

The readiness of Exempted Micro Enterprises for digitisation

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ABSTRACT

Transformation of business practices and the way in which business is conducted at present have opened up a wealth of trade and manufacturing opportunities in the global arena. As a result of digital technology (e-technology) developments in the world, South African businesses need to capitalise on this trend. Staying abreast or, at least, to be in the front lines of the digital era enables organisations to position their practices and processes for optimisation into the 21st century.

The reality is that not all trading and manufacturing organisations are at the same electronic skills level at any given time. It is, however, in the interest of larger organisations to establish support forums for most of their smaller service provider entities to enable e-technology skills.

Implementing new skills and systems may seem exciting, but the various business risks associated with this progress must be taken into account. An entity must also consider their e-technology support base. Being off-line more often than not can very quickly ruin a smaller operation when their commercial systems malfunction. Cyber security requires specific mention as a primary business risk to both the smaller entities and the large organisations.

Research was conducted to establish whether small and medium enterprises (classified as EMEs) participating in the supply chain activities of the large organisation where the research was conducted, are experiencing difficulties in completing the online supplier application questionnaire that is required for vendor registration and vendor information management (vendor and supplier are used as synonyms in this study). A pre-coded research questionnaire was utilised, which allowed the researcher to target a large audience and gather usable and relevant data.

A total of one hundred and sixty-two (162) research questionnaires were received and constitute the study population. The analysis of these results is presented in Chapter 4 of this report. It is very re-assuring to note from the responses that the majority of respondents are comfortable with using a web-enabled device, accessing the internet and working on a computer.

Conclusions derived from this research confirm that organisations in the 21st century face increasing pressure to keep abreast of technological advances as a driving force. Digitisation in its various forms constitute an important aspect of a competitive supply chain to ensure sustainable and profitable operations.

The researcher also concluded that the size of a company does not have a material influence on the ability of small enterprises, defined as EMEs, to adapt to the use of new technology platforms. The research also found that the study population could complete the online supplier questionnaire with relative ease and within reasonable time, indication minimal constraints in the process.

In closure, the research confirmed that Qualification does not influence the perception of the groups with regards to how they experienced the process of completing the online supplier application questionnaire.

The online supplier questionnaire of the organisation where the study was conducted posed two hundred and sixty-eight questions to suppliers; this should be shortened and optimised. The organisation should develop and distribute training material to identified suppliers before they are requested to complete the online supplier questionnaire to prepare in advance and minimise frustration. Clear understanding of why applicants must comply with the requirements for an online supplier questionnaire will assist to build stronger relationships and trust.

Key terms: Digitisation, exempted micro enterprises, supply chain, online supplier questionnaire, technology platforms, research questionnaire, quantitative research, readiness.

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LIST OF ABBREVIATIONS

Abbreviation	Meaning
BBBEE	Broad-Based Black Economic Empowerment
BO	Black Owned
BWO	Black Woman Owned
DTI	Department of Trade & Industry
EME	Exempted Micro Enterprise
ERP	Enterprise Resource Planning
GEM	Global Entrepreneurship Monitor
ICT	Information, Communication and Technologies
IoT	Internet of Things
IT	Information Technology
NRI	Network Readiness Index
PtP	Procure to Pay
PP	Preferential Procurement
QSE	Qualifying Small Enterprise
SAP	System Application Program
SMME	Small, Medium and Micro Enterprise
SPQ	Supplier Profile Questionnaire
SHE	Safety, Health & Environment

CHAPTER 1

NATURE AND SCOPE OF THE STUDY

1.1 INTRODUCTION

Innovation and automation are flourishing in the present-day digitised global marketplace, causing the management of large numbers of suppliers within an organisation's supply chain to be a complex and dynamic challenge (Jenks, 2016:1).

Chamodrakas, Batis and Martakos (2010:491) further state that modern industries have to adapt to this global marketplace and are therefore facing various pressures related to reducing expenditure. According to Heizer, Render and Munson (2017:44), supply chains include various sellers, ranging from raw material suppliers to comprehensive professional services such as accounting and sophisticated engineering designs. For large organisations, this might mean hundreds, if not thousands of small, medium and large suppliers that constitute the procurement portion of their supply chain.

The Oxford South African concise dictionary (2010:328) defines digitisation as converting pictures or sound into a digital form that can be processed by a computer. In current terms, digitisation has evolved to include anything from automation, machine intelligence, paperless processes and electronic supplier information management. The net effect is useful information on both electronic media and paper. The amount of time that is saved by implementing a paperless supplier selection process, for example, is only one of the many benefits of digitisation (Louden, 2017:1). Furthermore, globalisation requires organisations to be agile, meaning they must have the capability to move swiftly and with poise or to have a quick, resourceful and flexible character (Merriam-Webster's Online Dictionary, 2017).

Considering the evolution of technology, an organisation's business model must support it to meet the needs of demanding customers; build unique competencies to achieve and maintain a competitive advantage; assist in obtaining the best resources, and enable overall efficiency (Fawcett, Ellram & Ogden, 2007:187).

These business models must also address the potential dilemma of implementing new technologies in the organisation whilst leveraging the competencies and service offerings of its supplier base.

South Africa's absorption in to the global economy post-1994 has moved the government to incorporate an economic transformation strategy as part of its strategic approach to globalisation. This gave rise to the development of the Broad-Based Black Economic Empowerment Act 53 of 2003. The Act was introduced to expedite the empowerment of indigenous Africans, Coloureds and Indians in the South African economy. The Act also expects of larger organisations to mainly utilise the services of small and medium enterprises, where preference is given to suppliers that are 51% or more, black owned. The Act classifies a typical small enterprise as an exempted micro enterprise (EME), meaning any enterprise with a total annual revenue of R10 million or less (BBBEE Amended Codes of Good Practice, 2013 of 53 pp 8).

Government further describes black economic empowerment (BEE) as an integrated and coherent socio-economic practice that openly contributes towards the economic transformation of South Africa and causes substantial growth in the number of indigenous Africans that manage, own and regulate the country's economy (The Department of Trade and Industry, 2014).

In order to do business in South Africa, organisations need to comply with the most recent amended B-BBEE codes of 2013 and the B-BBEE Act no. 53 of 2003 (South Africa, 2013). The potential dilemma for large organisations that are driven to digitise is that many of its smaller suppliers, specifically those that are classified as EMEs, might not be ready or have the means to support or react to this digital drive.

By moving towards an electronic platform that optimises supplier information, digitisation can enable enhanced collaboration between an organisation and its suppliers. According to Jenks (2016:2), digital integration of the supply chain can add value at multiple levels of the organisation. This can range from daily operational value to longer term strategic value, value of the brand and increased revenue. Zhang and Chen (2015:485) are of the opinion that in the 21st century, traditional competition between organisations will tend to be characterised by competition between supply chains.

It is therefore critical that business models must be transformed and that organisations should embrace the opportunities that digital transformation holds (Berman, 2012:22). Some of the benefits of digitisation include reduced cost and streamlined business operations (Louden, 2017:1).

By implementing a digital supply chain solution, an organisation can eliminate the paper-trail-mode of operations and streamline the supplier management process, of which supplier selection is the first step. According to the consulting firm Deloitte (2017:9), the capability to compile large amounts of supplier data in a large-scale digital platform has been a fundamental technological development for global supply chains everywhere.

Over the past couple of years, the birth of cloud solutions has assisted large organisations to keep abreast with the pace of innovation (Deloitte, 2017:11).

To achieve sustainable economic growth, comply with and support the BEE initiatives, and maintain momentum in terms of technological advances as a driving force, it is important that possible constraints for small suppliers in terms of digitisation is identified and addressed.

1.2 CAUSAL FACTORS

Changes in the South African political landscape fundamentally contributed towards changes in legislation that impact the economy at large. Whilst organisations are encouraged to procure various supply chain services from smaller suppliers in order to comply with legislation as described above, these smaller suppliers might not be ready to embrace the technological platforms they are required to use in conducting business with larger organisations.

In addition, the technological explosion of the past few years is causing larger organisations to keep abreast with technological advances of the 21st century.

The current South African government aims to build an adaptive economy that is characterised by inclusivity and sustainable growth (The Department of Trade and Industry, 2014).

The challenge is therefore to progress in terms of digitisation, and more specifically, online platforms for vendor selection and supplier information management, whilst also utilising and supporting EMEs in order to comply with the B-BBEE Codes of Good Practice.

1.3 IMPORTANCE OF THIS STUDY

Many large organisations are faced with a conundrum: to optimise costs as far as possible; but also become more efficient in mitigating risks associated with trading in a globalised market. To mitigate certain risks involves costs, and therefore this study will focus on the use of an online supplier questionnaire as a means of vendor selection which, in turn, will enable the organisation where the research was conducted to leverage costs, efficiency and technology.

This study aims to identify the potential benefits and constraints involved in utilising an electronic vendor selection platform within a supply chain environment and also to establish whether the current EMEs that are rendering a service to the organisation where the research was conducted, is ready to embrace new technology platforms.

1.4 PROBLEM STATEMENT

The problem statement is: a multinational South African organisation operates in trade environments where varying degrees of digitisation exist, from sophisticated systems developed for first-world trading to almost informal systems such as basic paper payment (pay out of my pocket). It is therefore important that this multinational aligns itself with these circumstances and hedge itself against the associated risk of competing in a global market, whilst also having to comply with national legislation.

Within the multinational organisation where the research was conducted, a number of onerous risks arise as the organisation extends its globalisation and moves towards a complete digitised supply chain. The problem can be described as a two-fold challenge: firstly, an organisation needs to take advantage of the opportunity to leverage and optimise the newest information technologies (IT) as part of their physical operations (Berman, 2012:20).

Selecting, pre-qualifying, evaluating and assessing suppliers can be a tedious process, and is often lengthy and bureaucratic (Jenks, 2016:3).

In light of this bureaucracy and time consuming process, Chamodrakas *et al.* (2010:491) are of the opinion that there is an increasing concern amongst decision-makers about the effectiveness and rationale of supplier selection process implemented by organisations.

The second and more contentious issue is that, within the South African economic climate, organisations need to comply with stricter preferential procurement (PP) and black economic empowerment (BEE) requirements (BBBEE Amended Codes of Good Practice, 2013 of 53). There also appears to be a lack of knowledge in the exempted micro enterprise environment concerning digital platforms as a means for vendor selection, amongst other functionalities and the use of technology in general.

The primary research question therefore is: are Exempted Micro Enterprises (EMEs) experiencing constraints in adapting to new information technology platforms, specifically the online supplier application questionnaire?

The online supplier application questionnaire is the tool used for supplier registration and supplier information management and forms the basis of this study.

1.5 RESEARCH OBJECTIVES

The purpose of this study is to address the above-mentioned problem statement by obtaining data by means of a questionnaire to determine whether EMEs are experiencing any constraints with regards to the online supplier application questionnaire (herein after referred to as the online supplier questionnaire). The **primary objective** of this study is therefore to determine whether the size of a company has a bearing on its ability to adapt to the use of digital platforms as a means of participating in various supply chain activities of larger organisations.

The secondary objectives are:

- To determine the importance for large organisations in the South African context to use EMEs in their supply chain activities;

- To identify the potential benefits and/or constraints of the online supplier questionnaire;
- To determine whether the EME supplier landscape is ready for advanced technology platforms and;
- To determine whether there are any differences between the groups identified within the study population in terms of their perceptions about the online supplier questionnaire.

Achieving these objectives will enable the researcher to answer the primary research question, namely are EMEs experiencing constraints in adapting to new information technology platforms, specifically the online supplier questionnaire?

1.6 SCOPE OF THE STUDY

The empirical study focuses on large and small suppliers of the organisation where the research was conducted, but is limited to only those suppliers that have been requested to complete the online supplier questionnaire in the last 12 months. This constitutes the target population. The study extended up to October 2018 to allow participants sufficient time to respond. The study population therefore includes all suppliers that responded to the research questionnaire in the allocated time.

1.7 RESEARCH METHODOLOGY

This research involves a literature review and an empirical study executed by means of questionnaires.

1.7.1 Literature and theoretical review

The literature study defines and explains what a supply chain is and the importance of a technologically advanced supply chain in large enterprises. The literature study also highlights the benefits and risks associated with the use of digital platforms. An overview of the B-BBEE codes is provided as well as what preferential procurement is, and why it is important for large organisations. Lastly, a theoretical context based on the study is developed and tested by means of an empirical study.

1.7.2 Empirical research

This study follows a quantitative approach to collect data from the target population by means of a research questionnaire. The research questionnaire aims to test certain variables pertaining to suppliers' experience with- and exposure to the online supplier questionnaire that they were recently requested to complete.

The aim is to obtain quantifiable data that can be systematically analysed to establish whether EMEs experience any difficulties in adapting to new technology platforms.

Longitudinal research design is not suitable for this study as no pre- and or post-testing can be applied. The timeframe is also limited to a twelve-month period.

1.8 DELIMITATIONS AND ASSUMPTIONS

The demarcation of this study refers to the scope and not to constraints. It can be defined as what is included and what is not included.

1.8.1 Delimitations

The empirical investigation is limited to only the pool of suppliers that have been requested to complete the online supplier questionnaire in the last twelve months. The aim is not to investigate whether the correct supplier pool was identified by the organisation, nor is the aim to investigate the actual content of the online supplier questionnaire.

Secondly, it is not possible to include all the current suppliers of the organisations where the research was conducted, since the organisation has approximately 6 000 registered suppliers in its database.

This study focuses specifically on small and medium enterprises, classified as EMEs, as suppliers to the organisation where the research was conducted, because these suppliers are the most vulnerable population in terms of the research question.

Lastly, the literature review is limited to sources that are commonly found in South Africa at the time of the study. Trochim and Donnelly (2007:6) emphasises that time is an important factor of any research design and that a cross-sectional study takes place at a single point in time. This means that the study is conducted as a once-off exercise.

1.8.2 Assumptions

For the purpose of this study, it is assumed that the participants should answer the research questionnaire in a truthful and honest manner. It is also assumed that the inclusion criterion of the sample is applicable, and therefore, assures that the participants have all experienced the same or similar phenomenon of the study. Lastly, it is assumed that participants have a genuine interest in participating in the study and do not have any ulterior motives.

1.9 DEFINITIONS OF KEY TERMS

- **Agile:** described as the ability to move quickly and easily (Oxford South African concise dictionary, 2010:21). In business terms, the term agile refers to an iterative approach to project management and software development to enable faster services and delivery. Work is done in small but consumable increments and continuous evaluation enables a quick response to change (Atlassian, 2018).
- **Big data:** this term is used to describe an accumulation of data that is too large and complex for processing by traditional database management tools (Merriam-Webster's Online Dictionary, 2017). Gartner (2012) adds that big data contains extremely large volumes of information, received at high velocity that can vary significantly.
- **Digitisation:** this refers to the conversion of text, pictures, or sound into a digital form that can be processed by a computer (Oxford South African concise dictionary, 2010:328).
- **Exempted Micro Enterprise:** any enterprise with an annual total revenue of R10 million or less (BBBEE Amended Codes of Good Practice, 2013 of 53 p8).

- **Procure-to-pay:** this refers to the process of purchasing goods which includes the initial decision to make the purchase, the process of choosing the goods, and the transaction made to pay for the goods that were purchased (Techopedia, 2018).
- **Online supplier questionnaire:** this is the electronic questionnaire that suppliers are requested to complete in order to become registered suppliers and/or participate in supply chain activities of the organisation where the research was conducted.
- **Supply chain:** this is a network between an organisation and its suppliers to produce and distribute a specific product and/or service. The supply chain represents the steps taken to deliver the product or service to the customer (Investopedia, 2018).
- **Research questionnaire:** the research instrument that was developed by the researcher to conduct the empirical investigation. The content of the research questionnaire is further explained and defined in Chapter 3.
- **Readiness:** this entails the state of being completely prepared for something, also the willingness to do something (English Oxford living dictionary, 2018).
- **Technology platforms:** this can be defined as a group of technologies that are used as a base upon which other applications, processes or technologies are developed. It also refers to the basic hardware (computer) and software (operating system) on which software applications can be run (Techopedia, 2018).

