

**EVALUATING THE VALUE OF E-BUSINESS IN SMALL
AND MEDIUM-SIZED ENTERPRISES: A MODEL AND
ANALYSIS IN SOUTHERN AFRICA**

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BY

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ABSTRACT

The implementation of electronic business (e-business) in organisations has led to a major improvement in business performance in both developed and developing countries. This improvement as well as market forces have put pressure on Small and Medium-sized Enterprises (SMEs) to adopt e-business. However, the e-business models adopted by SMEs are often abstruse and poorly represented, which leads to time consumption and miscommunication between the stakeholders involved, the business operations and Information Technology (IT) functions. These unclear e-business models make it difficult to evaluate its value. This research examines the elements necessary for this e-business value creation and draws from different disciplines and theories to create a comprehensive model for e-business evaluation in Southern African SMEs.

Most studies done on e-business in Southern Africa have been found to be on challenges of technology, a lack of resources such as financial and user capabilities and challenges in business processes. Some gaps in the e-business literature have been found to exist on issues of alignment of business mission and strategy, entrepreneurial drive and management capabilities. The study adopted Gerbner's theory of communication exchange for the data collection strategy and process, which posits that by studying the events of the communication exchange, one can infer about the state of the systems engaged in the exchange and their relationships. Consequently quantitative website content analysis of 100 Southern African SMEs was conducted to determine their e-business value.

The results revealed that an SME that comprises of a properly aligned business mission and strategy, business processes that are enabled by e-business, an entrepreneurship orientation, management capabilities and employees as well as technology integration will achieve e-business value. This was seen by a positive influence of 68% on e-business value from these elements. Conversely 32% of this influence is from external elements, and future studies could explore more elements that influence e-business value. Also, a small employee size was found to not be a hindrance of e-business value. Lastly, overall infrastructural e-readiness is the same in Botswana and South Africa, which refutes claims that e-readiness is higher in South Africa than the rest of the Southern African countries. However, SMEs in Botswana lag behind when it comes to technological aspects such as technology equipment, successfully integrating their

systems within the businesses; and their IT in their entire businesses and networks, forming technology interdependencies of processes with external businesses, and using online means to transfer information to clients/customers. The developed model (EBVE model) could help (1) stakeholders investigate, communicate and make appropriate decisions and (2) aid SMEs to successfully integrate e-business in their business processes and practices.

KEYWORDS: E-business value, SMEs, conceptual model, Southern Africa, quantitative website content analysis.

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GLORY BE TO GOD!!! PSALM 18: 1, 2

DEDICATION

I dedicate this dissertation to God Almighty who deserves all the highest praise and glory!! I also dedicate it to my family (Johannes Tsumake, Kgomotso Tsumake, Cynthia Tsumake, Gertrude Tsumake, Atang and Malik) for all their support and love. Love you all!!

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List of Acronyms

E-Business..... Electronic Business

SME..... Small and Medium-sized enterprise

IT..... Information Technology

ICT..... Information and Communication Technologies

IS..... Information Systems

EBVE..... E Business Value Evaluation

LEA..... Local Enterprise Authority

AD..... Absolute Difference

ANOVA..... Analysis of Variance

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CHAPTER 1: INTRODUCTION

1.1 Background and Problem Statement

The continued use of the internet has become a predominant game changer in business practices in both developed and developing countries (Mann, Graham & Friederici, 2014). More companies have had to re-think how they conduct business which is a resultant of the major investments made in Information and Communication Technology (ICT) adoption in businesses today. With the rapid growth of electronic business (e-business) and as more companies adopt and invest in it, it is crucial to investigate its value creation, more so in Small and Medium-sized Enterprises (SMEs) as they have become significant contributors to employment creation and helpers of local improvement and innovation (Wang, 2016).

In Botswana, Shemi and Proctor (2013) conducted a study that revealed that ICT SMEs immensely help the Botswana government with over 80% of business activity. Similarly in South Africa, Kongolo (2010) states that 91% of the formal business entities are made up of SMEs. However, with this significant growth and economic contribution of SMEs in Southern Africa and e-business, little has been done to measure the value created in e-business adoption in Southern African SMEs.

Although models such as the DeLone and McLean IS Success Model (DeLone & McLean, 1992) exist and have been successfully used outside of Southern Africa to understand the post-adoption differences in usage and value of Information Systems (IS), these models have been found to have shortcomings. The DeLone and McLean IS Success Model measures IS success in a broader context and focuses on the IS itself. Conversely, the current research focuses more on the elements required within a business for better alignment with the IS so as to create value.

The research argues that there is no conceptual model that measures e-business value creation in SMEs in Southern Africa. Such a model could assist stakeholders of SMEs in Southern Africa that have adopted e-business, or would like to adopt e-business to recognise the essential elements that are critical to the company and an e-business model and to understand e-business operations in order to create e-business value. The purpose of this research is therefore to learn

and acquire from different viewpoints to create a comprehensive model that evaluates the value of e-business in SMEs in Southern Africa.

1.2 Definition of terms

In this section, important definitions that are used in the research are discussed. These include: E-Business, Small to Medium-sized enterprises and E-Business Value.

E-Business: In recent years, e-business has been of key interest to many researchers in the IS discipline. This has led to the existence of a pool of literature on the subject. Literature shows that there is a lack of consensus when it comes to defining e-business. Turban et al. (2017) define e-business as the use of business online for assisting customers, business partner cooperation, performance of inter-organisational electronic transactions and provision of e-learning whilst Cassidy (2016) simply defines it as the integration of people, processes and technology to conduct business. Barua, Konana, Whinston and Yin (2001), Zhu and Kraemer (2002), on the other hand, define it as using the internet to conduct or support business activities along the value chain (Porter, 2001). Furthermore, they argue that by achieving daily operational excellence through complementary changes, such as increased velocity of operations, and investments in these business activities, processes and resources along the value chain, value is created. This study focuses on the value created by e-business in Southern African SMEs. It therefore adopts the definition of e-business by Barua et al. (2001) and Zhu and Kraemer (2002) as it further emphasizes this value creation of e-business.

Small and Medium-sized Enterprises (SMEs): The criteria for the definition of an SME differs from country to country (OECD, 2013). In Botswana, an SME is defined as an entity that takes on less than 25 employees and has an annual turnover of between P60,000 and P1,500,000, and a medium-sized enterprise with less than one hundred workers including the owner and an annual turnover of between P1,500,000 and P5,000,000 (BICA, 2013). While in South Africa, it is defined as a small business with no more than 50 employees and an annual turnover of less than R2, 000,000, and a medium sized enterprise with less than 200 employees and an annual turnover of less than R30, 000,000 (Maduku, Mpinganjira & Duh, 2016). This

study considers both these definitions, as both countries are used in the study to represent Southern Africa.

E-business value: The different definitions of e-business value are very similar in that they aim to improve business performance through e-business usage. Humphreys, Fynes and Wiengarten (2014) define e-business value as the value created when there is alignment between e-business and supply chain factors. They categorize supply chain factors into supply chain strategy, supply chain processes, supply chain culture and supply chain structure. Zhu, Kraemer and Dedrick (2004) on the other hand define e-business value as the effect of using e-business for firm performance. Furthermore, they discuss that the firm's performance is determined by the downstream sales, upstream procurement and internal operations along the value chain. These are the major activities of the value chain, and this suggests that value is created if e-business adoption within the firm results in an increase in sales and a better customer service, a reduction in costs of purchasing business goods and products, improvement in coordination with the suppliers and employee effectiveness and efficiency of inter-organisational processes. This study adopts the latter definition of e-business value, as it elaborates on how firm performance is achieved by improving business inputs, processes and outputs along the value chain through e-business usage.

1.3 Research Objectives and Questions

In order to develop a comprehensive model that evaluates the value of e-business in Southern African SMEs, the objectives of the study are broken down as follows:

1. To explore and appreciate existing literature on e-business in the Southern African context.
2. To examine the different elements, approaches and theories that discuss and explain e-business value.
3. To develop a comprehensive theoretical integrative framework that integrates the various theories discussed.
4. To develop a conceptual model used to evaluate the value of e-business in Southern Africa SMEs.

Based on the formulated research objectives, this paper aims to develop a comprehensive model by providing an answer to the *primary research question* – How can the value of e-business in SMEs in Southern Africa be evaluated?

The secondary research questions are as follows:

1. How is e-business explained in the context of Southern Africa?
2. Which elements are fundamental within an SME for the achievement of e-business value?
3. How can a conceptual model that evaluates e-business value in SMEs in Southern Africa be developed?
4. How can a conceptual model be used to evaluate the value of e-business in SMEs in Southern Africa?

1.4 Importance of Research

The research is important because it aims to create a comprehensive model that evaluates the value of e-business in SMEs in Southern Africa. This model could assist SME stakeholders in Southern Africa that have adopted e-business, or would like to adopt e-business to recognise the essential elements that are critical to the company and an e-business model and to understand e-business operations in order to create e-business value.

Despite the fact that Southern Africa has a high willingness to adopt ICT (Ifenado, 2005) for value creation and competitiveness (Hung, Chang, Lin & Hsiao, 2014), the region still faces challenges when it comes to ICT adoption (Mpofu & Watkins-Mathys, 2011). Due to these challenges, business stakeholders in this region are unable to perceive value from ICT adoption (Uzoka, Seleka & Shemi, 2007). Therefore the conceptual model offers a tool that indicates the business elements that are critical to an e-business model and the value (e-business value) gained from these elements, thereby improving the awareness of value gained from ICT adoption. This model is especially critical for SMEs which despite the challenges they encounter, are drivers of economic development and job creation in most countries (Wang, 2016).

The research advances the theories discussed and indicates how they can be applied to the e-business value context. On a practical level it can guide further research in assisting

stakeholders in SMEs on e-business operations and elements necessary for the smooth running of the e-business. Such studies will have implications in practice as it can help guide government policies and initiatives in order to encourage the diffusion of new ICT technologies in Southern Africa.

1.5 Limitations of the Study

This study adopted a website content analysis research strategy. Even though this strategy was the most appropriate strategy for the study, it had some limitations. The majority of SMEs in the population sample had not provided sufficient data on the entrepreneurs, managers and employees capabilities. Additionally, none of the SMEs provided any financial information (financial statements) on their websites. Therefore online surveys were used as secondary data collection tool to derive this data from the entrepreneurs/managers of the SMEs. However, due to time constraints, data was only derived from a few SMEs. Therefore, future studies could acquire richer data by using content analysis alongside a secondary data collection tool in order to gain rich data where it is not sufficiently provided in the content that's being analysed.

Moreover, the researcher had intended to acquire another researcher to collect data from the same websites so as to validate the data. Unfortunately, due to time constraints, this was not possible. The cross sectional time frame of the study should be taken into account, as the major limitation was a lack of time.

1.6 Dissertation Overview

The rest of the dissertation consists of five other sections which are:

Chapter 2: This is the literature review. It includes an extensive review of literature on E-Business in the Southern Africa context, where the gaps identified in the literature in this context are shown; e-business value, where literature and theories of value creation are discussed; determinants of e-business value, which discusses the various elements that are essential for e-business value and the theories that explain them; the integrative theoretical framework and conceptual model, where a comprehensive integrative framework that encompasses all the theories discussed in the literature is developed in order to provide a broader perspective of the research problem, and the E-Business Value Evaluation (EBVE)

model developed from this comprehensive integrative framework to evaluate e-business value; and finally from the EBVE model, the research propositions are developed and presented.

Chapter 3: Discusses the research design and methodology. It comprises of the research philosophy, which discusses the critical underpinnings of a philosophical solution to why the research is being conducted namely ontology and epistemology; the research method which comprises of the research purpose, research approach, research strategy, research time frame, research instrument, target population, sampling frame and sample, pilot survey and data collection and the data analysis; and finally, this section ends with a discussion of the ethics and confidentiality issues of the research.

Chapter 4: This is the analysis and findings. Analyses are presented for each element and the outcomes of this analysis explained.

Chapter 5: This section is about the discussion of the research questions, analysis and findings. The section shows how the research questions were answered in the study and inferences of the analysis are made in terms of the propositions of the study. It also illustrates whether the propositions have been supported, and makes interpretations that are then supported with literature.

Chapter 6: This comprises of the conclusion of the research. The contribution of the study is also discussed and recommendations made.

CHAPTER 2: LITERATURE SURVEY

This chapter presents the literature review. It comprises of six main sub-sections which are, e-business in Southern Africa, e-business value, determinants of e-business value, theoretical framework and conceptual model and the research propositions. Different literature and theories are discussed that explain the research phenomenon in detail, and provide understanding of the research and its key issues.

2.1 E-Business in Southern Africa

When it comes to e-business development, research shows that the common challenges that most developing countries encounter are based on a lack of economic, infrastructural, social and political factors. These factors are categorized under e-readiness, which is considered to be lower in developing countries than developed countries (Mutula & Brakel, 2006). E-readiness is defined as the degree to which a country or organisation is willing to adopt ICT for value creation and competitive advantage (Hung et al., 2014). Ifenado (2005) argues that Southern African countries have an e-readiness score that is better than that of Africa's average, which is 2.22. Based on this study, South Africa's e-readiness is the best, with a score of 2.78, followed by Botswana, with a score of 2.47. Furthermore, the author asserts that Botswana has one of the best performing economies in Africa, which along with the high e-readiness of the country and that of South Africa, shows the relative strength of countries in the Southern region of Africa. Based on this argument, these two countries have been used in the study to represent Southern Africa.

Even with these high scores of e-readiness and some of the best performing economies, Southern African countries still encounter challenges when it comes to adopting e-business activities. Most studies on the adoption of e-business in Southern Africa identify technological, environmental and organisational factors as major impediments to e-business development. Shemi and Proctor (2013) adopt a technology-organisation-environment framework in their paper, as well as the owner/manager challenge. Technological challenges in Botswana such as slow internet speed, organisational challenges such as the way in which organisations prefer to do business, for example by face-to-face interactions, environmental challenges such as

economic and political instability in the country as well the owner/managers' lack of visionary leadership and entrepreneurial ability, as major impediments to e-business adoption in organisations in the country are discussed in the paper. Although the authors discuss organisational challenges, little is discussed in terms of internal business challenges as inhibitors of e-business, such as the business mission and strategy as well as business processes. Another study conducted on e-commerce technology adoption by SMEs in Botswana aims to assess the adoption of e-commerce in the country (Olatokun & Kebonye, 2010). The findings of the study revealed that to create e-business value in terms of return on investments, support of SMEs is essential in areas such as financial resources, capability of users and technology. However, value creation and support has been observed from a technological point of view, and the need for financial resources and capable users in support of this technology.

A study in South Africa, examines challenges such as technology incompatibility with target markets, lack of ICT knowledge, stakeholder unreadiness, technology disorientation and user perceptions when it comes to electronic marketing (Dlodlo & Dhurup, 2010). Although the discussion is on issues of technology, entrepreneur and management capabilities, financial resources and users of the technology as well as issues related to the value creation of the technology, very little is deliberated on the business processes as well as the mission and strategy of the business. Similarly, another study explores the challenges of adopting e-commerce/m-commerce in South Africa for economic development and competition in international trade (Jobodwana, 2009). This study focuses on challenges of technology such as limited communication infrastructure and low levels of internet penetration in the country. Furthermore, issues of financial resources, unskilled users in ICT, lack of management and entrepreneurial capabilities as some of the causes of this technology underdevelopment are revealed. Primary emphasis is conveyed on technology and issues of e-commerce/m-commerce adoption in relation to this technology. Little is discussed on the business processes as well as the business mission and strategy.

From the existing literature, it is evident that the majority of the studies conducted on e-business and e-commerce in both countries discuss and focus more on the technological,

environmental and external organisational aspects of the business. Little research has been done in evaluating e-business from an internal business perspective. Table 1 below shows the gaps identified in literature in the Botswana and South African context.

