followed by degree holders (34%) and a lesser percentage being holders of a higher certificate (17%). The following section discusses the racial distribution of the respondents.

5.2.3 Racial distribution

The racial distribution of the respondents is illustrated below. The question probed the race of the firm owners and supply chain officials and managers based on five categories, namely black, Indian, white, coloured and other. The results show that out of all race groups, black was the dominant racial group (71.1%). The racial composition of the sample is shown below.

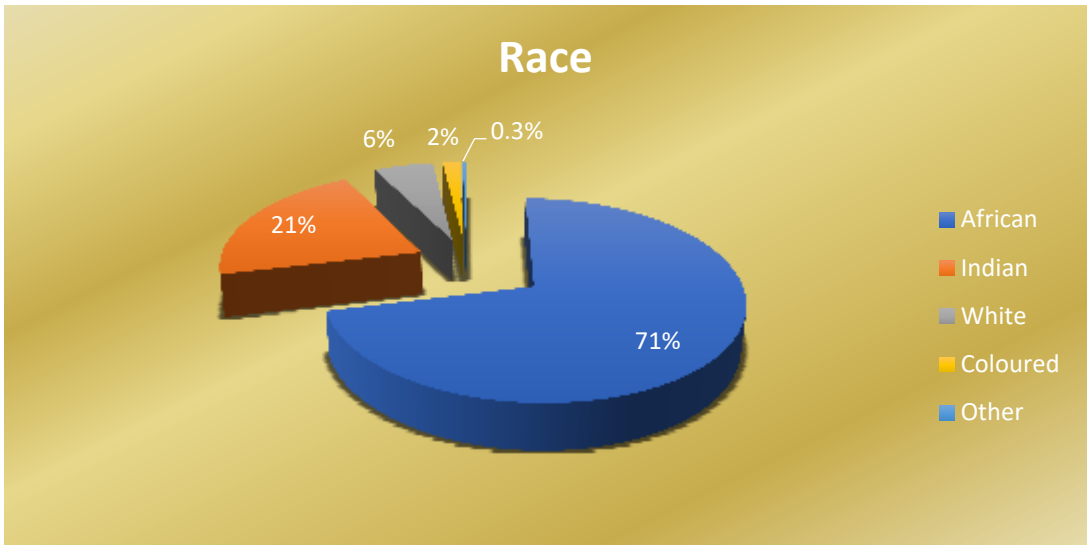


Figure 5.2: Racial distribution

As shown in Figure 5.2, the majority of firm/organisational owners or managers were African (71.2%) followed by Indians (21%), whites (6%), with coloureds (1.6%) and other (0.3%) forming the smallest components of the five main groupings in South Africa.

5.2.4 Employment

The size of organisation or firm was determined by the number of workforce or employees that each organisation/firm employed at the time of the study. Figure 5.3 show the results of the number of employees at each firm/organisation. The respondents chose from five categories, namely: 5 or less; 6-10; 11-20; 21-50 and 51 employees and above. The size of the organisational workforce is shown below.

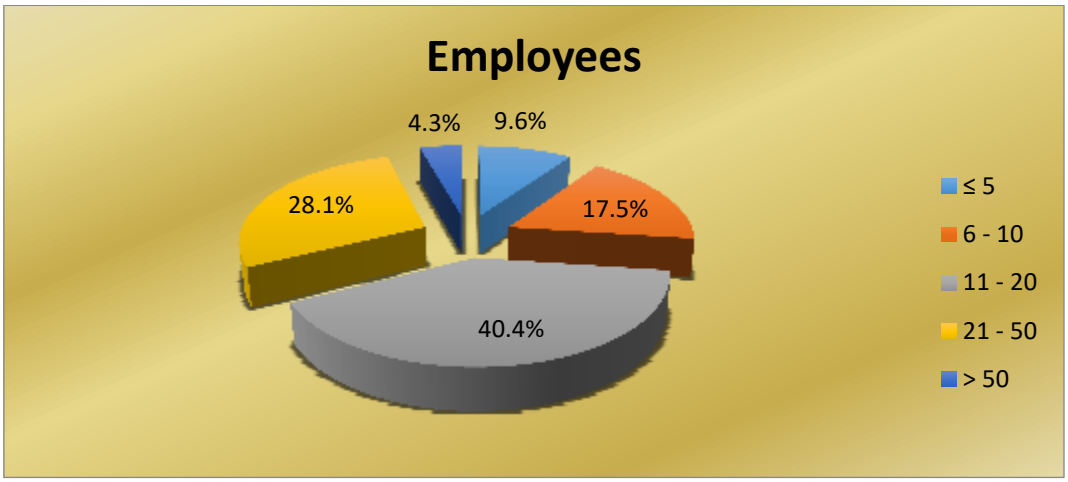


Figure 5.3: Number of employees

Respondents were asked to indicate the number of employees within their organisation. According to the results presented in Figure 5.3; 40.6% of the respondents indicated that they have 11 to 20 employees in their organisation. The next section focuses on staff development.

5.2.5 Training

The survival of any organisation or firm in the competitive society lies in its ability to train its workforce to be creative, innovative and increase competitive advantage. The results below show very clearly that companies never rely on training for competitive edge.

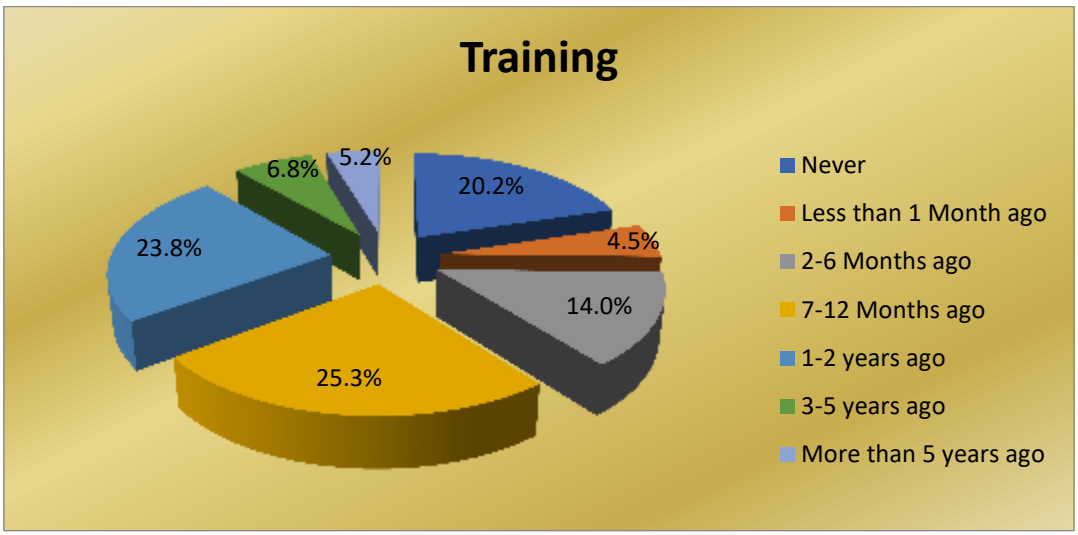


Figure 5.4: Training course

The results show that 25.3% of the respondents had attended a training course in the previous 7-12 months (mode). Figure 5.4 indicate that 5.2% had attended training less than one month ago, while 4.5% had last attended training more than five years ago. Training and development is a crucial strategic tool for enhancing employee performance to earn the organisation a competitive edge.

5.2.6 Years in current position

Based on the findings presented in figure 5.5, the majority (36.1%) of the sample had been working for 3-5 years in their current position at the time of the study, followed by 35% who had been working 6-10 years. The number of years in current position within their organisations is shown below.

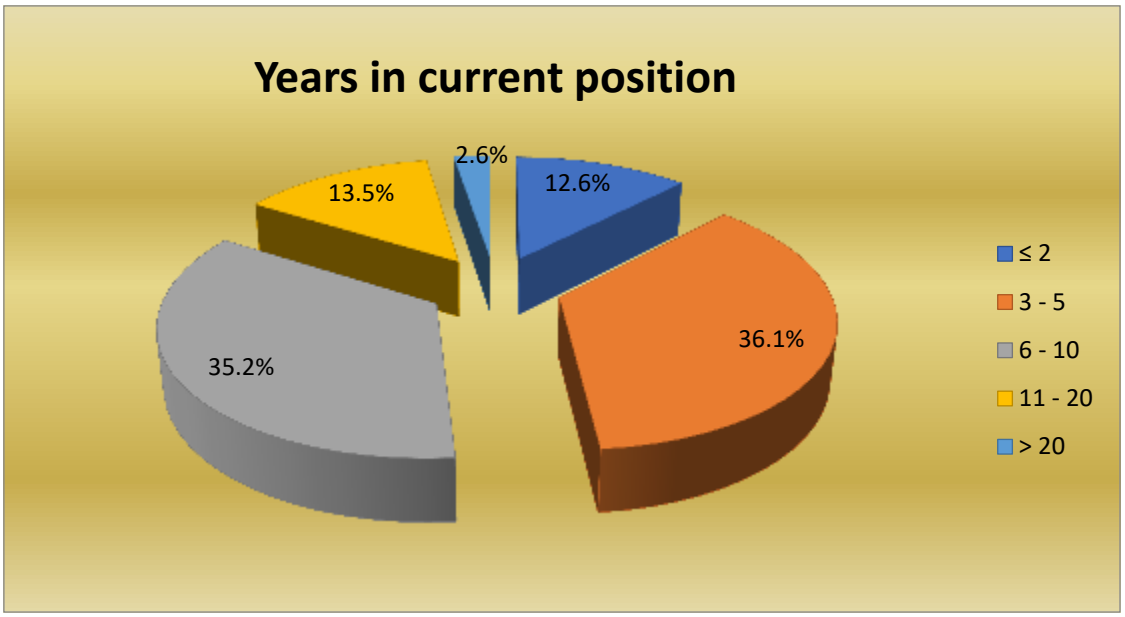


Figure 5.5: Years in current position

As shown in Figure 5.5, significantly more respondents (> 80%) had been in their positions for less than 10 years ($p < 0.001$). The following section discuses business type.

5.2.7 Business type

The respondents were requested to choose the type of business within which their organisation/firms slot. They were given 16 options to choose from. The type of business is shown below.

Table 5.3: Type of business

	Frequency	Valid percent
Manufacturing	21	6.9
Retailing	25	8.2
Construction	33	10.9
Mining	3	1.0
Tourism	10	3.3
Financial	201	66.1
Agriculture	11	3.6
Total	304	100.0

The results presented in Table 5.3 demonstrate that the majority of the respondents (66.1%) were involved in financial business. The next section discusses technology devices.

5.2.8 Technology devices

The respondents were asked about the marketing technology devices that their businesses own. They were given option to choose from, including computers, smart phones, Internet, satellites and others, which they needed to specify. Technology devices they selected are shown in Table 5.4 below.

Table 5.4: Technology devices

	Frequency	Valid percent
	2	0.6
Computers	11	3.5
Computers, Smart Phone, Internet	2	0.6
Computers, Smart Phone, Internet	181	58.4
Computers, Smart Phone, Internet, Satellite	5	1.6
Computers, Smart Phone, Satellite	1	0.3
Computers, Smart Phone	55	17.7
Computers, Internet	2	0.6
Computers, Satellite	1	0.3
Computers, Smart Phone, Internet	2	0.6
Smart phones	35	11.3
Smart Phone, Internet	3	1.0
Internet	9	2.9
Other (specify)	1	0.3
Total	310	100.0

The results in Table 5.4 further indicate that the types of technological devices which the majority of respondents indicated that they own were computers, smart phones, and

internet (58.4%). The following section discusses the descriptive analysis of the constructs.

5.3 DESCRIPTIVE ANALYSIS OF THE CONSTRUCTS

A 5-point Likert scale “from 1=Strongly disagree” to 5= “Strongly Agree” was used to measure the four constructs (trust, supplier development, knowledge creation, and supply chain performance) investigated in this study. The mid-point of the five-point Likert scale is therefore 2.5. All the mean values below 2.5 suggest that most respondents tend to disagree with the statements. The values between 2.5 and 3.5 indicate that respondents tend to be neutral. All the means above 3.5 reflect that the most of participants tend to either agree or strongly agree with the statements.

Table 5.5: Descriptive analysis

Variables	Mean	Std. Deviation	Interpretation
Trust	3,94	0,61	The descriptive results of trust indicate that majority of the respondents tended to strongly agree with the statements on trust.
Supplier development	2,86	0,65	According to the results, the majority of the respondents tended to be neutral about the statements of supplier development.
Knowledge creation	4,20	0,54	The mean point of 4.20 indicates that majority of the respondents tended to strongly agree with the statements on knowledge creation.
Supply chain performance	3,31	0,56	The results show that majority of the respondents tended to be neutral about the statements of Supply chain performance.

The descriptive findings presented in Table 5.5 show that the surveyed respondents were neutral (mean value= 2.86) on supplier development, and that they strongly agreed with

the statements on trust, knowledge creation and supply chain performance (with mean values of 3.94; 4.20 and 3.31 respectively).

5.4 ASSESSING RELIABILITY OF THE SCALES

In this study, Cronbach's alpha test was conducted to assess the reliability of the measures. Chinomona (2011: 108) confirmed that a higher level of Cronbach's coefficient alpha indicates a higher reliability of the measurement scale. The reliability analysis was conducted for each scale to measure the internal consistency of each construct. The results in Table 5.6 demonstrate that all constructs are internally consistent in their measurement because the Cronbach's alphas are above 0.7 (Field 2013). These results confirm that all scales used in this study are reliable.

Table 5.6: Reliability of the scales

Variables	Mean	Std. Deviation	Skewness	Kurtosis	Cronbach's alpha	Number of items
Trust	3.94	0.61	-0.94	1.30	0.831	7
Supplier development	2.86	0.65	-0.31	0.29	0.863	12
Knowledge creation	4.20	0.54	0.23	3.11	0.914	15
Supply chain performance	3.31	0.56	-0.13	0.46	0.916	15

The results presented in Table 5.6 also suggest a normal distribution of the data as the skewness and Kurtosis coefficients of all four constructs are between [-2; and +2] (Field 2013). The next section discusses assumption of multi-collinearity.

5.5 ASSUMPTION OF MULTI-COLLINEARITY

A multicollinearity test was conducted to assess if there are strong correlations between independent variables. Multicollinearity is assessed by examining the tolerance and VIF. The value of the tolerance is expected to be above 0.1 and the value of VIF is expected to be below 10. Table 5.7 represents the multicollinearity of the three independent variables: trust, knowledge creation, and supply development.

Table 5.7: Assumption of multi-collinearity

Coefficients[a]			
Model		Collinearity statistics	
		Tolerance	VIF
1	(Constant)		
	Trust	0.756	1.323
	Knowledge creation	0.732	1.367
	Supplier development	0.934	1.070
a. Dependent variable: Supply chain performance			

Table 5.7 shows the multicollinearity of the three variables: trust, knowledge creation, and supply development. The results indicate that there is no multicollinearity issue between the variables because the value of tolerance for each variable is above 0.1 and VIF is below 10 (Pallant 2010).

5.6 REGRESSION ANALYSIS

A regression analysis was performed for hypotheses testing results and the findings are presented on Table 5.8. Before running the regression analysis, a correlation test was

conducted to ensure the variables considered in the research model were somehow related. Table 5.8 (below) illustrates that the correlations are positive and statistically important ($p<0.01$). This means that it is acceptable to proceed with the regression analysis.