1.10 LAYOUT OF THE STUDY

The study is presented in the form of a mini-dissertation and is divided into five chapters as explained below:

CHAPTER 1: NATURE AND SCOPE OF THE STUDY

The purpose of this chapter is to provide an introduction to the study with reference to causal factors and the problem statement. The chapter also provides an overview of the research design and a layout of the following chapters.

CHAPTER 2: LITERATURE REVIEW

This chapter explains, by means of a literature review, what a supply chain is and why it is important for organisations to digitise. An overview of the history and importance of preferential procurement in the South African economy is also provided.

CHAPTER 3: RESEARCH METHODOLOGY

This chapter presents the research methodology by discussing the sampling method applied, the compilation of the research instrument, namely a survey questionnaire, as well as the sample population and data collection method.

CHAPTER 4: RESULTS OF THE STUDY

This chapter focuses on the analyses and results of the empirical study. A detailed discussion of the results of the empirical study is provided.

CHAPTER 5: CONCLUSIONS AND RECOMMENDATIONS

In the last chapter, recommendations are made based on the results analysed in Chapter 4. The chapter also provides a general overview of the study before concluding with additional recommendations for further research.

1.11 CONCLUSION

The South African economy is a diverse and complex landscape, and the implementation of the BBBEE Codes places a large responsibility on large organisations to comply with legal requirements and to support BEE initiatives.

Operating in the 21st century, however, also requires organisations to be innovative, agile and technologically advanced. Finding a balance between compliance and advancement is critical for sustainable growth and profitability.

1.12 CHAPTER SUMMARY

This chapter provided with a synopsis of the proposed study as well as an outline of the approach that was followed. The themes that are covered describe why digitisation is important in the current business landscape. The chapter furthermore presented background on, and definitions of black economic empowerment from a South African perspective.

The problem statement, importance of this particular study, the research methodology, objectives and research design were also explained. Also, the scope and limitations of the study were described. The researcher aims to answer the question as to whether the exempted micro enterprises within the South African economy, specifically rendering services to the large organisation where the research was conducted, are ready to embrace technological advances such as the online supplier questionnaire, as required from large organisations that uses these EMEs as their main supplier base.

CHAPTER 2

LITERATURE REVIEW

2.1 INTRODUCTION

In the current volatile macro-economic and competitive environment, it can be challenging to abreast of external and internal pressures, let alone becoming an industry leader. Lacking a disciplined strategy and approach to building sustainable innovative capabilities can demote leaders into followers in an instant (Marchese & Lam, 2014:15).

The 4th Industrial Revolution brought about a technological evolution that allowed organisations to combine information technology with operations technology to accomplish end-to-end business optimisation. Schrauf and Bertram (2016:7) explain that Industry 4.0, namely digitisation, is about organisations positioning themselves to the customer through e-commerce, digital marketing, social media and the overall customer experience.

The illustration below provides an overview of the industry since 1800:

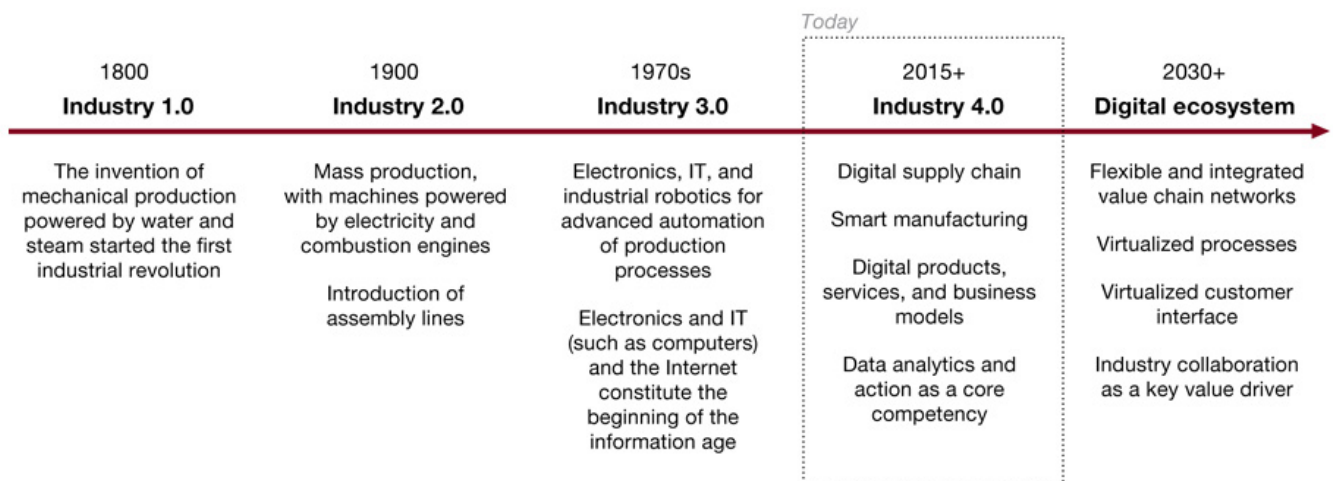


Figure 2-1: Overview of the industry

Source: <https://www.strategyand.pwc.com/reports/digitization-more-efficient> Date of access: 29 Sept. 2018.

Technology as an external force is an important driver of change within any organisation, and organisations should take cognisance of the disruptions this may cause in their business.

Digital transformation has caused a systematic shift from “the way things are done here” to where electronic data capturing, data analysis through the application of algorithms and electronic data storage banks have become the heartbeat of large and most medium-sized organisations. Long gone are the days that handwritten invoices were dispatched by snail mail through post office services and hosting hordes of filing cabinets. The typing pools where numerous typists were clustered together and filing rooms where filing clerks were living their careers seem to be a thing of the past. The application of the computer-designed technology for communication and data storing is by now, in 2018, so well-entrenched that almost every industry in the world has become largely dependent on software systems for their daily operations.

The applications of digital technology are so dynamic and diverse that some organisations find it difficult to maintain the momentum of development and entrenching electronic systems into their daily operations before someone else launches new products, e-solutions and enabling hardware.

In large organisations, numerous and diverse functions are performed that are all designed with the purpose of reaching the organisational goals set by management (Jordaan, 2012:34). According to Jordaan (2012:34), organisational systems strive to incorporate all the various functional systems into one single system to facilitate information flow, eliminate duplication of information, and to enhance the efficiency of processes. According to Heizer *et al.* (2017:622), this is where an ERP (enterprise resource planning) systems becomes important. Heizer *et al.* (2017:622) define an ERP system as software that (1) allows organisations to automate and integrate different business processes, (2) share a joint database and business practices throughout the organisation, and (3) generate information in real time. ERP systems, as a means of digitisation, have the objective of consolidating all the separate organisational systems into one single system that shares all common information used throughout the organisation.

Electronic commerce as a form of digitisation, on the other hand, occurs when organisations conduct business in an electronic medium and moves away from traditional paper processing. According to Jordaan (2012:35), this phenomenon is closely associated with the internet as a method of global communication that allows transactions to take place between parties, practically anywhere in the world.

The various manners in which digitisation occurs within an organisation can have an impact on the organisation and its structure. The following sections aim to highlight some of the most common risks and benefits of digitisation.

2.2 RISK ASSOCIATED WITH DIGITISATION

Although the available literature indicates that the cyber-revolution has undisputable benefits, consideration should be given to the implications of modern-day dependency on IT.

The main risk of a digital supply chain is information loss or distortion (Heizer *et al.*, 2017:488), and organisations should therefore hedge themselves against risks associated with digitisation.

The 360 Risk Insight report from Lloyd (2010:40) states that globalisation presents significant challenges pertaining to managing and assuring the supply chain of products and services, and that the IT industry is not exempt from these challenges. According to Lloyd (2010:40), the IT industry is still in its early stages of verifying the correctness of software components. In addition, only a few manufacturers supply computer hardware. These two aspects of the IT industry have important consequences for the supply chain, namely (1) it is difficult to establish that a specific software product is free from unwanted risks like malware, and (2) alleviating the supply chain risk by purchasing core IT components from numerous sources are becoming less effective, since increasingly more core components are supplied from the same minority of manufacturers.

Data security is one of the most salient risks that evolved with digitisation. Organisations are constantly under the threat of cyber-attacks, and therefore need to spend large amounts of money on cyber security.

Muzundar (2016:22) states that attacks on the intellectual property of an organisation can occur at various levels in the organisation, and hence it needs a broad set of security strategies such as identity management, access control and mobile security.

Small and micro enterprises that may not have the funds for comprehensive data security platforms poses the risk of cyber infiltration to diligent organisations through seamless network connections. Cecere (cited by Muzumdar, 2012:22) cautions that even when a digital supply chain solution is purchased from well-known service providers, it may still be flawed.

Lloyd (2010:13) caution that proper assessments of the risks of digitisation are required in order to implement mechanisms to protect digital data and processes of any organisation. Xavier (2016) is of the opinion that the digitisation of processes and interfaces in themselves is a source of concern, since organisations might be the victims of a digital attack at any point in time. It is thus imperative to protect organisations against potential harm caused by leakage of information, system hacks and the like. Complexities in the design and implementation of digital solutions in large organisations can be demanding and difficult; hence technological factors and constraints can overshadow its potential business benefits (Travers, 2017).

According to Lloyd (2010:14), the risks associated with digitisation are important enough to become a consideration for boards of directors of organisations. Risk managers need to create ways for frequently monitoring digital risks and providing an informed view to their organisations. Specifically, boards need to be made aware of digital risks and be regularly briefed on new developments and trends, also considering their supplier landscape. Digital risk assessments require the involvement of technology experts and other stakeholders across the organisation. Therefore, risk managers need to collaborate with their IT decision-making colleagues, and forge strong links with their information security colleagues.

The reality is that organised criminals and state-sponsored attackers are well-funded and persistent enough to initiate attacks over a period of time and do not mind to wait patiently for opportunities to infiltrate. Underground movements on the internet avail software and services that simplify the task of attackers.

This allows a widespread range of attackers with diverse motives and different methods to steal from, disrupt and spy on organisations.

Kohli (2015) further elaborates on the importance of conducting risk assessments on the suppliers of any large organisation to establish their financial health, business performance, sustainability and ability to respond to technology trends. Technology usage often disrupt operating models and it is therefore important to determine whether an organisation's suppliers are adapting to such trends and transferring the benefits to the organisation in the form of improved delivery and potentially lower cost. Failing to respond to technological trends might impact the suppliers' future.

Apart from the potential risks of digitisation, the transformation of business in the modern era has produced dramatic power shifts in market channels that disrupt traditional sources of economic profit while crafting fundamentally new sources of value (Bharadwaj, El Sawy, Pavlou & Vekatraman, 2013:477). Rick (2016) articulates that successful digital transformation starts with leadership who embraces technology. According to Rick (2016), digital technologies can cause disruptions in supply chains, organisational structures, operations and revenue models. Only by positively managing digital transformation will organisations endure.

The perceived risks that suppliers might associate with a digital platform form part of the research questionnaire, and the intent is to test whether suppliers agree that there are risks involved in completing and storing their information in the online supplier questionnaire, and whether they believe it is a safe platform.

2.3 BENEFITS OF DIGITISATION

Digital expertise can be described as a combination of information, computing, communication and connectivity technologies. As such, these technologies are fundamental in transforming business strategies and processes, organisational capabilities and internal relationships in the organisation (Bharadwaj *et al.*, 2013:471).

According to Banker (cited by Bharadwaj *et al.*, 2013:472), digital platforms support cross-functional and global business processes that enable the execution of work across boundaries of time, distance and functions. Leveraging digital platforms can also assist an organisation to redesign its customer value proposition and to transform its operations for better customer or supplier interaction and collaboration (Berman, 2012:16).

Xue, Zhang, Ling and Zhao (2013:326) define digital supply chain systems as inter-organisational systems that organisations implement to digitise the process of transacting and collaborating with supply chain partners, for example upstream suppliers and downstream customers. Technology platforms can assist the supplier management function within the supply chain to source globally, thus achieving economies of scale and enrich supplier selection and screening as well as contracting.

Optimising business technologies and operations can reduce costs within an organisation, as multiple tasks are streamlined, allowing an organisation to increase its efficiency and influence (Louden, 2017). Bharadwaj *et al.* (2013:473) identify global supply chains, the growth of cloud computing and the emergence of big data as key external digital trends. It is therefore important that organisations should undertake digital transformations and create new operating models to develop competitive differentiation.

The extensive usage of social media, cloud computing and mobile phones has enhanced the quantity and quality of data that is generated daily (Bharadwaj *et al.*, 2013:474). The significant explosion of data availability in the 21st century requires powerful business analytics to interpret information, and digitisation provides the ability to combine data from various sources into a useful format for organisational use (Berman, 2012:16 & Louden, 2017). Bharadwaj *et al.* (2013:475) are of the opinion that the instant availability of, and the reliance on cloud computing services provide organisations with the strategic and dynamic ability to improve their infrastructure, because cloud computing enables on-demand network access to a shared pool of configurable computing resources, increasingly supporting business functions such as supply chains.

This integration between functions and channels is essential for managing digital operations and optimising digitally enhanced supply chains (Berman, 2012:22).

It also empowers organisations to break traditional industry boundaries and to operate in new environments. Empowerment is further enabled by the availability of diverse streams of information that allows for quicker and more effective decision-making by management (Bharadwaj *et al.*, 2013:476).

Increased organisational agility, created by digital platforms, also enhances the supplier experience in that they have instant access to information and can now take ownership of maintaining and managing their own information on, for example, a digital supply chain platform. By shifting the responsibility for accurate and timeous information back to the supplier, large organisations can simplify the customer-supplier relationship. The ability to share information in real-time creates visibility of supply chain activities and enables a pro-active approach to dynamic environments.

Digitisation can be seen as an ideal vehicle for providing supply chain information that can support with monitoring, reporting, controlling and evaluating various issues or solutions (Botha, Bothma & Geldenhuys, 2004:356). Electronic technologies further simplify the sharing of information and automation of routine tasks. Together, these activities result in a supply chain that is more responsive, coordinated, efficient and accurate (Botha *et al.*, 2004:342). The Institute of Management and Administration (2013:6) states that automation can assist organisations to comply with regulatory requirements and that due to the thousands of suppliers, numerous integration points and different sources of information, effectively screening suppliers is becoming increasingly more difficult and complex.

Jenks (2016) is of the opinion that by utilising any of the modern supply chain tools available today, supplier selection can be simplified and expedited, leading to a streamlined supplier selection process. Jenks (2016) further states that digitisation in Supplier Relationship Management creates a supplier/supply platform or ecosystem where the scheduling and executing of buyer-supplier tasks and goals are effortlessly communicated and performance of the supplier's quality of production can be measured. Strong supplier relationship management, aided by digital solutions, can therefore produce a level of relationship transparency and collaboration that allows buyers to judge, manage and mitigate risks with confidence.

Digital platforms within supply chain allows for electronic document storage that optimise office space, costs and labour, thereby increasing document management control and related governance. Jordaan (2012:35) further states that standardised information can be shared between functions, since digitisations allows for the synchronisation of information through a centralised information management system. Electronic communication such as e-newsletters allows for quick and effective messages to employees and stakeholders, eliminating communication barriers.

Real-time information sharing via for example a cloud solution can improve stakeholder relationships by ensuring continuous information and knowledge sharing, additionally empowering suppliers to be accountable for managing their own supplier data.

Software applications are becoming an important success factor in contemporary organisations. Travers (2017:50) describes the benefits of digital platforms as leading to greater transparency and flexibility; better control over data quality and integrity; increased customer satisfaction due to rapid response, and improved data analysis functionality that boosts decision-making capabilities. Matthews (2016) suggests that these also offer additional benefits in terms of economic advantages, agility and on-going innovation. Seth (2012) stresses the importance of supplier analyses within organisations in order to predict and address business risks. He maintains that network analytics can have numerous benefits like enabling the benchmarking of suppliers, predicting their future performance and improved visibility of the supplier base.

Cloud computing in an agile market is commonly accepted by most organisations and, therefore, the implementation of a digital solution for managing supplier relationships can be a fairly easy transition.

The research questionnaire also intends to test the perceived benefits that suppliers might associate with a digital platform.