Table 1: Gaps Identified in Literature

Source/Study	Business Mission and Strategy	Business Processes	Entrepreneurial Drive	Management Capabilities	Financial Resources	Users Capabilities	Technology	Economic Value
Shemi and Proctor (2013)			X	X	X	X	X	
Olatokun and Kebonye (2010)		X	X	X	X	X	X	X
Mutula and Brakel (2006)		X			X	X	X	
Uzoka and Seleka (2006)		X					X	
Nkwe (2012)		X		X	X	X	X	

*X represents what has been covered in the study

2.2 E-Business Value

2.2.1 Porter's (1985) value chain model

There are several approaches that explain e-business value. Porter's (1985) Value-Chain Model, focuses on the economic implications (i.e. costs and value) of business functions and activities by identifying the primary activities (which have a direct impact on value creation) and support activities (which affect value through their impact on the primary activities performance) and the value they add in the chain. If all these activities add value to the chain, overall value is created. This also applies to the value creation of activities within e-business.

Whilst much research has focused on larger organizations in the past years, more researchers have been conducting research within the context of SMEs. McLarty (2005) discusses how this recent trend of researching SMEs has grown to become a significant field of study that provides evidence, prescriptions and solutions, not just within the SMEs but also to the policy-makers in government. Furthermore, the author argues on the process of implementation of the SME value chain (McLarty 2000), which was developed in another study specifically for SMEs. This unique SME value chain aims to provide recommendations for better management decision making and for it to be used as a framework for business development. It comprises of activities of the value chain that have been modified, removed and substituted with new elements to make the framework more relatable to SME managers.

2.2.2 The Resource Based View

The resource based view is another approach that explains value. Here, value is created by using various resources that are economically valuable, difficult to imitate, or imperfectly mobile across firms (Barney 1991, Peteraf 1993). This means that e-business value is created by focusing on the use of e-business resources in a firm that are efficient and effective, cannot be copied by any other firm, and cannot be moved across the firm. Bi, Davison and Smyrniotis (2017) discuss the importance of resources in the performance of SMEs. They affirm that the use of business partnership as a resource, that is, resources such as knowledge, strategic planning and collaboration is positively associated with fast growth SME performance. Thus, by focusing on e-business resources in an SME, e-business value can be derived.

2.2.3 Economic theory

This theory suggests that value is created by looking at the supply i.e., large capital investments on Information Systems and demand side i.e., increase of users of information technology, taking into consideration the uncertainty of actual benefits of the technology and switching costs (Bakos & Kemerer, 1992) in SMEs. This assumes that value is created by using Information Systems on a large scale, and where the demand to use technology is high. However, they also argue that even with a large scale use of Information Systems and a high demand of technology use, there is uncertainty of these value creation benefits and there are

switching costs. Julien (1993) discusses the economic theory in SMEs. The author argues that the economic theory mostly focuses on larger firms and neglects important economic phenomena, such as the expansion of SMEs in the economy. Furthermore, the author suggests that the economic theory be reconstructed to incorporate the behaviour of SMEs and entrepreneurs.

Looking at the fact that SMEs have become drivers of the economy through employment creation (Jones, Packham, Beynon-Davies & Pickernell, 2011), the economic theory may, however, be strategically used in SMEs to create value if large investments (not just monetary) in resources such as tangible IT machinery are made on Information Systems and every employee of the SME fully utilizes IT. SMEs are characterized by a small revenue and size, which means unlike larger companies, it may not be as easy to make large monetary investments in IS and to have more than a 100 users in IT. Therefore by simply investing in the utilization of the tangible IT assets that they have and ensuring that every skilled user in the SME utilizes this IT, the economic theory may be satisfied.

Each approach looks at value from a different perspective. While Porter's Value-Chain Model looks at value from a business activity perspective, the Resource based view focuses on the resources of the firm. The economic theory on the other hand looks at the demand and supply of IS/IT. The aim of this study is to come up with a model that measures the overall value created in SMEs. It therefore encompasses some dimensions from each of these theories.

2.3 Determinants of E-Business Value

When it comes to discussing e-business requirements, this paper uses the viewpoints discussed in the paper by Gordijn and Akkermans (2001). They state that in the development of IS, three major perspectives have to be considered. These are the value viewpoint which represents the creation of economic value, the process viewpoint which proposes using business processes for the operationalization of the value perspective, and lastly, the system architecture viewpoint, which is the IS that enables and supports e-business processes. However, Sahim (2012) suggests that for competitiveness to occur in the buying and selling of goods over the

internet, resources, capabilities, processes or firm knowledge that provides firm performance have to be involved. Therefore, aside from the viewpoints of Gordijn and Akkermans (2001), this paper also recognizes and incorporates the human factor capabilities, the business mission and strategy as well as the resources available.

2.3.1 Value Viewpoint

This can be understood from the economic theory perspective. Gordijn and Akkermans (2001) suggest that there are various dimensions or aspects of value which are interlinked and which form the e³-value ontology. This paper considers some of these value adding aspects such as the actor, the value object, the value port, the value interface, the value exchange, the value offering and the value activity. These are briefly explained in table 2 below.

Table 2: Value Aspects, their definitions, value contribution and interlink

Value Aspect	Definition	Value Contribution	Interlink
Actor	This is an independent economic entity capable of making a profit, for example. an individual, a group, an entrepreneur an SME etc.	The actor adds value by making a profit through value activities.	The actor is the main value aspect in the e ³ -value ontology (Gordijn & Akkermans, 2001), and is interlinked to the rest of the value aspects. Without this entity, the rest of the value aspects would not be instigated. The actor creates the value object, and offers/requests it through the value port. This value port is part of a collection of other value ports that are within the
Value Object	This is the service, product, money or consumer experience that is exchanged between actors.	The value object is what actors exchange in order to create economic value.	
Value Port	This is an interface or a connection point that interconnects actors so that they may exchange value objects. For example, in SMEs this would be the point where the external actor provides the SME with a	The value port adds value by enabling the actor to show external actors that it wants to provide/request value objects so that a value exchange may occur.	

	purchase order for a value object.		value interface, which the actor uses to communicate about the value objects and interact with external actors through value offerings and value exchanges.
Value Interface	This is a mechanism that allows two or more actors to communicate or interact. It groups individual value ports together. For example in SMEs, the SMEs website is a value interface.	The value interface adds value as it shows external actors which value objects are available for exchange and the condition of the value exchange.	A value exchange of value objects is carried out by the actor using the value interface. In this value exchange, the actor offers/requests a value offering of value objects. This exchange occurs between the value ports that are within the value interface.
Value Exchange	This is the act of giving value objects and receiving them in return or trading value objects between actors. For example, this would be the potential sale in SMEs: once the external actor provides the SME with a purchase order, the SME can then provide the service or product required in exchange for monetary payment.	The value exchange adds value by showing which actors are willing to exchange value objects with each other.	By requesting/offering value offerings of value objects for value exchanges, which occur through the value ports that are within the value interface, the actor performs a value activity which increases and/or creates profit.
Value Offering	This is the act of giving an actor the opportunity to exchange a value object. For example this would be the SME displaying to the external actors what value objects it provides.	The value offering adds value by displaying to the external actors which value objects are available for value exchanges.	

Value Activity	This is the act of performing a process that is profitable between two or more actors. For example, the process in which SMEs exchange value objects.	The value activity adds value by enabling value objects to be exchanged in order for the actor to gain profits.	
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2.3.2 Process Viewpoint

According to Gordijn and Akkermans (2001), the process viewpoint discusses the operationalization of the value viewpoint by using business processes. This simply means integrating the business processes with the value viewpoint. This integration can clearly be explained by the value chain model (Porter, 1985), as it looks at value-adding activities within the firm. The value chain model predicts that overall value is created if each of the primary and support activities within an organisation add value. Zhu and Kraemer (2005) further suggest that the use of e-business along an organizations value chain activities, leads to improved firm performance, which as also asserted by Soto-Acosta, Popa and Palacios-Marqués (2016), indicates a strong link between e-business usage and e-business value. This research defines e-business usage as the integration of e-business in a firm's core processes (Zhu & Kraemer, 2005).

Taylor and Murphy (2004) discuss Foley and Ram's (2002) PIT model of ICT Adoption by SMEs. This model consists of processes used by SMEs through the adoption of ICT. The processes entail publishing information on a website, for example online auctioning and online recruiting, the interaction between customers and suppliers through automated communication systems such as e-mails and credit card verification, and finally, the transformation of business activities such as real-time tracking of deliveries. Furthermore, this model proposes that in SMEs, the primary and support activities would occur in areas of logistics and delivery, purchasing and procurement, finance, operations, processing and assembling, marketing, sales and after sales services. In each of these areas, this would be automating the activities involved and conducting them online.

For the availability, interaction and exchange of these processes within the e-business, channels in which these processes are transferred from one end to another must be in place. Chen and Lewis (2010) discuss that this exchange and interaction of services, products and information sharing can occur between channels such as the business-to-business (B2B), business-to-consumer (B2C), business-to-employee (B2E), business-to-government (B2G) and a Hybrid of B2B and B2C models. Although they discuss other channels of e-business such as consumer-to-consumer (C2C), this study focuses only on those that are directly impacted by the business. Overall, if the e-business process is effectively and efficiently integrated with the value viewpoint, this results in e-business value creation.

2.3.3 Architecture Viewpoint

In this paper, the architecture perspective implies the technology used to support these business activities. Gordijn and Akkermans (2001) discuss this viewpoint as an IS/IT enabler and supporter of the e-business processes. This is explained by the technology theoretical perspective, specifically the IT-enabled business transformation framework proposed by Venkatraman (1994). The author predicts that five (5) levels of IT-enabled business configuration should exist in an organization for there to be added value. These levels include the IT functionality within a business, leveraging IT throughout the entire business, business process integration, business network integration and business scope integration. These levels explain how technology is used to support and enable internal and external business processes as well as the organization as a whole for added value. Chen and Lewis (2010) discuss the specific technologies that support and enable e-business as being the electronic data interchange (EDI) and internet. Both these technologies use telecommunication infrastructure for electronic connections which enable information transactions. These transactions have been made even easier by the introduction of wireless infrastructure and networks. EDI is used by trading partners, and allows the transfer and sharing of business data. For example, EDI would be used when businesses agree to electronically send information such as request for quotes, purchase orders and invoices. The internet or World Wide Web (WWW), with the help of advanced web browsers, has become a universal platform for information sharing and transfer between businesses and people, making it easier to adopt e-business within an SME.

Moreover, Chen and Lewis (2010) discuss how the availability of broadband channels, which are cables or fibre optic lines that allow more and faster data transfer, have been the final breakthrough for the enablement of e-business. The use of interactive company portals which allow a shared real-time environment for businesses to be able to conduct transactional information, billing and payment as well as invoices have also improved e-business. For example in SMEs where there is a need for ticket reservations, production scheduling, material shipments etc., this real-time environment makes these processes easier and faster. With the rapid growth of technologies such as web services, online social media, collaboration software, kiosks, videoconferencing and mobile technologies, e-business has been made easier, efficient and effective. With this advanced technology, e-business processes are better supported and enabled, which results in e-business value creation within organisations.

2.3.4 Human factor

This factor is explained by the entrepreneurship theoretical perspective discussed by Miller (1983). According to this theory, entrepreneurs need to possess an entrepreneurial orientation consisting of certain methods, practices and organizational behaviours in order to keep the firm competitive. The human factor discusses this entrepreneurial orientation. For the successful adoption and value creation of e-business, an SME needs to have visionary and capable leaders. These leaders include the entrepreneur and managers. Kyobe (2008a) argues that for the success of IS, entrepreneurs have to possess certain qualities and traits that distinguish them from others. Furthermore, the author suggests that behaviour characteristics such as attitude to technology, risk taking, commitment and control over resources influence the entrepreneur's ability to effectively respond to technology adoption. Chatzoglou and Chatzoudes (2016) also suggest that the entrepreneur's knowledge of IT and outlook of innovation drive this e-business adoption. The SMEs' managers also need to possess these traits. They should have the relevant ICT information and good managerial skills and should be able to allocate their time, resources and encouragement for the use of IS within the firm (Petter, DeLone & McLean, 2013). If the human factor within an organization consists of all these traits and capabilities, e-business is more likely to be adopted and efficiently implemented in the organization. These traits and

capabilities also enable the human factor to run and maintain the e-business successfully, resulting in the creation of e-business value.

2.3.5 Business Mission and Strategy

Stakeholders of SMEs need to be able to understand the business mission (what the business is about) so that they can develop and implement proper and innovative business strategies that support, drive and help the business to achieve this mission. Ekpe, Eneh and Inyang, (2015) assert that a business mission is its intention for existence and that it provides a feeling of purpose and direction. Furthermore, they suggest that it is the starting point for strategy development in a business. Both the business mission and strategy are explained by the strategic management theoretical perspective. Drucker (1988) discusses innovation in strategic management as a fundamental consideration in adding value in a business. This means that for an organization to create and add value, it needs to have innovative strategies that support the business mission. According to Chen and Lewis (2010), IT managers need to be aware of the business strategy and e-business plan in order to develop the right e-business technology to support the business processes. Chaston, Badger, Mangles and Sadler-Smith (2002) discuss strategic competencies as those that establish a direct link with customers, use technology to stand out from the rest of the companies and develop and provide new products and services. It is hence essential to be able to understand and know these competencies when developing the business strategy. This ensures proper alignment with the business mission, therefore enabling proper integration of the e-business plan and technology, leading to e-business value.

2.3.5.1 Alignment of Business Mission and Strategy

Analoui and Karami (2002) discuss the criticality of a mission statement in strategy development and business success. Additionally, strategy development has been viewed as a decision-making process for the executive-level in an organisation, where single strategic decisions are integrated into a comprehensive strategy (Fredrickson, 1984). Therefore, for an organisation to experience business success, it's imperative for the executive management in SMEs to develop business strategies that are consistent and aligned to the business mission. A study carried out by Gerow, Grover, Thatcher and Roth (2014) revealed that alignment within

an organisation leads to firm performance. This further emphasises the positive relationship between alignment and business success, which makes alignment a critical concept in a business.

Gerow et al. (2014) define alignment as the fit of needs, demands, goals and/or structure between two or more components. In other words, the concept of alignment, as also argued by Kyobe (2008b), is determined by the consistency between the elements being investigated. The concept of alignment, which is also postulated as a concept of fit is explained by the contingency theory, which posits that a dependent outcome e.g. firm performance is enhanced if there is a connection between two or more independent variables (Fry & Schellenberg, 1984). Venkatraman (1989) argues that there are six (6) perspectives of fit. These are gestalts, profile deviation, covariation, moderation, mediation and matching. The gestalts perspective is used when there are many variables, where patterns are identified in terms of the degree of internal coherence or fit amongst the variables, whilst profile deviation perspective looks at fit as the degree of adherence between an ideal profile and another. The covariation perspective looks at fit as the internal consistency among a set of related variables. The moderation perspective proposes that the desired effect or dependent variable is achieved if there is fit between the independent variable or predictor and a moderator. The influence of the independent variable on the dependent variable is varied depending on the effect of the moderator. The mediation perspective proposes that the desired effect or dependent variable is achieved if there is fit between the independent variable or predictor and an intervening variable. In the matching perspective, fit is postulated as the match between two related variables and the effect of this fit is examined. Unlike the moderation and mediation perspective, alignment is independent of a third variable. This study adopts the matching perspective of alignment, as it argues that a positive effect is determined if there is fit between the business mission and strategy.

2.3.6 Availability of resources

In order for companies to fully experience e-business value, it is essential for them to stay interactive and maintain the e-business. This element is explained by the resource-based view (Barney, 1991; Peteraf, 1993), which discusses the use of resources that are efficient and

effective, cannot be copied by any other firm, and cannot be moved across the firm. This paper focuses on financial resources and the users of the e-business for the creation of e-business value. Chaston et al. (2002) discuss the need for financial resources which are necessary to invest in the right technology, to be able to regularly maintain the business websites, to integrate the company's information management systems and to provide proper interfacing with customers.

To stay interactive with the e-business, companies also need to have employees in place who ensure that this interaction is maintained. Bordonaba-Juste, Lucia-Palacios and Polo-Redondo (2012) suggest that these employees need to possess some IT knowledge, IT technical capability, technical expertise and an intellectual resource (the employee's educational qualification and work experience that distinguish them from the others). These traits make it easier to train these employees when adopting the new system, and make them more aware in determining the value created by the system. This is especially necessary in SMEs, as they are characterized by a smaller number of employees. With the use of financial resources and capable employees, the e-business is well maintained and stays interactive, which results in e-business value.