Table 5.8: Regression analysis

Correlations				
	Supply chain performance	Trust	Knowledge creation	Supplier development
Supply chain performance	1.000			
Trust	0.315	1.000		
Knowledge creation	0.482	0.491	1.000	
Supplier development	0.554	0.176	0.249	1.000

As shown in Table 5.8, generally, there is a positive correlation between the four research variables in this study, as shown by the positive correlation coefficiences ranging between 0.176 (for trust-supplier development correlation) to 0.554 (for the supplier development-supply chain performance correlation.

5.7 MULTIPLE REGRESSION ANALYSIS

Three regressions analyses were conducted. The first model (model 1) tested the effect of trust, knowledge creation and supplier development on supply chain performance. The second model (model 2) tested the predictive influence of trust on supplier development. The third model (model 3) tested the predictive influence of trust on knowledge creation.

Table 5.9: Variance explained

Model summary[b]				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.661[a]	0.437	0.431	0.42567
a. Predictors: (Constant), Supplier development, trust, knowledge creation				
b. Dependent variable: Supply chain performance				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
2	0.176[a]	0.031	0.028	0.64166
a. Predictors: (Constant), Trust				
b. Dependent variable: Supplier development				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
3	0.491[a]	0.241	0.239	0.46698
a. Predictors: (Constant), Trust				
b. Dependent variable: Knowledge creation				

Using the R-square values, Table 5.9 above suggests that the first model explained up to 43.7% of the variance of supply chain performance. The second model explained only 3.1% of the variance of supplier development, and the third model explained 24.1% of the variance of knowledge creation. The results confirm that these three models are statistically significant as Table 5.10 indicates p values lower than 0.05 for all three models (Model 1: F= 79,132; p<0.001; Model 2: F= 9,794; p<0.001; Model 2: F= 97,867; p<0.001).

Table 5.10: ANOVA statistical model

ANOVA[a]						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	43.015	3	14.338	79.132	0.000[b]
	Residual	55.446	306	0.181		
	Total	98.460	309			
a. Dependent variable: Supply chain performance						
b. Predictors: (Constant), Supplier development, trust, knowledge creation						
Model		Sum of Squares	Df	Mean Square	F	Sig.
2	Regression	4.033	1	4.033	9.794	0.002[b]
	Residual	126.813	308	0.412		
	Total	130.846	309			
a. Dependent variable: Supplier development						
b. Predictors: (Constant), Trust						
Model		Sum of Squares	Df	Mean Square	F	Sig.
3	Regression	21,342	1	21.342	97.867	0.000[b]
	Residual	67,166	308	0.218		
	Total	88,508	309			
a. Dependent variable: Knowledge creation						
b. Predictors: (Constant), Trust						

Table 5.10 indicates p values lower than 0.05 for all three models (Model 1: F= 79,132; *p*<0.001; Model 2: F= 9,794; *p*<0.001; Model 2: F= 97,867; *p*<0.001). The results confirm that these three models are statistically significant. Regression results are discussed below (Table 5.11) as well as the conclusions on the five research hypotheses.

Table 5.11: Multiple regression analysis

Coefficients[a]							
Model		**Unstandardised Coefficients**		**Standardised Coefficients**	**T**	**Sig.**	**Conclusion on Hypotheses**
		B	**Std. Error**	**Beta**			
1	(Constant)	0,440	0,213		2,069	0,039	
	Trust	0,066	0,046	0,071	1,430	0,154	The results indicate that Trust does not significantly affect SCP because its p value (0,154>0.01) is non-significant. Meaning that Trust does not directly determine SCP. In other words, any increase in Trust will not directly guarantee an improvement of the SCP. Therefore, **H1 is rejected.**
	Knowledge creation	0,352	0,053	0,333	6,648	0,000	The results demonstrate that Knowledge Creation has a positive and significant impact on SCP because the β value (0,333) is positive and the p value (0,000<0.01) is significant. Meaning that SCP is determined by Knowledge Creation. In other words, any increase of Creation knowledge will translate into an improvement of the SCP. Therefore, **H4 is accepted**
	Supplier development	0,398	0,039	0,458	10,328	0,000	The results demonstrate that Supplier Development has a positive and significant impact on SCP because the β value (0,458) is positive and the p value (0,000<0.01) is significant. Meaning that SCP is determined by supplier development. In other words, any increase of Supplier development will result in an improvement of the SCP. Therefore, **H5 is accepted**
a. Dependent variable: Supply chain performance							
2	(Constant)	2,117	0,240		8,815	0,000	
	Trust	0,189	0,060	0,176	3,130	0,002	The results indicate that Trust has a positive and significant impact on Supplier development because the β value (0,176) is positive and the p value (0,002<0.01) is significant. Meaning that Trust is a significant predictor of supplier development. In other words, any increase of Trust will result

							to an increase of supplier development. Therefore, **H2 is accepted**
a. Dependent variable: Supplier development							
3	(Constant)	2,488	0,175		14,237	0,000	
	Trust	0,434	0,044	0,491	9,893	0,000	The results indicate that Trust has a positive and significant impact on Knowledge creation because the β value (0,491) is positive and the p value (0,000<0.01) is significant. Meaning that Trust is a significant predictor of knowledge creation. In other words, any increase of Trust will lead to an improvement of knowledge creation. Therefore, **H3 is accepted**
a. Dependent variable: Knowledge creation							

Table 5.11 above and Figure 5.6 below shows the results of the tested research model. According to the results, trust does not have any direct impact on supply chain performance. However, based on the beta coefficient (β) values, trust predicts better knowledge creation than supplier development. Supplier development was also found to be the strongest predictor of supply chain performance because it has the highest β value.

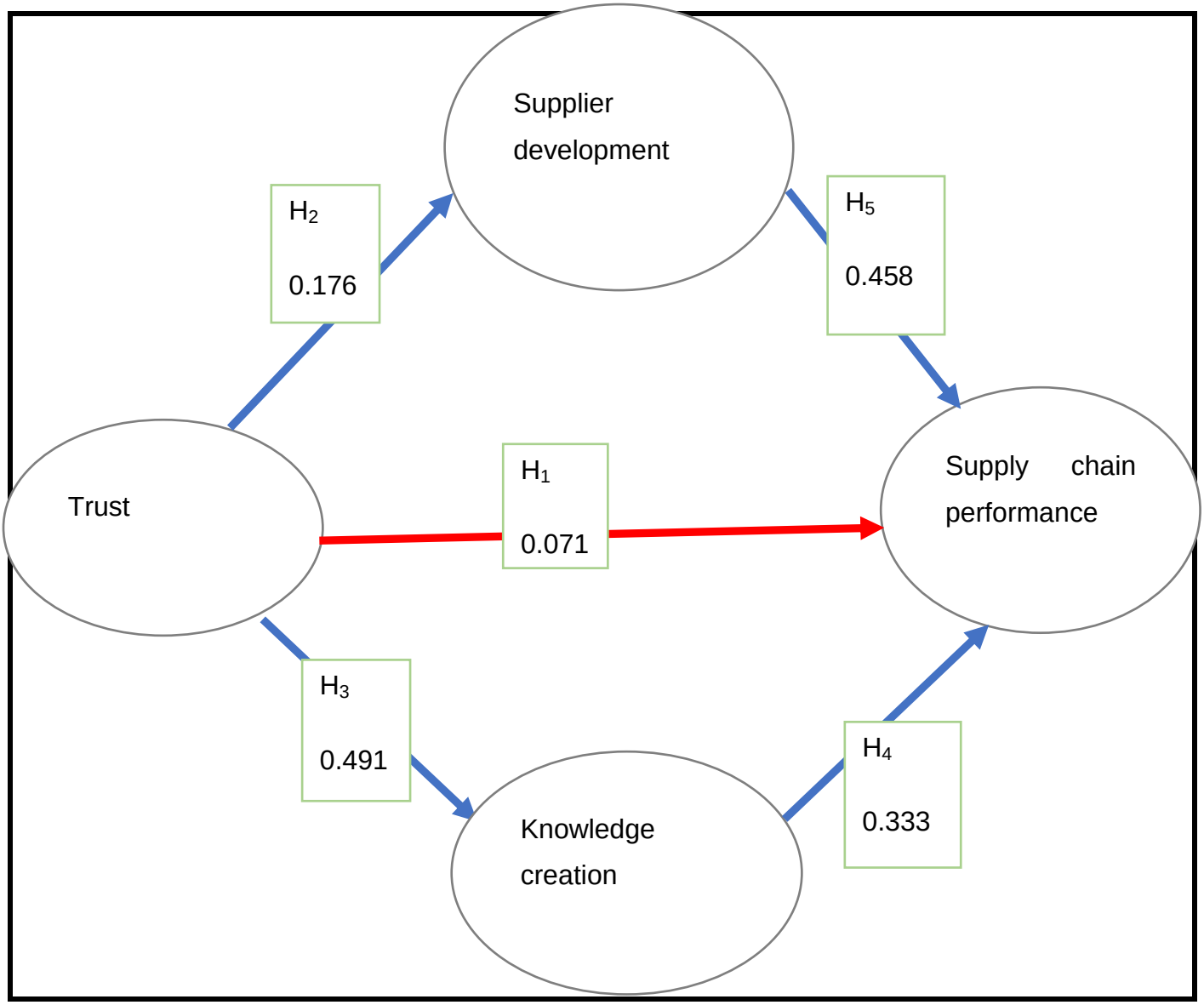


Figure 5.6: Research conceptual model

Source: Author's own figure

The empirical results presented in Table 5.11 and Figure 5.6 indicate that trust has a weak positive (beta coefficient of 0.07) and insignificant (p-value of 0.154>0.01) influence on supply chain performance, meaning that trust does not directly determine supply chain performance. In other words, any increase in trust will not directly lead to an improvement of the supply chain performance. Therefore, H1 was rejected. The study also aimed to examine the influence of trust on supplier development. The results presented in Table 5.11 and Figure 5.6 indicate that trust has a positive and significant influence on supplier development because the β value (0,176) is positive and the p-value (0,002<0.01) is

significant, meaning that trust is a significant predictor of supplier development. In other words, any increase in trust will directly result in an increase in supplier development.

The study also sought to ascertain the influence of trust on knowledge creation. The results presented in Table 5.11 and Figure 5.6 indicate that trust has a positive and significant impact on knowledge creation because the β value (0,491) is positive and the p-value (0,000<0.01) is significant, meaning that trust is a significant predictor of knowledge creation. In other words, any increase in trust will directly lead to an improvement of knowledge creation. Further, the study aimed to assess the influence of knowledge creation on supply chain performance. The results presented in Table 5.11 and Figure 5.6 demonstrate that knowledge creation has a positive and significant influence on supply chain performance because the beta coefficient (β) value (0,333) is positive and the p-value (0,000<0.01) is significant; meaning that SCP is directly determined by knowledge creation. In other words, any increase in knowledge creation will directly translate into an improvement in the supply chain performance.

Finally, the study examined the influence of supplier development on supply chain performance. The results presented in Table 5.11 and Figure 5.6 demonstrated that supplier development has a positive and significant influence on supply chain performance because the β value (0,458) is positive and the p-value (0,000<0.01) is significant, meaning that supply chain performance is determined by supplier development. In other words, any increase in supplier development will lead to an improvement in supply chain performance.

5.7.1 FINDINGS AND DISCUSSIONS

The results show that 310 participants contributed in this research study, and the majority were females (51.0%). Respondents were asked to indicate their level of education. The results show that of the 310 respondents, 152 (49.0%) had a diploma qualification. The results also show that of all race groups, blacks were the dominant racial group (71.1%). The respondents were asked to indicate number of employees within their organisation. As indicated by the outcomes of the study, 40 (6%) of the participants specified that they have 11 to 20 employees in their organisation. Respondents were also requested to indicate when they had attended their last training course. The results show that only 3% of the

surveyed respondents attended a training course in the past 7-12 months. Based on the results and at the time of the study, only 1% of the surveyed sample had been working 3-5 years in their current position. The results further indicate the type of devices which the majority of respondents owned to be computer, smart phone, and internet. Respondents were also requested to specify the type of business they were involved in. The outcomes demonstrate that most of the surveyed respondents (66.1%) were involved in financial business at the time of the study.

In the existing literature, different perspectives and theories have been used to explain SCM variables. Therefore, Chapter 2 of this study examined the hypothesised linear relationships between trust, supplier development, knowledge creation and supply chain performance by means of the following three theories: TBR, RBV and LKP. The LKP theory is used to explain the relationship between trust and knowledge creation as well as the link between knowledge creation and supply chain performance. The relationship between supplier development and supply chain performance is explained using the RBV theory. The TBR theory is then used to explain the relationship between trust and supply chain performance; trust and knowledge creation, along with the relationship between trust and supplier development. The primary objective of this study was to investigate the influence of trust on supplier development, knowledge creation and supply chain performance in KZN, SA. This was accomplished through the achievement of the following secondary objectives.

The current study sought to determine the influence of trust on SCP. Theoretically, the influence of trust on supply chain performance was discussed in Chapters Two, Three and Four. The multiple regression analyses in Chapter Five indicated that trust does not significantly affect supply chain performance because its p value (0,154>0.01) is non-significant – meaning that trust does not determine supply chain performance. In other words, any increase in trust will not lead to an improvement in the supply chain performance. This could also mean that trust has an indirect influence on supply chain performance, and depends on other factors to yield a significant influence of the performance of the entire supply chain. As mentioned by Ha, Park and Cho (2011), additional pressure occurs when a service provider's trust has an important influence on partnership in sharing information and risk, which leads to improved supply chain

performance. Therefore, a high level of trust is the basic fundamental to enable the building of a long-term collaborative strategy, which in turn boosts supply chain performance.

As cited by various scholars, the South African Global Entrepreneurship Monitor Report (2012) revealed that South Africa has a not been acknowledged often when it comes to small business popularity ratio and this raises concerns over the SMME segment's capability to contribute significantly to job creation, economic growth and a more equal spread of income (Kelley, Singer and Herrington 2012). It is reported by different scholars that the failure rate of SMEs is high throughout the world with the situation being no different to SA (Fang, Yuli and Hongzhi 2009). More so, as noted by Fumo and Jabbour (2011), the most significant challenges faced by SMEs (as supply chain associates) are funding and competition. Access to finance is the biggest challenge pointed out as delaying the growth and survival of start-up SMEs in SA (Mazanai and Fatoki 2012).

More often, accessing institutional support depends on human resources and the ability of SMEs to create and maintain long-term relationships with institutions according to their procedures, expectations, and the facility to integrate institutional support with the invention development. It is clear that banks in SA do not provide SMEs in the country with adequate capital, maybe because of their lack of trust in SME' performance and ability to pay back all the loaned amounts. As such, a high level of trust would be the initial belief of participants (be it Banks) to be willing to take the risk in building partnership relationships with SMEs, and especially when it comes to loaning them huge amounts of start-up capital.