2.4 CHARACTERISTICS OF EXEMPTED MICRO ENTERPRISES

The National Small Business Act (1995 of 102) defines small, medium, and micro enterprises based on certain characteristics, for instance number of employees and annual turnover. These small enterprises, also known as exempted micro enterprises, are exempted from a comprehensive BBBEE verification. EMEs automatically qualify as a Level 1 contributor if they are 100% black owned, and as a Level 2 if they are 51% black owned. A small enterprise is further classified as an entity with 50 or less employees and an annual turnover of R10 million or less.

Although the academic literature is silent on the exact characteristics of these small enterprises, it is often believed that due to their size and turnover, they could potentially face financial constraints and have limited access to resources. Ingram (2018) suggests that smaller turnover does not necessarily constitute low profitability, and that many established small enterprises often have their own facilities and equipment, which, in conjunction with other factors, help to keep costs lower than larger organisations. Ingram (2018) further explains that small enterprises normally serve a much smaller market segment than their larger counterparts, often limiting their ability to compete in larger markets.

Herrington, Kew and Mwanga (2017:68) supports the notion that small enterprises often find it difficult to obtain the necessary financing to either start or grow their businesses. The authors further state that government policies pertaining to the regulatory environment and labour laws, as well as education and training, are some of the largest pitfalls for small enterprises.

It is against this backdrop that the perception is created that small enterprises, classified as EMEs, are not able or ready to adapt to new technological platforms as they are perceived to lack the skills, knowledge and resources to do so.

The intent of the research questionnaire is to establish whether smaller enterprises have greater difficulty than larger enterprises to use technology and to complete the online supplier questionnaire of the organisations where the research was conducted.

2.5 OVERVIEW OF PREFERENTIAL PROCUREMENT

From the above discussion, it is evident that larger organisations have to offer resources in support of the preferential procurement policies, that they must now provide themselves, and ensure that the small and micro enterprises reap the financial benefit.

The first democratically elected government of 1994 had a clear mandate to redress the inequalities of the past in every sphere of influence namely political, social and economic. Since then, government has embarked on a comprehensive programme to provide a legislative structure for the transformation of the country's economy. In 2003, the Broad-Based Black Economic Empowerment (B-BBEE) Strategy was issued as a precursor to the B-BBEE Act, No. 53 of 2003. The fundamental objective of the Act is to advance economic transformation and develop the economic participation of black people in the South African economy.

The Act offers a legislative framework for the elevation of BEE (black economic empowerment), authorising the Minister of Trade and Industry to issue Codes of Good Practice and publish Transformation Charters, thereby paving the way for the formation of the B-BBEE Advisory Council. The mandate of the Council is to provide guidance and overall monitoring of the state of B-BBEE performance in the economy with a view to making policy recommendations to address challenges experienced with the implementation of this transformation policy.

The B-BBEE Codes of Good Practice materialised in February 2007 as an implementation framework for B-BBEE policy and legislation. After the implementation thereof, official mechanisms were established for the monitoring and evaluation of B-BBEE in the entire South African economy. In 2013, an amendment to the Act was published with the purpose of clarifying certain interpretations, adding more definitions and, more importantly, to strengthen the evaluation and monitoring of compliance (BBBEE Amended Codes of Good Practice 2013 of 53). One of the most salient changes in to the Act were the elements used for measuring BEE compliance. The South African Department of Trade and Industry (DTI) defines preferential procurement as “the

procurement of goods and services from Empowering Suppliers as a percentage of total procurement” (DTI, 2017).

Alternatively, it is the promotion of procurement from suppliers with a healthy B-BBEE scorecard, mainly small and micro enterprises, in order to expose previously disadvantaged individuals or businesses to the mainstream economy.

The BBBEE Amended Codes of Good Practice (2013 of 53) further defines an exempted micro enterprise as any enterprise with an annual total revenue of R10 million or less (BBBEE Amended Codes of Good Practice, 2013 of 53 pp 8-9). In December 2006, when the Broad-Based Black Economic Empowerment (B-BBEE) Codes of Good Practice were approved for gazetting, Cabinet directed the Department of Trade and Industry, as well as National Treasury to amend the Preferential Procurement Policy Framework Act 5 of 2000, so as to advance the objectives of the B-BBEE Act No 53 of 2003 as Amended by Act 46 of 2013 (BEE Act) and its related strategy, as these two pieces of legislation were not appropriately aligned.

The aforementioned processes led to the amendment of the Preferential Procurement Regulations to align themselves to the B-BBEE Codes of Good Practice.

Medium and large enterprises that embarked on the journey to digital transformation has the benefit of conducting their business with almost effortless and time saving first world communication systems. The challenge mostly arises when these firms want to do business with smaller entities within South Africa and abroad, especially when those entities have not yet transformed to digitisation and still depend on manual systems.

The South African government applies and enforces certain preferential procurement policies onto large and medium organisations, but fails to provide the much-needed digital transformation development platforms to the small and micro enterprises for them to become economically competitive.

Such developments are largely left in the hands of the large organisations that, by default, also have to fund such development, training and support systems.

The Network Readiness Index (NRI) evaluates overall country-level technological and regulatory readiness for ICT (information, communication and technologies). According

to the World Economic Forum 2016 NRI survey, South Africa is placed 65th out of 139 countries.

This is ten places higher than 2015. The results published by the World Economic Forum (2016) state that this rise in rankings is motivated by the private sector, because more organisations recognise the long-term benefits of investing in digital infrastructure.

Although transformation is a key focus area in South Africa, and South African businesses need to adopt and comply with legislative measures intended to foster black economic empowerment (Krüger, 2011:207), there are various schools of thought that are not convinced that BEE is achieving the intended success. In a study conducted by Krüger (2011:232), it was found that the respondents in the study mainly disagreed with the notion that BEE practices would improve business performance. Regardless of this finding, government still aims to encourage economic transformation in order to enhance the participation of certain demographic groups in the economy and, as such, organisations are compelled to comply.

2.6 SUPPLY CHAIN

In the Deloitte 2014 Supply Chain Leadership report, Marchese and Lam point out that, at a fundamental level, organisations compete on their supply chain capabilities and that cost, quality and agility are determined by the effective management of the activities involved in planning, sourcing, manufacturing and delivering products. Marchese and Lam (2014:4) further caution that competition amongst supply chains in an increasingly global business environment is getting tougher. Constant innovation and global distribution of new technologies and tools are directly facilitating new connectivity, collaboration and co-creation across numerous businesses.

The growth of the Internet of Things, which increasingly connects smart products, is significantly enhancing the creation of, and access to data, thereby producing ever-increasing transparency (Kelly & Marchese, 2015:283). Substantial technological changes are set to transform many industries and processes and may cause significant disruption in various business models. Kelly and Marchese (2015:283) are of the opinion that the scale and speed of these changes are producing new opportunities for supply

chain operations within any organisation, to discover profoundly new ways of creating value, driving innovation and sustaining enterprise growth.

Heizer *et al.* (2017:44) define a supply chain as the large group of suppliers who provides several services from basic raw materials to complete accounting services. Alternatively, it is defined as a global system of organisations and activities that supplies a firm with goods and services to ultimately create value. Jordaan (2012:35) further explains that organisations exist to acquire and convert materials and services into products to ultimately create wealth, and that this conversion process can be described as a supply chain. A supply chain is an integral function of organisations in the 21st century, and the need for a 'service industry' is becoming progressively more important in business. The increase in demand for quality products and customised requirements of customers therefore forces organisations to improve upon service delivery.

Supply chains are progressing towards becoming value networks that span across and connect entire ecosystems of suppliers and collaborators. These can play a critical role in reshaping business strategy and delivering superior results (Kelly & Marchese, 2015:282).

This means that traditional supply chains are becoming more agile, adaptive and robust, thereby enabling faster and more flexible responses to the dynamic needs of customers. Traditional supply chain functions of large organisations were, however, not set up to deal with a sphere of multiple, sometimes even thousands of partners. In order for these supply chains to adapt, organisations are establishing new platforms to enable greater levels of connectivity, co-operation and co-creation with its partners and suppliers. It is therefore expected of organisations to have clear visibility into the activity and integrity of its suppliers (Kelly & Marchese, 2015:285).

Fawcett *et al.* (2007:70) therefore suggest a shift from functional decision-making towards process integration management to promote collaboration between a supply chain and its numerous partners. Process thinking requires major changes in how people relate to one another and work across functions (Fawcett *et al.*, 2007:70). It is consequently imperative that digital transformation within supply chains are embraced and supported throughout the organisation and its external supplier base.

Process redesign is the essential rethinking of business practises to bring about dramatic improvements in performance (Heizer *et al.*, 2017:336).

Redesign casts aside all notions of how the process is currently executed and focuses on tangible improvements in cost, time and customer value (Heizer *et al.*, 2017:337). This means that the supply chain profession itself is also evolving and requires new skills and capabilities such as the analysis of big data (Kelly & Marchese, 2015:283).

Supply chain management comprises the efforts involved in distributing and producing products and services in the value chain and links the processes across supplier-user enterprises and functions that enable this value chain to make products and provide services to customers (Vendrell-Herrero, Bustinza, Parry & Georgantzis, 2017:70). These supplier/process linkages are essential determinants of the overall supply chain performance and value generation (Vendrell-Herrero *et al.*, 2017:72).

Traditional supply chain management is often augmented by new imperatives like learning, agility and renewal (Kelly & Marchese, 2015:284). It is therefore essential that organisations should adopt a digital transformation strategy to enable them to adapt to changing technologies. Marchese and Lam (2014) state that the essence of supply chain management is to integrate supply and demand management within and across organisations.

Organisational characteristics determine the readiness for supply chain digitisation in terms of the maturity and size of the organisation, supplier landscape, revenue, investment in IT and availability of specialised IT skills. Digital disruption, combined with electronic commerce, has affected organisational interdependencies and power relationships in various ways throughout the organisation (Vendrell-Herrero *et al.*, 2017:69). Effective supply chain management enables winning business models. An organisation's business model must support it to meet the needs of demanding customers; build unique competencies to achieve and maintain a competitive advantage; assist in obtaining the best resources, and enable overall efficiency (Fawcett *et al.* 2007:187).

As the corporate landscape increasingly configures around dynamic, highly interactive ecosystems, supply chains are expected to evolve substantially (Kelly & Marchese, 2015:284). Traditionally, supply chain nodes were linear and inflexible.

Today's technologically advanced market environment requires vigorous supply chain networks that are flexible and allow for augmented variation. Schrauf and Bertram (2016:10) compare the traditional linear supply chain with an integrated, digitally enabled supply chain in the model below.

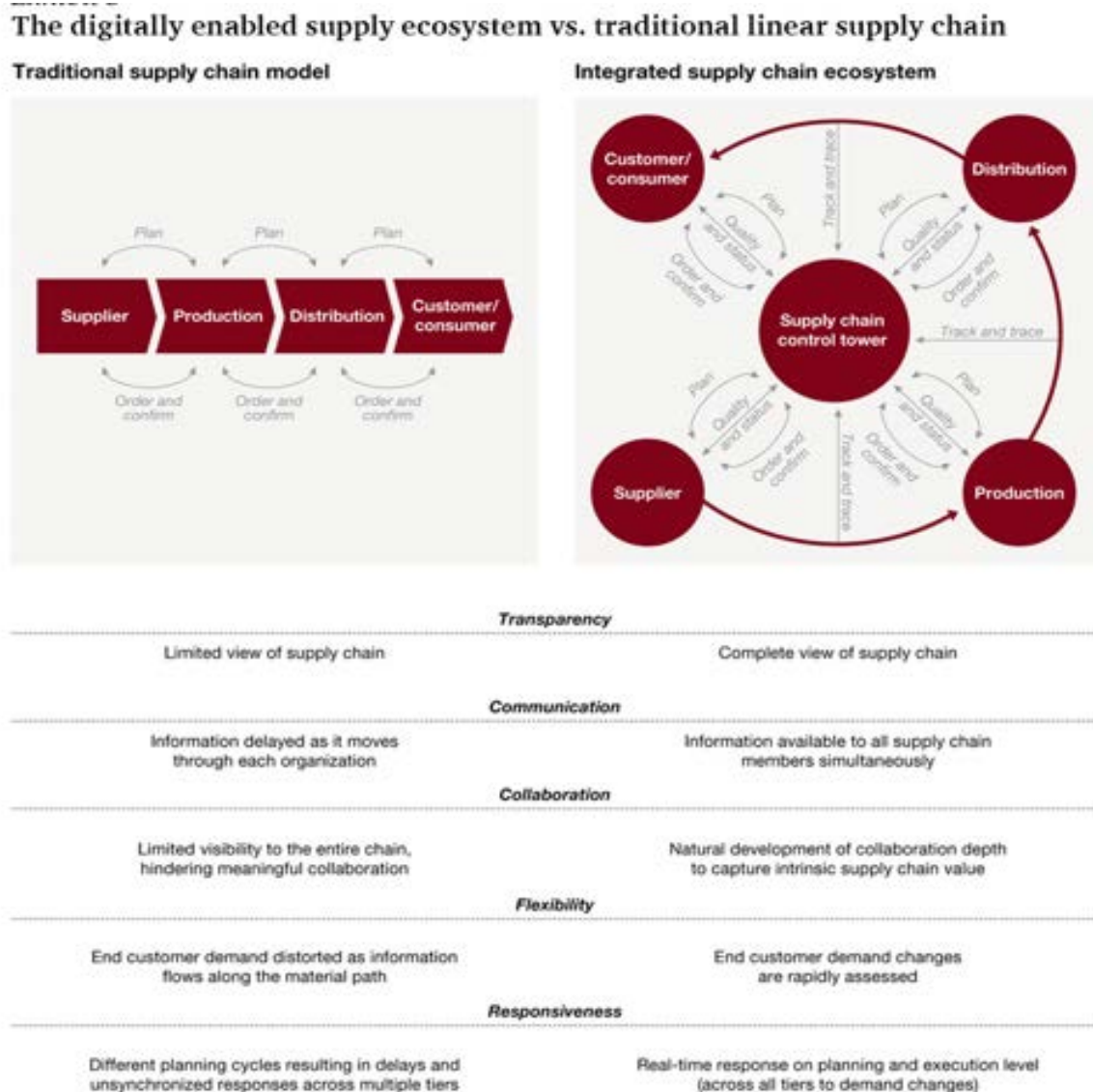


Figure 2-2: Supply chain model

Source: <https://www.strategyand.pwc.com/reports/digitization-more-efficient> Date of access: 29 Sept. 2018.

This illustration summarises the most important differences between a linear and integrated supply chain, and it is evident that digital integration is a key factor for sustainable business growth in future.

In fact, Schrauf and Berttram (2016:11) are of the opinion that digitisation can cause significant economic benefits, boosting revenues with an estimated 2,9% a year. Digitisation is already happening within many supply chains. Manual execution of repetitive tasks is becoming less whilst cost-saving objectives drive organisations towards automation.

The need for transparency and visibility across functions and databases increasingly echoes the need for integrated systems and intelligent interfaces.

Jordaan (2012:39) describes it as the dawn of technology that changed the mechanisms of execution of the entire supply chain.

An important component of supply chain management is supplier management. Marchese and Lam (2014:11) note that the significance of suppliers necessitates collaborative supplier relationships. Collaborating with the strategic suppliers can simultaneously improve performance and address potential areas of vulnerability. Globalisation therefore accentuates the importance of supplier management within the supply chain. When an organisation expands its operations beyond local borders, political factors such as international legislation, foreign country regulations, taxes and other factors complicates supplier management. Not only does an organisation have to ensure compliance to these factors, but language barriers, time zone differences and a variety of corporate cultures need to be considered.

According to Schrauf and Berttram (2016:12), the main objective of the digital supply chain is to deliver the right product as quickly as possible, in a reliant manner, with increased efficiency and by optimising costs via automation. The supply chain therefore needs to be completely integrated, effortlessly connecting suppliers, manufacturing, logistics, warehousing and customers, driven by a central cloud-based command centre. Schrauf and Berttram depict these eight key elements of the digital supply chain as follows.