2.4 Evaluation of E-Business Value

In order to improve business performance by using e-business in SMEs, it is important to evaluate the elements that lead to its value creation. Ammenwerth, Graber, Herrmann, Burkle and Konig (2003), define evaluation as the decisive assessment of defined entities, based on a set of criteria, to solve a given problem. In this study, the evaluation process will involve a critical assessment of some elements of the value creation approaches and determinants of e-business value discussed above, in the context of Southern Africa, which, if present in a business, create e-business value. Hallikainen and Chen (2006) suggest that evaluation should be achieved by examining (i) outset situations (organisational norms and values, IS project contingencies and IS project resources), (ii) the business development process (for example IS development and procurement) and (iii) the outcomes (for example, success of IS implementation, investment and functionality). This e-business value evaluation will

furthermore examine the outset situations of e-business (for example, the organizational mission and strategy, the processes involved, technology and e-business resources), and its outcomes and post-adoption (i.e., the e-business value created).

2.5 Integrative Theoretical Framework and Conceptual model

Following the discussion on the value creation approaches, the different theories that explain the determinants of e-business value and evaluation of e-business value, an integrative framework has been developed that integrates and deals with every theory discussed. This framework has been developed in order to overcome the limitations that each of these theories have, thereby providing a broader perspective of the research problem and the theories that explain this. Although, each of the theories looks at value creation within the business, each of them focus on one value creating aspect. For example, the resource based view (Barney, 1991; Peteraf, 1993) focuses on the use of resources only for value creation, whilst the entrepreneurship theoretical perspective (Miller, 1983) looks at the entrepreneur and managements capabilities as a value adding element and the technology theoretical perspective (Venkatraman, 1994) from a technology as an enabler value creation aspect. On the other hand, the economic theory (Bakos & Kemerer, 1992) looks at value creation from the supply and demand of IS/IT, whilst the strategic management theoretical perspective (Drucker, 1988) looks at it from an innovative strategy development and mission supporting perspective.

In order to develop this comprehensive framework that integrates these theories, McLarty's (2000) SME value chain model, which adopts Porter's (1985) value chain model has been used in the context of SMEs as a template or theoretical glue holding these theories together. This model has been identified as being the most suitable as it addresses the business in terms of processes, resources and value as well as business interactions internally and externally. Therefore, each of the levels and processes in the model has been explained by the theories discussed in the previous section. Porter's (1985) value chain model has been extensively used in the business environment, for example in supply chain management. It consists of three levels, which are the primary activities that directly create and bring value to the customer, the

support activities that enable the primary activities and the margin which indicates value creation. Figure 1 below shows Porter's (1985) value chain model.



Figure 1: Porter's (1985) Value chain model

McLarty's (2000) SME value chain model, which has been used to create the comprehensive and integrative framework aims to provide recommendations for better management decision making and to be used as a framework for business development in SMEs. Furthermore, McLarty (2000) argues that this value chain model fits in both the production and services sector, and comprises of activities of Porter's (1985) value chain model that have been modified, removed and substituted with new elements to make the model more relatable to SME managers. In this revised SME value chain model, human resource management which is a support activity is replaced by management capabilities, firm infrastructure has been modified to resource infrastructure, technology development and procurement have been removed and entrepreneurial drive has been included. In the primary activities, inbound logistics, operations and outbound logistics have been substituted by mission and processes, whilst marketing and service remain unchanged. Figure 2 below shows this modified SME value chain model.

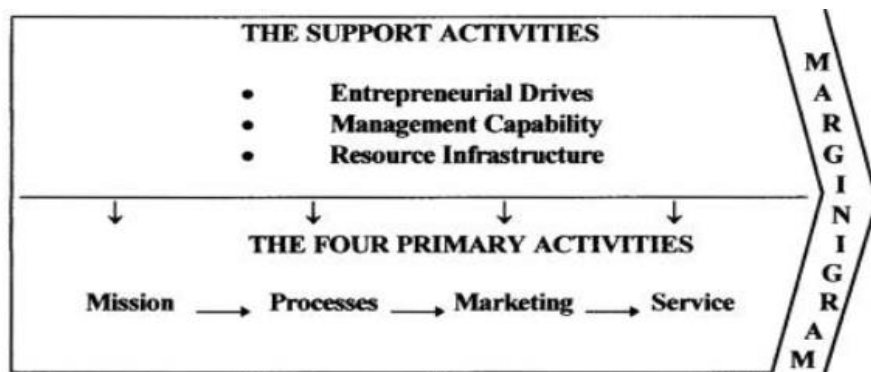


Figure 2: McLarty's (2000) SME Value Chain Model

To integrate the theories discussed in this paper, each of the elements in the SME value chain model has been explained by one or more of these theories to create a more comprehensive theoretical framework. Figure 3 below shows this framework.

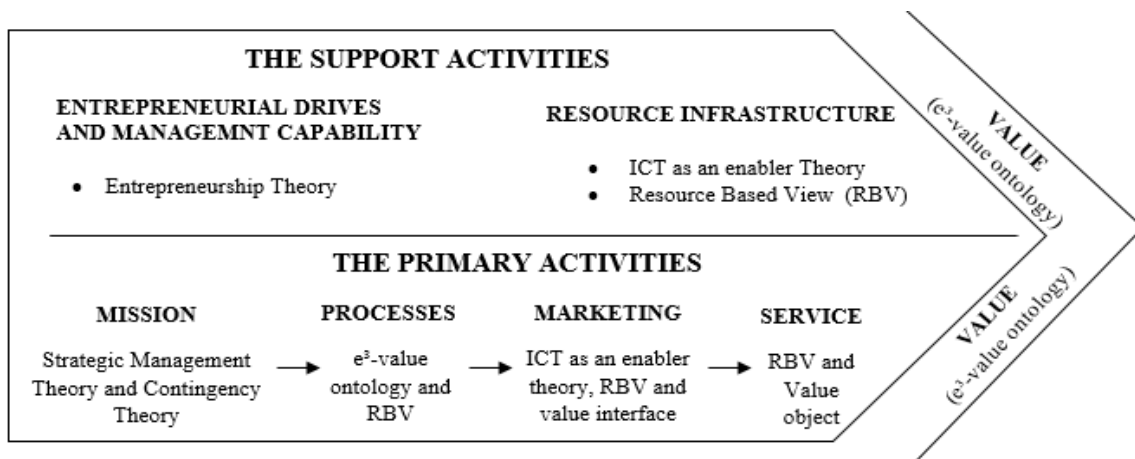


Figure 3: The developed integrative theoretical framework

For the support activities of the SME value chain, the entrepreneurship theoretical perspective discussed by Miller (1983) has been used to explain both the **entrepreneurial drive** and **management capability** element in the SME value chain. This theory explains how value creation is attained by having visionary and capable leaders that possess certain qualities that distinguish them from others. The ICT as an enabler theory discussed by Venkatraman (1994) and resource based view (Barney 1991, Peteraf 1993) have been used to explain the **resource infrastructure** element. According to Venkatraman (1994), value is created in the ICT as an

enabler theory if an SME has undergone five stages of technology integration. These stages are leveraging of IT throughout the entire business, business process integration, business network integration and business scope integration. In the resource based view, value is created by using resources that add value, are only found in the company, cannot be copied by other companies and cannot be moved across firms. For this theory, focus has been made on financial resources and the employees as they are both critical for the successful running of a business.

In explaining the primary activities, the **mission** has been explained by the strategic management theoretical perspective discussed by Drucker (1988) and the contingency theory of alignment discussed by Fry and Schellenberg (1984). While the strategic management theoretical perspective assumes that value is created if a firm uses innovative strategies to support the business mission, the contingency theory predicts firm performance through the fit between two or more dependent variables, which in this case are business mission and strategy. The **processes** have been explained by the resource based view (Barney 1991, Peteraf 1993) and e³-value ontology (Gordijn & Akkermans, 2001), which consist of different aspects that are interlinked and create overall value. These aspects include the actor, the value object, the value port, the value interface, the value exchange, the value offering and the value activity. The **marketing** element in the SME value chain has been explained by the resource based view (Barney 1991, Peteraf 1993), ICT as an enabler theory discussed by Venkatraman (1994), as technology such as the internet enable products and services to be promoted by the business; and has also been explained by the value interface of the e³-value ontology (Gordijn & Akkermans, 2001). The value interface is the mechanism that allows two or more actors to communicate or interact, for example, a website. The **service** element has been explained by the resource based view (Barney 1991, Peteraf 1993) and value object in the e³-value ontology (Gordijn & Akkermans, 2001), which is not only the product, money or consumer experience exchanged between actors, but also the service exchanged.

The **margin element or value element** of the SME value chain model has been explained by the e³-value ontology (Gordijn & Akkermans, 2001). It captures economic value in terms of profits made from value activities, social value in terms of efficiency and effectiveness as there

is better communication between actors and quality of value objects and moral value as there is transparency of value exchanges through value interfaces.

Based on this integrative theoretical framework, the conceptual model below has been developed to evaluate the value of e-business in SMEs in Southern Africa. It consists of the value creation elements (independent variables) and e-business value which is the dependent variable.

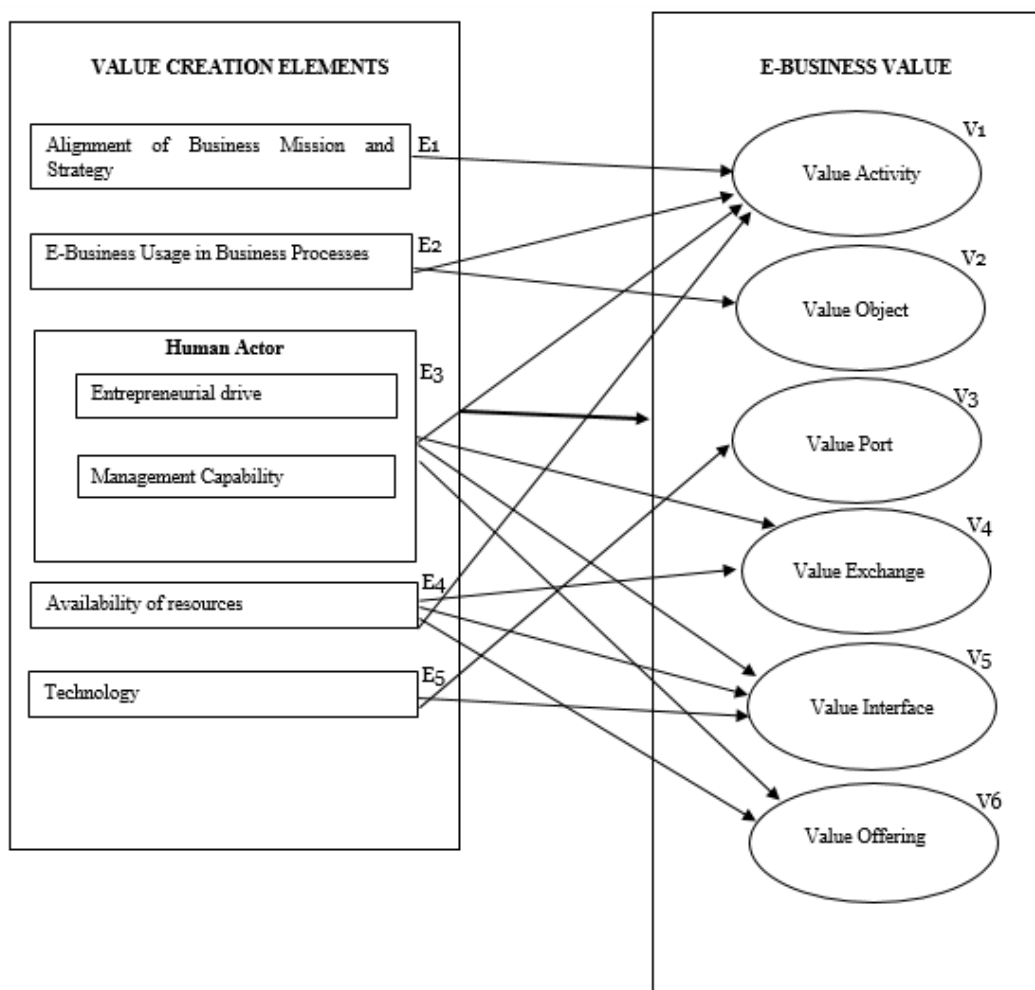


Figure 4: E-Business Value Evaluation (EBVE) conceptual model

2.6 Research Propositions

The research propositions have been formulated based on the literature and from the conceptual model above. These propositions have been developed in order to test the relationships in the model, thereby determining if they are supported or not.

According to Ekpe et al. (2015), a mission statement is a starting point of strategy formulation within a business. This suggests that a mission statement acts as a basis or foundation for strategy development, and therefore, a link exists between these two elements. Fry and Schellenberg (1984), assert that the contingency theory posits that an enhanced outcome is derived if there is connection between two or more elements. In the current research, the desired outcome is e-business value, specifically through value activity within a SME. Therefore, it is important to determine if the alignment of the mission statement and formulated strategy will enhance value activity within a SME in the current research. It is therefore proposed that:

Proposition 1: The alignment between business mission and business strategy (E1) in an SME is positively related to value activity (V1).

As defined by Zhu and Kraemer (2005), e-business usage is the integration of e-business in a firm's core processes. In the current study, focus has been given to processes in Foley and Ram's (2002) PIT model of ICT adoption by SMEs. Consequently, understanding the extent to which e-business is integrated in the processes in this model by SMEs in Botswana and South Africa is essential to determine the level of integration of e-business in SMEs in these countries. According to Soto-Acosta et al. (2016) the use of e-business technologies in an SME, lead to firm performance. This suggests that e-business usage in a firms processes has an influence on value creation in a firm. Therefore, determining the level of integration of e-business in Southern African SMEs would have an impact in value creation in SMEs in these countries. Soto-Acosta et al. (2016) further argue on innovation and e-business use having a connection. They propose that innovation is the thoughts and skills that are changed into new products and services as well as shared experiences. This asserts that there is a link between e-business usage and innovation or new products/services (value objects) and shared experiences (value activity). Therefore, it is proposed that:

Proposition 2a: E-Business usage in business processes (E2) in an SME is significantly associated with value activity (V1).

Proposition 2b: E-Business usage in business processes (E2) in an SME is significantly associated with the creation of value objects (V2).

The entrepreneurship orientation and management capabilities are both critical in driving business success. According to Malatjie, Garg and Rankhumise (2017:201), innovation within an entrepreneur's orientation is characterized by the "development of new or existing services, technologies, administrative techniques, new improved strategies, risk taking and pro-activity". All of these characteristics lead to business success in that value objects are developed through the establishment of new or existing services/ products. By utilising technology (value interfaces) these value objects are then offered (value offering) by the business through connections (Chen & Lewis, 2010) to clients/customers developed through business strategies which leads to value exchange. This value exchange influences the value activity within the SME, which is directly linked to the achievement of the business mission and organisational performance. Moreover, Malatjie et al. (2017) state that for this outcome to be derived, it is vital for top management to support the entrepreneurship strategic vision. This implies that both the entrepreneur drive and management capabilities are essential to attain the business mission and organisational performance. It is therefore proposed that:

Proposition 3a: Human actor capabilities (E3) in an SME are positively related to value activity (V1).

Proposition 3b: Human actor capabilities (E3) in an SME are positively related to value exchange (V4).

Proposition 3c: Human actor capabilities (E3) in an SME are positively related to a value interface (V5).

Proposition 3d: Human actor capabilities (E3) in an SME are positively related to value offerings (V6).

While the human actor capabilities drives the mission, goals and strategies of the business, financial resources and employees are critical in their execution. According to Zhu and Kraemer (2005), financial commitment is required in order to implement and use e-business.