- The study also aimed to examine the influence of trust on supplier development. Theoretically, the influence of trust on supplier development was discussed in Chapters Two, Three and Four. The multiple regression empirical analyses in Chapter indicate that trust has a positive and significant impact on supplier development because the β value (0,176) is positive and the p value (0,002<0.01) is significant – meaning that trust is a significant predictor of supplier development. In other words, any increase in trust will result in an increase in supplier development. Different scholars confirmed that when trust occurs amongst SC associates their relations could take very long, which involves connection permanency as a potential result of supplier trust (Vieira, Paiva,

Finger and Teixeira 2013). In other words, when supply chain associates trust their suppliers regardless of their size, they are most likely to invest in their development. Previous studies (Ismail and Alina 2010; McDowell, Harris and Gibson 2010; Ismail, Omar and Wei 2015; Mafini, Pooe and Loury-Okoumba 2016) have shown that to any SME service provider trust has an incentive influence on threat management actions between SMEs working in different SCs.

- The study further aimed to ascertain the influence of trust on knowledge creation. Theoretically, the influence of trust on knowledge creation was discussed in Chapters Two, Three and Four. The multiple regression empirical analyses in Chapter Five indicate that trust has a positive and significant impact on knowledge creation because the β value (0,491) is positive and the p value (0,000<0.01) is significant – meaning that trust is a significant predictor of knowledge creation. In other words, any increase in trust will lead to an improvement in knowledge creation. Niu (2010) confirmed that trust generates knowledge creation, which is defined as the method of creating knowledge within a firm.

- The study also assessed the influence of knowledge creation on supply chain performance. Theoretically, the influence of knowledge creation on supply chain performance was discussed in Chapters Two, Three and Four. The multiple regression empirical analyses in Chapter Five demonstrate that knowledge creation has a positive and significant impact on supply chain performance because the β value (0,333) is positive and the p value (0,000<0.01) is significant – meaning that supply chain performance is determined by knowledge creation. In other words, any increase in creation of knowledge will translate into an improvement in the supply chain performance.

- Lastly, the study focused on examining the influence of supplier development on supply chain performance. Theoretically, the influence of supplier development on supply chain performance was discussed in Chapters Two, Three and Four. The multiple regression empirically analyses in Chapter Five demonstrate that supplier development has a positive and significant impact on supply chain performance because the β value

(0,458) is positive and the p value (0,000<0.01) is significant – meaning that supply chain performance is determined by supplier development. In other words, any increase in supplier development will lead to an improvement in the supply chain performance.

5.8 CHAPTER SUMMARY

Chapter Five presented the analyses and interpretation of the research findings. Descriptive outcomes of the research findings were presented. They indicate that generally, all the scopes have a significant positive influence on all the focus areas included in the variables, confirming that the framework is a reliable tool to assess the organisation's/firm's resource abilities for SCP. Consideration of empirical presentations, analysis and interpretations of research findings were undertaken using regression analysis. In this study, Cronbach's alpha tests were conducted in order to assess the reliability of the measures. The data collected from the responses was analysed through linear-regression analysis conducted on IBM SPSS version 25. The purpose of linear-regression analysis was to evaluate if there is a statistically significant relationship between variables. The analysis presents the following outputs: reliability analysis, correlation and multiple linear regression, to determine whether there is a negative or positive relationship between the variables.

Findings of the study revealed that out of four variables (supplier development, trust, knowledge creation and SCP), only three were extremely reliable. The results indicate that trust does not significantly affect SCP because its p value (0,154>0.01) is non-significant. This means that trust does not determine SCP. In respect of SCP, findings of the study specify that all the variables included in all the focus areas are perceived to be important. The next chapter presents the conclusions and makes certain recommendations.

CHAPTER SIX: CONCLUSIONS AND RECOMMENDATIONS

6.1 INTRODUCTION

The analysis and interpretation of research findings were the main focus of the previous chapter (Chapter 5). The study was conducted in the KZN provincial hospitals and with private suppliers who work closely with the DoH and who supply medical equipment and furniture. The study was also focused on the formal SMEs and the sample size was drawn from the University of Zululand suppliers database, KZN. This study is important in a sense that it will help to improve supplier development as well as the SMEs since they are vulnerable. Yet, little research is available on the opportunities and challenges faced by SMEs in the context of the BEE strategy, and on their potential contribution for socio-economic transformation. This chapter focuses on the synopsis of the research objectives as well as recommendations and a conclusion of the study. New knowledge contributed to the discipline of supply chain management is reflected on, while recommendations for potential future areas of study are presented.

6.2 RESEARCH OBJECTIVES REVISITED AND THEIR ACHIEVEMENT

This research study intends to contribute to the body of knowledge, because of a dearth in literature particularly on the concept of SCP and its determinants. This study concentrated on the influence of trust on supplier development, knowledge creation and SCP in both public and private firms of all sizes in KZN, SA. The aim of this study was examine the influence of trust on SCP, with supplier development and knowledge creation as the mediators. The primary objective of this study was to investigate the influence of trust on supplier development, knowledge creation and SCP in KZN, SA. These objectives have been achieved through supporting objectives. The supporting objectives were to determine the influence of trust on SCP. The empirical results indicate that trust does not significantly influence SCP. The study also aimed to examine the influence of trust on supplier development. The results indicate that trust has a positive and significant influence on supplier development.

The study also sought to ascertain the influence of trust on knowledge creation. The results indicate that trust has a positive and significant influence on knowledge creation. Further, the study aimed to assess the influence of knowledge creation on SCP. The results demonstrate that knowledge creation has a positive and significant influence on SCP. Finally, the study examined the influence of supplier development on SCP. The results demonstrate that supplier development has a positive and significant influence on SCP. Empirical results (Chapter five) indicate that three regression analyses were conducted (Table 5.9: Variance explained). The first model (model 1) tested the effect of trust, knowledge creation, supplier development on SCP. The second model (model 2) tested the predictive influence trust on supplier development. The third model (model 3) tested the predictive influence of trust on knowledge creation.

6.3 CONCLUSIONS

This chapter has presented a summary of the conclusions reached concerning the research objectives, which apply to the primary research objective and the secondary objectives. Based on the findings, it can be concluded that trust does not significantly influence supply chain performance. However, the results do indicate that trust has a positive and significant influence on supplier development. Furthermore, the study's results also indicate that trust has a positive and significant influence on knowledge creation; that knowledge creation has a positive and significant influence on supply chain performance; and that supplier development has a positive and significant influence on supply chain performance. Thus, this study concluded that an increase in supplier development will lead to an improvement in the supply chain performance. More so, any increase in trust will lead to an improvement in knowledge creation and will result in an increase in supplier development. The learning process for firms could be a relevant component of SMEs' development.

6.4 IMPLICATIONS OF THE STUDY

The study was conducted since there is a huge gap in literature focusing on the influence of trust on supply chain performance, with supplier development and knowledge creation as the mediators. It is clear that supply chain performance is not well investigated. As

such, it is essential to be informed of the effect of trust on supplier development, knowledge creation and supply chain performance. As stated, little attention has, however, been given to the effect of trust, supplier development and knowledge creation on supply chain performance. In addition, little is known about supplier development and knowledge creation, particularly as mediator variables, for the relationship between trust and supply chain performance. Hence, the main purpose of this study was to evince the influence of trust on supplier development, knowledge creation and supply chain performance. The research problem for this study arose from a gap which exists as a result of a dearth in literature that examines the influence of trust on supplier development, knowledge creation and supply chain performance, which exists theoretically and pragmatically. According to the results, trust does not have any direct impact on supply chain performance. However, based on the β values, trust predicts better knowledge creation than supplier development. Supplier development was also found to be the strongest predictor of supply chain performance because it has the highest β value.

The empirical results presented in Chapter Five, indicate that trust has a weak positive and an insignificant influence on supply chain performance, meaning that trust does not directly determine supply chain performance. Thus, any increase in trust will not directly lead to an improvement of the supply chain performance. Consequently, H1 was rejected. The results also indicate that trust has a positive and significant influence on supplier development, meaning that trust is a significant predictor of supplier development. In other words, any increase in trust will directly result in an increase in supplier development. Therefore, H2 was accepted. The results also indicate that trust has a positive and significant influence on knowledge creation, meaning that trust is a significant predictor of knowledge creation. Therefore, H3 was accepted.

Further, the results also demonstrate that knowledge creation has a positive and significant influence on supply chain performance; meaning that supply chain performance is directly determined by knowledge creation. Therefore, H4 was accepted. In addition, the results demonstrate that supplier development has a positive and significant influence on supply chain performance, meaning that supply chain performance is determined by supplier development. Therefore, H5 was accepted.

6.5 RECOMMENDATIONS OF THE STUDY

SMEs need to constantly assess the environment that they function in, understanding their competitors. Since it is clear that banks in South Africa do not provide SMEs in the country with adequate capital, therefore a start-up and SME development lending policy must be executed. This will enable SMEs to grow, and perform better, as well as improve the level of trust between SMEs and their supply chain associates.

6.5.1 Training and development

There is a shortfall concerning progress regarding staff development for public and private sector institutions as well as individual career management enhancement initiatives. There is also limited special training and development initiatives for suppliers, supplying medical equipment and furniture to provincial hospitals. An increase in supplier development will lead to an improvement in the supply chain performance. Therefore, any increase in trust will lead to an improvement of knowledge creation. Thus, any increase in trust will result in an increase in supplier development. The learning process for firms could be a relevant component of SMEs' development. However, firms often express difficulties in establishing a deliberate learning process. The capability to integrate external knowledge from different sectors could be a major factor in firms' improvement capacity. SMEs must grow external partnerships that offer secure opportunities to obtain new knowledge. Expanded training programmes, intrapreneurship and internal training developments by senior employees are considered to be levers by which new knowledge can be integrated. The South African Government must provide training for firm owners and easy funding access for SMEs in KZN to be able to confront competition from local and foreign competitors. Furthermore, this study suggests that staff development and training for public and private sector institutions as well as individual career management enhancement initiatives must be implemented.

6.5.2 Collaboration with suppliers

There is inadequate collaboration with the suppliers to inaugurate a level of trust to eradicate problems that arise and to ensure that shipment schedules can be amicably resolved. Thus, collaboration with the suppliers must be implemented to inaugurate a level of trust to eradicate problems that arise and to ensure that shipment schedules can be

amicably resolved. More so, control measures need to be implemented to monitor the product at all stages of production so that corrective action can be implemented. To be able to challenge competition, partnership with suppliers must be considered. Entering into partnership is strongly recommended, which should increase the chance to chain strengths, knowledge creation, information sharing and technological proficiencies.

6.5.3 Technology

The study suggests that suppliers must challenge competition and enter into partnership which should increase the chance to gain and improve strengths, knowledge creation, information sharing and technological proficiencies. This study also suggests that an effective electronic data interchange system needs to be linked to suppliers as well as customers to enhance the communication needs, create knowledge and improve supply chain performance.

6.6 LIMITATIONS AND FUTURE RESEARCH POSSIBILITIES

This study included a number of limitations. The leading drawback was the modest sample size which was purposively drawn from five provincial hospitals (in KZN) with a few selected private suppliers who work closely with DoH and who supply medical equipment and furniture. Moreover, the study included a sample size of 350 SMEs that were drawn from the University of Zululand suppliers database in one province (KZN), SA. Due to this limitation, further studies of similar nature should be conducted but should use a larger sample and include other areas in order for the results to be more comprehensive. The next restriction is the unwillingness to share information, which could be addressed by more effective means of communication to ensure more comprehensive input (Li, Ye and Sheu 2014). Serious consideration of these aspects should ensure that collaboration and risk management bring about improved financial performance in SME supply chains.

The third limitation is the poor supplier training and development strategy. Mettler and Rohner (2009) confirmed that service provider development should be provided to support them to realise the necessities of the SMEs. Furthermore, it is significant for small businesses to ensure more transparency by making sure that their periodical and yearly reports are accessible to strategic suppliers (Carr and Kaynak 2007). Finally, it is

recommended that other scholars could look at challenges impacting the development of suppliers' special SMEs. Eckerd and Hill (2012) stated that partnering with suppliers, handling quality, implementing new technologies and refining business processes can result in more trust and better relationships.

According to the empirical result of this study, it is suggested that hospitals should integrate with their suppliers and create a good relationship which would result in their suppliers deriving greater levels of performance from the SC. Various scholars have indicated that SCM-enhanced risk management results in lasting relationships between SC partners (Dwyer, Schurr and Oh 1987; Bensaou 1999; Hoyt and Huq 2000; Duffy 2008). Furthermore, it is evident that the organisational life span of the majority of SMEs is less than five years (Bureau for Economic Research 2016), and thus it is normal to assume that supplier relationships will end sooner. The perception in SA is that SMEs are unable to have lasting relationships. These challenges, to the degree essential, would ensure that critical focus areas for the improvement of supply chain performance are achieved. Future researchers could perform a thorough investigation into the development and improvement of performance of SMEs. Such a study needs to be broad in different ways to include qualitative and quantitative methods such as large surveys on descriptive samples.

6.7 CHAPTER SUMMARY

To conclude, in this study the researcher investigated the influence of trust on supplier development, knowledge creation and supply chain performance in government and private institutions in KZN, SA. The empirical results show that an organisation/firm that has a high level of knowledge creation with its suppliers will yield greater performance within its SC. The findings also have important implications for policy makers. As the supply chain performance enabled process was empirically defined, firms are therefore able to design appropriate collaborative strategies for their supply chains. Moreover, since the study sample was selected from a combination of various firms, the conclusions are more general and comprehensive. Thus, follow-up research could be targeted toward some specific firms/institutions, such as suppliers who supply medical equipment and furniture, the SMEs under the University of Zululand database to understand their

resemblances. This would provide more vision into SCM implementation in these particular firms. Firm type indicates an important relationship with supply chain performance, but firm size does not. SC collaborations are basically formed from the consideration of vertical integration across various types of firms/institutions. Information sharing by itself may not fully exercise its influence on the achievement of supply chain performance in a direct manner.

REFERENCES

Abor, J. and Quartey, P. 2010. Issues in SME Development in Ghana and South Africa. *International Research Journal of Finance & Economics*, 39: 1450-2887. Available: http://www.eurojournals.com/finance.htm.

Abu Bakar, A. H., Lukman Hakim, I., Chong, S. C. and Lin, B. 2010. Measuring supply chain performance among public hospital laboratories. *International Journal of Productivity and Performance Management,* 59 (1): 75-97.

Adler, E.S. and Clark, R. 2008. *How it's done: an invitation to social research*. London: Thomson Wadsworth, 14.

Ahmad, M.M. and Alaskari, O. 2014. Development of assessment methodology for improving performance in SME's. *International Journal of Productivity and Performance Management*, 63 (4): 477-498.

Alaez-Aller, R. and Longas-Garcia, J.C. 2010. Dynamic supplier management in the automotive industry. *International Journal of Operations & Production Management*, 30 (3): 312-335.

Aminu, M.I. and Mahmood R. 2015. Mediating role of dynamic capabilities on the relationship between intellectual capital and performance: a hierarchical component model perspective in PLS-SEM path modelling. *Research Journal of Business Management*, 9: 443-456.

Amra, R., Hlatshwayo, A. and McMillan, L. 2013. *SMME Employment in South Africa*. Paper presented at the biennial conference of the Economic Society of South Africa, Bloemfontein, 25-27th September 2013.

Anand, N. and Grover, N. 2015. Measuring retail supply chain performance: Theoretical model using key performance indicators (KPIs). *Benchmarking: An International Journal*, 22(1): 135-166.

Andrews, M. 2008. *Is Black Economic Empowerment a South African growth catalyst? (Or could it be…)*. CID Working Paper, 170. Available:

http://www.hks.harvard.edu/var/ezp_site/storage/fckeditor/file/pdfs/centersprograms/centers/cid/publications/faculty/wp/170.pdf (Accessed: 16 August 2016).