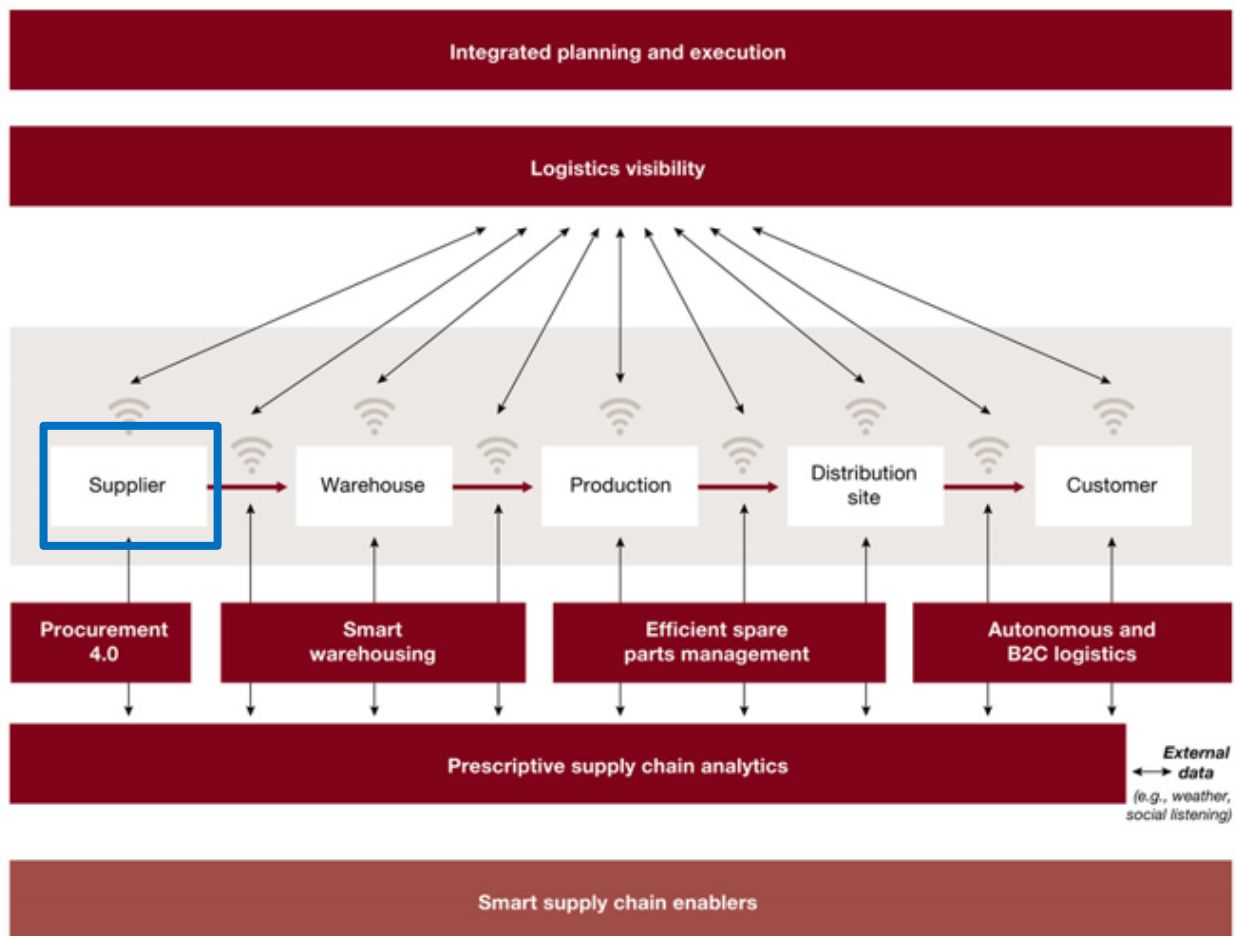


Figure 2-3: 8 Key elements of a digital supply chain

Source: <https://www.strategyand.pwc.com/reports/digitization-more-efficient> Date of access: 29 Sept. 2018.

This study focuses on the supplier role within a supply chain by means of the supplier management function within the supply chain of a large, multinational organisation.

A variety of business networks and collaborative cloud-based platforms is emerging that allows organisations to interact with supply chain stakeholders quicker and more comprehensively. One such platform, SAP Ariba, focuses on matching demand and supply for specific commodity products. This cloud-based solution also brings suppliers into the supply chain through its Supplier Information Management (SIM) module that enables organisations to on-board and register suppliers by means of an electronic Supplier Profile Questionnaire (SPQ) (SAP Ariba, 2018).

Marchese and Lam (2014:13) add that cloud computing enables organisations to decrease capital investment while obtaining access to analytics and data; agile product development; and increased collaboration within organisational operations, suppliers, and customers worldwide. By providing easy access to data, cloud computing enables various mobile technologies.

When the role of supplier management is enabled through technology, the value-add not only involves a greater capacity to manage supplier data, but also increases the capability to properly conduct supplier screening and transforming PtP activities into a strategic lever for the entire organisation. The process of traditional vendor selection and screening thus needs to be redesigned to adapt to digital requirements and technological advancements.

The supplier management function within the supply chain of the identified multinational needs to obtain, validate and manage all sorts of supplier data, the function is therefore ideally positioned in the organisation to ensure proper supplier screening. By utilising the SAP Ariba SPQ, director details; ownership percentages; BBBEE credentials and even bank information can be screened for correctness. This allows for mitigating the risk of registering potential fraudulent suppliers and protecting the organisation's reputation. Previously, the supplier completed a hard copy application form and submitted copies of relevant documents.

The main success factor in any supply chain is efficient and timely exchange of information, requiring technical sophistication and a reasonable degree of intelligent human involvement (Schrauf & Bertram, 2016:16). The latter seems to be lacking on the side of the hundreds of suppliers that are requested to complete the online supplier questionnaire for the multinational organisation where the research was conducted. This poses the question as to whether the targeted suppliers, being mainly small and medium enterprises, understand the requirements of the online supplier questionnaire and have the means to actually complete the questionnaire successfully.

2.7 DESIGNING BUSINESS MODELS FOR DIGITAL TRANSFORMATION

According to Marchese and Lam (2014:1), supply chains can only fuel long-term, sustainable growth by building innovation capabilities and by adopting emerging and potentially disruptive technologies like digital platforms.

Turber, Vom Brocke, Gassmann and Fleisch (2014:17) add that digital technologies, also known as the “Internet of Things” (IoT), offer a wealth of business model opportunities and that in this context, organisations are required to reconsider business models beyond a firm-centric lens in order to respond to changed dynamics.

Turber *et al.* (2014:18) explain that the IoT opens up a world of new business model opportunities when digital technology is incorporated into previously non-digital products or services. It is also recognised by Cecere (cited by Muzumdar, 2016:22) that enormous dividends can be derived as the IoT emerges and large volumes of data can be provided in real-time.

Marchese and Lam (2014:11) are of the opinion that business model innovations can have a significant impact for supply chains in areas such as redesigning systems, processes, services and distribution channels. It is, however, important that this supply chain business model innovation is integrated into the overall organisational corporate strategy.

Matt, Hess and Benlian (2015) stress that the challenge that organisations face is the rapid development of digitisation and how quickly it can be incorporated into business models and product designs. It is therefore important that organisational structures and management practices should be developed to fully exploit and integrate digitisation into the products and services of the organisation to ensure alignment in the application of digital transformation strategies.

2.8 CONCLUSION

It is evident from the above literature review that digital transformation is the way of the future, but that smaller suppliers, rendering services and products to large organisations, are often not ready or equipped to adapt to digital platforms.

The fact that legislation requires large organisations to utilise the services of small and micro enterprises poses a predicament in that large organisations are embracing digital platforms to integrate its supply chain, but its supplier base faces many constraints and difficulties to comply and adjust timeously.

Without considering how to up-skill small and micro enterprises to incorporate digital strategies into its business, and how to comply with the digital requirements of large organisations, supply chains may be constrained in terms of the available pool of small and micro enterprises to which procurement contracts can be assigned.

2.9 CHAPTER SUMMARY

This chapter provided an overview of relevant matters. Digital transformation was described as an enabler for an integrated supply chain within any organisation. Examples of various potential risks as well as benefits of digitisation were highlighted.

An overview of the BBBEE Codes was presented in order to explain the concept of preferential procurement within a large multinational organisation. Exempted micro enterprises were defined and the constraints these small entities face in the business world were underlined.

The elements of an integrated supply chain were discussed, as well as the differences between a traditional and digitised supply chain. The importance of efficient supply chain management as well as supplier management within supply chain were explained and defined.

An example of a cloud-based supplier platform, SAP Ariba, was provided, along with the types of information required to be completed by suppliers in the online questionnaire of a large multinational organisation. The researcher aimed to explain the effect of and readiness for digitisation of exempted micro enterprises.

The chapter ended with a short discussion on digital transformation business models.

CHAPTER 3

RESEARCH METHODOLOGY

3.1 INTRODUCTION

The literature review conducted in Chapter 2 presented an overview of the concept of digital transformation and highlighted the risks and benefits associated with it. An overview of preferential procurement and the supply chain was also provided. It was concluded that although digital transformation is the way of the future, interventions may be required to ensure that exempted micro enterprises are ready and trained in the use of technology platforms.

To establish the nature and extend of the required intervention, it is important that potential constraints in utilising certain digital platforms are identified and advantages, if any, are leveraged.

An empirical investigation was performed to establish whether or not EMEs are experiencing constraints in adapting to new technology platforms such as a cloud-based supplier profile questionnaire that is used as means for vendor selection at large organisations. The research design and methodology used to conduct the empirical study, as well as the research instrument that was developed and the sample method and techniques utilised for data analyses are presented in this chapter. Ethical considerations are discussed before the chapter concludes.

3.2 RESEARCH DESIGN

The researcher's aim was to establish whether small and medium suppliers (classified as EMEs) participating in the supply chain activities of the large organisation where the research was conducted, are experiencing difficulties in completing the online supplier questionnaire that is required for vendor registration and vendor information management. (Vendor and supplier are used as synonyms in this study.)

The research questionnaire measured the perceptions of respondents within the current pool of approved suppliers within the multinational organisation where the research was conducted, on their view of the benefits and constraints of completing an online supplier questionnaire. It also measured their views on the importance of using technology for the purpose of participating in supply chain activities and as a tool for maintaining business information electronically. Finally, it measured the relationship between the variables of the research.

To achieve the objectives of the study, a structured approach by means of a quantitative study was chosen as research design, with the use of questionnaires as the primary research instrument for data collection.

The reason for following a quantitative approach is that it enabled the researcher to reach a larger audience than would have been possible with personal interviews. It is believed that a quantitative approach allows for logical, empirical testing of the theory and that it is also more objective than a qualitative approach (Bryman, Bell, Hirschsohn, Dos Santos, Du Toit, Masenge, Van Aardt, & Wagner, 2014:31). Chetty (2016) further states that the main purpose of quantitative research is the quantification of the data, as it allows for the conceptualisation of results by measuring the views and responses of the target population. The aim was to obtain quantifiable data that can be systematically analysed to establish whether small and medium enterprises, classified as exempted micro enterprises, with a turnover of less than R50 million per annum, experience any difficulties in adapting to new technology platforms, like the one used for supplier registration and information management.

One of the strengths of using questionnaires is the benefit of confidentiality in the sense that the researcher does not meet any respondents in person. It can therefore contribute to respondent objectivity when completing the questionnaire, as user anonymity is believed to provide more comfort to respondents (Debois, 2016). Not meeting with respondents in person can also reduce the potential of researcher bias (Bryman *et al.*, 2014:192 and Saif, 2015). The large amounts of data that is collected can be analysed fairly easily, since responses are based on pre-coded, closed-ended questions. Questionnaires are therefore the most affordable manner to obtain quantitative data, and scalability allows for the researcher to target a large audience.

The researcher does, however, acknowledge the inability to control the environment (Chetty, 2016) in which respondents complete the questionnaire and take note of the fact that certain conditions such as the time of day may influence a respondent's answer. It is furthermore acknowledged that the data obtained by using a questionnaire with closed-ended questions may lead to restricted outcomes, since respondents have limited options of responses, based on the response selection made by the researcher (Chetty, 2016).

Considering the above-mentioned advantages and disadvantages, and also considering time and convenience, the researchers' intention and approach were to collect data by means of a well-designed, pre-coded questionnaire. This questionnaire was distributed to the target population by means of electronic mail. Although email surveys generally have a lower response rate than other methods (Bryman *et al.*, 2014:293), the researcher specifically wanted to test user experience and perceptions in using online platforms, and an online survey was therefore deemed inappropriate to test this construct.

3.3 THE RESEARCH INSTRUMENT

The research questionnaire was designed in English, which is the formal business language of the organisation where the research was conducted. The target population consist of current suppliers of the organisation, meaning the suppliers already have a business relationship with the organisation, and therefore there was no reservation that language would be a barrier. The simple and elementary nature of the questions also compensated for any possible ambiguity. The research questionnaire further had to take into account factors such as time constraints, anonymity, method of delivery and ethical considerations.

The research questionnaire was designed to test whether exempted micro enterprises are ready to adapt to the use of digital platforms as a means of participating in various supply chain activities of larger organisations. The research questionnaire measured the difficulty level of the different dimensions (sections) of the digital supplier questionnaire currently being utilised by the organisation where the research was conducted, against user perceptions of the importance of using a digital platform for business information management.

Section A of the questionnaire consists of eight questions and mainly deals with business demographic details such as type of entity, how many years the business has been trading, and the average annual turnover in order to classify businesses as exempted micro enterprises, qualifying small enterprises or large enterprises. The BBBEE Amended Codes of Good Practice (2013 of 53) defines an EME as any enterprise with an annual turnover of less than R10 million. Section A also asked respondents which position they occupy in the business, their level of education, and what their home language is. No further BBBEE information was required from respondents, since the study only focuses on size of the entity and not BBBEE compliance level or ownership status.

Section B of the questionnaire tested respondents' levels of computer knowledge with questions relating to internet accessibility, types of devices used (for example, a laptop or smartphone), as well as how many hours per day are spent working on a computer or similar device.

The items in Section C addressed the respondents' experience with the current online platform utilised by the organisation where the research was conducted, as well as their perceptions about the difficulty level of accessing and completing the online supplier questionnaire. A four-point Likert scale was utilised to test whether suppliers agreed or disagreed with the statements posed in each question. Section C also asked respondents whether the online supplier questionnaire was visually appealing, easy to navigate, how much time was spent to complete the questionnaire, and if a respondent required any additional assistance during the process.

Section D asked general questions to test whether respondents would rather prefer the online supplier questionnaire in a different language or in the format of a cell phone application. It also asked whether additional training material would be beneficial to assist during the process and if any specific portion of the supplier questionnaire was particularly difficult. A total of 53 questions were posed to respondents.

The data collection method as well as the time available to respondents impacted the design and length of the questionnaire.

It was important to ensure that all aspects of the online supplier questionnaire were addressed by the questions of the research questionnaire.

The research questionnaire was therefore tested with a sample of five stakeholders who deal with supplier on-boarding on a daily basis as part of their work requirements, within the organisation where the research was conducted.

The research questionnaire was perceived to be simple and comprehensive enough to test all the identified constructs. The time study also indicated that respondents would spend a maximum of 15 minutes to complete the research questionnaire.

The research questionnaire containing all the elements and variables measured is provided as an appendix at the end of this document.

3.4 CONSTRUCT VALIDITY AND RELIABILITY

Measurement validity is concerned with whether an indicator, or set of indicators, that is formulated to measure a concept, truly measures the concept it is anticipated to measure (Bryman *et al.*, 2014:38). Anastasi and Urbina (1997:113) further explain that the validity of a test concerns what the test measures and how well it does so. If valid, it measures then what it is supposed to measure.

In this study, factor analyses was used as a data reduction method to ensure the construct validity of the constructs of the measuring instrument.

Reliability is concerned with consistency of measures (Bryman *et al.*, 2014:36). According to Anastasi and Urbina (1997:84), the reliability of a test refers to the consistency of scores obtained by the same persons when they are re-examined with the same test on different occasions, or with different sets of the same items, or under other variable examining conditions.

In this study, Cronbach alpha reliability coefficients were computed to ensure the reliability of the constructs.

3.5 DATA COLLECTION

Research questionnaires were distributed to the target population by means of electronic mail. The contact information of respondents was obtained by the researcher as part of normal work duties, after approval was obtained from senior management that the identified target population could be contacted.