This is because for this implementation, financial investment in e-business technologies and employee training is required for the employees to gain more traits and capabilities that distinguish them from others, more especially in SMEs as they are characterized by a smaller number of employees (Bordonaba-Juste et al., 2012). Therefore, this brings to light the importance of understanding if the employee size somewhat has an effect on the employee capabilities gained during training, especially since this could impact e-business value and business performance. Harter, Schmidt and Hayes (2002) refer to the employee operational level as the business unit level, and state that based on the influence of managers or supervisors, the level of commitment and contribution at this level is directly linked to business performance. This is because as suggested by Malatjie et al. (2017), the attitudes of employees are influenced by the leadership in an organisation, and a positive employee attitude will lead to customer satisfaction, loyalty and productivity (Harter et al., 2002). Therefore, employees with a positive attitude will be willing to perform value activity within a business through value offerings and value exchanges enabled by technology (value interfaces). Based on this discussion, it is proposed that:

Proposition 4a: Financial resources and employees (E4) in an SME are significantly associated with value activity (V1).

Proposition 4b: Financial resources and employees (E4) in an SME are significantly associated with value exchange (V4).

Proposition 4c: Financial resources and employees (E4) in an SME are significantly associated with a value interface (V5).

Proposition 4d: Financial resources and employees (E4) in an SME are significantly associated with value offerings (V6).

As discussed in section 2.1, Ifenado (2005) suggests that South Africa has a high e-readiness compared to the rest of Southern Africa. Kumar and Gupta (2017) argue that in developing countries, e-readiness evaluation could assist with establishing a starting point to determine a way forward. Therefore, it is critical to understand the significant differences, particularly in technology, between both Botswana and South Africa in order to assist Botswana and other Southern African countries to determine where improvements could be made in their countries in terms of technology. This could enable them to identify which developments are needed for

their infrastructural e-readiness, thereby improving the likelihood of e-business adoption and e-business value in the rest of Southern Africa.

E-Business integrates internet technologies throughout the entire business, both internally and externally (Cassidy, 2016). This means that internet technologies are integrated in both the internal business operations and external operations. Chen and Lewis (2010) state that these internet technologies use telecommunication infrastructure for electronic connections which enable information transactions which have been made easier by the introduction of wireless infrastructure and networks. These information transactions lead to other benefits such as transactional efficiencies and market expansion (Zhu & Kraemer, 2005). Therefore, because e-business technologies enable electronic connections (value ports) and interfaces (value interfaces) for information sharing and exchange, it is proposed that:

Proposition 5a: The technology (E5) in an SME is significantly associated with the value port (V3).

Proposition 5b: The technology (E5) in an SME is significantly associated with a value interface (V6).

Cassidy (2016) argues that a lack of planning, inefficient business processes, lack of training and investment, lack of strong ownership and lack of technology use pose as challenges to e-business value. Additionally, Sahim (2012) suggests that firm competitiveness is enhanced by factors such as financial resources, technological resources, a strategic business plan, employees and management capabilities as well as processes. Based on the discussion in section 2.3 above, these factors are considered to be determinants/value creation elements of e-business value. This indicates that each of these elements is fundamental to the achievement of e-business value. Therefore it is proposed that:

Proposition 6: The value creation elements in an SME will have a positive effect on e-business value.

CHAPTER 3: RESEARCH DESIGN AND METHODOLOGY

This section presents the research design and methodology. It commences with a brief introduction, followed by the research philosophy which discusses the ontological and epistemological stances and those selected for the study. The next part of this section discusses the research method. This includes the research purpose, research approach, research strategy, research time frame, research instrument, target population, sampling frame and sample, pilot survey and data collection and finally data analysis. This chapter then discusses the ethics and confidentiality.

3.1 Introduction

According to Holden and Lynch (2004), choosing a research methodology, that is, how to conduct the research, requires a researcher to first understand the critical underpinnings of a philosophical solution to why the research is being conducted. This entails discussing how the researcher views the world and how knowledge is derived from this (research philosophy). A discussion of how the research will be conducted will be examined in this chapter. The subsections below will provide solutions for both the ‘why’ and the ‘how’ questions of this research.

3.2 Research Philosophy

The research philosophy relates to the nature and development of knowledge and consists of important assumptions about the way in which the world is viewed by the researcher (Saunders Lewis & Thornhill, 2009). Saunders et al. (2009) further suggest that the research philosophy influences the way the researcher chooses to answer the research question or the methods they use in order to answer the research question. Moon and Blackman (2014) discuss the two main branches of philosophy as being the ontology, which is the study of being or of what exists in the world from which humans can obtain knowledge and epistemology, which is the study of knowledge or how people create knowledge and what is possible to know.

3.2.1 Ontology

This branch of philosophy, which is concerned with the nature of reality consists of two main ontological aspects, subjectivism and objectivism. Saunders et al. (2009:111) argue that subjectivism is involved with “the social phenomenon created from the perceptions and consequent actions of social actors”. In other words, subjectivists believe that reality exists in the human mind, and is therefore forever changing, based on each individuals experiences at a given time and place (Moon & Blackman, 2014). In addition to this, Holden and Lynch (2004) suggest that subjectivists should be actively involved in the social phenomenon so as to derive the meanings that individuals contextualize to these settings. This aspect of ontology is therefore linked to social constructionism as suggested by Saunders et al. (2009), as it seeks to construct reality from the human mind. The objectivism ontological aspect on the other hand posits that social entities exist externally to social actors (Saunders et al., 2009). That is to say, reality is objective and out there waiting to be discovered through observations and measurements (Holden & Lynch, 2004). Furthermore, Holden and Lynch (2004) suggest that objectivists, stay independent of the research, and have no influence at all to the study. Because this ontological aspect focuses on the objective reality, objectivists believe that one true reality exists and is unchanging. However, as discussed by Moon and Blackman (2014), the structures around this reality can change, which leads to the nature of the reality changing. It is for this reason that this ontological aspect consists of independent and dependent causal relationships, and hypotheses that are tested by the observed effects between these relationships (Holden & Lynch, 2004).

The focus of this study was on the nature of e-business value, that is, how the value creation elements discussed in the literature influence this value. It therefore, adopted the objectivism ontological aspect. E-Business has become a rapidly growing technology that’s been adopted by several companies (Cassidy, 2016) and its adoption and implementation has been extensively discussed by different researchers. Therefore, in understanding the nature of e-business value, the researcher aimed to explore this knowledge in this existing pool of e-business literature and discover the critical elements within the e-business value environment. This exploration of literature and theoretical work revealed some elements that are fundamental

to the nature of e-business value and its achievement, and this led to the development of a theoretical framework that provides a broader perspective of this nature of e-business value. Moreover, to draw reality from this e-business value environment and observe and quantify it, a conceptual model of these e-business value elements was developed consisting of independent and dependent causal relationships and is applicable to the context of Southern African SMEs.

3.2.2 Epistemology

The ontological philosophy precedes the epistemological philosophy. That is to say that the two are interlinked. As discussed above, the subjectivism ontology posits that reality exists in the human mind. It is therefore interlinked with the interpretivist epistemology, which has an emphasis on conducting research among people rather than objects (Saunders et al., 2009). This epistemology focuses on the interpretations and meanings that people attach to what they see, and therefore this reality is social in that meanings can be shared, and is co-constructed from the human mind (Moon & Blackman, 2014). Another type of epistemology which is interlinked with both the subjectivism and objectivism ontology (Wilson, 2014), is known as the pragmatism. According to Moon and Blackman (2014), this type of epistemology aims to compromise between the knowledge derived from what is seen, and that derived from a logical and rational reason. Furthermore, these authors suggest that to understand a certain problem, pragmatists should use various methods, instead of being dedicated to one particular philosophical stance and thus research should be situated contextually. The third epistemology is the positivist stance, and is interlinked with the objectivism ontology (Wilson, 2014). Creswell (2013) suggests that positivism observes and measures objective reality using precise methods. The reality is independent of the human mind, and it seeks to measure and test hypotheses in order to draw conclusions.

The knowledge in this research was derived from e-business literature that is already existing, which was measured and tested to make conclusions, it therefore adopted a positivism paradigm. By drawing this reality from the e-business value environment and using a conceptual model with independent and dependent causal relationships formulated from the

discovered elements in the e-business literature, hypotheses of these relationships were formulated. These were tested and measured using quantifiable methods (Holden and Lynch, 2004), and conclusions were drawn from this.

3.3 Research Method

According to Walliman (2017), quantitative data can be evaluated as it contains size and is often depicted numerically. Yilmaz (2013) defines quantitative research as research that explains situations by numerical data which measures an unchanging reality or a one true reality, and is analysed in a statistical and quantifiable manner. Furthermore, the author states that emphasis is made on the measurement and analysis of causal relationships between variables in a framework in quantitative research and that the reality of this method of research is independent of the study. The current research was informed by the objectivism ontology and positivism epistemology. This is because by exploring the existing extensive research on e-business, concepts were discovered that are fundamental to the nature of e-business value and its success. The developed EBVE conceptual model was developed based on these concepts, and this model comprised of independent and dependent causal relationships. These relationships facilitated the development of propositions which were observed and measured using statistical and quantifiable methods. Quantitative methods was therefore used to conduct the research and to facilitate in drawing conclusions of this e-business value environment.

3.3.1 Research Purpose

According to Saunders et al. (2009), the research purpose is influenced by the way in which the research question has been developed. This research purpose can either explain the phenomena under investigation (explanatory research), describe the phenomena under investigation (descriptive research) or explore the phenomena under investigation (exploratory research). This research aimed to provide an answer to the primary research question - How can the value of e-business in SMEs in Southern Africa be evaluated? The research question intended to seek insight on e-business value in order to assess its nature. In answering this research question, a search of literature was conducted in order to come up with the different theories that have been used in the study to understand the nature of e-business value. The

research also intended to discover and validate the relationships between the variables in the developed conceptual model. The study therefore adopted an exploratory research purpose because of the way in which the primary research question of the study was developed, and of how the study explored different theories and concepts in order to answer this research question.

3.3.2 Research Approach

Research can be carried in an inductive or deductive approach. An inductive approach is one in which data is collected and then analysed to see the theory that emerges, whereas a deductive approach discusses and draws from the theory that exists, develops hypotheses and tests, observes and validates them (Saunders et al., 2009). This approach of testing, observing and validating hypotheses is appropriate for quantitative research which is informed by the objectivism ontological stance. According to Yilmaz (2013), frameworks used in quantitative research are drawn from prior theories. Woo, O'Boyle and Spector (2017) argue that this is a top-down approach where hypotheses and propositions are logically stated from theory, and tested before observations can be conducted and ultimately, confirmations of these theories made. The study used a deductive approach to study, as it drew from different theories which were brought together to develop a comprehensive theoretical framework. This framework led to the development of a conceptual model and propositions which were tested, observed and validated.

3.3.3 Research Strategy

The study used a quantitative content analysis of websites as a primary strategy of data collection. As defined by Berelson (1952:18), content analysis is “a research technique for the objective, systematic and quantitative description of the manifest content of communication”. In other words, this is the observation and examination of certain words and concepts in messages and texts, using quantifiable methods. This definition clearly indicates how content analysis consists of the foundations of the objectivism philosophical consideration and how it integrates the positivism paradigm. Content analysis is explained by the communication exchange theory discussed by Gerbner (1958). The author defines this theory as the social

interpretation of communication events, which are results, relationships and the nature of processes shared and conveyed. This posits that by studying the events of the communication exchange, one can interpret and infer about the state of the systems engaged in the exchange and their relationships. Furthermore, Gerbner states that the sum of these interpretations that can be made about these communication events is referred to as the content of communication, and that communication events may reveal something about the precise exchange that instigated them, instead of what we think and expect them to mean. The author also discusses some significant questions to consider about the content of communication during content analysis, which this research considers. Table 3 below relates/matches the questions that Gerbner (1958) posits to the current research, revealing how the research considered these questions.

Table 3: Gerbner’s significant questions and the link to the study

Gerbner's Significant Questions on Content Analysis	Link to the study
In what ways does this material reflect physical and social qualities of communicating agencies (someone engaged in a communication exchange), and their relationships to other systems such as markets, advertisers, audiences, and their world of events?	By conducting the website content analysis, and considering the social media and technologies adopted in the SMEs (as shown/discussed on the websites) one can make inferences on the physical and social qualities of the communicating agencies/ human actors and users (resources) in the SMEs, and their relationships to other systems. The SMEs communicating agencies or the human actor and users (resources) have been discussed in depth in the literature.
What points of view about life and the world as the communicating agent/agency sees them are implied and facilitated?	Through these websites, one can understand the points of view of the communicating agents through the information provided about these SMEs, such as, what the SMEs are about, what they do and the vision that the human actor has.
What social arrangements of ownership and control of communicative means and facilities are revealed by the prevalence of this material (content)?	Even though some of the websites do not quite reveal social arrangements of ownership and control in the SMEs, some of the content in the websites reveal the responsible actors or users of the SMEs.
What patterns of selection, context, and availability are inferable from this body of content?	Common patterns that the websites reveal are on what the SME is about, what its services and/or products are and how customers/clients can get in touch with the SMEs. This would entail the use of technologies as explained in the literature, the business mission and processes.
How valid, adequate, and coherent is the correspondence of these representations to any actual system of events (truth quality)?	The websites are a means of direct contact with clients/ customers. Therefore, the SMEs would be forthright about the information they provide on their websites, such as, what the SME is about, its services and products and contact details.
What might be the consequences (aside from sales, likes and dislikes, conventional meanings, or "effectiveness" in terms of conscious objectives) of social relationships and points of view mediated through this content as a social event system?	The consequences of social relationships mediated through websites would be the clients/customers awareness of what the SME does and provides, greater reach of clients/ customer and transparency of processes (thereby leading to trust and customer loyalty).

3.3.3.1 Choice of Theory of Research Strategy

The theory of communication exchange was appropriate for the research strategy of this study because the study aimed to evaluate the value of e-business in SMEs, by observing and drawing factual information (Holden and Lynch, 2004) from these websites about the communication they share and convey and how this communication is understood by clients/customers. The SMEs transfer and convey communication events such as information about themselves (Cebi, 2013) e.g. their mission and value, their products and services etc., to their clients/customers through their websites and this study observed and drew from these events that are within the content of communication. This provided the study with insight of the elements that the SMEs consist of which enable and lead to the creation of e-business value. Moreover, by drawing this communication from websites content or by using website content analysis as a research strategy for this study, the constructs in the developed model were fully captured.

Even though other strategies such as survey methods may have captured constructs of the value creation elements, constructs of the e-business value aspects, such as the value ports, value interface, value exchange and value offering may have not been captured by these strategies. Therefore, by using website content analysis, the quality and performance of the value interface i.e. the website quality (Al-Qeisi, Dennis, Alamanos & Jayawardhena, 2014), was captured and the value ports which enable interconnectivity between the SMEs and their customers/ clients (Chen & Lewis, 2010) on these websites were also captured through the online communication methods the websites contained as well as online reservation and/or ordering systems in place. Furthermore, by observing the customers/clients feedback and comments about the company services on these websites and on the social media technologies that the SMEs used and their response rates, the customer satisfaction, quality of value exchange and value offering was also captured. Apart from the economic value, this theory enabled the social value in terms of the customer satisfaction, marketing, effectiveness and efficiency of business processes as well as the moral value in terms of the transparency (Nkwe, 2012) of the business processes to be fully captured, which would otherwise have not been captured by other research strategies.

3.3.3.2 Benefits and Limitations of Research Strategy

Rose, Spinks and Canhoto (2014), discuss the strengths and weaknesses of content analysis as a research strategy. The benefits it offers are that it is a flexible research approach, in that it can be applied to a variety of text sources e.g. written documents, visual representations etc., as well as mass media sources such as films, radios, books etc. It can also be used for big data and longitudinal time frames and it is based on naturally occurring data that the researcher cannot temper with. Conversely, given the use and benefits of content analysis as a research tool, like any other research tool, it also has its limitations. Rose et al. (2014) further assert that, these limitations are mostly experienced during the process of sampling and coding. They suggest that this technique can introduce bias in the sampling and coding process when, as like any other technique, interpreting the data collected. Additionally, this occurs when important data is overlooked, as the strategy selects certain words within texts, resulting in a loss of meaning and this can be difficult to provide further explanations outside of the provided text. It is for this reason that online surveys were used as a secondary method of data collection to control for these limitations.