Arend, R.J. and Winser, J.D. 2004. Small business and supply chain management: is there a fit? *Journal of Business Venturing*, 20: 403-36.

Argote, L., McEvily, B. and Reagans, R. 2003. Managing Knowledge in Organisations: An Integrative Framework and Review of Emerging Themes. *Journal of Management Sciences*, 49(4).

Ariely, G. 2003. Knowledge management as a methodology towards intellectual capital. *Presented at the 3rd European Knowledge Management Summer School*. Spain, San Sebastian (Accessed: 7 - 12 September).

Babbie, E. 2001. *The Practice of Social Research*. Belmont, CA: Wadsworth.

Babbie, E. 2010. *The practice of social research*. London: Wadsworth Cengage Learning, 80 – 274.

Babbie, E. and Mouton, J. 2010. *The practice of social research*. Cape Town: Oxford University Press.

Badenhorst-Weiss, H., Strydom, S., Strydom, J., Heckroodt, S., Howell, J., Cook, G., Phume, T,B. and Horn, G. 2014. *Supply Chain Management: A South African Approach*. Available: https://www.loot.co.za/product/hannie-badenhorst-weiss-supply.../hhmv-2916-g360.

Bailey, W. T. 1994. A longitudinal study of fathers' involvement with young children: Infancy to age 5 years. *The Journal of Genetic Psychology*, 155 (3): 331-339.

Baloyi, M. 2012. An investigation into the preferential procurement practices in South Africa: Impacts on the South African Construction industry. Master's dissertation, University of the Witwatersrand, South Africa.

Barker, R.L. 2003. *The social work dictionary*. Washington: NASW Press, 116.

Barney, J. 1991. Firm resources and sustained competitive advantage. *Journal of Management*, 17(1): 99-120.

Barney, J., Brahma, S.S. and Chakraborty, H. 2011. From Industry to Firm Resources: Resource-Based View of Competitive Advantage. *The IUP Journal of Business Strategy*, 8(16): 9.

Basher, V. 2010. Vendor selection and quota allocation by using fuzzy topics and linear programming. Master of Engineering in Production Engineering. University of Delhi, India.

Bell, R.L. 1999. Understandings of the nature of science and decision making on science and technology based issues. Unpublished doctoral dissertation, Oregon State University, Oregon.

Benjamin, C. 2014. BEE law has failed small enterprises, say black leaders. *Mail & Guardian*, 31 January Available: http://mg.co.za/article/2014-01-31-00-bee-law-has-failed-small-enterprises-say-black-leaders (Accessed: 31 January 2014).

Bensaou, M. 1999. Portfolios of buyer–supplier relationships. *Sloan Management Review*, 40(4): 35-44.

Berg, K.T. 2009. Finding connections between lobbying, public relations and advocacy. *Public Relations Journal*, 3 (3): 60.

Bernard, H.R. 2011. *Research methods in anthropology*. Altamira: Rowman.

Blome, C., Schoenherr, T. and Eckstein, D. 2014. The impact of knowledge transfer and complexity on supply chain flexibility, *International Journal of Production Economics*, 147(B): 307–316.

Bode, C., Wagner, S., Petersen, K. and Ellram, L. 2011. Understanding responses to supply chain disruptions: Insights from information processing and resource dependence perspectives. *Academy of Management Journal,* 54 (4): 833–856.

Bolstorff, P. and Rosenbaum, R. 2012. *Supply chain excellence*. Amacom: New York.

Botes, A., Niemann, W. and Kotzé, T. 2017. Buyer-supplier collaboration and supply chain resilience: A case study in the petrochemical industry. *South African Journal of Industrial Engineering,* 28 (4): 143–199.

Botti, M. 2005. Clinical research 5: Quantitative data collection and analysis. *Intensive and Critical Care Nursing*, 21 (3): 187-193.

Brandenburg, M., Govindan, K., Sarkis, J. and Seuring, S. 2014. Quantitative models for sustainable supply chain management: Developments and directions. *European Journal of Operational Research,* 233 (2): 299–312.

Brink, D. 2006. *Some Forms and Limits of Consequentialism*. In David Copp, the Oxford Handbook on Ethical Theory. Oxford University Press, 380-423.

Bryman, A. and Bell, E. 2003. *Business research methods*. Oxford University Press.

Bryman, A. and Bell, E. 2005. Quantitative Research. *Research Methodology*. Oxford University Press, Oxford, 154.

Bryman, A. and Bell, E. 2007. The Ethics of Management Research: An Exploratory Content Analysis. *British Journal of Management*, 18: 63–77.

Bryman, A. and Cramer, D. 1998. *Quantitative data analysis with SPSS for Windows: a guide for social scientists*. London: Routledge.

Bureau for Economic Research. 2016. The small, medium and micro enterprise sector of South Africa. Research Note 2016. Available: http://www.seda.org.

Burger, R. and Jafta, R. 2010. Affirmative action in South Africa: An empirical assessment of the impact on labour market outcomes, available: http:// www3.qeh.ox.ac.uk/pdf/crisewps/workingpaper76.pdf Cant (Accessed: 03 April 2016).

Burns, N. and Grove, S. K. 2001. The practice of nursing research. *Conduct, critique, and utilization*. Philadelphia: W. B.Saunders.

Cai, J., Liu, X., Xiao, Z. and Liu, J. 2009. Improving supply chain performance management: A systematic approach to analysing iterative KPI accomplishment. *Decision Support Systems*, 46 (2): 512-521.

Cannon, J. P., Doney, P. M., Mullen, M. R., and Petersen, K. J. 2010. Building long-term orientation in buyer–supplier relationships: the moderating role of culture. *Journal of Operations Management*, 28 (6): 506-521.

Cant, M.C. and Wiid, J.A. 2013. Establishing the challenges affecting South African SMEs. *International Business & Economics Research Journal,* 12 (6): 707–716.

Cao, M. 2007. *Achieving collaborative advantage through IOS-enabled supply chain collaboration: An empirical examination*. University of Toledo.

Cao, M. and Zhang, Q. 2011. Supply chain collaboration: impact on collaborative advantage and firm performance. *Journal of Operations Management*, 29 (3): 163–180.

Capaldo, A. and Giannoccaro, I. 2015. *Interdependence and network-level trust in supply chain networks: A computational study. Ind. Market. Manag*, 44: 180-195.

Carr, A.S. and Kaynak, H. 2007. Communication methods, information sharing, supplier development and performance: An empirical study of their relationships. *International Journal of Operations and Production Management,* 27(4): 346–370.

Carter, C., Kosmol, T. and Kaufmann, L. 2017. Toward a supply chain practice view. *Journal of Supply Chain Management*, 53(1): 114-122.

Chandrasekaran, N. 2012. *Supply chain management: process, system and practice*. 2nd ed. India: Oxford University Press, 58 – 59.

Chavhan, R., Mahgan,S.K. and Joshi, S.P. 2012. Supplier Development: Theories and practices. *Journal of Mechanical and Civil Engineering*, 3 (3): 37-51.

Chen, H., Daugherty, P.J. and Landry, T.D. 2009. Supply Chain Process Integration: A Theoretical Framework. *Journal of Business Logistics*, 30 (2).

Chen, I.J. and Paulraj, A. 2004. Understanding supply chain management: critical research and a theoretical framework. *International Journal of Production Research,* 42 (1): 131–163.

Chen, T. and Gong, X. 2013. Performance evaluation of a supply chain network. *Procedia Computer Science*, 17: 1003-1009.

Chingwaru, T. 2014. Impact of trade and economic liberalisation policy reforms on the operations of selected small to medium enterprises (SMEs) in Zimbabwe; A comparative

study with South Africa's experiences. Doctoral dissertation, Durban University of Technology, South Africa.

Chinomona, R. 2011. Non-mediated channel powers and relationship quality: A case of SMES in Zimbabwe channels of distribution. Ph.D. Thesis, Taiwan: National Central University, 1-175.

Chinyamurindi, W.T. 2012. Stories of career change amongst distance learners in South Africa. *South African Journal of Human Resource Management,* 10 (2): 1–11.

Chinyamurindi, W.T. 2016. A narrative investigation on the motivation to become an entrepreneur amongst a sample of black entrepreneurs in South Africa: Implications for entrepreneurship career development education. *Acta Commercii,* 16 (1): 1–9.

Chinyamurindi, W.T. 2017. The role of information management in project management success: Narratives from entrepreneurs operating within the South African construction industry. *South African Journal of Information Management* 19 (1): 1–9.

Chisholm, C. U. and Holifield, D . 2003. The Role of Tacit Knowledge in Continuous Professional Development of Work Based Practitioners. In: Proceedings of Proceedings of Annual Conference of Work Based Learning Network (UACE). Nicosia, 242-250.

Chiu, C. M., Hsu, M. H. and Wang, E. T. G. 2006. Understanding knowledge sharing n virtual communities: an integration of social capital and social cognitive theories. *Decision Support Systems*, 42 (3): 1877-1888.

Chopra, S. and Meindl, P. 2007. *Supply Chain Management: Strategy, Planning and Operations.* 3rd ed. Prentice Hall: Upper Saddle River,NJ.

Chopra, S. and Sodhi, M. 2014. Reducing the Risk of Supply Chain Disruptions. *Mit Sloan Management Review*, 55 (3): 72-80.

Chow, W.S., Madu, C. N, Kuei, C-H., Lu, M.H., Lin, C., and Tseng. H. 2008. Supply chain management in the US and Taiwan: An empirical study. *The International Journal of Management Science*, 36: 665-679.

Chowdhury, P.P. 2012. Antecedents and consequences of trust and commitment in B2B Relationship: A Review of Literature. *International Management Journal*, 4 (2): 49–63.

Civi, E. 2000. Knowledge management as a competitive asset: a review. *Marketing Intelligence and Planning*, 18 (4): 166-174.

Cohen, L., Manion, L. and Morrison, K. 2011. *Research methods in education*. 7th ed. Routledge: Abingdon.

Cohen, L., Manion, L., and Morrison, K. 2007. *Research Methods in Education*. 6th ed. London and New York: Routledge.

Colicchia, C. and Strozzi, F. 2012. Supply chain risk management: a new methodology for a systematic literature review. S*upply Chain Management: An International Journal*, 17 (4): 403-418.

Collis, J. and Hussey, R. 2009. *Business Research: A Practical Guide for Undergraduate and Postgraduate Students*. 3rd ed. Hampshire, U.K: Palgrave Macmillan

Collis, J. and Hussey, R. 2014. *Business research: A Practical Guide for Undergraduate and Postgraduate Students*. 4th ed. Palgrave Macmillan, New York.

Conner, K. and Prahalad, C. 2002. *A resource-based theory of the firm, in Choo and Bontis (Eds)*. The strategic management of intellectual capital and organisational knowledge. New York: Oxford University Press, 103-131.

Conner, K. R. 1991. A Historical Comparison of Resource-Based Theory and Five Schools of Thought Within Industrial Organisation Economics: Do We Have a New Theory of the Firm? *Journal of Management*, 17: 121-154.

Council for Supply Chain Management Professionals. 2015. CSCMP supply chain management. Available: https://cscmp.org/about-us/supplychain-management-definitions (Accessed: 14 July 2015).

Covey, S.M.R. 2008. *The speed of trust: The one thing that changes everything*. Free Press, New York, NY.

Creswell, J. W. 2003. *Research design: quantitative, qualitative, and mixed methods approach*. 2nd ed. California: Thousand Oaks: Sage Publication.

Creswell, J.W. and Clark, V.L. 2011. *Designing and conducting mixed methods research*. 2nd ed. London: Thousand Oaks: SAGE Publications.

Crowther, D. and Lancaster, G. 2008. *Research methods: a concise introduction to research in management and business consultancy*.

Dalvi, M.V. and Kant, R. 2015. Benefits, criteria and activities of supplier development: A categorical literature review. *Asia Pacific Journal of Marketing and Logistics,* 27 (4): 653–675.

Davenport, T.H. and Prusak, L. 1998. *Working Knowledge: How Organisations Manage What They Know*. Harvard Business School Press.

Dawson, A. 2002. Supply chain technology. *Work Study*, 51 (4): 191-196.

Day, R.L. 1984. Modeling choices among alternative responses to dissatisfaction in NA. *Advances in Consumer Research*. 11th ed. Thomas C. Kinnear, Provo, UT : Association for Consumer Research, Pages: 496-499.

De Carolis, D. 2002. The role of social capital and organizational knowledge in enhacing entrepreneurial opportunities in high-technology environments. In Choo and Bontis (eds). *The Strategic Management of Intellectual Capital and Organizational Knowledge*, New York: Oxford University Press.

De Klerk, S.S. 2008. A critical analysis of broad-based black economic empowerment in the mining sector. Doctoral dissertation, University of Johannesburg, South Africa.

De Vaus, D. A. 1996. *Surveys in social research*. London: UCL Press.

De Vos, A. S. 1998. *Research at grass roots: A primer for the caring professions*. Pretoria: J. L. Van Schaik.

De Vos, A.S., Strydom, H.J., Fouche, C.B., and Delport, C. S. L. 2011. *Research at grass roots: For the social sciences and human services professions*. 4th ed. Pretoria, Van Shaik.

Delport, C.S.L. and Roestenburg, W.J.H. 2011. Quantitative data-collection methods: questionnaires, checklists, structured observation and structured interview schedules. In De Vos, A.S., Strydom, H., Fouché, C.B. & Delport, C.S.L. (Eds). *Research at grassroots*

for the social sciences and human service professions. 4th ed. Pretoria: Van Schaik, 186 - 196.

Denzin, N. K. and Lincoln, Y. S. 2011. *The SAGE handbook of qualitative research. Thousand Oaks, CA: Sage.*

Department of Trade and Industry. 2006. Construction sector: Broad-based black economic empowerment charter version 6, DTI, Pretoria.

Department of Trade and Industry. 2014. South Africa's economic transformation: A strategy for broad-based black economic empowerment, 31. Available: http://www.dti.gov.za/economic_empowerment/bee-strategy.pdf (Accessed: 25 April 2014).

Department of Trade and Industry. 2016a. BBBEE. Available: http://www.thedti.gov.za/economic_empowerment/bee.jsp (Accessed: 24 June 2016).

Department of Trade and Industry. 2016b. Economic empowerment. Available: http://www.thedti.gov.za/economic_empowerment/economic_empowerment.jsp (Accessed: 23 June 2016).

Department of Trade and Industry. 2016b. Economic empowerment. Available: http://www.thedti.gov.za/economic_empowerment/economic_empowerment.jsp (Accessed: 23 June 2016).

Department of Trade and Industry. 2017. National Small Business Amendment Act. Available: https://www.thedti.gov.za/business_regulation/acts/small_business_amendment_act.pdf (Accessed: 27 December 2017).

Department of Trade and Industry. 2017. National Small Business Amendment Act. Available:https://www.thedti.gov.za/business_regulation/acts/small_business_amendment_act.pdf (Accessed: 27 December 2017).

Deshpande, A.R. 2012. Supply chain management dimensions, supply chain performance and organisational performance: An integrated framework. *International Journal of Business and Management*, 7 (8): 2 – 9.

Dixon, N. M. 2000. *Common knowledge: How companies thrive by sharing what they know*. Harvard Business School Press, Boston, Massachusetts.

Dörnyei, Z. 2007. *Research methods in applied linguistics*. New York: Oxford University Press.