Respondents were provided the opportunity to complete the research questionnaire digitally by means of check boxes that were added to each question in the questionnaire. Alternatively, research questionnaires could have been printed out, completed manually and then scanned back to the researcher.

Anonymity was ensured by assigning a reference code to each email that was sent to a supplier containing the research questionnaire. The researcher had no means of identifying any supplier name or respondent details, apart from the basic demographic information that was asked in Section A of the questionnaire. Results were summarised from the questionnaire for analysis by aggregation, and not individually.

The voluntary participation of respondents was emphasised in the cover letter that accompanied the questionnaire as well as in the instructions portion of the questionnaire itself. The assurance of anonymity and the security of data were ensured by the random assignment of a reference code for each respondent. Respondents were allowed two weeks to complete and submit the research questionnaire back to the researcher.

Whilst developing the research questionnaire, it was important to understand the target population in order to determine the level of complexity, the comprehensiveness and time that would be practical for the selected target audience. The researcher had access to the population of possible respondents through her normal work duties, and therefore a convenient sampling method was applied. No random sampling was used in this study.

Considering the research objectives, the target population was selected based on the fact that the identified population have recently been subjected to the comprehensive supplier on-boarding process, where active suppliers were required to complete an online supplier questionnaire consisting of approximately two hundred and sixty-eight (268) questions.

It was therefore important to develop a concise and relevant research questionnaire in order not to frustrate respondents and to ensure informed views and accurate responses.

The organisation where the research was conducted has approximately 6 000 active suppliers. An active supplier is defined as any supplier that received at least one purchase order in a 12-month period, constituting a transaction between the research organisation and said supplier.

In applying the convenient sampling method, two criteria were used, namely the time period and secondly, the activity of identified suppliers with the organisation where the research was conducted.

3.6 TARGET POPULATION

In light of the above, the target population is therefore defined as all the suppliers that have completed the online supplier questionnaire between 01 October 2017 and 30 September 2018 and that received one or more purchase orders during this period. The target population was identified by means of a database of approved suppliers. One thousand three hundred and forty (1 340) suppliers were identified as part of the target population. These included small, medium and large enterprises, as defined in Chapter 1.

The target population is scattered across all nine provinces of South Africa, and no distinction was made between the services and/or products that these enterprises supply to the organisation where the research was conducted. Industry and type of services or products supplied were deemed irrelevant to this study, since every supplier of the organisation where the research was conducted was requested to complete the online supplier questionnaire, regardless of its size or scope of service. The aim was not to segment only one group of suppliers, but to obtain an overall understanding of the perceptions of all the suppliers in the target population. The target population was contacted via electronic mail and asked to voluntarily complete and submit the research questionnaire within two weeks.

Consequently, the study population consists of those respondents who completed and returned the research questionnaire within the specified time period. A total of one hundred and sixty-two (162) research questionnaires were received and these constituted the study population.

The research questions are therefore answered and interpreted only with reference to the study population under investigation. Interpretations, recommendations and conclusions therefore only apply to the study population.

No inferential statistics were used to interpret results, although p-values, yielded by inferential statistical analyses are reported as if random sampling methods were used, for the purpose of completeness.

3.7 DATA ANALYSIS

Data was captured and analysed by the North-West University's Department of Statistical Consultation Services using SAS (SAS Institute Inc., 2017). Frequency tables were drawn to describe the socio-demographic variables of the study population. Cronbach alpha reliability coefficients were computed for the measuring instrument's subtest (Nunnally & Bernstein, 1994).

A guideline for Cronbach alpha reliability is that a construct is perceived to be reliable if the Cronbach alpha coefficient is > 0.6 . Confirmatory factor analyses were done to confirm construct validity of subtests. To determine whether a factor analysis may be appropriate, Kaiser's measure of sample adequacy (MSA), which gives an indication of the inter correlations among variables, was computed (Tabachnick & Fidell, 2001) for each confirmatory factor. Guidelines according to Hair, Andersen, Tatham and Black (1998) were used to assure that the MSAs were appropriate. According to these guidelines, MSAs are appropriate if > 0.5 .

As a result of the fact that no random sampling was conducted, interpretation of comparisons between group means was done according to Cohen's effect sizes, d (Cohen, 1988). Effect sizes indicate practical significance; that is the extent to which a difference is large enough to have an effect in practice (Steyn & Ellis, 2009).

No inferential statistics was interpreted, although p-values are reported as if random sampling was assumed.

The following guidelines were used for d-values regarding differences between means: small effect: $d = 0.2$ (no difference of any practical value); medium effect (noticeable with the naked eye): $d = 0.5$; large effect and practically significant: $d \geq 0.8$.

Although it may seem as if the references concerning statistical analyses are very old, it is important for the purposes of this study that the original sources are used.

3.8 ETHICAL CONSIDERATIONS

Considering the ethical aspects of the research, the first risk identified was confidentiality and sensitivity of information from the organisation where the research was conducted. Informed consent for the study was obtained within the organisation where the research was conducted as it is also the organisation where the researcher is employed. The confidential information related to the organisations' supply chain and the online supplier questionnaire utilised as part of supply chain practice are shown in this research in a manner that ensures the confidentiality of the information and anonymity of the respondents.

The second risk was the exposure of respondents without their consent. Respondents were informed that participating in the research was completely voluntary and that by submitting a completed research questionnaire they gave informed consent that the information provided may be used in this study. The assurance of anonymity and the security of data were ensured by assigning a random reference number to each research questionnaire that was received from a respondent.

Lastly, formal ethical clearance was obtained from the institution where the researcher is enrolled as a student before commencing with the data collection. This is added as an annexure.

3.9 CONCLUSION

It is of utmost importance that the research methodology that was applied is correctly understood in order to ensure practical and executable recommendations are made.

Maree (2007:178) is of the opinion that the sample size is influenced by various factors which include the type of research, financial- and time constraints, as well as the size of the population. Denscombe (2010:5) further states that the researcher should choose a research method that is likely to be successful in achieving the objectives of the research, and be able to justify the choice of this method clearly and explicitly.

Considering the importance of the target population and subsequent study population to the organisation where the research was conducted, it is evident that the research design and methodology is suitable. The utilisation of a pre-coded research questionnaire allowed the researcher to target a sufficiently large audience and to gather usable and relevant data.

The following chapter focuses on a detailed analysis of the data that was obtained from the study population.

3.10 CHAPTER SUMMARY

Chapter 3 started by highlighting the importance of the study. The research design was explained as well as why the decision was made to follow a structured approach by means of a questionnaire. The strengths and weaknesses of using questionnaires as research instrument were also indicated. The chapter further explained how the research instrument (questionnaire) was developed and what it was intended to measure. A summary of the research questions covered in the research instrument was also provided.

Construct validity and reliability were defined and it was mentioned that Cronbach alpha reliability coefficients were computed to ensure reliability of the constructs.

The data collection method was explained as well as how the target population was identified and contacted.

The data analyses methods used in this study were defined and explained, and ethical considerations were mentioned before the chapter concluded with why the chosen research method is deemed suitable for this study.

CHAPTER 4

EMPIRICAL RESULTS

4.1 INTRODUCTION

The previous chapter explained the research methodology and data analyses techniques used in this study. The main purpose of this chapter is to apply the methods discussed in Chapter 3 to determine the results of the study. The chapter also focuses on interpreting the empirical data that was obtained from the study population by means of a research questionnaire. The first part of the chapter provides details of the sample and the respondent profile. Then the chapter focuses on the categories and sub-categories of the themes as derived from the data analyses before the chapter concludes.

4.2 DEMOGRAPHIC PROFILE OF STUDY POPULATION

A total of 162 research questionnaires were received and analysed according to the methodology as described in Chapter 3. Of the 162 respondents, 101 were female, 57 were male and 4 respondents did not indicate their gender. The results are illustrated in figure 4-1 below.

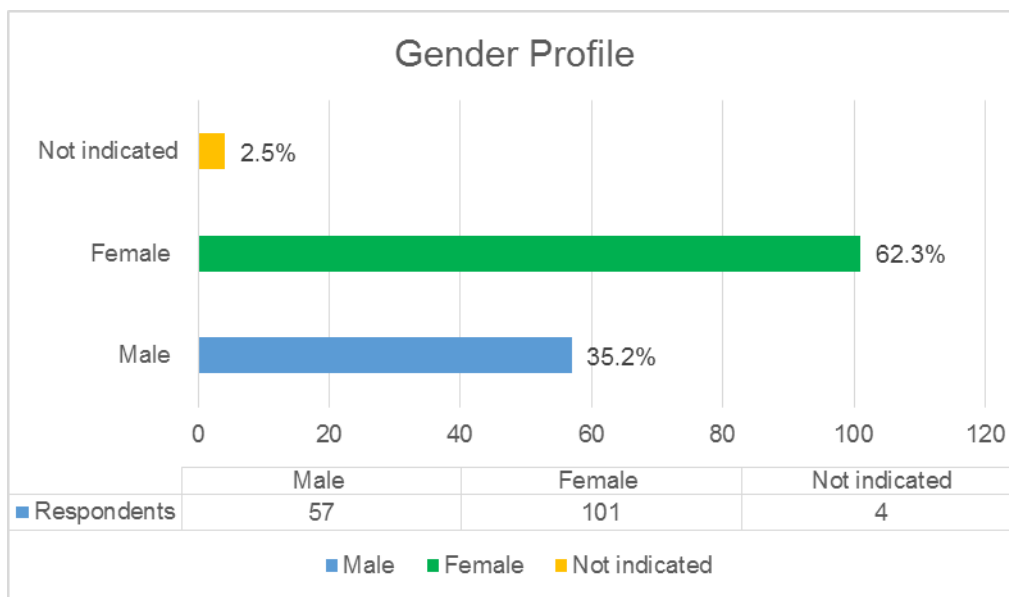


Figure 4-1: Gender profile of study population

The average age of respondents was 45 years, the youngest respondent being 24 and the oldest, 71 years of age.

The study population comprised current suppliers to the multinational organisation where the research was conducted. Respondents' demographic information pertaining to type of entity, years in business, annual turnover, and position occupied in the entity, level of education and home language is provided in table 4-1 below.

Table 4-1: Demographic composition of respondents

Demographic indicator	Number of respondents	Percentage
Type of entity		
Private (Pty) Ltd	113	69.8%
Closed Corporation	40	24.7%
Sole Proprietor	4	2.5%
Partnership	1	0.6%
Not indicated	4	2.5%
Years business has been trading		
Less than 1 year	0	0.0%
1-2 years	6	3.7%
3-5 years	7	4.3%
6-10 years	10	6.2%
More than 10 years	135	83.3%
Not indicated	4	2.5%
Average annual turnover		
R1 million – R10 million	70	43.2%
More than R10 million but less than R50 million	49	30.2%
R50 million & more	35	21.6%
Not indicated	8	4.9%
Position occupied in the business		
Owner	13	8.0%
Management & owner	30	18.5%
Management but not owner	48	29.6%
Employee	71	43.8%
Not indicated	0	0.0%
Level of education		
No schooling	0	0%
Primary School	1	0.6%
Secondary School	36	22.2%
Certificate 1-2 years	32	19.8%
Diploma/Degree	92	56.8%
Not indicated	1	0.6%

Home Language		
English	76	46.9%
Afrikaans	54	33.3%
Zulu	7	4.3%
Xhosa	0	0.0%
Southern Sotho	4	2.5%
Northern Sotho	1	0.6%
Tswana	3	1.9%
Venda	0	0.0%
Tsonga	6	3.7%
Swati	1	0.6%
Ndebele	0	0.0%
Did not indicate	10	6.2%

Observations from the table above are as follows:

- The majority of entities falls within the proprietary limited cluster, at 69.8%. Closed corporations are second with 24.7% respondents indicating this type of entity.
- Only 14.2% of entities have been trading for less than ten years and 83.3% of entities have been trading for more than 10 years.
- The average annual turnover is well spread across the three buckets, with 43.2% of respondents indicating an average annual turnover of R10 million or less. These respondents are also classified as exempted micro enterprises.
- The majority of respondents (43.8%) are employed by the entity whilst 26.5% occupy a managerial position as well as owns the entity.
- 56.8% of respondents indicated that they have either a diploma or degree and home language preference is largely divided between English and Afrikaans with 46.9% and 33.3% respectively.

4.3 SECTION B – COMPUTER KNOWLEDGE

The following analyses aims to address one of the secondary research objectives, namely to determine whether the EME supplier landscape is ready for advanced technology platforms.

Section B of the research questionnaire tested basic skills pertaining to the usage and accessibility to either a computer or other web-enabled device.

Table 4-2 below indicates if respondents have access to a computer or web-enabled device like a smartphone or tablet. The table also indicates the number of hours respondents spent working on a computer.

Table 4-2: Accessibility and devices

Do you have access to a computer or web-enabled device?		
Yes	160	98.8%
No	1	0.6%
Not indicated	1	0.6%
Type of device		
Computer only	50	30.9%
Smartphone / Tablet only	1	0.6%
Both computer and Smartphone /Tablet	110	67.9%
Not indicated	1	0.6%
Do you have access to the internet?		
Yes	160	98.8%
No	0	0%
Not indicated	2	1.2%
Average hours per day spent working on a computer		
Less than 2 hours per day	3	1.85%
From 2 hours to 5 hours per day	37	22.8%
More than 5 hours per day	121	74.7%
Not indicated	1	0.6%

It is evident from the table above that 98.8% of respondents have access to a web-enabled device as well as to the internet. The majority of respondents (67.9%) have access to more than one device and 74.7% of respondents spend more than 5 hours a day working on a computer.

The figure below depicts where respondents access the internet. It is important to note that the majority of respondents access the internet from more than one place, indicating a high rate of connectivity throughout a normal day. Sixty-five respondents (40.1%) indicated that they have access to the internet at home, at the office and through a mobile network anywhere. Only four respondents indicated that they only access the internet from their homes. Considering the aforementioned, as well as the number of hours that the majority of respondents spent working on a computer, it is fair to assume that respondents are comfortable with using a web-enabled device, accessing the internet and working on a computer.

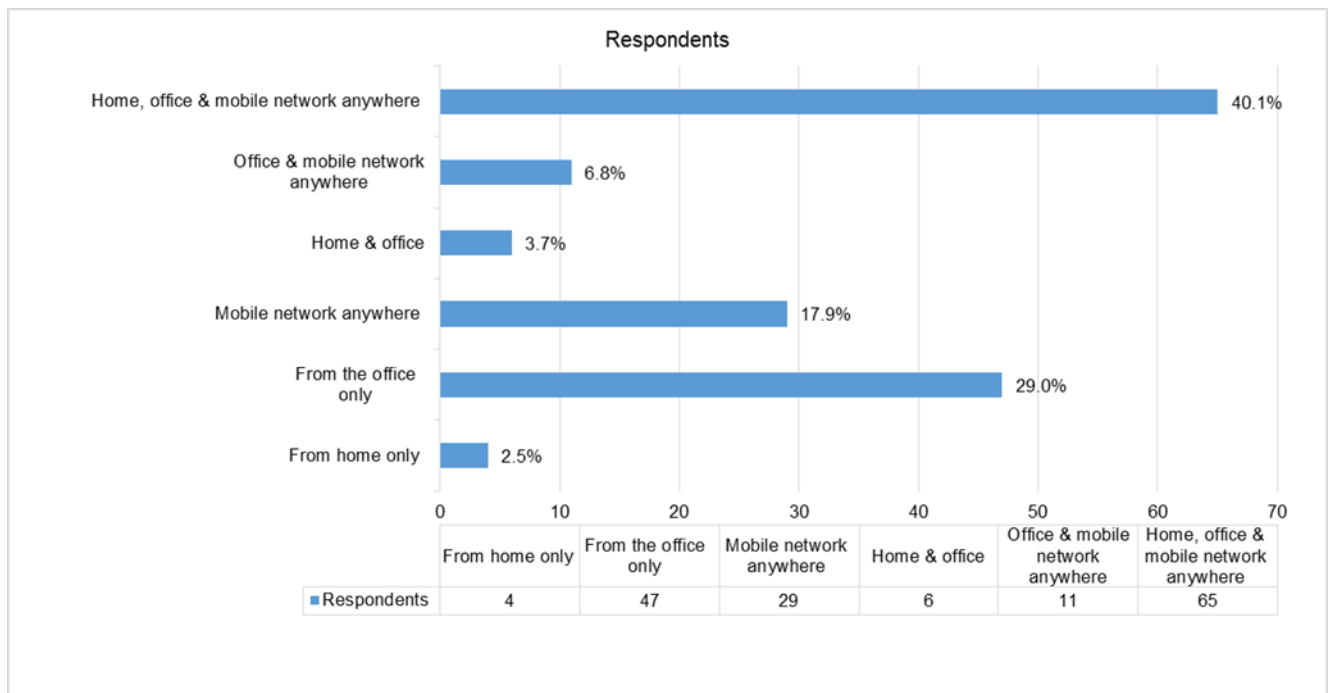


Figure 4-2: Access to internet

Section B, question 3 asked respondents to rate their level of computer knowledge by means of a four-point Likert scale. The reason for using a four-point scale is to eliminate any neutral answers so that exact data could be obtained through the research questionnaire. According to Jamieson (2018), the Likert scale, as a rating system, was designed to measure peoples' opinions, attitudes or perceptions. Respondents choose from a series of possible responses that are numerically coded to indicate their accord towards the statement, for example "agree" or "disagree". On a four-point Likert scale, the midpoint or mean is 2.5 and responses are interpreted in light of this midpoint.