3.3.3.3 Secondary Data Collection Method: Online Surveys

Online surveys were used to collect data from the SMEs on the human actor (entrepreneur and managers) capabilities, and the resources (financial resources and users). These two constructs were specifically selected by the researcher so that there would be no bias based on the quality of the website when drawing from the communication on the users and human actor capabilities conveyed on the websites. Furthermore, some of the SMEs had not shared information about their users and human actor capabilities on the websites, and none of the SMEs provided financial information. Therefore, it was essential to collect this secondary data to ensure that the overall compiled data was rich and of good quality. The online surveys were administered to the human actors (entrepreneurs/managers) of the websites of the SMEs where the primary data was collected. Qualtrics software was used for these online surveys. Toepoel and Ludtig (2015) suggest that online surveys can now be used in different devices e.g. laptops, tablets, mobile phones etc. This makes them an affordable and quicker data collection method

(Decieux, Mergener, Sischka & Neufang, 2015). Hence the online surveys used in this research could be completed in any device the respondent decided to use.

3.3.4 Research Time Frame

The time frame in research may be longitudinal or cross sectional. This study was conducted in a cross sectional time frame due to the duration of the course (2-year programme), and also because it proposed to study the current relationships of the variables (Saunders et al., 2009) in the developed model. The time frame was more appropriate for this study as longitudinal studies occur over long periods of time and study the change and development of the phenomena under investigation (Walliman, 2017).

3.3.5 Research Instruments

Two instruments were used for the data collection, a code book was used for the primary data collection and an online survey for the secondary data collection. The instrument designs, data and variables for both data collection methods are discussed below. In addition the validity and reliability of the research instrument is also deliberated.

3.3.5.1 Instrument Design and Data

According to Brace (2018), in order to decide on the kind of analysis to conduct, a researcher needs to understand the kind of data to be collected for each question in the data collection instrument. While the author describes this data as “measurement scales” (p. 58), Walliman (2017) refers to it as “levels of measurement” (p. 73). Nevertheless, both these terms refer to this type of data. This data comprises of four types which are nominal or categorical, ordinal, interval and ratio.

Walliman (2017) asserts that nominal measurements of data consist of simple data that can be classified or categorized separately. The author further suggests that this form of data can be examined using basic graphical representations and statistical methods. Additionally, Brace (2018) states that the categories in this data type can be allocated a number of identification

that indicates no value to the category. Ordinal data on the other hand places the data in ranking order based on a particular criterion with no exact measurement between the ranks, but just the awareness that each rank is more or less than the other (Brace, 2018; Walliman, 2017). Moreover, both these authors discuss interval data as that which has ranks with exact measurements between them, disregards the zero point and based on this ranking, can aid a researcher in determining which rank is preferred by the respondents and which isn't. And finally, ratio scales or levels are those that regard the zero point and can "express values in terms of multiples of fractional parts, making the ratios true ratios" (Walliman, 2017, p. 76).

To derive the data for the primary data collection, a code book was developed which was used to obtain the data from the websites, whilst for the secondary data collection, an online survey was used. Both data collection tools consisted of some demographic information and close-ended five-point Likert scale questions. Close ended questions allow the respondent to pick from a set of answers that have been provided (Walliman, 2017). In this research, the answers were provided within the five-point Likert scale. The questions in this scale represented a progression from negative to positive with a mid-point (Brace, 2018), where the negatives where 1 = strongly disagree and 2 = disagree; mid-point was 3 = somewhat agree; and the positives where 4 = agree and 5 = strongly agree. Table 4 below depicts a summary of the layout of these data collection tools, the data types (levels of measurement/ measurement scales) and the information they comprise of.

Table 4: Primary and Secondary Data Collection Instrument Designs

	Instrument Divisions	Data Type	Information
Code Book	Section A	Nominal/ Categorical	Demographic information: Country; Location; District/Province; Business Type; Business Sector and Number of employees
	Section B	Ordinal	Likert Scale information: Business Mission and Strategy Construct (5 variables); E-Business Usage in Business Processes Construct (3 variables); Human Actor Construct (8 variables); Availability of Resources Construct (6 variables); Technology Construct (13 variables) and E-Business Value Construct (6 variables)
Online Survey	Section A	Nominal/ Categorical	Demographic information: Country and Number of employees
	Section B	Ordinal	Likert Scale information: Human Actor Construct (8 variables) and Availability of Resources Construct (4 variables)

3.3.5.2 Variables

Both the data collection tools used in the study consisting of variables constructed from the literature survey, which were guided by the constructs in the conceptual model. In addition, the variables of the primary data collection tool were verified by an already existing theoretical framework that consists of measurable features and indicators that make up a successful website, regardless of the service that the company provides. This framework was developed by Hasan and Abuelrub (2011), in their study on assessing the quality of websites. The hierarchical framework consists of indicators such as the content quality which characterizes the information of the website, e.g. up to date information, organisational objectives etc. and the website design which is concerned with the visual characteristics of the website e.g. attractiveness, characteristics of the text etc. Additionally it consists of the organisation quality which considers the structure of the website and includes elements that help with user navigation such as working website links and visiting pages, and lastly the user friendliness of the website which enables the interaction of the user with the website e.g., usability, customisation to user's needs etc.

The variables in the code book were used as the coding units for the analysis, as they were the units of texts used for classification of the coding process (Rose et al., 2014). The variables in the online survey on the other hand were derived from the primary data collection tool, but tailor made for the respondents. Appendix A shows the code book for this website conceptual analysis consisting of these coding units and Appendix B shows the online survey. Table 5 below shows the constructs, a summarized explanation of how the constructs were measured on the websites and their sources. The sources also captured studies that discussed the constructs in the Southern African context.

Table 5: Constructs, Measures and Sources

Construct	Identification of Measure	Source
Alignment of Business Mission and Strategy	<p>By identifying/Assessing:</p> <ul style="list-style-type: none"> ➤ If the business mission has been conveyed on the website and how it will be achieved (business strategy); or if based on the website they're are evident. ➤ If the innovativeness of the strategy is conveyed or evident, by means of whether it establishes a direct link with customers, whether it enables technology use in the business as well as the development of business products and services. 	Chen and Lewis (2010), Chaston et al. (2002), McLarty (2000), Drucker, (1988), Porter (1985).
E-business Usage in Business Processes	<p>By identifying/Assessing:</p> <ul style="list-style-type: none"> ➤ If the business processes have been clearly conveyed on the website or are evident. ➤ If there is means of interaction with customers/clients on the websites e.g. online chats, e-mails etc. ➤ If there is means of automation of business activities e.g. automated billing, real time tracking of deliveries etc. 	Nkwe (2012), Chen and Lewis (2010), Olatokun and Kebonye (2010), Mutula and Brakel (2006), Uzoka and Seleka (2006) Taylor and Murphy (2004), Foley and Ram (2002), Gordijn and Akkermans (2001), McLarty (2000), Porter (1985).
Human Actor	<p>By identifying/Assessing:</p> <ul style="list-style-type: none"> ➤ The competencies that the entrepreneur and managers have e.g., are they visionary, what is their attitude to technology etc., based on the 	Chatzoglou and Chatzoudes (2016), Petter et al. (2013), Shemi and Proctor (2013), Nkwe (2012), Chinyanyu Mporu and Watkins-Mathys (2011), Mutula

	<p>communication conveyed about them on the website, the business vision conveyed and technology adopted by the business in its processes (if shared on the website).</p>	<p>and Mostert (2010), Dlodlo and Dhurup (2010), Olatokun and Kebonye (2010), Jobodwana (2009), Kyobe (2008a), McLarty (2000), Porter (1985), Miller (1983).</p>
Availability of resources	<p>By identifying/Assessing:</p> <ul style="list-style-type: none"> ➤ The company financials (if they have been provided). ➤ The look and quality of the website (such as, if links are working). ➤ If the company users have some IT knowledge (assessed by the use of e-mails and/ or online chats for communication, social media interaction and communication conveyed about the users of the SMEs (employees)). ➤ The company response rate to comments and feedback on the website and its social media technology. 	<p>Shemi and Proctor (2013), Bordonaba-Juste et al. (2012), Nkwe (2012), Chinyanyu Mpofo and Watkins-Mathys (2011), Mutula and Mostert (2010), Dlodlo and Dhurup (2010), Olatokun and Kebonye (2010), Jobodwana (2009), Mutula and Brakel (2006), Chaston et al. (2002), Peteraf (1993), Bakos and Kemerer (1992), Barney (1991).</p>
Technology	<p>By identifying/Assessing:</p> <ul style="list-style-type: none"> ➤ The IT functionality within the business, throughout the business, complete redesign of the business processes (smooth integration with processes), the business network integration (communication with customers/clients) and business scope integration (whole business and its network). 	<p>Shemi and Proctor (2013), Chen and Lewis (2010), Nkwe (2012), Chinyanyu Mpofo and Watkins-Mathys (2011), Mutula and Mostert (2010), Dlodlo and Dhurup (2010), Olatokun and Kebonye (2010), Jobodwana (2009), Mutula and Brakel (2006), Uzoka and Seleka (2006), Gordijn and Akkermans</p>

		(2001), Venkatraman (1994), Bakos and Kemerer (1992).
E-business Value	By identifying/Assessing: <ul style="list-style-type: none"> ➤ The value objects being exchanged between actors for profits, the value objects being offered by the business, the value objects being provided/requested by the business for value exchange, which value actors are willing to exchange value objects, etc. 	Olatokun and Kebonye (2010), Dlodlo and Dhurup (2010), Jobodwana (2009), Gordijn and Akkermans (2001), McLarty (2000), Peteraf (1993), Bakos and Kemerer (1992), Barney (1991), Porter (1985).

3.3.5.3 Validity and Reliability of the Research Instrument

Zamanzadeh et al. (2015) refer to **validity** as the data collection instruments' capability to measure the properties of the construct or concept being studied. In other words validity measures the degree to which an element measures what it proposes to measure. According to Bolarinwa (2015), validity tests comprise of two main assessments, which are internal and external validity. Internal validity is the actual ability of the data collection tool to measure what it is intended to measure and external validity is the degree to which the results obtained can be used to generalize a population (Saunders et al., 2009). Saunders et al. (2009) further suggest that the internal validity of an instrument and its accuracy in data collection will be influenced by its design and structure and the thoroughness of its pilot testing. In the development of the instrument design for this research, both internal and external validity were considered. The internal validity was considered by developing a data collection tool driven and verified by existing literature. Table 5 above shows the sources of the measures of this data collection tool. In addition, the variables in the developed constructs also considered and were validated by measurable features and indicators that make up a successful website in an already existing theoretical framework (Hasan & Abuelrub, 2011). The data collection tool was also pilot tested with 20 websites, to ensure that the constructs captured what they were meant to capture. By employing a large sample size of 100 websites of SMEs, and adopting a random sampling technique external validity was considered by ensuring that the sample was well

representative and generalizable to the target population (Southern Africa) and that likely error and bias was reduced.

Face validity, content validity and construct validity were also considered in the study. Bolarinwa (2015) asserts that these assessments are components of internal and external validity. The author defines face validity as the validation of the face value of the instrument with a researcher/expert in the field; content validity as the extent to which the instrument fully reviews the construct being investigated, which can be determined by the review of literature for the construct. And lastly, Bolarinwa (2015) defines construct validity as the extent to which the instrument measures the construct that it is intended to measure. In other words this checks hypothesis validity, to determine whether there is evidence that supports the relationships proposed between variables. In the current research, the researcher considered the face validity of the data collection tool by validating it with the research supervisor and the Universities Commerce Faculty Ethics in Research Committee. Content and construct validity were both covered by the extensive literature review and theoretical concepts that led to the development of the constructs in the instrument and that provided evidence or support of the relationships proposed in the propositions.

Reliability is referred to as consistency and is concerned with whether the data collection instrument can be replicated and produce the same findings under different times and situations (Saunders et al., 2009). Bolarinwa (2015) asserts that it is often conducted using a pilot test. The data collection instrument in this research was not only pilot tested with the 20 websites of the SMEs for internal consistency, but also for reliability as it was used and replicated 20 times for each website, to determine if the same thing was derived. Of the three approaches that assess reliability, which are test re-test, alternative form and internal consistency, internal consistency was adopted to assess the reliability of the sample. This involves determining whether the variables in a construct measure the same thing (Bolarinwa, 2015). Bonett and Wright (2015) suggest that even though there may be a number of ways to determine internal consistency, Cronbach alpha is the most commonly used in social and organisational sciences. Cronbach alpha is expressed as a number between 0 and 1 (Tavakol & Dennick, 2011). According to Hair, Anderson, Tatham and Black (2006), a Cronbach alpha of above 0.60 is

acceptable in exploratory studies. Tavakol and Dennick (2011) further assert that a low Cronbach alpha may be caused by a low number of questions, poor interrelatedness between items or varied constructs.

3.3.6 Target Population, Sampling Frame and Sample

According to Walliman (2017) the population and sample consists of deciding on who to query or what to observe in large groups. The author suggests that this consists of a population, sampling frame and sample. Figure 5 below depicts a representation of these elements in relation to one another. In addition to these elements, the sample size and sampling technique/method were discussed.

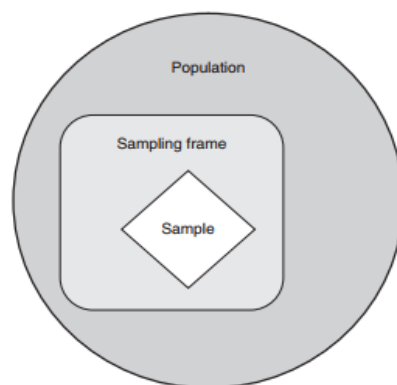


Figure 5: Population, Sampling Frame and Sample (Walliman, 2017)

3.3.6.1 Target Population

The target population refers to the entire set of subjects whose features are of a particular interest to the researcher (Martínez-Mesa, González-Chica, Duquia, Bonamigo & Bastos, 2016). Walliman (2017) suggests that these subjects may be people, organisations, groups, objects or even events. The aim of the study was to evaluate the value of e-business in SMEs in Southern Africa. Consequently, the target population was grouped by location (region), which was Southern Africa. This target population was specifically chosen by the researcher as the location is considered to have an e-readiness score which is better than that of Africa's average of 2.22 (Ifenado, 2005). Therefore, it was interesting to evaluate the value of e-business

in a location that has a high willingness to adopt ICT for value creation and competitiveness (Hung et al., 2014).

3.3.6.2 Sampling Frame and Sample

Once the target population was identified, the groups that were of particular interest to the research had to be selected within the target population. These groups are known as the sampling frame (Walliman, 2017). According to Martínez-Mesa et al. (2016), this sample frame needs to be aligned to the objectives or hypotheses. The target population for this research was Southern Africa. The research was primarily concerned with small and medium sized enterprises (SMEs) within the Southern African context (the target population). This interest in SMEs was developed on the basis that despite their hindrances in growth and limitations of resources, in developing countries these enterprises are the drivers of economic development and job creation (Wang, 2016).

Due to the cross-sectional time frame of this research, it was unmanageable to collect data from SMEs within the whole of Southern Africa. Therefore, it was critical to select subgroups where data could be collected and used to represent SMEs in the entire target population. This selection of subgroups that are representative of the entire population within the sample frame (SMEs) is referred to as sampling, and the subgroups themselves are known as samples (Walliman, 2017). SMEs of two countries within Southern Africa which were deemed to be well representative of the entire population were sampled. These countries were Botswana and South Africa. Ifenado (2005) asserts that South Africa consists of the best e-readiness score of 2.78 in the Southern African region, followed by Botswana with a score of 2.47. The author further states that Botswana has one of the best performing economies in Africa, and along with its e-readiness and that of South Africa, this determines the relative strength of these countries in this region of Africa. This sample was thus considered to be well representative of the entire target population in evaluating e-business value.