Drucker, P.F. 1998. *The Discipline of Innovation*. Harvard Business Review, 149-157.

Duffy, R. S. 2008. Towards a better understanding of partnership attributes: an exploratory analysis of relationship type classification. *Industrial Marketing Management*, 37 (2): 228-244.

Dwyer, F. R., Schurr, P.H. and Oh, S. 1987. Developing buyer-seller relationships. *Journal of Marketing*, 51 (2): 11-27.

Dyer, J. H. and Chu, W. 2011. The determinants of trust in supplier-automaker relations in the US, Japan and Korea: a retrospective. *Journal of International Business Studies*, 42 (1): 1-7.

Dyer, J.H. and Chu, W. 2003. The role of trustworthiness in reducing transaction costs and improving performance: Empirical evidence from the United States, Japan, and Korea. *Organisation Science*, 14 (1): 57-68. Available: https://www.jstor.org/stable/3086033.

Easterby-Smith, M. and Lyles, M.A. 2011. In praise of organisational forgetting. *Journal of Management Inquiry*, 20: 311.

Easterby-Smith, M., Thorpe, R. and Jackson, P. R. 2012. *Management research: Mark Easterby-Smith, Richard Thorpe and Paul Jackson*. 4th ed. Los Angeles: SAGE, 348-359.

Eckerd, S. and Hill, J.A. 2012. The buyer supplier social contract: information sharing as a deterrent to unethical behaviours. *International Journal of Operations & Production Management*, 32 (2): 238–255.

Engel, R.J. and Schutt, R.K. 2010. *Fundamentals of social work research*. London: SAGE, 9.

Engel, R.J. and Schutt, R.K. 2013. *The practice of research in social work*. Los Angeles: SAGE, 18.

Eon-Kyung, L., Sungdo, H. and Sheung-Kown, K. 2000. An effective supplier development methodology for enhancing supply chain performance. Proceedings of the 2000 IEEE International Conference on Management of Innovation and Technology. ICMIT 2000. 'Management in the 21st Century' (Cat. No.00EX457). 2000. Publisher: Institute of Electrical and Electronics Engineers (IEEE). Available: DOI**:** 10.1109/ICMIT.2000.916809 (Accessed: 12-15 November).

Erturgut, R. and Soysekerci, S. 2011. Professional manager education on logistics and supply chain management. *Procedia-Social and Behavioral Sciences*, 15: 2771-2775.

Estampe, D., Lamouri, S., Paris, J.L. and Brahim-Djelloul, S. 2013. A framework for analysing supply chain performance evaluation models. *International Journal of Production Economic*s, 142 (2): 247-258.

Fang, N., Yuli, Z. and Hongzhi, X. 2009. Acquisition of resources, formal organisation and entrepreneurial orientation of new ventures. *Journal of Chinese Entrepreneurship*, 1 (1): 40-52.

Fatoki, O. 2014. The causes of the failure of new small and medium enterprises in South Africa. *Mediterranean Journal of Social Sciences*, 5 (20): 922-927.

Fawcett, S. E., Osterhaus, P., Magnan, G.M., Brau, J.C. and McCarter, M.W. 2007. Information sharing and supply chain performance: the role of connectivity and willingness. *Supply Chain Management: An International Journal*, 12 (5): 358-368.

Fawcett, S.E., Jin, Y.H., Fawcett, A.M. and Magnan, G. 2017. I know it when I see it: the nature of trust, trustworthiness signals, and strategic trust construction. *The International Journal of Logistics Management*, 28 (4): 914-938.

Fawcett, S.E., Jones, S.L. and Fawcett, A.M. 2012. *Supply chain trust: the catalyst for collaborative innovation*. Kelley School of Business, Indiana University, 55 (2): 163–178.

Field, A. 2013. *Discovering statistics using IBM SPSS statistics: And sex and drugs and Rock "N" Roll*. 4th ed. Sage, Los Angeles, London, New Delhi.

Fowler, F.J. 2002. *Survey research methods*. Newbury Park, CA, SAGE.

Friedl, G. and Wagner, S.M. 2012. Supplier development or supplier switching?, *International Journal of Production Research*, 50 (11): 3066-3079.

Fumo, N. D. G. and Jabbour, C.J.C. 2011. Barriers faced by MSEs: evidence from Mozambique. *Industrial Management & Data Systems*, 111 (6): 849-868.

Gagalyuk, T., Hanf, J. and Hingley, M. 2013. Firm and whole chain success: Network management in the Ukrainian food industry. *Journal on Chain and Network Science,* 13 (1): 47-70.

Garg, R. and DE, K.K. 2014. An exposition of resource capabilities for SMEs in the emerging markets. *South African Journal of Economic and Management Sciences,* 17 (3): 310-318.

Garson, G.D. 2009. *Factor Analysis from Statnotes: Topics in Multivariate Analysis*. Available: http://faculty.chass.ncsu.edu/garson/pa765/statnote.htm.

Giannakis, M. 2008. Facilitating learning and knowledge transfer through supplier development. *Supply Chain Management: An International Journal,* 13 (1): 62-72.

Gill, J. and Johnson, P. 2002. *Research methods for managers*. Sage.

Gold, S., Seuring, S. and Beske, P. 2010. Sustainable supply chain management and inter-organisational resources: a literature review. *Corporate Social Responsibility and Environmental Management*, 17: 230-245.

GOMM, R. 2009. *Key concepts in social research methods*. London: Palgrave, 92.

Gordhan, P. 2013. *Small and medium enterprises: Taxation considerations, interim report*. Davis Tax Committee, Pretoria.

Government Gazette, Republic of South-Africa. 2003. National Small Business Amendment Act, No. 26 of 2003, 461 (25763): 2-10. Available: http://www.info.gov.za/view/DownloadFileAction?id=68002 (Accessed 22 January 2013).

Grant, R.M. 1996. Toward a knowledge-based theory of the firm. *Strategic Management Journal*, 17(Winter Special Issue): 109-122.

Gravetter, F.J and Forzano, L.-A.B. 2011. *Research methods for the behavioural sciences*. Wadsworth Publishing Company, Belmont, CA.

Gravetter, F.J. and Forzano, L.B. 2003. *Research methods for the behavioural sciences*. London: Thomson Wadsworth.

Gronum, SJ. 2015. SME performance: the role of networking, innovation breadth, and business model design. PhD thesis, Brisbane, Queensland, AUS: University of Queensland.

Grose, J. and Richardson, J. 2014. Strategies to identify future shortages due to interruptions in the health care procurement supply chain and their impact on health services: a method from the English National Health Service. *Journal of Health Services Research and Policy*, 19 (1): 19–26.

Gubi, E., Arlbjørn, J.S and Johansen, J. 2003. Doctoral dissertations in logistics and supply chain management: A review of Scandinavian contributions from 1990 to 2001. International Journal of Physical Distribution & Logistics Management, 33 (10): 854-885.

Gunasekaran, A., Patel, C. and McGaughey, R.E. 2004. A framework for supply chain performance measurement. *International Journal of Production Economics,* 87(3): 333-347.

Ha, B., Park, Y. and Cho, S. 2011. Suppliers' affective trust and trust in competency in buyers. *International Journal of Operations and Production Management*, 31(1): 56-77.

Hallikas J. 2009. Risk Management in value networks: supply chain risk. *International Series in Operations Research & Management Science*,124. Springer, Boston, MA.

Han, G. and Dong, M. 2015. Trust-embedded coordination in supply chain information sharing. *International Journal of Production Research*, 53 (18): 5624–5639.

Harisalo, R. and Miettinen, E. 2010. *Trust: The capital of the capital*. Tampere: Tampere University Press.

Hatch, S.A. 2010. Forum: A world seabird organisation and Seabirds.net: meeting the challenge of the new paradigm. *Marine Ornithology*, 38: 69-77.

Helfat, C. and Peteraf, M. 2003. The dynamic resource-based view: Capability lifecycles. *Strategic Management Journal*, 24: 997-1010.

Hemsworth, D. and Martínez, L. 2005. The effect of supplier development initiatives on purchasing performance: a structural model. Supply Chain Management, 10 (4): 289-301.

Henning, E., Van Rensburg, W. and Smit, B. 2004. *Finding your way in qualitative research*. Van Schaik Publishers, Pretoria.

Hingley, M., Lindgreen, A. and Grant, D.B. 2015. Intermediaries in power-laden retail supply chains: An opportunity to improve buyer–supplier relationships and collaboration. *International Journal of Industrial Marketing Management,* 50: 78-84. Available: https://doi.org/10.1016/j.indmarman (Accessed: 25 May 2015).

Hoejmose, S., Brammer, S. and Millington, A. 2012. Green supply chain management: The role of trust and top management in B2B and B2C markets. *Industrial Marketing Management*, 41 (4): 609–620.

Hoejmose, S.U., Roehrich, J.K, and Grosvold, J. 2014. Reputational risks and sustainable supply chain management: Decision making under bounded rationality. *International Journal of Operations & Production Management*, 34 (5): 695-719.

Hong, P. and Jeong, J. 2006. Supply chain management practices of SMEs: from a business growth perspective. *Journal of Enterprise Information Management*, 19 (3): 292–302.

Hove, P. (2015) The Influence of Supply Chain Practice on Supply Chain Performance in South Africa, Unpublished PhD thesis, Vaal University of Technology, South Africa.

Hoyt, J. and Huq, F. 2000. From arms-length to collaborative relationships in the supply chain: an evolutionary process. *International Journal of Physical Distribution and Logistics Management*, 30 (9): 750-764.

Hsu, C.C., Tan, K.C., Kannan, V.R. and Keong Leong, G. 2009. Supply chain management practices as a mediator of the relationship between operations capability and firm performance, *International Journal of Production Research*, 47 (3): 835-855.

Hudnurkar, M., Jakhar, S. and Rathod, U. 2014. Factors affecting collaboration in supply chain: a literature review. *Procedia-Social and Behavioral Sciences*, 133: 189-202.

Human, D. 2006. *Implementation of affirmative action and Black Economic Empowerment (BEE) in the construction industry*. Available: http://www.icoste.org/ASAQS_Human.pdf (Accessed: 04 March 2016).

Hylton, A. 2002. A KM Initiative is Unlikely to Succeed without a Knowledge Audit. Available: http://www.annhylton.com/siteContents/writings/writings-home.htm, July 2002, (accessed 12 January 2006).

Iacobucci, D. and Churchill, G.A. 2010. *Marketing research: methodological foundations*. 10th ed. Mason, Ohio: Thomson South-Western, 258.

Institution for supply chain management. 2014. Available: http://www.ioscm.com (Accessed: 17 August 2015).

Ismail, H. P. M., Omar, S.S. and Wei, L.C. 2015. Trustworthiness in buyer-supplier relation on supply chain collaboration among SMEs. *International Symposium on Technology Management and Emerging Technologies* (ISTMET).

Ismail, H.P.M. and Alina, S. 2010. Level of supply chain collaboration of Malaysian SME manufacturers. In: Proceedings of 5th IEEE. *International Conference on Management of Innovation and Technology*, 169-174.

Iyanaga, S. and Kawada, Y. 1980. Statistical Estimation and Statistical Hypothesis Testing. Cambridge: MA: MIT Press.

Jabbour, A.B. L.S. and Jabbour, C. J.C. 2009. Are supplier selection criteria going green? Case studies of companies in Brazil. *Industrial Management & Data Systems,* 109 (4): 477-495.

Janse van Rensburg, K. and Roodt, G. 2005. The perceptions of employment equity and black economic empowerment as predictors of organisation-related commitment. *South African Journal of Human Resource Management,* 3 (3): 49–60.

Jayaram, J. and Tan, K.C. 2010. Supply chain integration with third party logistics providers. *International Journal of Production Economics*, 125: 262-271.

Jeffery, A. 2013. BEE is flawed and should be scrapped. *Mail & Guardian*, 18 January. Available: http://mg.co.za/article/2013-01-18-bee-is-flawedand-should-be-scrapped (Accessed: 08 March 2016).

Jiang, Z., Henneberg, S.C and Naudé, P. 2011. The importance of trust vis-à-vis reliance in business relationships: some international findings. *International Marketing Review*, 28 (4): 318-339.

Johnson, R. B., Onwuegbuzie, A. J., and Turner, L. A. 2007. Toward a definition of a mixed methods research. *Journal of Mixed Methods Research*, 1: 112-133.

Johnston, D. A., Mccutcheon, D. D., Stuart, I. F. and Kerwood, H. 2004. Effects of supplier trust on performance of cooperative supplier relationships. *Journal of Operation Management*, 22 (1): 23-38.

Jope, M. 2000. *Reliability and validity in quantitative research*. Beverly Hills, SAGE.

Kannan, V.R. and Tan, K.C. 2005. Just in time, total quality management, and supply chain management: understanding their linkages and impact on business performance. *OMEGA: The International Journal of management Science*, 33 (2): 153-162.

Kasuto, O.A. 2009. The monitoring and evaluation framework for the broad Based Black Economic Empowerment policy in South Africa and lessons of experience for Namibia. Master's thesis, University of the Western Cape, South Africa.

Kato, T. and Nunes, B. 2012. Supplier competitive advantage in inter-firm business relationships : is Keiretsu really a source of competitive advantage for Japanese automotive suppliers?. *Advances in manufacturing technology XXVI: 10th international conference on manufacturing research: incorporating the 27th national conference on manufacturing research, manufacturing technology and operations to sustain business success*, 2.

Kelley, D.J., Singer, S. and Herrington, M.D. 2012. The Global Entrepreneurship Monitor. Available: http://www.gemconsortium.org/report.

Kengne, B.D. 2016. Mixed-gender ownership and financial performance of SMEs in South Africa: A multidisciplinary analysis. International Journal of Gender and Entrepreneurship, 8 (2): 117-136.

Kern, D., Moser, R., Hartmann, E. and Moder, M. 2012. Supply risk management: Model development and empirical analyses. *International Journal of Physical Distribution & Logistics Management*, 42 (1): 60-82.

Kim, B. 2000. Coordinating an innovation in supply chain management. *European Journal of Operational Research*, 123 (3): 568-584.

Kim, K. K., Umanath, N. S., and Kim, B. H. 2005. An assessment of electronic information transfer in B2B supply-channel relationships. *Journal of Management Information Systems*, 22 (3): 293-320.

Kleynhans, P.J. and Kruger, M.C. 2014. Effect of Black Economic Empowerment on profit and competitiveness of firms in South Africa. *Independent research journal*, 14 (1), Kleynhans.

Kocoglu, I., Imamoglu, S.Z., Ince, H. and Keskin, H. 2011. The effect of supply chain integration on information sharing: enhancing the supply chain performance. *Procedia Social and Behavioural Sciences*, 24: 1630- 1649.

Kogut, B. and Zander, U. 1992. Knowledge of the firm, combinative capabilities, and the replication of technology. *Organisation Science*, 3: 383-397.

Kogut, B. and Zander, U. 1996. What firms do? Coordination, identity, and learning. Organisation Science, 7 (5): 502-518. Available: https://www.jstor.org/stable/2635287 (Accessed: September - October 1996).

Kohli, A.K., Jaworski, B.J., Kumar, A. 1993. Markor: a measure of market orientation. *Journal of Marketing Research,* 15: 467-477.

Kozlenkova, I.V., Samaha, S.A. and Palmatier, R.W. 2013. Resource-based theory in marketing. *Journal of the Academy of Marketing Science*, 42 (1):1-21.