When asked to rate their computer knowledge on a scale of one to four, where 1 = "almost none" and 4 = "good", the average response was 3.65, which is larger than the midpoint of the scale. This means that the perception of the group is that their computer skills range between "average" to "good", with a strong tendency towards "good".

Table 4-3: Level of computer knowledge

Item			Almost none	Basic	Average	Good	Not indicated	Total	Mean
B3	Rate your level of computer knowledge	Frequency	0	5	45	111	1	162	3.65
		Percentage	0	3.1	27.8	68.5	0.6	100	

Considering the aforementioned descriptive statistics, it is concluded that the study population can work on computers and other devices and that they are therefore able to adapt to technological requirements.

The following sections explain and analyse the data for the remainder of the research questionnaire.

4.4 SECTION C – ON-BOARDING EXPERIENCE

This portion of the research questionnaire tested user experience pertaining to the recent on-boarding where suppliers of the organisation where the research was conducted were required to complete the online supplier questionnaire consisting of 268 questions. The aim is to answer establish whether companies are experiencing any constraints regarding the use of the digital platform for completing the online supplier questionnaire. The tables below indicate responses as well as the mean for each of the questions.

Table 4-4: Level of ease in completing the online supplier questionnaire

Item			Very difficult	Somewhat difficult	Easy	Very easy	Not indicated	Total	Mean
C1	Considering the recent on-boarding exercise, how easy was it to complete the questionnaire?	Frequency	1	43	79	38	1	162	2.95
		Percentage	0.6	26.5	48.8	23.5	0.6	100	

Although the bulk of the respondents indicated the online supplier questionnaire was easy to complete, with a combined response of 72.3%, a fair percentage also indicated that they did experience some difficulty (26.5%). The mean is slightly above the midpoint, indicating overall medium level of ease in completing the online supplier questionnaire.

Question C2 asked respondents if they were able to navigate through the two hundred and sixty-eight questions of the online supplier questionnaire within an acceptable time, with a simple yes/no response option. 83.3% of the respondents indicated “yes”, whilst only 16% indicated “no”.

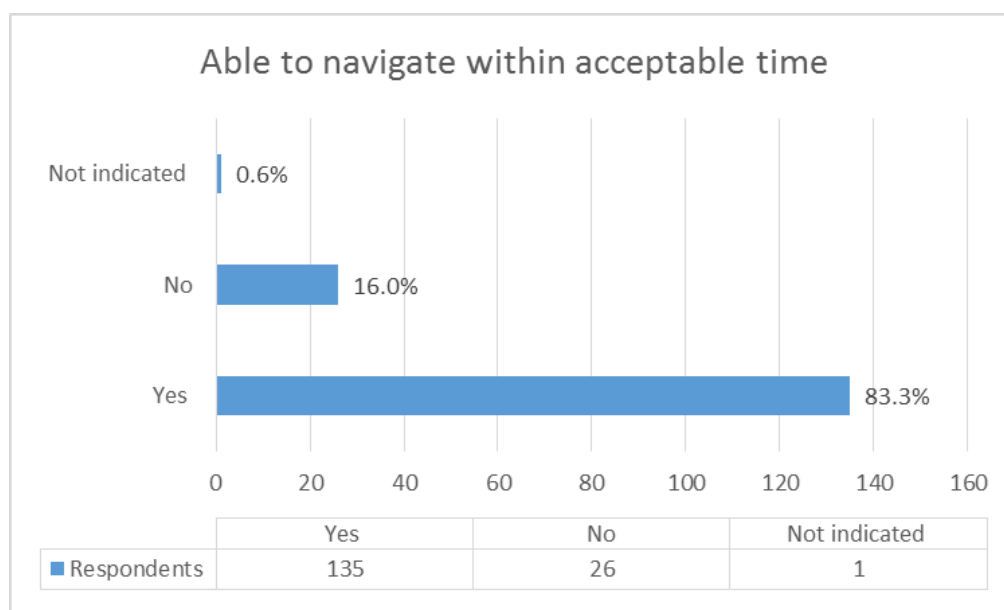


Figure 4-3: Ability to navigate within reasonable time

The figure above shows that the majority of respondents could complete the online questionnaire within a reasonable time period.

Question C3 asked respondents whether they perceived the website and the online supplier questionnaire as visually appealing. The majority indicated that the website and online supplier questionnaire was appealing, however, 8.6% reported that it was not at all appealing and 32.7% found it only somewhat appealing. Table 4-5 below provides the scores for this question.

Table 4-5: Visual appeal of the website / online supplier questionnaire

Item			Not at all appealing	Somewhat appealing	Appealing	Very appealing	Not indicated	Total	Mean
C3	How visually appealing is the website / questionnaire?	Frequency	14	53	86	9	0	162	2.55
		Percentage	8.6	32.7	53.1	5.6	0	100	

From the table above it can be derived that the score was only 0.5 larger than the midpoint, indicating that the general perception amongst respondents is that the website and online supplier questionnaire is only somewhat appealing. According to Pengnate and Sarathy (2016:50), website design features such as the visual appeal and ease of use are key elements that influence user response and experience.

The authors further elaborate that website design features behave as cognitive cues that create a first impression and establish an emotional bond between users and the website. It can be concluded that if users do not perceive a website to be appealing and easy to use, these might affect their response rate and willingness to complete the online supplier questionnaire.

Question C4 gauged respondents' perception of the difficulty level of the two hundred and sixty-eight questions asked in the online supplier questionnaire. The mean of 3.01 is larger than the 2.5 midpoint, and this is indicative that respondents were able to complete the questions with relative ease. This is also confirmed by a combined percentage of 81.5% of respondents stating that answering the questions asked in the online supplier questionnaire was easy.

Table 4-6: Difficulty level of the questions

Item			Very difficult	Somewhat difficult	Fairly easy	Very easy	Not indicated	Total	Mean
C4	How easy is it to understand the questions of the online questionnaire?	Frequency	0	30	100	32	0	162	3.01
		Percentage	0	18.5	61.7	19.8	0	100	

Considering the preceding descriptive statistics and the fact that 43.2% of respondents are classified as EMEs (refer table 4-1 above), it can be concluded that the majority of the study population (81.5%) did not experience extreme difficulty or constraints in completing the online supplier questionnaire.

Question C5 asked respondents if they think that their information is safe on the website used for completing the online supplier questionnaire, with a simple yes/no response option. The bulk of the respondents believe that their information is safe, with 88.9% indicating “yes”. Only 11.1% of respondents do not think their information is safe on the website.

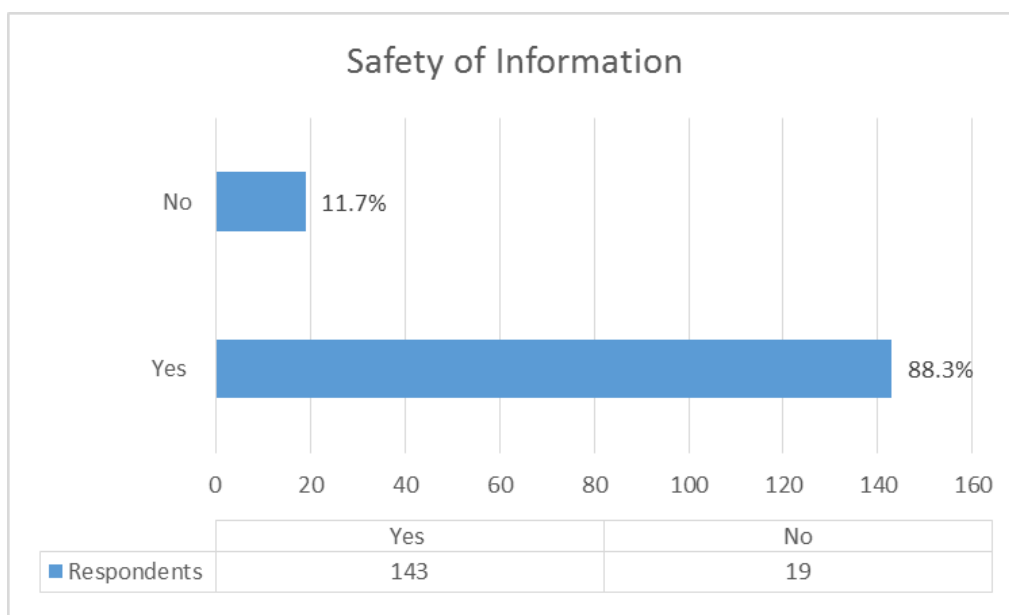


Figure 4-4: Safety of information

To test the validity of the above responses, respondents were further asked to indicate whether or not they agree that their information is confidential and securely stored on the website where the online supplier questionnaire is completed. The scores are reflected in Table 4-7 below.

Table 4-7: Confidentiality of information

Item			Strongly disagree	Mildly disagree	Mildly agree	Strongly agree	Not indicated	Total	Mean
C6	Information is confidential and securely stored on the website	Frequency	7	16	81	58	0	162	3.17
		Percentage	4.3	9.9	50	35.8	0	100	

As per the table above, respondents selected “mildly agree” and “strongly” agree with a combined percentage of 85.8%. This strongly supports the 88.9% of respondents indicating “yes” to question C5. The mean score of 3.17 indicates that respondents overwhelmingly believe that their information is safe and confidentially stored on the website where the online supplier questionnaire is completed.

As specified in the literature review in Chapter 2, one of the most important risks of digital platforms is information security.

It can be concluded that the current website as well as the information required in completing the online supplier questionnaire was deemed safe by the respondents.

Question C7 asked respondents whether the online supplier questionnaire is user-friendly. The responses are indicated in Table 4-8 below.

Table 4-8: User-friendliness

Item			Not at all	Somewhat user-friendly	User-friendly	Very user-friendly	Not indicated	Total	Mean
C7	How user-friendly is the online supplier questionnaire?	Frequency	7	48	77	27	3	162	2.77
		Percentage	4.3	29.6	47.5	16.7	1.9	100	

According to Pengnate and Sarathy (2016:49), ease of use, or user-friendliness, reflects the features of a website which can either assist or hinder users as they acquire knowledge or access different sections of that website. Pengnate and Sarathy (2016:50) continue to define ease of use as the degree of effort in using a particular system that a person believes is required.

The table above provides a lower mean score of 2.77 and, although this is slightly greater than the midpoint, it indicates that the current website where the online supplier questionnaire is contained was perceived to be only somewhat user-friendly.

The next section details the factor analyses and Cronbach alpha calculations used for this study.

4.5 CONSTRUCT VALIDITY AND RELIABILITY

As previously explained in Chapter 3, section 3.4, factor analysis was done to determine construct validity and Cronbach alpha coefficients were computed to assure reliability of constructs.

Questions C8 to C14 of the research questionnaire were used as data reduction to obtain constructs that are discussed in this section of the analyses. Tables 4-9 to 4-11 below indicate the calculations.

4.5.1 Factor analysis

Questions C8A to C8F, with the exception of C8E, tested respondents experience with regards to log in problems, navigation between questions of the online supplier questionnaire and time required to complete said questionnaire. Questions C9 to C12 asked respondents to indicate approximately how much time was spent in completing the online supplier questionnaire, how easy it was to log into the website hosting the online supplier questionnaire, and whether or not assistance was required during the process of completing the online supplier questionnaire.

Table 4-9: Results of the factor analysis on section pertaining to Issues

Items	MSA	Factors retained	% Variance explained	Communalities vary between
C8A – C8F, C9, C10, C11 & C12	0.85°	3	66.16	0.55 & 0.80

[°]According to Hair et al. (1998), the results on a factor analysis is appropriate if the MSAs > 0.5.

Please note that MSA procedure for the appropriateness of factor analysis is analogue to Bartlett's test of sphericity.

From the table above, 3 factors are retained namely:

Factor 1: [C9, C12, C8F, C8B & C8C] and the decision was made to name this factor **Time Constraints**. **Factor 2:** [C8A, C8D, C10] is named **Accessibility**. The score for C10 is reversed. **Factor 3:** [C11 & C8E] does not correlate with each other and as a result, these two items were analysed separately. [C11] is named **Support** and [C8E] is named **Visual Appeal**.

Taking into account the MSA of 0.85, and the percentage variance explained, namely 66.16%, construct validity for Time Constraints, Accessibility, Support and Visual Appeal was assured from this factor analysis which was used as a data reduction method.

Another secondary objective of this study was to identify the benefits of using the online platform for supplier management matters. Questions C13A to C13E asked respondents to indicate whether or not they agree with statements made regarding the perceived benefits of using the online supplier questionnaire.

A factor analysis was then done on questions C13A to C13E as data reduction method as well as to assure construct validity. Table 4-10 below provides the results of this factor analysis.

Table 4-10: Results of the factor analysis on section pertaining to Benefits

Items	MSA	Factors retained	% Variance explained	Communalities vary between
C13A – C13E	0.77°	1	63.08	0.40 & 0.74

°According to Hair et al. (1998), the results on a factor analysis is appropriate if the MSAs > 0.5.

Please note that MSA procedure for the appropriateness of factor analysis is analogue to Bartlett's test of sphericity.

From the table above, one factor [C13A, C13B, C13C, C13D & C13E] is retained and the decision was made to name it **Advantages**.

Taking into account the MSA of 0.77, and the percentage variance explained, namely 63.08%, construct validity for Advantages was assured from this factor analysis which was used as a data reduction method.

Hand-in-hand with the identification of benefits, the researcher also aimed to identify possible constraints in using the online platform for supplier management matters. Questions C14A to C14F asked respondents to specify whether or not they agree with statements made regarding the perceived risks of using the online supplier questionnaire they were requested to complete by the organisation where the research was conducted. Table 4-11 below indicates the results of this factor analysis.

Table 4-11: Results of the factor analysis on section pertaining to Risks

Items	MSA	Factors retained	% Variance explained	Communalities vary between
C14A – C14F	0.76°	2	76.16	0.50 & 0.87

°According to Hair et al. (1998), the results on a factor analysis is appropriate if the MSAs > 0.5.

Please note that MSA procedure for the appropriateness of factor analysis is analogue to Bartlett's test of sphericity.

Two factors are retained from the table above namely [C14C, C14E, C14F & C14D] and the decision was made to name this factor **Disadvantages**, [C14A & C14B] is named **Security of Information**.

Taking into account the MSA of 0.76, and the percentage variance explained, namely 76.16%, construct validity for Disadvantages and Security of Information was assured from this factor analysis which was used as a data reduction method.

4.5.2 Cronbach alpha calculations

Cronbach alpha coefficients were computed to assure reliability of constructs, as indicated in Table 4-12 below.

Table 4-12: Cronbach alpha coefficients of constructs

Construct	N	Cronbach alpha reliability coefficient
Time Constraints	157	0.77
Accessibility	156	0.77
Advantages	149	0.85
Disadvantages	151	0.86
Security of Information	161	0.80

Support and Visual Appeal consist of only one item each, and therefore no Cronbach alpha was calculated.

According to Field (2017), a construct is perceived to be reliable if the Cronbach alpha coefficient is > 0.6 . From the table above it can therefore be concluded that all the Cronbach alpha values were > 0.6 and consequently all the constructs are reliable.