3.3.6.3 Sample size and Sampling method/technique

Both Botswana and South African SMEs were used to represent the rest of Southern Africa. It is for this reason that a sample size of 100 was used in order to reduce likely error and for the data to be more representative of this region (Saunders et al., 2009). According to Walliman (2017), parts of the population can be more representative than others, which can result in a study providing undesirable misrepresentations. This is defined as bias, which the author suggests occurs due to random error, which is the difference between the average value of the sample and that of the entire population. In order to avoid such bias, this study adopted a probability sampling technique. Unlike a non-probability sampling technique, which cannot be generalized to a target population, this sampling technique is more representative of the target population and each participant has equal chance of being selected (Saunders et al., 2009).

The type of probability sampling technique adopted was the simple random sampling technique. This involves randomly selecting participants from a full list of sample parts (Martínez-Mesa et al., 2016). For this research, since the primary data collection tool was website content analysis, in Botswana, a list of SMEs with websites was obtained from the Local Enterprise Authority (LEA). This was increased with more SMEs with websites which were obtained from Ulwazisa.com. In South Africa, SMEs with websites were obtained from Yellosa.za, Bestdirectory.za and Atoz.za. Websites were randomly sampled from each of these sources.

3.3.7 Pilot Survey and Data Collection

According to Martínez-Mesa et al. (2016), a pilot study is administered as a pre-test of the data collection tool on a small number of participants. A pilot study was conducted on 20 websites of SMEs in Botswana and South Africa prior to the full research being conducted. This was to assess the feasibility of the study and to determine if any improvement of the data collection tool was required. A few changes were made to the primary data collection tool, such as changing the midpoint of the Likert scale questions from “uncertain” to “somewhat agree” as well as the look and design of the tool. Once the pilot study was completed, and the changes made to the data collection tool, primary data was collected using website content analysis

from the websites provided from the various sources in both countries. Data from a total of 100 websites was collected from both countries, of which 50 were randomly sampled from Botswana and the remaining 50 from South Africa.

The secondary data collection tool which was an online survey was also administered to the human actors (entrepreneur/manager) of the 100 websites of SMEs that were sampled. This secondary data collection tool was sent in order to provide further explanations of data that was not sufficiently included in the websites (Rose et al., 2014) or that was excluded altogether. Out of this sample, only 13 responses were derived. The remaining respondents were considered to be non-respondents. According to (Martínez-Mesa et al., 2014) nonresponses are considered to be losses or refusals. Due to time constraints in the research time frame (cross-sectional), there wasn't sufficient time to continue with the follow-ups for the nonresponses, and so the researcher deemed it appropriate to continue forth with the analysis of the data that had been collected, especially since there was primary data that was already collected.

3.3.8 Data Analysis

Quantitative analysis techniques were adopted for this research. Once the data collection was completed from both the primary data collection method and secondary data collection method, it was coded and compiled in Microsoft Excel, in two separate spreadsheets (that is, data collected from the websites and online questionnaires stored in separate sheets). This data was considered as raw data. Saunders et al. (2009) suggest that raw data is data that has not been processed or that has been processed a little. This raw data had not been processed at all, and was thus cleaned and removed of any anomalies, consequently transforming it from raw data to cleaned and processed data. This cleaned data was then exported to Statistica 13 for statistical analysis.

A reliability test was firstly conducted on the constructs to determine their internal consistency. Analyses on the demographic data consisting of bar-graphs and pie charts was then conducted on the nominal data of the data collection tool. A chi square was also conducted on the employee size variable, to determine if this was significantly different by country. Descriptive

analysis was also conducted on the ordinal data to determine the data distribution. Various analysis were then conducted to determine if the propositions were supported. These are explained below.

3.3.8.1 Difference score analysis for Matched alignment

For the alignment, the matching perspective was adopted for the variables of business mission and business strategy. This perspective can be analysed using three analytical schemes, which are, analysis of variance, difference score analysis and regression residuals (Chan & Huff, 1993). This research analysed the matching perspective using difference score analysis, which according to Cragg, King and Hussin (2002), uses the absolute difference between the two variables to determine fit. These authors state that the absolute difference is the closeness between two variables which shows whether they match or fit. The closeness is determined by a small difference between the variables.

In this present study, to determine alignment, the absolute difference was derived by computing the difference between the ratings of items that measured business mission and business strategy for each company that data was collected from. However, before computing these differences, it was essential to determine if these variables had a relationship, in order to establish whether the items that measured them could be associated with each other (Thirumalai, Chandhini & Vaishnavi, 2017). Therefore, a correlation test was computed on the variables of the alignment of business mission and strategy construct. Once the association was determined between the two variables, the absolute difference was then computed on the items that measured them for each of the 100 SMEs. To get a representative figure, each of these absolute differences for the 100 companies was added together, and their sum divided by the number of companies (King, Cragg & Hussin, 2000) to get their average. If this average absolute difference was small, then this would indicate a high level of alignment as this implied that the absolute difference between the two elements was low/close (Sugumaran, 2012). In this study, Sugumaran (2012) measures the alignment between the priority of mergers and acquisitions objectives and IS/IT by determining the absolute difference between the priority of strategic objectives and the contributions of IS/IT to those objectives. Similarly, Kyobe

(2008b) determines alignment through computing the absolute difference by comparing the variances of the average absolute differences between items of two variables that were associated. In addition to conducting the difference score analysis, a t-test was also conducted in the present study to determine if the differences in means between these variables was statistically significant.

3.3.8.2 Analysis of Variance (ANOVA)

The analysis of variance tests for the equality of the means between three or more different groups (Montgomery, 2017). Saunders et al. (2009) suggest that a one way analysis of variance or one way ANOVA determines the likelihood of variation between these groups by determining the spread of data values between and within them and comparing the means. These differences are depicted by the F ratio or F static (Henson, 2015). Saunders et al. (2009) further suggest that a large F ratio will be influenced by the possibility of a low chance of the differences between the groups taking place, and that this large F ratio will be represented by a probability less than 0.05 ($p < 0.05$) known as statistically significant. The ANOVA analysis was used in the research in order to determine the equality of the different employee sizes on the employee capabilities.

3.3.8.3 Tests for Difference in means (T-Tests)

According to Saunders et al. (2009), this analysis is used to determine if there is a difference between two groups. The two variations of t-tests are independent/unmatched samples and dependent/matched samples. A t-test of independent/unmatched samples is conducted in order to compare group differences (Bristol, Kostelec, & MacDonald, 2018). If the likelihood of these groups being different is low, then this will depict a probability less than 0.05 ($p < 0.05$), which is statistically significant. Additionally, Saunders et al. (2009) discuss the dependent/matched samples, also known as paired t-test. They argue that this tests for variables that determine the same feature under different conditions, thereby, determining the differences over time. A probability less than 0.05 ($p < 0.05$) is also used in this analysis to test for statistical significance. The different t-tests were conducted on most of the propositions to determine their statistical significance in the different scenarios.

3.3.8.4 Spearman ranked correlation coefficient

Thirumalai et al. (2017) argue that the spearman ranked correlation is a quantifiable measurement of data of no particular distribution (negative or positive distribution) conducted as the measure of worth of an association amongst two factors. When an alteration in one variable results in an alteration in another, but with no specification of which variable is causing this alteration this is referred to as correlation (Saunders et al., 2009). These authors further suggest that a correlation coefficient quantifies the strength of the linear association between two ranked variables and that this coefficient can take on any number between +1 (positive correlation) and -1 (negative correlation). Moreover, Saunders et al. (2009) assert that spearman ranked correlation coefficient presume that the data is ordinal and has been sampled randomly. The probability of the association of the two ranked variables is also taken into consideration, and if it's lower than 0.05 ($p < 0.05$) then this is statistically significant. A relationship of more than 0.80 is considered to be exactly the same and is known as multicollinearity (Hair et al., 1995). Analyses of the spearman ranked correlation coefficient were conducted to determine the associations between some of the proposed relationships.

3.3.8.5 Multiple Regression

This analysis consists of cause and effect relationships, which Saunders et al. (2009) argue that they occur when an alteration in one or more variables (independent) causes an alteration in another variable (dependent). It is used to test for the strength/relationship of the independent variables and dependent variable (statistical significance) to test the conceptual model for individual impact (regression coefficient), combined influence (the percentage of variance), and its appropriateness in the predictions being tested. This analysis was used to test the entire model.

3.4 Ethics and Confidentiality

Saunders et al. (2009:178) define ethics as “the appropriateness of your behaviour in relation to the rights of those who become the subject of your work, or are affected by it”. It is therefore critical for a researcher to apply and obtain ethics approval so as to maintain the rights of the

participants of the research or those affected by it. In February 2018, a research proposal, signed ethics form, research instrument, letter of consent and management consent were submitted to the University Commerce Faculty Ethics in Research Committee. The signed ethics form, letter of consent, and consent form have been included in Appendices C, D and E consecutively. All the documents for the ethics application were reviewed by the committee and sent back to the researcher for a few clarifications. The approval was ultimately granted to the researcher in March 2018.

Since most of the list of SMEs were obtained from online sources, there was no permission requested for this. However, permission to request a list of SMEs was obtained from the Local Enterprise Authority (LEA) in Botswana. A letter of request for the list of SMEs from both the researcher and supervisor of the research were sent to the Authority. Once approval was obtained, and the list of SMEs provided to the researcher, the entrepreneurs/managers of the SMEs that were randomly selected and derived from the online sources and from LEA were then contacted via e-mail before commencing with the data collection so as to be made aware of the research during the website content analysis and also for the secondary data collection. They were provided with the letter of consent which included the purpose of the research, information regarding the website analysis as well as request for their permission to use their websites for the analysis and for their participation in the secondary data collection method. The SME entrepreneurs/managers were also notified of their right to request the researcher to cease any data collection from the SMEs websites at any time or withdraw from participating in the secondary data collection. The privacy and anonymity of the SMEs websites were kept confidential at all times and identified with website numbers during the data capturing to maintain anonymity. Furthermore, any information on the websites that compromised the privacy and anonymity of the SMEs names and its workforce were not collected. The data was solely collected for the research purpose and stored in a password protected laptop.

3.5 Summary of Chapter

This research aimed to learn and acquire from different viewpoints to create a comprehensive model that evaluates the value of e-business in SMEs in Southern Africa. This chapter provided

the research design and methodology adopted in the study. Subsequent to the introduction, the section discussed the philosophical considerations of the research, thereby addressing why the research was conducted, followed by the research method which discussed how the research was conducted and ultimately ending this chapter with a discussion of how the ethics and confidentiality issues were addressed. Figure 6 below shows a summary of this section.

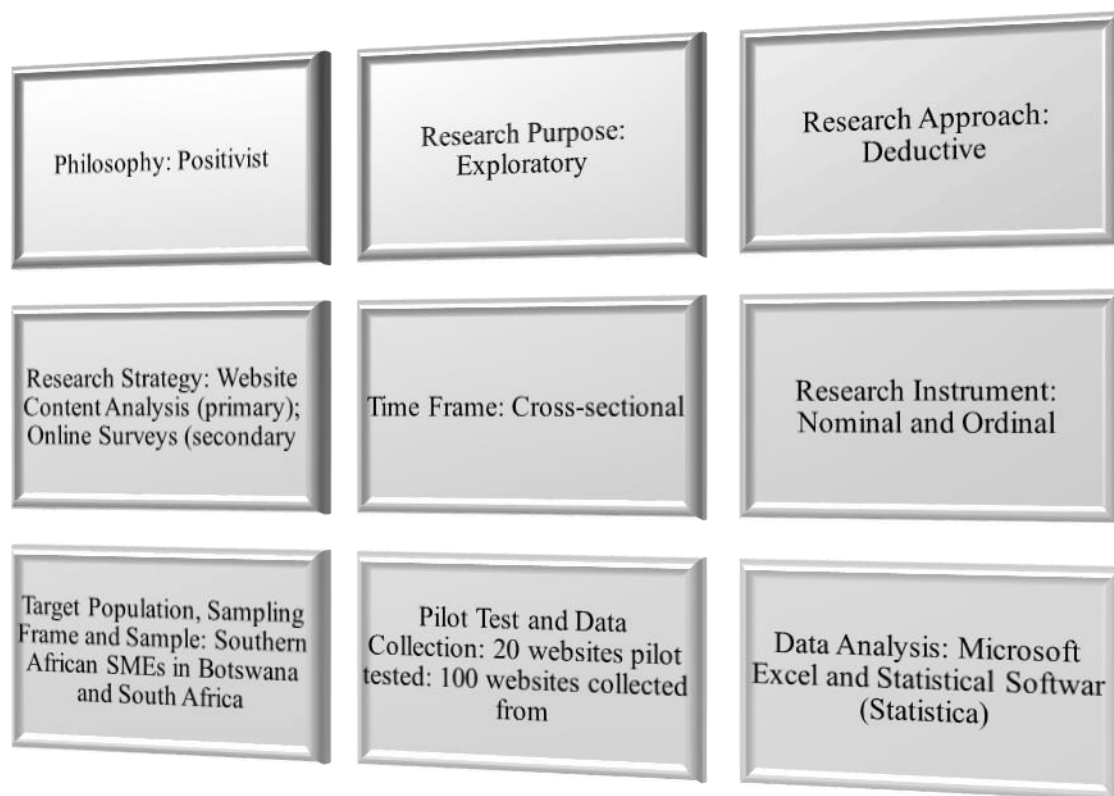


Figure 6: Summary of Research Design and Methodology

CHAPTER 4: RESEARCH ANALYSIS AND FINDINGS

While the previous chapter presented the research philosophical considerations and methodology, this chapter presents the analyses and findings of the study. The analyses will be conducted to determine construct reliability and reveal how the data looks like in graphical representations. The formulated propositions will then be tested.

4.1 Introduction

Primary and secondary data was collected in this study. The primary data collection method was website content analysis, while online surveys were used as a secondary data collection method. The secondary data was collected in order to provide further explanations of data that was not included on the websites (Rose et al., 2014). Primary data was collected from 100 websites and online questionnaires sent out to the same websites. Only 13 responses were derived from the secondary data. Once the raw data was collected from both data collection methods, it was coded and compiled in Microsoft Excel, in two separate spreadsheets (that is, data collected from the websites and online questionnaires stored in separate sheets). Once all the data was compiled, it was then cleaned and anomalies removed, transforming it from raw data to cleaned data. The cleaned data was then exported to Statistica 13, which was used to conduct the different analysis presented below.

4.2 Reliability Testing

The reliability of the data was tested by using Cronbach alpha coefficient. This was to ensure that each variable had internal consistency. Literature shows that there are differing acceptable thresholds of Cronbach alpha. Hair et al. (2006), posit that for exploratory studies, a Cronbach alpha of 0.60 is acceptable. Whereas, Bolarinwa (2015) suggests that a threshold of 0.70 is acceptable. Additionally, Kuo, Ho and Hu (2002) accepted a Cronbach alpha threshold of 0.50 in their study. This research adopts a Cronbach alpha threshold of 0.6 (Hair et al., 2006) because it is of an exploratory nature. Table 6 below shows the results of each construct reliability. It revealed that all the constructs are above the threshold of 0.60, which means they were all reliable.

Table 6: Reliability Test (Cronbach Alpha)

Construct	Alpha
Business Mission and Strategy	0,85
E-Business Usage in Business Processes	0,61
Human Actor	0,92
Resources	0,62
Technology	0,91
E-Business Value	0,79

4.3 Analysis of the Demographic Data

The codebook consisted of demographic data such as country, location, district or province, business type, business sector and number of employees. These variables were of nominal data which consists of data that comprises of categories with no clear order. The results of the analyses for this data is presented below.

4.3.1 Location by country

Overall data was collected from 100 SMEs, of which 50 of them were collected from South Africa, and 50 from Botswana. 46% of the SMEs in Botswana were located in Gaborone, whilst 22% were in Kasane. 12% were located in Maun, whilst 10% were located in Francistown. The remaining SMEs each at 2% were located at Molepololole, Ramotswa, Masunga and Selebi Phikwe. Additionally 2% of the SMEs were located both in Maun and Gaborone.

In South Africa, 48% of the SMEs were located in Johannesburg, followed by Cape Town (16%), 10% of the SMEs were located in Durban and another 8% in Pretoria. The remaining locations each had 2% of SMEs located there. Figure 7 below shows a representation of this data.