Kristal, M.M., Huang, X. and Roth. A.V. 2010. The effect of an ambidextrous supply chain strategy on combinative competitive capabilities and business performance. *Journal of Operations Management*, 28: 415-429.

Kruger, D., Ramphal, R. and Maritz, M. 2013. *Operations management*. 3rd ed. OUP, Southern Africa, 42.

Kruger, L.P. 2011. The impact of black economic empowerment (BEE) on South African businesses: Focusing on ten dimensions of business performance. *Southern African Business Review,* 15 (3): 207-233.

Kuhn, T. S. 1962. *The structure of scientific revolutions*. University of Chicago Press, Chicago, Illinois, USA.

Kumar, G. and Nath, B. R. 2014. Supply chain collaboration index: an instrument to measure the depth of collaboration. *Benchmarking: An International Journal*, 21 (2): 184–204.

Kumar, G., Banerjee, R.N., Meena P.L and Ganguly, K.K. 2017. Joint planning and problem solving roles in supply chain collaboration. *IIMB Management Review*, 29 (1): 45-57. Available: http://dx.doi.org/10.1016/j.iimb.2017.03.001 (Accessed March 2017).

Kumar, R. 2005. *Research methodology: A step-by-step guide for beginners*. 2nd ed. London: Sage, 145 – 151.

Kushnir, K., Mirmulstein, M. and Ramalho, R. 2010. Micro, small, and medium enterprises around the world: how many are there, and what affects the count? *MSME Country Indicators*. Washington, DC: IFC and the World Bank.

Kwon, I.W. G. and Suh, T. 2004. Factors affecting the level of trust and commitment in supply chain relationships. *The Journal of Supply Chain Management*, 40 (2): 4–14.

Laeequddin, M., Sahay, B. S., Sahay, V., and Waheed, K. A. 2012. Trust building in supply chain partners relationship: an integrated conceptual mode. *Journal of Management Development*, 31(6): 550-564.

Lambert, D. M. 2008. *Supply chain management', in D.M. Lambert (ed.), Supply chain management: Processes, partnerships, performance.* 3rd ed. Sarasota: Supply Chain Management Institute.

Lambert, D.M. and Pohlen, T.L. 2001. Supply chain metrics. International Journal of *Logistics Management*, 1 – 19.

Lavastre, O., Gunasekaran, A. and Spalanzani, A. 2012. Supply chain risk management in French companies. *Decision Support Systems*, 52 (4): 828–838.

Le Fleur, H., Koor, J., Chetty, V., Ntshangase, S., Mackenzie. and Rawoot, F. 2014. *Informal small medium and micro enterprises (SMME) retailers in South Africa, ILDP.* Available: http://www.wrseta.org.za/ILDP_2014/ Syndicate%201-%20Ratoon.pdf (Accessed: 28 December 2017).

Leedy, P. D. and Ormrod, J. E. 2015. *Practical research: Planning and design*. 11th ed. Boston, MA: Pearson.

Li, S. and Lin, B. 2006. *Accessing information sharing and information quality in supply chain management*. United States (Accessed 27 March 2006).

Li, Y., Ye, F. and Sheu, C. 2014. Social capital, information sharing and performance: evidence from China. *International Journal of Operations and Production Management*, 34 (11): 1440–1462.

Lin, C., Chow, W.S., Madu, C.N., Kuei, C-H. and Pei Yu, P. 2005. A structural equation model of supply chain quality management and organisational performance. *International Journal of Production Economics*, 96 (3): 355-365.

Liu, C.H. 2009. The effect of a quality management system on supply chain performance: An empirical study in Taiwan. *International Journal of Management*, 26 (2): 285–294.

Liu, C.H. 2009. The effect of a quality management system on supply chain performance: an empirical study in Taiwan. *International Journal of Management*, 26 (2): 285-294.

Liu, J., Zhang, S. and Hu, J. 2005. A case study of an inter-enterprise workflow-supported supply chain management system. *Information and Management Journal,* 42 (3): 441–454.

Liu, Y., Luo, Y. and Liu, T. 2008. Governing buyer–supplier relationships through transactional and relational mechanisms: evidence from China. *Journal of Operations Management,* 27: 294–309.

Lockett, A., Thompson, S. and Morgenstern, U. 2009. The development of the resource-based view of the firm: A critical appraisal. *International Journal of Management Reviews*, 11: 9–28.

Lotfi, Z., Mukhtar, M., Sahran, S. and Zadeh, A.T. 2013. Information sharing in supply chain management. *In: Proceedings of 4th International Conference on Electrical Engineering and Informatics*. Procedia Technology, 298–304.

Lotfi, Z., Mukhtar, M., Sahran, S. and Zadeh, A.T. 2013. Information sharing in supply chain management. *4th International Conference on Electrical Engineering and Informatics, Procedia Technology*, 11: 298–304.

Love, J.H. and Roper, S. 2015. SME innovation, exporting and growth: A review of existing evidence. *International Small Business Journal,* 33 (1): 28–48.

Luiz, J. and Gaspari, R. 2007. The Indigenisation of business ownership in an emerging market: doing business in South Africa. *International Business & Economics Research Journal* (IBER), 6 (12).

Lysons, K. and Farrington, B. 2016. *Procurement and supply chain management*. 9th ed. Pearson Education, London.

Maas, G. and Herrington, M. 2006. *Global entrepreneurship monitor South African report*. Available: http://www.gemconsortium.org/document.aspx?id756 (Accessed: 6 September 2013).

Maas, G. and Herrington, M. 2006. Global entrepreneurship monitor: South African executive report 2006. *The UCT Centre for Innovation and Entrepreneurship*. Available: http://www.gbs.nct.ac.za/gbswebb/userfiles/gemsouthafrica2000pdf, (Accessed: 10 May, 2009).

MacDuffie, J. P. 2011. Inter-organisational trust and the dynamics of distrust. *Journal of International Business Studies*, 42 (1): 35-47.

Malerba, F. and Orsenigo, L. 2000. Knowledge, innovation activities and industrial evolution. *Industrial and Corporate Change*, 9 (2): 289-313.

Malhotra, N.K. 2010. *Marketing research: an applied orientation*. Englewood Cliffs, NJ: Prentice-Hall, 312.

Markley, M.J. and Davis, L. 2007. Exploring future competitive advantage through sustainable supply chains. *International Journal of Physical Distribution & Logistics Management*, 37 (9): 763-774.

Marlow C. 2005. *Research methods: For the specialist Social Worker*. 2nd ed. Pacific Grove, C.A: Brooke / Cole.

Mathura, A. 2009. The impact of broad-based black economic empowerment on the financial performance of companies listed on the JSE. Masters Dissertation. Gordon Institute of Business Science, University of Pretoria, 48.

Mathura, A. 2009. The impact of broad-based black economic empowerment on the financial performance of companies listed on the JSE. Master's research project, Gordon Institute of Business Science, University of Pretoria.

Maxwell, J. A. 2013. Qualitative research design: An interactive approach. 3rd ed. Thousand Oaks, CA: SAGE Publications, 122.

Mazanai, M. and Fatoki, O. 2012. Access to finance in the SME sector: A South African perspective. *Asian Journal of Business Management*, 4 (1): 58-67.

Meier, D.E. 2011. Increased access to palliative care and hospice services: opportunities to improve value in health care. *The Milbank Quarterly*, 89 (3): 343-380.

Mentzer, J. T., DeWitt, W., Keebler, J. S., Min, S., Nix, N. W., Smith, C. D. and Zacharia, Z. G. 2001. Defining supply chain management. *Journal of Business Logistics*, 22 (2): 1-25.

Mertens, D.M. 2009. *Transformative research and evaluation*. New York: The Guilford Press.

Mettler, T. and Rohner, P. 2009. Supplier relationship management: A case study in the context of health care. *Journal of Theoretical and Applied Electronic Commerce Research*, 4 (3): 58–71.

Michailova, S. 2011. Contextualising in international business research. Why do we need more of it and how can we be better at it? *Scandinavian Journal of Management,* 27 (1): 129–139.

Michailova, S. and Jormanainen, I. 2011. Knowledge transfer between Russian and Western firms: Whose absorptive capacity is in question? *Critical Perspectives on International Business,* 7 (3): 250–270.

Miocevic, D. and Crnjak-Karanovic, B. 2012. The mediating role of key supplier relationship management practices on supply chain orientation. The organisational buying effectiveness link. *Industrial Marketing Management*, 41 (1): 115–124.

Mitchell, M.L. and Jolley, J.M. 2010. Research design explained. New York, 205.

Mitchell, M.L. and Jolley, J.M. 2010. *Research design explained*. New York: Wadsworth Cengage Learning, 205.

Mitchell, R. and Boyle, B. 2010. Knowledge creation measurement methods. *Journal of Knowledge Management*, 14 (1): 67-82.

Modi, S.B. and Mabert, V.A. 2007. Supplier development: Improving supplier performance through knowledge transfer. *Journal of Operations Management,* (25): 42–64.

Mohamed, A.Z. 2015. *Correlation and regression analysis*. SESRIC, 1 – 17.

Mohanty, R.P. and Deshmukh, S.G. 2005. *Supply chain management: Theories and practices*. Delhi: Biztantra Publication.

Mohanty, R.P. and Prakash, A. 2014. Green supply chain management practices in India: A confirmatory empirical study. *Production & Manufacturing Research*, 2 (1): 438–456.

Moloto, G.R.B., Brink, L. and Nel, A.J. 2014. An exploration of stereotype perceptions amongst support staff within a South African higher education institution. *South African Journal of Human Resource Management,* 12 (1): 1–12.

Monette, D.R., Sullivan, T.J. and Dejong, C.R. 2011. *Applied social research: a tool for the human services.* New York: Brooks/Cole Cengage Learning.

Monitor, Global Entrepreneurship. 2012. South African Report. Cape Town: University of Cape Town Graduate School of Business, University of Cape Town.

Montgomery, D.C., Peck, E.A. and Vining, G.G. 2012. Introduction to Linear Regression Analysis. 5th ed. *International statistical review*, 81 (02): 175 – 335.

Morris, T. 2006. *Social work research methods: four alternative paradigms*.

Musana, G. 2006. *Universal Primary Education in Uganda: What went wrong*. Makerere University.

Nagati, H. and Rebolledo, C. 2011. The role of relative absorptive capacity in improving suppliers operational performance. *International Journal of Operations & Production Management*, 32 (5): 611–630.

National Youth Policy. 2015. The Presidency Republic of South Africa. Available: https://www.gov.za/documents/national-youth-policy-20152020-8-jun-2015-0000 (Accessed: 10 October 2017).

Neuman, W.L. 2006. *Social research methods: qualitative and quantitative approaches*. New York: Pearson Allyn and Bacon.

Ngwenya, S. 2007. Successes and failures of BBBEE: A critical assessment. Doctoral dissertation, University of Stellenbosch, South Africa.

Niglas, K. 2009. How the novice researcher can make sense of mixed methods designs. International Journal of Multiple Research Approaches, 3 (1): 34-46.

Niu, K. 2010. Organisation trust and knowledge obtaining in industrial clusters. *Journal of Knowledge Management*, 14 (1): 141 – 155.

Nold, C. 2009. Emotional cartography. Technologies of the Self. London: Space Studios, 9 - 10.

Nonaka, I. 1994. A dynamic theory of organisational knowledge creation. *Organisation Science*, 5: 14-37.

Nonaka, I. and Konno, N. 1998. *The concept of "ba": Building a foundation for knowledge creation*. California management review, 40 (3): 40-54.

Nonaka, I. and Takeuchi, H. 1995. *The Knowledge Creating Company*. Oxford University Press, New York, NY, 64 – 69.

Nonaka, I. and Von Krogh, G. 2009. Perspective tacit knowledge and knowledge conversion: Controversy and advancement in organisational knowledge creation theory. *Organisation Science*, 20 (3). Available: https://doi.org/10.1287/orsc.1080.0412.

Nyaga, G.N., Lynch, D.F., Marshall, D. and Ambrose, E. 2013. Power asymmetry, adaptation and collaboration in dyadic relationships involving a powerful partner. Journal of Supply Chain Management, 49 (3): 42–65.

Nyaga, G.N., Whipple, J.M. and Lynch, D.L. 2010. Examining supply chain relationships: do buyer and supplier perspectives on collaborative relationships differ'? *Journal of Operations Management*, 28: 104–114.

Nyaga, G.N., Whipple, J.M. and Lynch, D.L. 2010. Examining supply chain relationships: do buyer and supplier perspectives on collaborative relationships differ? *Journal of Operations Management*, 28: 104–114.

O'Gorman, C. 2001. The sustainability of growth in small-and medium-sized enterprises. *International Journal of Entrepreneurial Behavior & Research*, 7 (2): 60-75.

O'Reilly III, C.A. 1982. Variations in decision makers' use of information sources: the impact of quality and accessibility of information. *Academy of Management Journal*, 25 (4): 756 – 771.

Odongo, W., Dora M., Molnár, A., Ongeng D. and Gellynck, X. 2016. Performance perceptions among food supply chain members: A triadic assessment of the influence of supply chain relationship quality on supply chain performance. British Food Journal, 118 (7): 1783–1799.

Oliver, P. 2010. *The student's guide to research ethics*. McGraw-Hill Education, UK.

Oosthuizen, R.M. and Naidoo, V. 2010. Attitudes towards and experiences of employment equity. *South African Journal of Industrial Psychology,* 36 (1): 1–9.

Ou, C., S, Liu, F., C., Hung, Y., C., and Yen, D., C. 2010. A structural model of supply chain management on firm performance. *International Journal of Operations & Production Management*, 30 (5): 526-545.

Pallant, J. 2010. *SPSS survival manual: A step by step guide to data analysis using SPSS*. McGraw-Hill International.

Panayides, P. M. and Venus-Lun, Y.H. 2009. The impact of trust on innovativeness and supply chain performance. *International Journal of Production Economics*, 122 (1): 35-46.

Patton, M. Q. 2002. *Qualitative research and evaluation methods*. 3rd ed. Sage Publications, Inc.

Pedhazur, E. J. and Schmelkin, L. P. 1991. *Measurement, Design, and Analysis: An Integrated Approach*. Hillsdale, NJ: Lawrence Erlbaum Associates.

Pelissier, R. 2008. *Business Research Made Easy*. Juta & Co., 12.

Peng, M.W. 2009. *Global business*. Canada: South-Western Cengage Learning.

Penrose, E. 1959. *The theory of the growth of the firm*. Oxford: Basil Blackwell Publisher.

Polanyi, M. 1966. *The tacit dimension*. London: Routledge & Kegan Paul.

Polit, D. F. and Hungler, P. B. 2004. *Nursing research: Principle and methods*. Philadelphia: Lippincott, Williams & Wilkins, 716.

Pooe, D. 2013. Theoretical perspectives and the implementation of the BBBEE policy framework. *Mediterranean Journal of Social Sciences*, 4 (14): 635-642.

Quayle, M. 2003. A study of supply chain management practice in UK industrial SMEs. *Supply Chain Management: An International Journal*, 8 (1): 79-86.

Rajasekar, S., Philominaathan, P. and Chinnathambi, V. 2013. *Research Methodology*, 5. Available: https://arxiv.org/abs/physics/0601009 (Accessed: 27 May 2019).

Rajendra, C., Mahajan, S.K. and Joshi, S.P. 2012. Supplier development: Theories and practices. *Journal of Mechanical and Civil Engineering,* 3 (3): 37–51.