4.5.3 Means of constructs

The means of the identified constructs as per table 4-12 above, are depicted in Table 4-13 below. The two factors that were analysed separately, namely Support and Visual Appeal, are also indicated below.

Table 4-13: Means of constructs

Item	Construct	N	Mean	Std. Deviation
C9, C12, C8F, C8B, C8C	Time Constraints	157	1.99	0.68
C8A, C8D, C10	Accessibility	156	1.92	0.70
C13A, C13B, C13C, C13D, C13E	Advantages	149	1.75	0.54
C14C, C14E, C14F, C14D	Disadvantages	151	3.10	0.58
C14A, C14B	Security of Information	161	2.89	0.72
C11	Support	147	1.86	0.74
C8E	Visual Appeal	159	1.93	1.01

From the table above, the mean for the study population, pertaining to Time Constraints is 1.99, which is lower than the midpoint of 2.5, meaning the study population almost never experienced time constraints during the process of completing the online supplier questionnaire. In terms of Accessibility, the mean is also lower than 2.5 at 1.92, indicating that the online supplier questionnaire was easily accessible and the study population was able to navigate between questions and subsections with relative ease.

Questions C13A to C13E of the research questionnaire asked respondents to indicate if they agreed with statements pertaining to the benefits of using an online platform for the completion of supplier questionnaires and managing their own supplier data.

The responses ranged from “strongly agree” to “strongly disagree” where “strongly agree” = 1 and “strongly disagree” = 4. The fact that the mean for Advantages is lower than 2.5 in this instance (1.75) indicates that the study population mostly agree that it is advantageous to use online platforms for supplier management related matters.

In terms of the Disadvantages construct, questions C14C, C14D, C14E and C14F asked respondents to indicate if they agreed with statements pertaining to the risks of using an online platform for the completion of supplier questionnaires and if they believed their information was safe. Statements were posed in the negative and responses ranged from “strongly agree” = 1 to “strongly disagree” = 4. The fact that the mean is greater than 2.5 in this instance (3.10) indicates that the study population strongly disagreed with the negative statements and it is their perception that it is safe to store supplier information on an online platform.

The mean for Security of Information is 2.89, which is larger than the 2.5 midpoint, indicating that respondents believed their information is safe and confidential and that information will not get misplaced. In terms of the Support construct, question C11 asked respondents if they required additional assistance during the process of completing the online supplier questionnaire, if the person assisting was able to resolve their problems. The mean of 1.86 confirms that respondents mostly agreed that the assistance they received was sufficient and effective.

Question C8E stated that the online supplier questionnaire was not visually appealing and respondents were asked to “disagree” or “agree” with the statement.

The lower mean of 1.93 indicates that the majority of respondents found the online supplier questionnaire appealing.

4.5.4 Effect sizes

This section of the study aims to achieve another secondary research objective by determining if there are any differences between the demographic groups identified within the study population, in terms of their perceptions about the online supplier questionnaire.

According to the guidelines from Cohen (1988) pertaining to his effect sizes, d , the following applies: small effect: $d = 0.2$ (no difference of any practical value); medium effect (noticeable with the naked eye): $d = 0.5$; large effect and practically significant: $d \geq 0.8$.

To calculate the effect sizes for differences between means, Turnover and Level of Education (named Qualification) were used to identify two groups, namely Group 1 and Group 2. Group 1 consists of all the respondents that are classified as EMEs with an annual turnover of R10 million or less. Group 2 subsequently consist of all the respondents with an annual turnover of more than R10 million. With regards to Qualification, Group 1 consists of all the respondents that only holds a certificate, whilst Group 2 consists of respondents that holds a 4-year diploma and / or degree.

The tables below depict the results of the effect sizes, based on Group 1 and Group 2, as explained above. Table 4-14 shows that there are no differences of any practical value between Group 1 and Group 2, regarding any of the means.

Table 4-14: Effect sizes on Turnover

Construct	Group	N	Mean	Std. Deviation	p-value (if random sampling is assumed)	d-value
Time Constraints	1	70	2.11	0.65	0.05	0.31
	2	84	1.90	0.68		
Accessibility	1	70	2.10	0.71	0.005*	0.44
	2	84	1.79	0.66		
Advantages	1	70	1.87	0.55	0.04*	0.33
	2	83	1.69	0.52		
Disadvantages	1	70	2.90	0.60	0.0004*	0.56*
	2	83	3.23	0.52		
Security of Information	1	70	2.84	0.70	0.59	0.08
	2	83	2.90	0.74		
Support	1	64	2.05	0.82	0.009*	0.40
	2	77	1.71	0.63		
Visual Appeal	1	68	2.16	0.97	0.0054*	0.50*
	2	83	1.71	0.98		

*p-value statistically significant at 0.05 level, yielded by t-test result for independent groups.

*d-value of 0.50 = medium effect

Considering the effect sizes indicated in the table above, they are small effects according to Cohen (1988), and thus no differences of any practical value between these groups exist regarding Time Constraints (0.31), Accessibility (0.44), Advantages (0.33), Security of Information (0.08) and Support (0.40). Furthermore, there was an effect size of medium effect on Visual Appeal (0.50), meaning that Group 1 (mean 2.16) has a higher perception of Visual Appeal than Group 2 (mean 1.71). There was also an effect size of medium effect on Disadvantages (0.56). The section of the research questionnaire pertaining to disadvantages (C14A - C14F) posed negative statements to respondents requesting them to “strongly agree” = 1, with the negative statement or “strongly disagree” = 4 with the negative statement. Group 2 (mean 3.23) therefore disagreed more with the negative statements than Group 1 (mean 2.90). This indicates that the perception of Group 2 is that disadvantages of using the online supplier platform are fewer than what Group 1 perceived it to be. In conclusion, there is a medium effect on Disadvantages and Visual Appeal, noticeable with the naked eye.

The same analysis was done on the two groups pertaining to Qualification, but no differences of any practical value were noted. Table 4-15 shows the results of the effect sizes.

Table 4-15: Effect sizes on Qualification

Construct	Group	N	Mean	Std. Deviation	p-value (if random sampling is assumed)	d-value
Time Constraints	1	32	1.89	0.60	0.31	0.19
	2	92	2.00	0.71		
Accessibility	1	32	1.78	0.70	0.17	0.27
	2	92	1.99	0.75		
Advantages	1	32	1.61	0.48	0.142	0.27
	2	91	1.76	0.60		
Disadvantages	1	32	3.18	0.50	0.44	0.14
	2	91	3.09	0.62		
Security of Information	1	32	2.75	0.72	0.09	0.35
	2	91	3.01	0.73		
Support	1	29	1.97	0.82	0.42	0.17
	2	87	1.83	0.72		
Visual Appeal	1	32	1.94	1.00	0.82	0.05
	2	91	1.89	0.98		

In terms of the effect sizes for the groups, based on the above table, it can be concluded that Qualification does not influence the perception of the groups with regards to how they experienced the process of completing the online supplier questionnaire. Considering the d-values of the constructs, there are no practical effect since all the d-values are < 0.5 .

4.6 SECTION D – GENERAL

In the last section of the research questionnaire, respondents were asked a set of general questions to test their overall perception about the online supplier questionnaire and if they would prefer an additional mode of delivery or additional training material to assist in the process of completing the online supplier questionnaire. Responses are indicated in Table 4-16 below.

Table 4-16: General questions

Which medium do you prefer?		
Electronic process / Paperless	158	97.5%
Hard copy / Physical paper completion	3	1.9%
Not indicated	1	0.6%
Would you prefer to complete the questionnaire through a cellphone application?		
Yes	13	8.0%
No	148	91.4%
Not indicated	1	0.6%
Would a short tutorial video benefit you?		
Yes	121	74.7%
No	38	23.5%
Not indicated	3	1.9%
The additional website links within the questionnaire were useful		
Yes	110	67.9%
No	38	23.5%
Not indicated	14	8.6%

From the table above it is evident that almost all the respondents (97.5%) prefer an electronic process to a manual hard copy process for completing online supplier questionnaires. Although the responses are overwhelmingly positive, respondents did, however, not favour the use of a device like a cell phone for the completion of online supplier questionnaires.

The majority of respondents (74.7%) also indicated that a tutorial video would be beneficial before they started with the process of completing an online supplier questionnaire. Lastly, 67.9% of respondents said that they did make use of the additional website links contained in the online supplier questionnaire during the process of completing said questionnaire.

The last question of section D asks respondents if any particular portion of the online supplier questionnaire was more difficult than another, where “very difficult” = 1 and “very easy” = 4. The responses are depicted in table 4-17 below.

Table 4-17 : Difficulty level of various sections of the online questionnaire

	Which section of the supplier questionnaire was more difficult to complete?		Very difficult	Somewhat difficult	Fairly easy	Very easy	Not indicated	Total	Mean
D4A	Section 3: Entity information	Frequency	6	22	73	58	3	162	3.15
		Percentage	3.7	13.6	45.1	35.8	1.9	100	
D4B	Section 4: Contact information	Frequency	1	9	76	73	3	162	3.38
		Percentage	0.6	5.6	46.9	45.1	1.9	100	
D4C	Section 5: Banking details	Frequency	0	6	85	67	4	162	3.38
		Percentage	0	3.7	52.5	41.4	2.5	100	
D4D	Section 6: Customer trade references	Frequency	2	16	80	54	10	162	3.22
		Percentage	1.2	9.9	49.4	33.3	6.2	100	
D4E	Section 7: BBBEE information	Frequency	6	29	74	48	5	162	3.04
		Percentage	3.7	17.9	45.7	29.6	3.1	100	
D4F	Section 9: SHE standards	Frequency	8	29	82	31	12	162	2.90
		Percentage	4.9	17.9	50.6	19.1	7.4	100	

From the table above it can be seen that all the mean scores are larger than the 2.5 midpoint, indicating that the study population strongly felt that the different sections of the online supplier questionnaire were fairly easy to complete.

D4B and D4C are the easiest sections of the online supplier questionnaire, whilst D4F is the least easy. D4F pertains to the Safety, Health and Environmental regulations as prescribed by the government.

Suppliers were requested to upload various legal documentation in this section of the online supplier questionnaire and it can be assumed as the reason for slight user difficulty in this section of the questionnaire.

4.7 CONCLUSION AND CHAPTER SUMMARY

The aim of this chapter was to answer the research question and achieve the research objectives by means of a detailed explanation of the results that were obtained through the empirical study.

The demographic profile of the study population was discussed, whilst observations about the demographic composition of the study population were provided. Construct validity and reliability was tested through factor analyses and Cronbach alpha calculations.

All the sections and subsections of the research questionnaire were discussed and data was analysed by means of descriptive statistics.

Effect sizes were calculated for two different groups based on Turnover and Qualification. The chapter ended with observations from the study population regarding their overall experience with the online supplier questionnaire.

Chapter 5 concludes this study and provides further interpretations of the data that was analysed in this chapter. Recommendations for further study are also provided.

CHAPTER 5

CONCLUSION AND RECOMMENDATIONS

5.1 INTRODUCTION

The results of the empirical findings that were obtained through quantitative research were discussed in Chapter 4. This chapter utilises the results from the theoretical and empirical research to draw conclusions and make recommendations.

The chapter further aims to establish whether the research objectives, as formulated in Chapter 1, were achieved. Important aspects of the empirical findings are highlighted and conclusions in this chapter are based on the research objectives of Chapter 1. The chapter ends with a discussion for future studies as well as the limitations of this study.

5.2 CONCLUSIONS WITH REFERENCE TO THE RESEARCH OBJECTIVES

As explained in Chapter 1, this study intended to establish whether exempted micro enterprises are experiencing constraints in adapting to new information technology platforms, specifically the online supplier questionnaire of the organisation where the research was conducted.

5.2.1 Objective 1

This study had one primary objective, namely to determine whether the size of an entity has an influence on the ability of said entity to adapt to the use of digital platforms as a means of participating in various supply chain activities of larger organisations. It is clear from Chapter 2 that organisations in the 21st century are faced with increasing pressure to keep abreast with technological advances as a driving force. Digitisation in its various forms constitute an important aspect of a competitive supply chain and to ensure sustainable and profitable operations.

Considering the barriers that EMEs face in the business environment and the South African economy as a whole, the perception was that these EMEs will also find it difficult to adapt to new technology and digital platforms.

The empirical findings contradict this perception, as EMEs did not indicate practical significant difficulties in understanding and completing the online supplier questionnaire. EMEs also have access to the same resources in terms of devices and connectivity than their larger counterparts. Furthermore, EMEs did not require more time than average to complete the online supplier questionnaire nor did the EMEs find any particular portion of the online supplier questionnaire noticeably more difficult than other respondents.

It can therefore be concluded that the size of an entity does not influence its ability to adapt to the use of technological platforms and that EMEs are able to participate in various supply chain activities through digital platforms like any other size entity.

5.2.2 Objective 2

The second objective was to determine why it is so important for large organisations in the South African context to make use of EMEs in their supply chain activities.

The literature review in Chapter 2 clearly indicated the importance of transforming the economy in South Africa and enhance the participation of black people in the South African economy. The DTI supports this notion by prescribing preferential procurement with small and micro enterprises, typically EMEs. It is for this reason that the BBBEE Codes of Good Practice was implemented by government and therefore large organisations are obliged to comply. This objective was comprehensively answered through the theoretical study.

5.2.3 Objective 3

By understanding why large organisations have an increased need to utilise the services of EMEs, this study further intended to establish whether the EME supplier landscape is ready for advanced technology platforms.

Data analyses were conducted by means of a quantitative study and through descriptive statistics in Chapter 4, it was determined that the study population, consisting largely of EMEs, are ready to adapt to new technology platforms.

The descriptive statistics clearly indicated that respondents are comfortable with using web-enabled devices, accessing the internet through various mediums and can work on a computer. The level of computer knowledge of respondents was also tested in order to answer this objective.

5.2.4 Objective 4

In order to define the constructs of potential benefits and/or constraints of the online supplier questionnaire, factor analyses were conducted and the means of the identified constructs were discussed in Chapter 4. It was found that the study population agreed that it is advantageous to use online platforms for supplier management related matters.

Descriptive statistics also indicated that the advantages of using a digital platform outweighs the disadvantages. It was further found that the study population could complete the online supplier questionnaire with relative ease and within reasonable time, indicating minimal constraints in the process. This objective was therefore answered through the data analyses of the empirical study.

5.2.5 Objective 5

To achieve the last research objective, the researcher aimed to determine if there are any differences between the demographic groups identified within the study population, in terms of their perceptions about the online supplier questionnaire.

Turnover and Qualification were used to identify two groups namely Group 1 and Group 2. Subsequently, effect sizes for differences between means were calculated as per the guidelines by Cohen (1988).

In terms of Turnover, it was concluded that there is a medium effect on Disadvantages and Visual Appeal, noticeable with the naked eye.

With Visual Appeal, Group 1 had a higher perception of Visual Appeal than Group 2. In terms of Disadvantages, Group 2 disagreed more with the negative statements posed in the research questionnaire than Group 1. This indicated that the perception of Group 2 is that disadvantages of using the online supplier platform is less than what Group 1 perceives it to be. In terms of Qualification, it was concluded that Qualification does not influence the perception of the groups with regards to how they experienced the process of completing the online supplier questionnaire. This objective was answered through the data analyses of the empirical study.

The primary objective, as well as the secondary objectives could be sufficiently answered through this study and can now be used to make the following recommendations.

5.3 RECOMMENDATIONS

Considering the aforementioned objectives, as well as the research question that were answered through this study the following recommendations are proposed:

- That the organisation where the research was conducted consider shortening the current online supplier application questionnaire. The current online supplier application questionnaire poses two hundred and sixty-eight questions to suppliers and even though there were no time complaints identified through the research, it is an extremely long questionnaire and therefore might influence respondent behaviour. Where possible, questions should be combined or re-considered in totality, as a shorter questionnaire could yield a better response rate.
- That the organisation where the research was conducted develop and distribute training material to identified suppliers before they are requested to complete the online supplier application questionnaire. By enabling suppliers in advance, through training material, of what the online supplier application questionnaire entails and what the exact requirements are, suppliers can prepare and set-aside the required time to complete the online supplier questionnaire. Allowing suppliers to prepare in advance and ensure they have all the necessary documents at hand before commencing with the completion process might lead to positive respondent behaviour and a quicker turnaround time in completing the online supplier application questionnaire.