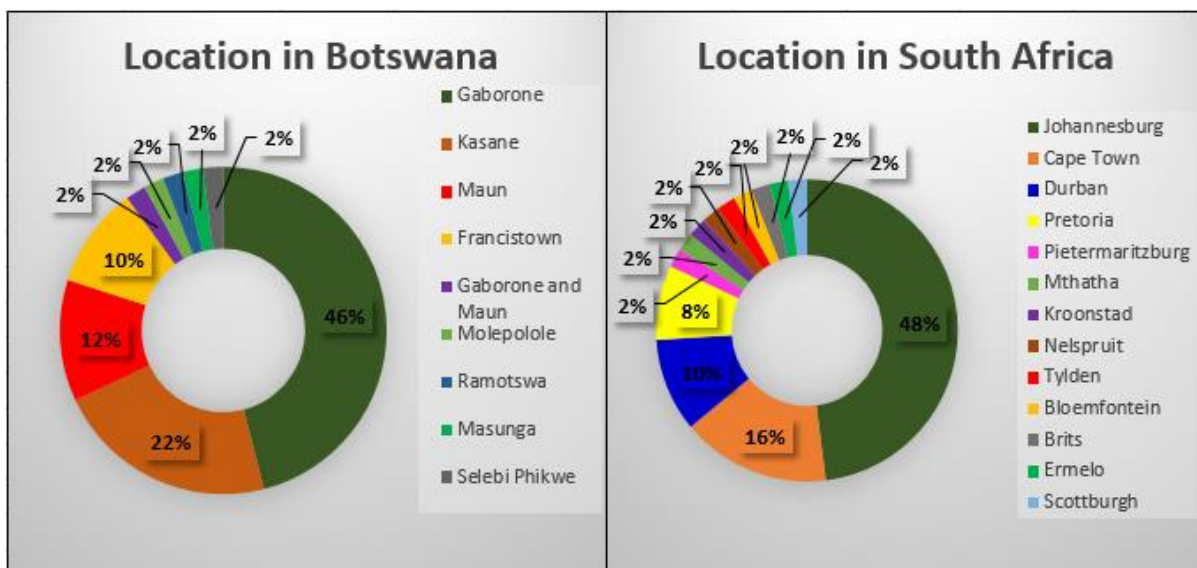


Figure 7: Location by Country

4.3.2 District/Province

Figure 8 shows a representation of the allocation of SMEs collected by district/province in both Botswana and South Africa. In Botswana 50% of the SMEs were collected from the South-East District, followed by the North-West District, where 34% of SMEs were collected. In South Africa, 12% of the SMEs were collected from the North-East District whilst 2% were from the Central District. 2% of the SMEs were located in both the South-East and North West District. 56% of SMEs were collected in the Gauteng Province in South Africa. This was followed by the Western Cape (16%) and Kwa Zulu Natal (14%). 4% of the SMEs were allocated from Eastern Cape, Free-State and Mpumalanga consecutively. And only 2% were located from the North-West Province.

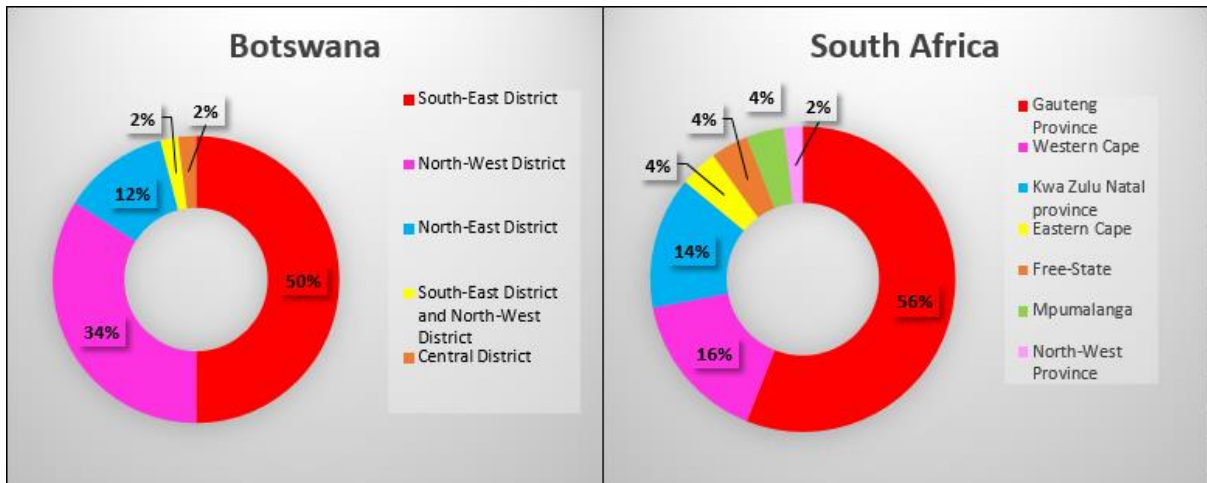


Figure 8: SMEs allocation by District/Province

4.3.3 Business Type

In both Botswana and South Africa, 16% of the SMEs were from the Hospitality and Catering business type, followed by 13% which were industrial services. 11% of the SMEs were found in the business consulting and services business type, and 10% were consecutively from the travel and tours and IT services and IT consulting business type. Engineering and Construction Services made up 10% of the sample size. Consecutively, 3% of the SMEs were from the air charter, storage services, skills development and training, car services and interior design and furniture services business types. Advertising, accounting, photography, and clothing retailer's successively made up 2% of the sample size and lastly 1% of the SMEs came from the florist, dog parlour, medical aid scheme, health products, counselling services, legal services, boardroom services, beauty products and office supplies business types consecutively. Figure 9 below shows a graph representation of this.

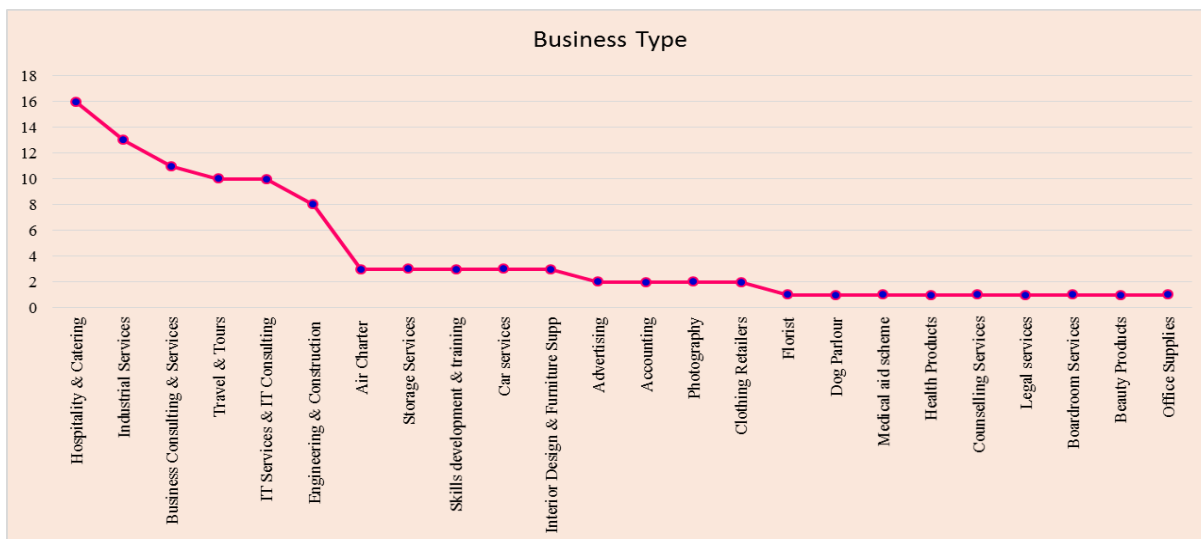


Figure 9: Business Type

4.3.4 Business Sector

Both countries had 6 predominant business sectors namely tourism, financial sector, manufacturing and industrial, mining and engineering, health and the legal sector. 35% of the SMEs made up the financial sector, followed by the tourism sector at 32%. The manufacturing and industrial sector made up 27% of the sample, whilst only 3% was from the health sector, 2% from the mining and engineering sector and 1% from the legal sector. Figure 10 below represents this.

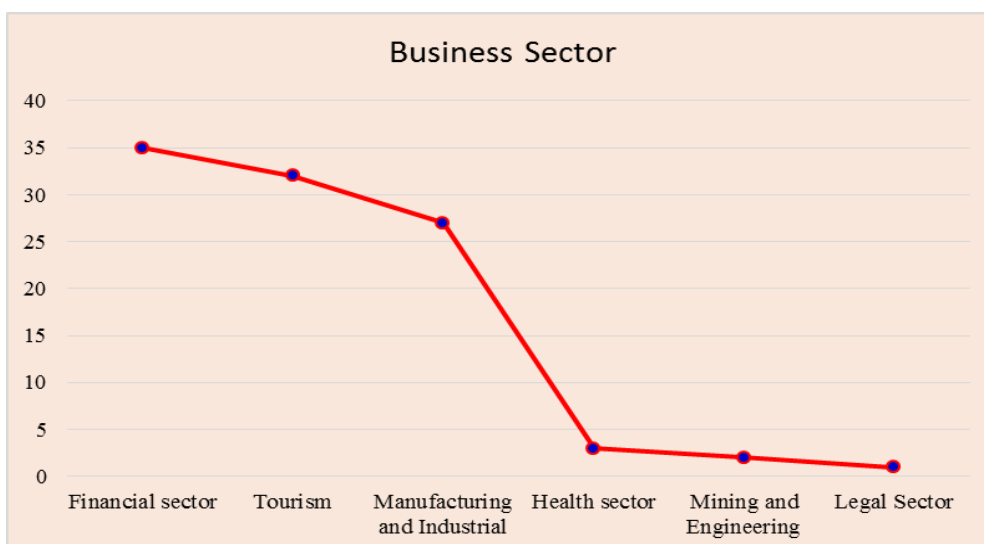


Figure 10: Business Sector

4.3.5 Employee size

The employee size consisted of 4 employee size categories. The category of employee size 1 was of 1 – 50 employees, whilst that of employee size 2 was of 51 – 100 employees, that of employee size 3 of 101 – 150 employees and category 4 of 151 – 200 employees. A chi-squared distribution was conducted to determine if the employee sizes of these categories varied by country. Table 7 below indicates that there is a significant difference only in employee size 1 between the two countries. However, a p-value of 0.15 indicates that employee sizes of these categories do not vary by country.

Table 7: Expected Frequencies of Employee size

Summary Table: Expected Frequencies Marked cells have counts > 10 Pearson Chi-square: 5.26316, df=3, p=.153511					
Country	EmpSize 1	EmpSize 2	EmpSize 3	EmpSize 4	Row Total
Botswana	47.50	1.00	1.00	0.50	50.00
South Africa	47.50	1.00	1.00	0.50	50.00
All Grps	95.00	2.00	2.00	1.00	100.00

4.3 Descriptive Analysis

The descriptive analysis was conducted in order to show a graphical representation of how the data looks like. Table 8 below reveals that on average, most SMEs gain E-Business value, as can be seen by an average of 4.17. This is followed by e-business usage in business processes and resources with an average of 3.29 consecutively, and human actor with an average of 3.17. A low mean of 2.84 for the alignment of business mission and strategy indicates that very few SMEs have a properly aligned business mission and strategy and a mean for technology of 2.87 also indicates that few companies have the right e-business technologies.

Table 8: Descriptive Statistics

Descriptive Statistics (N=100)				
Variable	Mean	Min	Max	Std.Dev.
Business Mission and Strategy	2,84	1,50	5,00	0,59
E-Business Usage in Business Processes	3,29	1,00	5,00	0,87
Human Actor	3,17	1,13	4,88	0,82
Resources	3,29	1,00	4,50	0,69
Technology	2,87	1,00	4,69	0,88
E-Business Value	4,17	2,67	5,00	0,55

*Likert Scale used: 1 = strongly disagree; 2 = Disagree; 3 = Somewhat Agree; 4 = Agree; 5 = Strongly Agree

4.4 Value Creation Elements and Propositions

4.4.1 Alignment of Business Strategy and Business Mission (Proposition 1)

As discussed in chapter 3, subsection 3.3.8.1, under data analysis (sub-section 3.3.8), before computing the alignment of business mission and strategy, a spearman correlation test was essential to establish whether there was an association between the variables of business mission and business strategy so as to determine if the items that measured them could be related/linked. This test is used to test for associations amongst two factors (Thirumalai et al., 2017). This is also discussed in chapter 3 sub-section 3.3.8.4. Table 9 below shows the results of the correlation on the variables of the alignment of business mission and strategy construct. Based on a correlation coefficient of 0.69 (highlighted in yellow), the results indicate that there is association between the business mission and business strategy variable. Additionally, the 0.69 coefficient is below the 0.80 threshold of multicollinearity (Hair et al., 1995), indicating that the two variables are not considered to be exactly the same.

Table 9: Correlation Test: Business mission and Strategy variables

Spearman Rank Order Correlations MD pairwise deleted Marked correlations are significant at p <.05000					
Variable	Business Mission	Business Strategy	Customer Link	Use of Technology	Creation of Value Objects
Business Mission	1.00				
Business Strategy	0.69	1.00			
Customer Link	0.59	0.81	1.00		
Use of Technology	0.37	0.44	0.51	1.00	
Creation of Value Objects	0.46	0.68	0.62	0.44	1.00

Based on the results of the correlation test in table 9, the items that measured business mission and strategy could therefore be related, and a valid could be computed. Further discussion in the previous chapter (chapter 3, subsection 3.3.8.1) asserts that the difference score analysis is established by using the absolute difference, which is the closeness between two variables indicating whether they match or fit (Cragg et al., 2002). This closeness is determined by getting the difference between the ratings of the two variables (King et al., 2000). Therefore, since it was established that the variables of business mission and business strategy were associated (table 9), the absolute difference was conducted on the items that measured the two variables for each of the 100 companies that data was collected from. To get a representative

figure and given that the two variables could be linked (based on the results of the correlation test in table 9), the sum of the absolute differences was then computed, producing a total of 81. This sum absolute difference was then divided by the total number of companies that data was collected from, to get the average absolute difference. The result of this was a representative average absolute difference of 0.81. Table 10 below shows a representation of the sum absolute difference and average absolute difference.

Table 10: Sum AD and Average AD: Business mission and Business Strategy

Sum Absolute Difference (AD)	No. of companies	Average of AD
81	100	0.81

In addition to conducting the difference score analysis, a t-test was also conducted to test the differences in means between the business mission and strategy variables, in order to establish whether this difference was significantly small. According to Saunders et al., (2009), if the likelihood of groups being different is low, then this will depict a probability less than 0.05 ($p < 0.05$). This is discussed in chapter 3, sub-section 3.3.8.3 under data analysis (sub-section 3.3.8). The results of the analysis revealed a statistically significantly low difference ($p = 0.00$), which further indicates that there is alignment between business mission and strategy. This is shown in table 11 below.

Table 11: T-test: Business mission and Business Strategy

T-test for Dependent Samples Marked differences are significant at $p < .05000$								
Variable	Mean	Std.Dv.	N	Diff.	Std.Dv.	t	df	p
Business Mission	4.07	0.92						
Business Strategy	3.26	1.13	100.00	0.81	0.86	9.41	99.00	0.00

Once the alignment between business mission and business strategy was established, a spearman correlation test was then conducted to determine if this alignment in the context of SMEs is positively related to value activity (proposition 1). The results of this test would be revealed by a significant association between the variables. The table below shows a detailed report of this analysis.

Table 12: Correlation test: Business Strategy and Mission Construct and Value Activity

Spearman Rank Order Correlations MD pairwise deleted			
Marked correlations are significant at p <,05000			
Constructs	Spearman	t(N-2)	p-value
Alignment of Business Mission and Strategy & Value Activity	0.439863	4.848674	0.000005

Based on a p-value of 0.000005, and a positive spearman coefficient, the results of table 12 indicate that there is a significantly positive association between the alignment of business mission and strategy in an SME and e-business value activity.