Ralph L. Day. 1984. Modeling choices among alternative responses to dissatisfaction. 11th ed. *NA - Advances in Consumer Research*.

Ramanathan, U. and Gunasegaram, A. 2014. Supply chain collaboration: Impact of success in long-term partnerships. *International Journal of Production Economics*, 147: 252–259. Available: http://www.elsevier.com/locate/ijpe.

Rantakari, L. 2010. Governance in business process outsourcing: case study on call center outsourcing.

Rawls, J. 1999. A theory of justice, rev. edn. Oxford University Press, Oxford.

Remenyi, D., Williams, B., Money, A. and Swartz, E. 2003. *Doing research in business and management: An introduction to process and method*. London, SAGE Publications.

Rouse, M.J. and Daellenbach, U.S. 2002. More thinking on research methods for the resource-based perspective. *Strategic Management Journal*, 23 (10): 963-967.

Roussel, J.S. 2013. The strategic supply chain advantage: Treating supply chain as a strategic asset. Paper read at the SAPICS 35th Annual conference and exhibition, Sun City, South Africa, 2–4 June.

Rovai, A. P., Baker, J. D. and Ponton, M. K. 2014. *Social science research design and statistics: A practitioner's guide to research methods and IBM SPSS*. Chesapeake, VA: Watertree Press LLC.

Rubin, A. and Babbie, E. 2010. Essential research methods for social work. Newyork, 41.

Sachan, A. and Datta, S. 2005. Review of supply chain management and logistics research. *International Journal of Physical Distribution & Logistics Management*, 35 (9): 664705.

Sahay, B. S. and Mohan, R. 2003. Supply chain management practices in Indian industry. *International Journal of Physical Distribution & Logistics Management*, 33 (7): 582-606.

Sako, M. 1992. *Prices, quality and trust*. Cambridge: Cambridge University Press.

Sanchez, R. 2005. *Tacit knowledge versus explicit knowledge: approaches to knowledge management practice*. TEAM Ling, 191.

Sanchez-Rodríguez, C., Hemsworth, D., and Martínez-Lorente, Á.R. 2005. The effect of supplier development initiatives on purchasing performance: a structural model. *Supply Chain Management: An International Journal*, 10 (4): 289-301.

Sarkis, J.,Zhu,Q. and Lai,K.H. 2011. An organisational theoretic review of green supply chain management literature. *International Journal Production Economics*, 130: 1–15.

Sauber, M.H., McSurely, H.B. and Rao Tummala, V.M. 2008. Developing supply chain management program: a competency model. *Quality Assurance in Education*, 16 (4): 375-391.

Saunders, M., Lewis, P. and Thornhill, A. 2003. *Research methods for business students*. 3rd ed. New York: Prentice Hall, 486.

Saunders, M., Lewis, P. and Thornhill, A. 2007. *Research methods for business students*. 4th ed. Harlow, UK: Pearson Education.

Saunders, M., Lewis, P. and Thornhill, A. 2009. *Research methods for business students*. 5th ed. Harlow, Pearson Education.

Saunders, M., Lewis, P. and Thornhill, A. 2012. *Research methods for business students*. 6th ed. Harlow. England: Pearson Education.

Saunders, M., Lewis, P. and Thornhill, A. 2016. *Research methods for business students*. 7th ed. Harlow: Pearson Education Limited.

Saunders, M., Lewis, P. and Thornhill. A. 2009. *Research methods for business students*. 5th ed. Harlow: Financial Times (Prentice-Hall).

Sekaran, U. 2000. *Research methods for business: A skill building approach*. New York: John Wiley and Sons.

Sekaran, U., and Bougie, R. 2016. *Research methods for business: a skill-building approach*. 7th ed. Haddington: John Wiley & Sons, 111.

Senker, J. 1995. Tacit knowledge and models of innovation. *Industrial and Corporate Change*, 4 (2): 425-47.

Servaes, H., Tamayo, A. and Tufano, P. 2009. The theory and practice of corporate risk management. *Journal of Applied Corporate Finance* 21 (4): 60–78.

Seuring, S. and Müller, M. 2008b. Core issues in sustainable supply chain management : A delphi study. *Business Strategy and the Environment,* 17 (8): 455– 466.

Seuring, S. and Müller, M. 2008a. From a literature review to a conceptual framework for sustainable supply chain management. Journal of Cleaner Production, 16 (15):1699–1710.

Sezen, B. 2008. Relative effects of design, integration and information sharing on supply chain performance. *Supply Chain Management: An International Journal*, 13 (3): 233-240.

Sezen, B. 2008. Relative effects of design, integration and information sharing on supply chain performance. *Supply Chain Management. An International Journal*, 13 (3): 233–240.

Sidik, I.G. 2012. Conceptual framework of factors affecting SME development: mediating factors on the relationship of entrepreneur traits and SME performance. *Procedia Economics and Finance*, 4:373-383.

Small Business Project (SBP). 2015. SME sustainability and growth should be an obsession for job creation in South Africa. Available: http:// www.sbp.org.za/uploads/media/SBP_Alert_-_SME_sustainability_and_ growth_01.pdf (Accessed: 12 October 2017).

Small Enterprise Development Agency. 2016. The small, medium and micro enterprise sector of South Africa. Available: http://www.seda.org.za/Publications/Publications/The%20Small,%20Medium%20and%20Micro%20Enterprise%20Sector%20of%20South%20Africa%20Commissioned%20by%20Seda (Accessed: 20 March 2018).

Sodhi, M.S., Son, B.G. and Tang, C.S. 2012. Researchers perspectives on supply chain risk management. *Production and Operations Management*, 21 (1): 1–13.

South Africa. Constitution of the Republic of South Africa. 1996. Pretoria. Government Printers.

Spender, J. C. 1996. Making knowledge the basis of a dynamic theory of the firm. *Strategic management journal*, 17 (S2): 45-62.

Steyn, L. 2015. Small firms hit by new BEE codes. Mail & Guardian, 20 March. Available: http://mg.co.za/article/2015-03-19-small-firms-hit-by-newbee-codes (Accessed: 25 March 2016).

Stock, J.R. and Boyer, S.L. 2009. Developing a consensus definition of supply chain management: A qualitative study. *International Journal of Physical Distribution & Logistics Management,* 39 (8): 690–711.

Struwig, F.W. and Stead, G.B. 2001. *Planning, designing and reporting research*. Cape Town: Pearson Education South Africa, 8.

Subramani, M. 2004. How do suppliers benefit from information technology use in supply chain relationships? *MIS Quarterly*, 28 (1): 45–73.

Suh, T. and Kwon, I. 2003. The role of bilateral asset specificity and replaceability on trust in supply chain partner. In: Proceedings of *Proceedings in the American Marketing Association*.

Sundram,V.P.K, Chandran, V.G.R., and Bhatti, M.A. 2016. Supply chain practices and performance: the indirect effects of supply chain integration. *Benchmarking: An International Journal*, 23 (6): 1445-1471.

Sunjka, B. P. and Sklar-Chik, M. 2012. Supply chain risk and small and medium manufacturing enterprises in South Africa. CIE42 Proceedings, Cape Town.

Tait, L. 2012. The potential for local community benefits from wind farms in South Africa. Doctoral dissertation, University of Cape Town, South Africa.

Takeuchi, H. and Nonaka, I. 2004. *Knowledge creation and dialectics*. Hitotsubashi on knowledge management, 60.

Talaja, A. 2012. Testing VRIN framework: Resource value and rareness as sources of competitive advantage and above average performance. *Management*, 17 (2): 51-64.

Tan, K.C, Handfield, R.B. and Krause, D.R. 1998. Enhancing the firm's performance through quality and supply base management: An empirical study. *International Journal of Production Research*, 36 (10): 2813-2837.

Tan, K.C. 2002. Supply chain management: Practices, concerns, and performance issues. *The Journal of Supply Chain Management,* 1-12.

Tan, Y.C., Mavondo, F and Worthington, S. 2011. Organisational capabilities and relationship quality performance implications for palm oil processors in Malaysia. *Asia Pacific Journal of Marketing and Logistics*, 23 (2): 152-164.

Tang, L., Ke, J., Jie, H. and Eugene, S. 2016. Complex interdependent supply chain networks: cascading failure and robustness. *Physica A: Statistical Mechanics and Its Applications*, 44(C): 58-69.

Tavani, S.N., Sharifi, H. and Ismail, H.S. 2013. A study of contingency relationships between supplier involvement, absorptive capacity and agile product innovation. *International Journal of Operations & Production Management*, 34 (1): 65–92.

Thabe, W.S. 2010. BEE and Rawlsian justice. Doctoral dissertation, Faculty of Humanities, University of the Witwatersrand, Johannesburg.

Thakkar, J. and Deshmukh, A.K. 2008. Supply chain management in SMEs: development of constructs and propositions*. Asia Pacifi c Journal of Marketing and Logistics*, 20 (1): 97131.

Theoharis, G. 2007. Social justice educational leaders and resistance: Toward a theory of social justice leadership. *Educational Administration Quarterly*, 43 (2): 221–258.

Thomas, R. and Esper, T. 2010. Exploring relational asymmetry in supply chains: the retailer's perspective. *International Journal of Physical Distribution & Logistics Management*, 40 (6): 475-494.

Thun, J. and Hoenig, D. 2009. An empirical analysis of supply chain risk management in the German automotive industry. *International Journal of Production Economics*, 131: 242-249.

Thun, J. and Hoenig, D. 2011. An empirical analysis of supply chain risk management in the German automotive industry. *International Journal of Production Economics*, 131(1): 242–249..

Tracey, M., Lim, J-S. and Vonderembse, M.A. 2005. The impact of supply-chain management capabilities on business performance. *Supply Chain Management: An International Journal*, 10 (3): 179-191.

Tredoux, C. and Durrheim, K. 2010. *Numbers, hypothesis and conclusions: A course in statistician for the social sciences*. Lans downe, UCT Press, 19.

Trkman, P., Budler, M. and Groznik, A. 2015. A business model approach to supply chain management. *Supply Chain Management: An International Journal,* 20 (6): 587-602.

Um, J., Lyons, A., Lam, H. K., Cheng, T. C. E., and Dominguez-Pery, C. 2017. Product variety management and supply chain performance: A capability perspective on their relationships and competitiveness implications. *International Journal of Production Economics*, 187: 15–26.

Um, K.-H. and Kim, S.-M. 2018. The effects of supply chain collaboration on performance and transaction cost advantage: The moderation and nonlinear effects of governance mechanisms. *International Journal of Production Economics*, 1-15.

United Nations Development Programme. 2014. *Small business is big business: a UNDP perspective on SMME development in South Africa*, 1-8. Available: http://www.za.undp.org/content/dam/south_africa/docs/Reports/publication (Accessed: 21 March 2017).

Uppal, V. 2014. Global experience of black economic empowerment and indigenisation polices. *Economic and private sector: Professional Evidence and Applied Knowledge Services*, Helpdesk Request', viewed, from Available: https://assets.publishing (Accessed: 08 August 2016).

Urban, B. and Naidoo, R. 2012. Business sustainability: Empirical evidence on operational skills in SMEs in South Africa. *Journal of Small Business and Enterprise Development*, 19 (1): 146–163.

Vachon S, and Klassen RD. 2008. Environmental management and manufacturing performance: The role of collaboration in the supply chain. *International Journal of Production Economics*, 111 (2): 299–315.

Van der Nest, D. 2004. The impact of black economic empowerment on the management of small companies in South Africa. Master's dissertation, Rand Afrikaans University, South Africa.

Van Scheers, L. 2011. SMEs' marketing skills challenges in South Africa. *African Journal of Business Managemen*t, 5 (13): 5048-5056. Available: http://www.academicjournals.org/AJBM (Accessed: 4 July, 2011).

Van Wyk, H.M. 2010. The impact of BBBEE on small and medium sized businesses in the Sedibeng region. Doctoral dissertation, North-West University, South Africa.

Verial, D. 2015. What is the Tukey HSD test? Available: http://classroom.synonym.com/tukey-hsd-test-2611.

Vieira, L.M., Paiva, E.L, Finger, A.B. and Teixeira, R. 2013. Trust and supplier-buyer relationships: an empirical analysis. *Brazilian Administration Review*, 10 (3): 263–280.

Von Krogh, G. 1998. Care in Knowledge Creation. California Management review, 40 (3): 133-153. SAGE.

Wakari ,G. 2012. The diffusion of mobile phones for business and information management in Kenya. *Journal of Gender, Information and Development in Africa*, 1 (1): 43 – 56.

Walker, D. H. T., Bourne, L. and Rowlinson, S. 2008. Stakeholders and the supply chain. *In Procurement Systems: A Project Management Perspective*. Oxford: Taylor and Francis.

Walsham, G. 1995. Interpretive case studies in IS research: Nature and method. *European Journal of Information Systems*, 4: 74-81. Available: https://doi.org/10.1057/ejis.1995.9

Wang, Z., Ye, F. and Tan, K. H. 2014. Effects of managerial ties and trust on supply chain information sharing and supplier opportunism. *International Journal of Production Research*, 52 (23): 7046–7061.

Wehmhoerner, A. 2015. *Correcting the past-losing the future? Black Economic Empowerment in South Africa, FEPS Studies*. http://www.feps-europe.eu/assets (Accessed: 17 January 2017).

Wernerfelt B. 1984. A resource-based view of the firm. *Strategic Management Journal*, 5(2): 171-180.

Wiklund, J. and Shepherd, D. 2003. Knowledge-based resources, entrepreneurial orientation, and the performance of small and medium-sized businesses. *Strategic Management Journal*, 24: 1307-1314.

Wilson, J. 2010*. Essentials of business research: a guide to doing your research project*. Thousand Oaks: Sage.

World Economic Forum. 2016. Insight report: The global competitiveness report 2015–2016. Available: http://www3.weforum.org/docs/gcr/2015-2016 (Accessed: 17 September 2016).

Wu, C. 2008. Knowledge creation in a supply chain. *Supply Chain Management: An International Journal*, 13 (3): 241-250.

Wyllys, R. 2003. Statistical hypotheses. *The University of Texas at Austin School of Information*. Available: https://www.ischool.utexas.edu/~wyllys/IRLISMaterials/stathyp.pdf.

Yang, C. and, Y. 2009. The relationship between benefits of ERP systems implementation and its impacts on firm performance of SCM. *Journal of Enterprise Information Management*, 22 (6): 722-752.

Yang, J. 2004. Job-related knowledge sharing: comparative case studies. *Journal of Knowledge Management*, 8 (3): 118-126.

Yap, A., Das, J., Burbridge, J. and Cort, K. 2006. A composite-model for e-commerce diffusion: integrating cultural and socio-economic dimensions to the dynamics of diffusion. Journal of Global Information Management, 14 (3): 17-35.

Yeung, A. C. L. 2008. Strategic supply management, quality initiatives, and organisational performance. *Journal of Operations Management*, 26 (4): 490-502.

Yeung, H. W. C., and Coe, N. M. 2015. Toward a dynamic theory of global production networks. *Economic Geography*, 91 (1), 29–58.

Yeung, J.H.Y., Selen, W., Zhang, M. and Huo, B. 2009. The effects of trust and coercive power on supplier integration. *International Journal of Production Economics*, 120 (1): 66–78.

Yin, R. K. 2009. *Case study research: Design and methods*. 4th ed. Thousand Oaks, CA: Sage.