- That the advantages of using a digital platform for the completion of the online supplier questionnaire be made known to all identified suppliers so that suppliers have a clear understanding of why they must comply to the requirements for an online supplier questionnaire. This will build stronger trust relationships with the suppliers and enhance collaborative initiatives between the organisation and its suppliers.
- That the website where the online supplier application questionnaire is hosted, as well as the questionnaire itself be re-designed to increase the visual appeal and thereby ensuring a more pleasant experience for suppliers when accessing the website and completing the online supplier questionnaire.

If these recommendations are considered and implemented, one may eliminate potential supplier frustration and assist to develop positive behaviour on the part of the suppliers.

5.4 LIMITATIONS OF THE STUDY

Limitations of the study were isolated as far as possible to ensure that optimal results were obtained.

The study sample was a convenient sample. By only considering suppliers that are already registered in the database of the organisation where the research was conducted, and which completed the research questionnaire. Suppliers who did not respond to the research questionnaire and prospective suppliers that are not yet registered vendors, but currently in the process of completing the online supplier application questionnaire were not considered for this study and might have a different opinion on using digital platforms to participate in supply chain activities.

5.5 RECOMMENDATIONS FOR FURTHER RESEARCH

The research identified important advantages of using the online supplier questionnaire, namely that it is a cost-effective and secure way in which suppliers can take the responsibility to manage and maintain their own supplier information.

These elements are naturally also important for the relationship between the organisation and its suppliers, but further research will be valuable to understand if prospective suppliers, specifically start-up enterprises, experience the same sentiments during the process of completing the online supplier questionnaire. More research is also required to establish whether factors such as human behaviour, company culture or supplier workload influence suppliers' willingness to undertake the process of completing the online questionnaire.

Lastly, further research can also be done to understand the differences in experiences between entities with a black ownership of >51% and entities that holds less than 51%, or no black ownership. A better understanding of these differences can improve the relationship between the organisation where the research was conducted and its supplier landscape, thereby positively influencing the surrounding communities where the organisation operates.

5.6 CONCLUSION AND CHAPTER SUMMARY

As technological advances progress in the globalised market place, large organisations will continue to explore with, and implement new technologies in order to maintain its competitive advantage and ensure sustainable operations. Small and medium enterprises that are increasingly becoming suppliers to these large organisations will be faced with a dynamic supply chain environment and changing client requirements as the large organisations strive for continuous improvement and optimisation.

The key is to find a balance between what large organisations require for success and how small enterprises align themselves to enable an agile and adaptable approach to an ever changing business environment. This study concluded that EMEs are, in fact, ready to adapt to new technological platforms and a digitised supply chain environment.

By considering and implementing the abovementioned recommendations, the organisation where the research was conducted can align itself and its suppliers with the high expectations that technology as a driver of change brings to enable successful collaborative relationships.

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ANNEXURES

ANNEXURE A: RESEARCH INSTRUMENT

Instructions for completing this survey

- Please mark every applicable box with an "X" by clicking in the blank box
- Alternatively you can print the survey, complete it per hand then scan and return to the specified email address
- Please ensure that all questions are answered
- Once completed, save your answers and return the questionnaire to the email address specified
- All responses must be submitted by 19 October 2018
- Responses are anonymous and strictly confidential, therefore no results shall be made available to any third party
- By completing this questionnaire, it is assumed that you give consent to participate in this study
- Your participation is highly valued and your time is appreciated

Section A: Demographical Information

1. Please select your gender

- ☐ Male (1)
- ☐ Female (2)

2. Age Please type your age in the "age" block, as per your last birthday

3. Please indicate which type of entity you own

- ☐ Private (Pty) Ltd (1)
- ☐ Closed Corporation (2)
- ☐ Sole Proprietor (3)
- ☐ Partnership (4)

4. How many years has your business been trading?

- ☐ Less than 1 year (1)
- ☐ 1-2 years (2)
- ☐ 3-5 years (3)
- ☐ 6-10 years (4)
- ☐ More than 10 years (5)

5. What is your average annual turnover?

- ☐ R1 million – R10 million (1)
- ☐ More than R10 million but less than R50 million (2)
- ☐ R50 million & more (3)

6. Which position do you occupy in the business?

- ☐ Owner (1)
- ☐ Management & Owner (2)
- ☐ Management but not owner (3)
- ☐ Employee (4)

7. Indicate your level of education

- ☐ No schooling (1)
- ☐ Primary School (2)
- ☐ Secondary School (3)
- ☐ Certificate 1-2 years (4)
- ☐ Diploma / Degree (5)

8. What is your home language?

- ☐ English (1) ☐ Afrikaans (2) ☐ Zulu (3) ☐ Xhosa (4) ☐ Southern Sotho (5)
- ☐ Northern Sotho (6) ☐ Tswana (7) ☐ Venda (8) ☐ Tsonga (9) ☐ Swati (10) ☐ Ndebele (11)

Section B: Computer Knowledge

1. Do you have access to a computer or web-enabled device like a smartphone or tablet?

- ☐ Yes (1)
- ☐ No (2)

1. a. If yes, please select type of device

- ☐ Computer (1) ☐ Smartphone / Tablet (2) ☐ Both (3)

2. Do you have access to the internet?

- ☐ Yes (1)
- ☐ No (2)

2. a. If yes, where do you access the internet?

- ☐ Home (1)
- ☐ Office (2)
- ☐ Mobile network anywhere (3)

3. Rate your level of computer knowledge

- ☐ Almost none (1)
- ☐ Basic (2)
- ☐ Average (3)
- ☐ Good (4)

4. On average, how many hours per day do you work on a computer?

- ☐ Less than 2 hours per day (1)
- ☐ From 2 hours to 5 hours per day (2)
- ☐ More than 5 hours per day (3)

Section C: Ariba On-boarding Experience

1. Considering the recent Ariba on-boarding exercise, how easy was it to complete the questionnaire?

- ☐ Very difficult (1)

- ☐ Somewhat difficult (2)
- ☐ Easy (3)
- ☐ Very easy (4)

2. Were you able to navigate your way through the questionnaire within acceptable time?

- ☐ Yes (1)
- ☐ No (2)

3. How visually appealing is the Ariba website / questionnaire?

- ☐ Not at all appealing (1)
- ☐ Somewhat appealing (2)
- ☐ Appealing (3)
- ☐ Very appealing (4)

4. How easy is it to understand the questions of the Ariba questionnaire?

- ☐ Very difficult (1)
- ☐ Somewhat difficult (2)
- ☐ Fairly easy (3)
- ☐ Very Easy (4)

5. Do you think your information is safe on the Ariba website?

- ☐ Yes (1)
- ☐ No (2)

6. Information is confidential and securely stored on the Ariba website

- ☐ Strongly disagree (1)
- ☐ Mildly disagree (2)
- ☐ Mildly agree (3)
- ☐ Strongly agree (4)

7. How user-friendly is the Ariba questionnaire?

- ☐ Not at all (1)
- ☐ Somewhat user-friendly (2)
- ☐ User-friendly (3)
- ☐ Very user-friendly (4)

8. Whilst completing the Ariba questionnaire I experienced the following issues:

a. I experienced log in problems

- ☐ Never (1)
- ☐ Almost never (2)
- ☐ Almost every time (3)
- ☐ Every time (4)

b. I struggled to find the information I needed to complete the questionnaire

- ☐ Disagree (1)
- ☐ Mildly disagree (2)
- ☐ Mildly agree (3)
- ☐ Agree (4)

c. It was difficult to navigate between questions and sections of the questionnaire

- ☐ Not at all difficult (1)
- ☐ Somewhat difficult (2)
- ☐ Somewhat easy (3)
- ☐ Very easy (4)

d. The website and questionnaire were confusing

- ☐ Disagree (1)
- ☐ Mildly disagree (2)
- ☐ Mildly agree (3)
- ☐ Agree (4)

e. The questionnaire was visually unappealing

☐ Disagree (1) ☐ Mildly disagree (2) ☐ Mildly agree (3) ☐ Agree (4)

f. It was time consuming to complete the questionnaire

☐ Disagree (1) ☐ Mildly disagree (2) ☐ Mildly agree (3) ☐ Agree (4)

9. On average, how much time was spent in completing the questionnaire?

☐ 15-30 minutes (1) ☐ 31 minutes to one hour (2) ☐ More than one hour but less than one day (3)
☐ One day and more (4)

10. How easy was it to log in to the Ariba website and start the questionnaire?

☐ Very difficult (1) ☐ Somewhat difficult (2) ☐ Fairly easy (3) ☐ Very easy (4)

11. If you required assistance in completing the questionnaire, the person was helpful and knowledgeable and could resolve your problems

☐ Strongly agree (1) ☐ Agree (2) ☐ Disagree (3) ☐ Strongly disagree (4)

12. How many times did you require assistance?

☐ No assistance required (1) ☐ From one time to 5 times (2) ☐ From 6 times to 8 times (3)
☐ More than 9 times (4)

13. The following are all benefits of using an electronic questionnaire:

a. Better and quicker interaction with Sasol

☐ Strongly agree (1) ☐ Agree (2) ☐ Disagree (3) ☐ Strongly disagree (4)

b. It is more cost effective for my business to do things electronically

☐ Strongly agree (1) ☐ Agree (2) ☐ Disagree (3) ☐ Strongly disagree (4)

c. I have easy and instant access to my own information

☐ Strongly agree (1) ☐ Agree (2) ☐ Disagree (3) ☐ Strongly disagree (4)

d. I can maintain my own information more effectively

☐ Strongly agree (1) ☐ Agree (2) ☐ Disagree (3) ☐ Strongly disagree (4)

e. Less paperwork for me

☐ Strongly agree (1) ☐ Agree (2) ☐ Disagree (3) ☐ Strongly disagree (4)

14. Indicate your level of agreement with the following statements regarding the risks of using an electronic questionnaire such as the one on Ariba:

a. Information is not confidential

☐ Strongly agree (1) ☐ Agree (2) ☐ Disagree (3) ☐ Strongly disagree (4)

b. Information may get lost

☐ Strongly agree (1) ☐ Agree (2) ☐ Disagree (3) ☐ Strongly disagree (4)

c. It is too complicated and difficult

☐ Strongly agree (1) ☐ Agree (2) ☐ Disagree (3) ☐ Strongly disagree (4)

d. It is expensive to use this type of technology

☐ Strongly agree (1) ☐ Agree (2) ☐ Disagree (3) ☐ Strongly disagree (4)

e. It is more time consuming to maintain my information electronically

☐ Strongly agree (1) ☐ Agree (2) ☐ Disagree (3) ☐ Strongly disagree (4)

f. It is difficult to understand the requirements of the Ariba questionnaire

☐ Strongly agree (1) ☐ Agree (2) ☐ Disagree (3) ☐ Strongly disagree (4)

Section D: General

1. Indicate which medium you would prefer to complete the Ariba / or similar questionnaires

☐ Electronic Process / Paperless (1) ☐ Hard copy / physical paper completion (2)

2. Would you prefer to apply through a cellphone application?

☐ Yes (1) ☐ No (2)

3. Would a short tutorial video benefit you to explain all the commodities & services required by the company, before you apply to become a vendor?

☐ Yes (1) ☐ No (2)

4. Which section of the supplier profile questionnaire was more difficult to complete?

a. Section 3: Entity Information

☐ Very difficult (1) ☐ Somewhat difficult (2) ☐ Fairly easy (3) ☐ Very easy (4)

b. Section 4: Contact Information

☐ Very difficult (1) ☐ Somewhat difficult (2) ☐ Fairly easy (3) ☐ Very easy (4)

c. Section 5: Banking Details

☐ Very difficult (1) ☐ Somewhat difficult (2) ☐ Fairly easy (3) ☐ Very easy (4)

d. Section 6: Customer Trade References

☐ Very difficult (1) ☐ Somewhat difficult (2) ☐ Fairly easy (3) ☐ Very easy (4)

e. Section 8: BBBEE Information

☐ Very difficult (1)

☐ Somewhat difficult (2)

☐ Fairly easy (3)

☐ Very easy (4)

f. Section 9: SHE Standards

☐ Very difficult (1)

☐ Somewhat difficult (2)

☐ Fairly easy (3)

☐ Very easy (4)

5. The additional website links within the Ariba questionnaire was useful for completing the questionnaire

☐ Yes (1)

☐ No (2)

Thank you for your participation

ANNEXURE B: ETHICAL CLEARANCE



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Research Ethics Regulatory Committee

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ETHICAL APPROVAL LETTER OF STUDY

Based on the approval by the Economic and Management Sciences Research Ethics Committee (EMS-REC) on 02/08/2018, the North-West University Research Ethics Regulatory Committee (NWU-RERC) hereby approves your project as indicated below. This implies that the NWU-RERC grants its permission that, provided the special conditions specified below are met and pending any other authorisation that may be necessary, the project may be initiated, using the ethics number below.

Project title: The effect of digitisation in exempted micro-enterprises.																
Project Leader/Supervisor: Mr JC Coetzee																
Student: E Viljoen																
Ethics number:	<table border="1"><tr><td>N</td><td>W</td><td>U</td><td>-</td><td>0</td><td>0</td><td>5</td><td>5</td><td>0</td><td>-</td><td>1</td><td>8</td><td>-</td><td>A</td><td>4</td></tr></table>	N	W	U	-	0	0	5	5	0	-	1	8	-	A	4
N	W	U	-	0	0	5	5	0	-	1	8	-	A	4		
Status: S = Submission; R = Re-Submission; P = Provisional Authorisation; A = Authorisation																
Application Type:																
Commencement date: 2018-08-02	Expiry date: 2019-08-02															
Risk:	Low															

Special conditions of the approval (if applicable):

- Fully completed and signed application form.
- Currently, there seems to be no motivation to include demographic and/or biographical information as part of the questionnaire. Without such a motivation, it should not be included.
- The final questionnaire should be sent to the ethics committee.

General conditions:

While this ethics approval is subject to all declarations, undertakings and agreements incorporated and signed in the application form, the following general terms and conditions will apply:

- The project leader (principal investigator) must report in the prescribed format to the EMS-REC:
 - annually (or as otherwise requested) on the progress of the project, and upon completion of the project
 - without any delay in case of any adverse event (or any matter that interrupts sound ethical principles) during the course of the project; and
 - Annually a number of projects may be randomly selected for an external audit.
- The approval applies strictly to the protocol as stipulated in the application form. Would any changes to the protocol be deemed necessary during the course of the project, the project leader must apply for approval of these changes at the EMS-REC. Would there be deviation from the project protocol without the necessary approval of such changes, the ethics approval is immediately and automatically forfeited.
- The date of approval indicates the first date that the project may be started. Would the project have to continue after the expiry date, a new application must be made to the NWU-RERC via EMS-REC and new approval received before or on the expiry date.
- In the interest of ethical responsibility, the NWU-RERC and EMS-REC reserves the right to:
 - request access to any information or data at any time during the course or after completion of the project;
 - to ask further questions, seek additional information, require further modification or monitor the conduct of your research or the informed consent process;
 - withdraw or postpone approval if:
 - any unethical principles or practices of the project are revealed or suspected;
 - it becomes apparent that any relevant information was withheld from the EMS-REC or that information has been false or misrepresented;
 - the required annual report and reporting of adverse events was not done timely and accurately; and/or
 - new institutional rules, national legislation or international conventions deem it necessary.

The EMSREC would like to remain at your service as scientist and researcher, and wishes you well with your project. Please do not hesitate to contact the NWU-RERC or EMS-REC for any further enquiries or requests for assistance.

Yours sincerely

Prof Bannie Linde
Chair NWU Economic and Management Sciences Research Ethics Committee

ANNEXURE C: PROOF OF LANGUAGE EDITING

This is to declare that I, Dr. L Combrink

Language editor and translator have

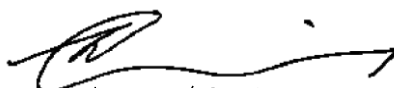
language edited the study

with the title

**The Readiness of Exempted Micro Enterprises for
Digitisation**

by

E Viljoen



Date: 20 November 2018