Youn, S., Yang, M. G., Hong, P., and Park, K. 2013. Strategic supply chain partnership, environmental supply chain management practices, and performance outcomes: An empirical study of Korean firms. *Journal of Cleaner Production*, 56: 121–130.

Zaheer, S., and Zaheer, A. 2006. Trust across borders. *Journal of International Business Studies*, 37 (1), 21-29.

APPENDICES

APPENDIX A: QUESTIONNAIRE

SECTION A: PERSONAL INFORMATION (Put an X on the appropriate block)

Dear respondents

Thank you for paying attention to this academic questionnaire. The purpose of this academic questionnaire is to gather information about the influence of trust in supply chain, supplier development, knowledge creation and supply chain performance in both public and private institutions KwaZulu-Natal, South Africa. You are therefore, requested to assist in completing the following questionnaires below, which should take no more than 10 minutes to complete. The research is purely for academic purposes and the information will be kept confidential. Please mark or circle the most appropriate response you choose for the questions below.

1. Gender

Male	Female
1	2

2. Education

High School	Diploma	Degree
1	2	3

3. Race

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

4. Number of employees

5 or less	6-10	11-20	21-50	51 or above
1	2	3	3	5

5. When was the last time that you attended a training course?

Never	Less than 1 Month ago	2-6 Months ago	7-12 Months ago	1-2 years ago	3-5 years ago	More than 5 years ago
1	2	3	4	5	6	7

6. The number of years in your current position

2years or less	3-5years	6-10years	11-20years	21years or above
1	2	3	4	5

7. What business are you in?

Manufacturing	Retailing	Construction	Mining	Tourism	Financial	Agriculture	Other (specify)
1	2	3	4	5	6	7	8

8. Do you own any of the following marketing technology devices? (Select by marking with an X on the block with the devices you own).

Computers	Smart phones	Internet	Satellite	Other (specify)
1	2	3	4	5

SECTION B: TRUST

Please circle the level of agreement on each of the items below based on the situation of your company. There is no right or wrong response, the question asks for your opinion.

1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree

	Supplier credibility	**Responses of respondents**				
1	This supplier's representative has been frank in dealing with us	1	2	3	4	5
2	Promises made by this supplier's representative are reliable	1	2	3	4	5
3	If problems such as shipment delays arise, the supplier's representative is honest about the problems	1	2	3	4	5
4	This supplier's representative has problems answering our questions	1	2	3	4	5
	Supplier benevolence	**Responses of respondents**				
5	This supplier's representative cares for us	1	2	3	4	5
6	In times of shortages, this supplier's representative has done more for us than we could possibly expect	1	2	3	4	5
7	This supplier's representative is like a friend, we feel that this representative has been on our side	1	2	3	4	5

SECTION C: SUPPLIER DEVELOPMENT

Please circle the level of agreement on each of the items below based on the situation of your company. There is no right or wrong response, the question asks for your opinion.

1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree

	Basic Supplier Development	**Responses of respondents**				
1	Evaluation of supplier's performance and feedback to suppliers.	1	2	3	4	5
2	Sourcing from a limited number of suppliers.	1	2	3	4	5
3	Parts standardization.	1	2	3	4	5
4	Supplier qualification.	1	2	3	4	5

	Moderate Supplier Development	**Responses of respondents**				
5	Visiting suppliers' plants.	1	2	3	4	5
6	Awards and approval of supplier's performance improvements.	1	2	3	4	5
7	Collaboration with suppliers in materials improvement.	1	2	3	4	5
8	Supplier certification.	1	2	3	4	5
	Advanced Supplier Development	**Responses of respondents**				
9	Training to suppliers.	1	2	3	4	5
10	Collaboration with supplier.	1	2	3	4	5
11	Involvement of suppliers in the buyer's new product development process.	1	2	3	4	5
12	Intensive information exchange with suppliers.	1	2	3	4	5

SECTION D: KNOWLEDGE CREATION

Please circle the level of agreement on each of the items below based on the situation of your company. There is no right or wrong response, the question asks for your opinion.

1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree

	Accessibility of knowledge	**Responses of respondents**				
1	Knowledge that exists in our organisation is readily available to assist in making our supply chain decisions.	1	2	3	4	5
2	Supply Chain knowledge contained in our organisation is easily accessible when needed.	1	2	3	4	5
3	On the average, it is easy to obtain supply chain knowledge from key people in this organisation.	1	2	3	4	5
	Quality of knowledge	**Responses of respondents**				
4	The supply chain knowledge we have is very accurate.	1	2	3	4	5
5	The supply chain knowledge we have is very reliable.	1	2	3	4	5
6	The supply chain knowledge we have is very relevant to our needs.	1	2	3	4	5
7	The supply chain knowledge we have is very specific to our needs.	1	2	3	4	5
8	The supply chain knowledge we have is exactly what we need.	1	2	3	4	5
9	The supply chain knowledge we have is very useful.	1	2	3	4	5
	Responsiveness	**Responses of respondents**				
10	We respond effectively to changes in a competitor’s product	1	2	3	4	5

	offerings.					
11	We respond rapidly to changes in our customers' product needs.	1	2	3	4	5
12	We rapidly attend to product complaints from our customers.	1	2	3	4	5
13	When we find out that our customers are unhappy with a product, we take corrective action immediately.	1	2	3	4	5
14	When we find out that our customers would like us to modify a product, we make a concerted effort to do so.	1	2	3	4	5
15	We periodically review our products to ensure that they are in line with our customers want.	1	2	3	4	5

SECTION E: SUPPLY CHAIN PERFORMANCE

Please circle the level of agreement on each of the items below based on the situation of your company. There is no right or wrong response, the question asks for your opinion.

1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree

	Flexibility performance	**Responses of respondents**				
1	Our supply chain has the ability to respond to and accommodate demand variations, such as seasonality.	1	2	3	4	5
2	Our supply chain has the ability to respond to and accommodate periods of poor manufacturing performance (machinebreakdowns).	1	2	3	4	5
3	Our supply chain has the ability to respond to and accommodate periodsof poor supplier performance	1	2	3	4	5
4	Our supply chain has the ability to respond to and accommodate periods of poor delivery performance.	1	2	3	4	5
5	Trusting our supply chain partners gives our supply chain the ability to respond to and accommodate new products, new markets, or new competitors.	1	2	3	4	5
	Resource Performance	**Responses of respondents**				
6	Knowledge creation has reduced the total cost of resources used in our supply chain as a whole.	1	2	3	4	5
7	Developing our suppliers and new knowledge creation has reduced the total cost of manufacturing, including labor, maintenance and re-work costs.	1	2	3	4	5
8	Creating new knowledge has reduced the costs associated with holding inventory in our entire supply chain.	1	2	3	4	5
9	Developing our suppliers and new knowledge creation has increased our entire supply chain's return on investments.	1	2	3	4	5
	Output Performance	**Responses of respondents**				
10	Developing our suppliers has increased our overall supply chain sales.	1	2	3	4	5
11	Developing our suppliers has improved our overall supply chain order fill rate.	1	2	3	4	5

12	Developing our suppliers has increased our overall supply chain on-time deliveries.	1	2	3	4	5
13	Developing our suppliers has reduced our supply chain shipping errors	1	2	3	4	5
14	Developing our suppliers has reduced our supply chain manufacturing lead time.	1	2	3	4	5
15	Developing our suppliers has reduced our overall supply chain customer complaints.	1	2	3	4	5

Thank you for your cooperation.

APPENDIX B: CONSENT LETTER

Mr D.M Mbambo
P.O Box 1652
Empangeni
3880
18 October 2017

To Whom It May Concern:

REQUEST FOR PERMISSION TO CONDUCT RESEARCH AT INKOSI ALBERT LUTHULI CENTRAL HOSPITAL

Dear Sir or Madam

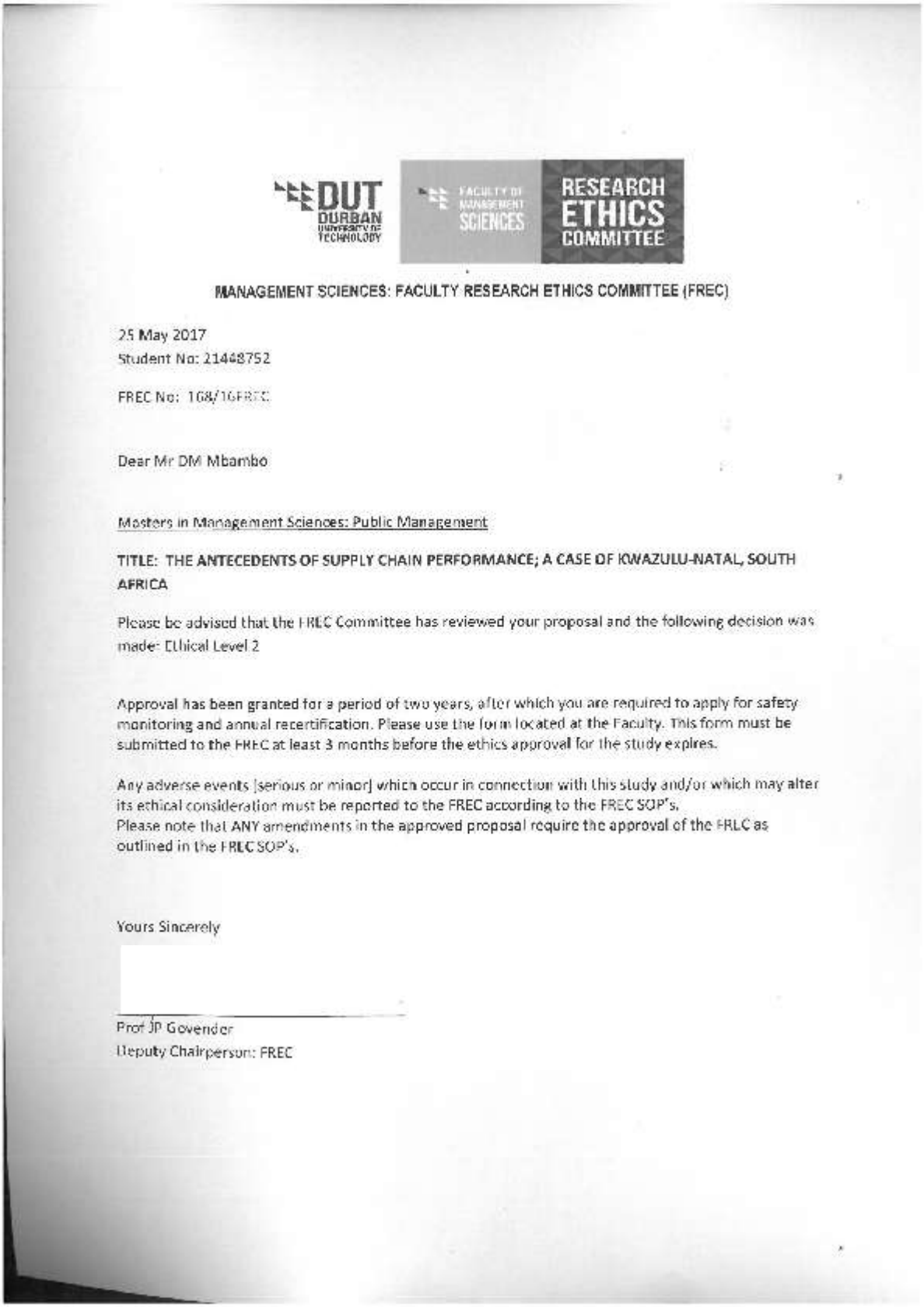
My name is Daluxolo Mbambo, and I am a public management student at the Durban University of Technology. The proposed title of my research I wish to conduct for my Master's dissertation is: The Antecedents of Supply Chain Performance; A Case of KwaZulu-Natal, South Africa. This project will be conducted under the supervision of Dr P. Hove-Sibanda (VUT, South Africa). I hereby request for your consent to conduct research under Supply Chain Management Department at Inkosi Albert Luthuli Hospital. I have provided you with a copy of my research proposal which includes copies of the questionnaire and consent forms to be used in the research process. Your approval is key in the approval and successful of my Masters research, as it is a requirement from the Durban University of Technology Research Ethics Committee.

Upon completion of the study, I undertake to provide your organisation with a bound copy of the full research report. If you require any further information, please do not hesitate to contact me on 073 5449125, dalombambo@gmail.com. Thank you for your time and consideration in this matter.

Yours sincerely,

Daluxolo Mbambo
Durban University of Technology

APPENDIX C: ETHICS LETTER



DUT DURBAN UNIVERSITY OF TECHNOLOGY

FACULTY OF MANAGEMENT SCIENCES

RESEARCH ETHICS COMMITTEE

MANAGEMENT SCIENCES: FACULTY RESEARCH ETHICS COMMITTEE (FREC)

25 May 2017
Student No: 21448752

FREC No: 168/16FREC

Dear Mr DM Mbambo

Masters in Management Sciences: Public Management

TITLE: THE ANTECEDENTS OF SUPPLY CHAIN PERFORMANCE; A CASE OF KWAZULU-NATAL, SOUTH AFRICA

Please be advised that the FREC Committee has reviewed your proposal and the following decision was made: Ethical Level 2

Approval has been granted for a period of two years, after which you are required to apply for safety monitoring and annual recertification. Please use the form located at the Faculty. This form must be submitted to the FREC at least 3 months before the ethics approval for the study expires.

Any adverse events (serious or minor) which occur in connection with this study and/or which may alter its ethical consideration must be reported to the FREC according to the FREC SOP's.
Please note that ANY amendments in the approved proposal require the approval of the FREC as outlined in the FREC SOP's.

Yours Sincerely

Prof JP Govender
Deputy Chairperson: FREC

APPENDIX D: PROOF OF EDITING CERTIFICATE

PROOF OF EDITING CERTIFICATE

TO WHOM IT MAY CONCERN

Language editing

I, Jeanne Enslin, acknowledge that I did the language editing of **Daluxolo Mbambo's** thesis submitted in the fulfilment of the requirements for the degree Master in Public Management at the Durban University of Technology.
The title of the thesis is:

THE ANTECEDENTS OF SUPPLY CHAIN PERFORMANCE: A CASE OF KWAZULU NATAL PROVINCE, SOUTH AFRICA.

If any major changes are made to the text after I sent the thesis to Daluxolo on 04 April 2019, I cannot be held responsible for any errors that are made. I also did some basic formatting of the document. As agreed with the student, I did not work on references.

The quality of the final document, in terms of language, formatting and references, remains the student's responsibility.

Detailed feedback of all the editing work has been provided to Daluxolo in writing and is evident in the version of the thesis in revision marking (with many comments).

Jeanne Enslin
Language editor
082-6961224.

J H Enslin BA (US); STD (US); Hons Translation Studies (UNISA)

APPENDIX E: TURNITIN REPORT

DALO MASTERS THESIS DRAFT

ORIGINALITY REPORT

19%	19%	9%	%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

1	uir.unisa.ac.za Internet Source	2%
2	www.scielo.org.za Internet Source	1%
3	www.saibw.co.za Internet Source	1%
4	www.rajalakshmi.org Internet Source	1%
5	mobi.unisa.ac.za Internet Source	1%
6	pt.scribd.com Internet Source	1%
7	dspace.lboro.ac.uk Internet Source	1%
8	link.springer.com Internet Source	1%
9	www.scielo.br Internet Source	1%