4.4.2 E-Business Usage in business processes (Proposition 2a and 2b)

As discussed in chapter 2, sub-section 2.6, in the current study, focus has been given to processes in Foley and Ram’s (2002) PIT model of ICT adoption by SMEs (also discussed in chapter 2, sub-section 2.3.2). Soto-Acosta et al. (2016) suggested that the use of e-business technologies in an SME, lead to firm performance. Therefore it was necessary to understand the extent to which e-business is integrated in the processes of this model by SMEs in Botswana and South Africa as this could have an impact on the value creation. A t-test of independent unmatched samples (discussed in the previous chapter, sub-section 3.3.8.3) was thus conducted in order to determine if there were any significant differences of business processes in Foley and Ram’s (2002) PIT model in Botswana and South Africa, which would determine the level of integration of e-business between these two countries. Based on p values greater than 0.05, the data revealed that there is no significant differences of these business processes between Botswana and South Africa. Table 13 below shows the results of this analysis.

Table 13: T-Test: E-Business Usage in business processes by country

E-Business Usage in Business Processes	Botswana	South Africa	t-value	p
Business processes Stated	4,26	4,26	0,00	1,00
Business processes Interaction	2,90	3,22	-1,53	0,13
Business processes Automation	2,42	2,68	-0,92	0,36
Average of Business Processes	3,19	3,39	-1,12	0,27

Table 14 below shows a t-test, which was conducted to determine the significant association between e-business usage in business processes and both value activity (proposition 2a) and value objects (proposition 2b). If these relationships resulted in a statistically significant level ($p < 0.05$), then this would indicate that it is true that the variables being tested have a significant association. The test revealed a p-value less than 0.05 for these variables (highlighted in yellow). Based on this p-value, the results indicate that e-business usage in business processes has a significant association with both value activity and value objects.

Table 14: T-Test: E-business usage in business processes, value activity and value object

T-test for Dependent Samples Marked differences are significant at $p < .05000$								
Variable	Mean	Std.Dv.	N	Diff.	Std.Dv.	t	df	p
E-Business Usage in business processes	3.29	0.87						
Value Activity	4.10	0.73	100.00	-0.81	0.74	-10.87	99.00	0.000000
E-Business Usage in business processes	3.29	0.87						
Value Objects	4.52	0.59	100.00	-1.23	0.75	-16.36	99.00	0.000000

4.4.3 Human Actor (Propositions 3a, 3b, 3c and 3d)

The human actor construct includes two sub constructs, the entrepreneurial drive and management capability (see discussion in chapter 2, sub-section 2.3.4). A dependent t-test of matched samples was conducted to determine the difference of means between the two sub-constructs, and to reduce confounding of the sub constructs (Zakrisson, Austin, & McCredie, 2018). The results of the test in table 15 below indicate that entrepreneurial drive is significantly higher than manager capability, which supports why the two sub constructs were split under the human actor construct in the conceptual model.

Table 15: T-Test: Entrepreneurial Drive and Manager Capability

Sub-constructs	Entrepreneurial Drive	Manager Capability	t-value	p
Entrepreneurial Drive vs. Manager Capabilities	3.29	2.97	2.64	0.01

In order to test if the human actor capabilities (entrepreneurial drive and management capabilities) have a positive effect on value activity, value exchange, value interface and value offering (propositions 3a, 3b, 3c and 3d consecutively), a detailed report of a correlation test was conducted. Table 16 below shows the detailed report of this test, which summarises the correlation tests for the various variables of the e-business value construct. Based on p-values less than 0.05 for all the variables, as well as positive coefficients, the results of the table indicate that both the entrepreneurial drive and management capability have a positive relationship with the selected e-business value sub-constructs. This means that these human actor sub constructs lead to the development of value activity, value exchange, a value interface and value offering.

Table 16: Correlation test: Human Actor, Value Activity, Value Exchange, Value Interface and Value Offering

Spearman Rank Order Correlations MD pairwise deleted Marked correlations are significant at p <,05000				
	E-Business Value sub-construct	Spearman	t(N-2)	p-value
Entrepreneurial Drive	Value Activity	0.60	7.36	0.00
	Value Exchange	0.56	6.70	0.00
	Value Interface	0.44	4.90	0.00
	Value Offering	0.50	5.78	0.00
Manager Capability	Value Activity	0.61	7.63	0.00
	Value Exchange	0.53	6.19	0.00
	Value Interface	0.34	3.56	0.00
	Value Offering	0.39	4.13	0.00

4.4.4 Availability of Resources (Propositions 4a, 4b, 4c and 4d)

An analysis of variance (ANOVA) test (discussed in chapter 3 sub-section 3.3.8.2) was conducted between employee size and the employees' capabilities. This was done to determine if the employee size in an SME has a significant effect on the employee's technical and

intellectual traits. As discussed in the literature review (chapter 2, sub-section 2.3.6), SMEs are characterized by a smaller number of employees, which makes it essential for their employees to possess certain traits (Bordonaba-Juste et al., 2012) in order to have a positive impact on e-business value and business performance. Therefore, it was essential to determine if the size of the employees influences the traits they possess.

Table 17 below shows the results of the ANOVA test which includes the p-values. As discussed by Saunders et al. (2009) a probability less than 0.05 ($p < 0.05$) indicates statistical significance (also discussed in chapter 3, sub-section 3.3.8.2). None of the p values for the variables were less than 0.05, which indicates that the size of the employees in an SME does not have any significant effect on the technical and intellectual traits of the employee.

Table 17: ANOVA test: Employee size and employee capabilities

Analysis of Variance Marked effects are significant at $p < .05000$								
Variable	SS	df	MS	SS	df	MS	F	p
ResourceMaintenance	2.87	3.00	0.96	98.44	96.00	1.03	0.93	0.43
ResourceKnowledge	4.55	3.00	1.52	93.45	94.00	0.99	1.53	0.21
ResourceIntellectual	1.12	3.00	0.37	52.07	94.00	0.55	0.68	0.57
ResourceResponse	1.26	2.00	0.63	65.35	62.00	1.05	0.60	0.55
AverageResources	1.42	3.00	0.47	45.48	96.00	0.47	1.00	0.40

Table 18 shows a breakdown of means of these variables by the employee size. Employee size 1 consists of employees ranging from 1 – 50, employee size 2 range from 51 – 100, employee size 3 range from 101 – 150 and employee size 4 range from 151 – 200.

Table 18: Breakdown table of means

Employee Size	Resource Maintenance	Resource Knowledge	Resource Intellectual	Resource Response	Average Resources
1	3.85	2.87	3.30	3.05	3.28
2	5.00	3.50	4.00	3.50	4.00
3	3.50	2.50	3.50	4.00	3.21
4	4.00	1.00	3.00	0.00	2.67
All Grps	3.87	2.86	3.32	3.08	3.29

A t-test was also conducted to test for statistical significance between the availability of resources in an SME and value activity, value exchange, value interface and value offerings (propositions 4a, 4b, 4c and 4d successively). This was computed in order to determine if these variables had a significant association with each other. The results of are shown in table 19 below. Based on p-values less than 0.05, they indicate that the availability of resources has a significant association with value activity, value exchange, value interface and value offering (highlighted in yellow).

Table 19: T-Test: Availability of resources, value activity, value exchange, value interface and value offering

T-test for Dependent Samples Marked differences are significant at $p < .05000$								
Variable	Mean	Std.Dv.	N	Diff.	Std.Dv.	t	df	p
Resources	3.29	0.69						
Value Activity	4.10	0.73	100.00	-0.81	0.57	-14.19	99.00	0.000000
Resources	3.29	0.69						
Value Exchange	3.72	1.09	100.00	-0.43	0.92	-4.67	99.00	0.000010
Resources	3.29	0.69						
Value Interface	4.67	0.60	100.00	-1.38	0.71	-19.38	99.00	0.000000
Resources	3.29	0.69						
Value Offering	4.54	0.72	100.00	-1.25	0.72	-17.46	99.00	0.000000

4.4.5 Technology (Proposition 5a and 5b)

A t-test of independent unmatched samples was conducted on the variables of this construct in order to determine the difference in means of technology between Botswana and South Africa. As discussed in chapter 2, sub-section 2.1, South Africa has the highest e-readiness compared to the rest of Southern Africa (Ifenado, 2005). Moreover, Kumar and Gupta (2017) argue that in developing countries, e-readiness evaluation could assist with establishing a starting point to determine a way forward. Therefore, establishing significant differences of the variables of technology could assist the rest of the Southern African countries to determine where to focus most of their efforts and improvements, in order to develop their infrastructural e-readiness. This development of infrastructural e-readiness could drive e-business adoption in these countries, which would result in the development of e-business value.

Table 20 below shows the results of this test. Based on higher means in South Africa, and p-values less than 0.05, the table shows significant differences for the technology variables - technology equipment, technology support, technology interaction, technology scope and technology transformation. However, on average the technology construct (Average Technology) shows no significant differences between the two countries.

Table 20: T-Test: Technology between the countries

T-tests by Country				
Variable	Botswana	South Africa	t-value	p
Technology Functionality	2.88	3.34	-1.78	0.08
Technology Equipment	3.22	3.68	-2.26	0.03
Technology Integration	2.58	2.60	-0.08	0.93
All In One Technology	2.38	2.28	0.39	0.69
Technology Support	3.06	3.64	-2.58	0.01
Technology Processes	2.08	2.42	-1.32	0.19
Technology Impact	3.32	3.65	-1.64	0.11
Technology Network	3.80	3.84	-0.22	0.83
Technology Interaction	2.62	3.24	-2.70	0.01
Technology Scope	2.62	3.16	-2.57	0.01
Technology Transformation	2.98	3.38	-2.18	0.03
Technology Performance	2.06	2.32	-0.86	0.39
Technology Leveraging	2.92	2.86	0.23	0.82
Average Technology	2.74	3.00	-1.47	0.14

A t-test was also conducted to test if the technology in an SME is significantly related to value ports (proposition 5a) and value interfaces (proposition 5b). The results of the analysis in table 21 below revealed p-values less than 0.05 (highlighted in yellow), indicating a significant association between technology, value ports and value interfaces.

Table 21: T-Test: Technology, Value Ports and Value Interface

T-test for Dependent Samples Marked differences are significant at $p < .05000$								
Variable	Mean	Std.Dv.	N	Diff.	Std.Dv.	t	df	p
Technology	2.87	0.88						
Value Ports	3.45	0.90	100.00	-0.58	0.74	-7.80	99	0.000000
Technology	2.87	0.88						
Value Interface	4.67	0.60	100.00	-1.80	0.89	-20.24	99	0.000000

4.5 Value Creation Elements and E-Business Value Aspects (Proposition 6)

As discussed in the previous chapter, in sub-section 3.3.8.5, multiple regression analysis is used to test for the overall impact of the model and its combined influence. Therefore, this analysis was conducted to test if the value creation elements have a positive effect on e-business value. These results reveal a percentage of variance (R^2) of 0.68. This indicates that 68% of the influence on the e-business value is directly from the value creation elements.

Table 22: Regression Analysis: Value creation elements and e-business value aspects

Regression Summary for Dependent Variable: AvgEBv $R = ,82341583$ $R^2 = ,67801362$ Adjusted $R^2 = ,66088669$ $F(5,94) = 39,588$ $p < 0,0000$ Std.Error of estimate: $,32116$						
N=100	b*	Std.Err.	b	Std.Err.	t(94)	p-value
Intercept			2,16	0,19	11,63	0,00
Alignment of business mission and business strategy	-0,04	0,08	-0,04	0,07	-0,51	0,61
E-business usage in business processes	0,35	0,10	0,22	0,06	3,55	0,00
Human Actor	0,05	0,12	0,04	0,08	0,46	0,65
Availability of Resources	0,30	0,09	0,24	0,08	3,13	0,00
Technology	0,27	0,11	0,17	0,07	2,49	0,01

4.6 Secondary Data Collection

Online Surveys were used for the secondary data collection. Of the 100 online surveys that were sent out, only 13 responses were derived. The online surveys only consisted of two questions of ordinal variables. This was for the human actor and availability of resources (employees and financial resources). Although data was collected from the websites on the human actor and employees, the researcher believed that rich data on these elements could be derived directly from the SMEs. In addition, data on financial resources was not revealed on

the websites by any of the SMEs. The intention was to compare the data collected from the website content analysis to that collected from the online survey. However, because of the few responses received, the data could not be compared to the data collected from the website content analysis, and it could not be generalized to the population.

4.7 Overview of Chapter

This chapter presented the analyses of the research and the findings. A reliability was conducted on the variables and revealed that all the variables were reliable. Some analysis on the demographic data was conducted and descriptive analysis was conducted to give a representation of how the data looked like. Various analysis such as t-tests, ANOVA, correlation and regression analysis were conducted on the data, to test the propositions. Overall, it revealed that 68% of the influence on e-business value in the EBVE model is from the value creation elements. The next chapter discusses how the research questions were answered, and the results of the analysis done on each proposition.

CHAPTER 5: DISCUSSION

Whilst the previous section presented the analysis and findings, this section will determine how the research questions were answered and the research propositions. The section commences with a brief introduction, then it will be divided into two main sub-sections, the first sub-section will be focused on discussing how the research questions were answered and addressed then the next sub-section will be focused on discussing the research propositions and analyses in chapter 4.

5.1 Introduction

The researcher conducted this study in order to address the problem revealed, which was the lack of a conceptual model that measures e-business value creation in SMEs in Southern Africa. This led to the purpose of the research which was to learn and acquire from different viewpoints in order to create a comprehensive model that evaluates the value of e-business in SMEs in Southern Africa. To achieve this purpose, a primary research question was formulated. Once this was answered, research propositions were formulated based on the output of the research question.

5.2 Addressing the Research Questions

According to O'Leary (2018) the research question is formulated in order to guide the entire research and provide a sense of direction on how to conduct the research. It provides the purpose and nature of the research and determines the kind of literature to review and theories to explore, as well as the choice of methodology. The primary research question for the study, **'How can the value of e-business in SMEs in Southern Africa be evaluated?'** was divided into secondary research questions, which overall contributed to answering it. These are discussed below.

5.2.1 Secondary Research Questions

The secondary research questions were developed in order to provide an answer to the primary research question. These were (1) How is e-business explained in the context of Southern Africa? (2) Which elements are fundamental within an SME for the achievement of e-business value? (3) How can a conceptual model that evaluates e-business value in SMEs in Southern Africa be developed? and (4) How can a conceptual model be used to evaluate the value of e-business in SMEs in Southern Africa? The section below discusses how they were addressed and answered.

5.2.1.1 How is e-business explained in the context of Southern Africa?

This secondary research question directed the researcher towards a review of literature on e-business in the Southern Africa context. Various literature conducted in Southern Africa, primarily focusing on e-business in Botswana and South Africa was reviewed and discussed to determine how e-business is explained in this context. As discussed in chapter 2, section 2.1, Botswana and South Africa were selected to represent the rest of Southern Africa, hence the literature reviewed was specifically from these two countries. Table 23 below shows which studies were reviewed and the authors of the studies.

Table 23: Literature Reviewed

Title	Author (s)
Understanding ICT adoption in the small firm sector in Southern Africa.	Chinyanyu Mpfu, K., & Watkins-Mathys, L.
Barriers to E-Marketing adoption among small and medium enterprises (SMEs) in the vaal triangle.	Dlodlo, N., & Dhurup, M.
Challenges and opportunities of e-government in South Africa.	Mutula, S. M., & Mostert, J.
E-readiness of SMEs in the ICT sector in Botswana with respect to information access.	Mutula, S. M., & van Brakel, P.
E-government: challenges and opportunities in Botswana.	Nkwe, N.
E-commerce and mobile commerce in South Africa: Regulatory challenges.	Jobodwana, Z.N.
E-commerce technology adoption by SMEs in Botswana.	Olatokun, W., & Kebonye, M.
Challenges of E-Commerce Adoption in SMEs: An Interpretive Case Study of Botswana.	Shemi, A., & Proctor, C. T.
B2C e-commerce development in Africa: case study of Botswana.	Uzoka, F. M. E., & Seleka, G. G.

The literature revealed that most studies focus more on the technological, environmental and external organisational aspects of the business. Very little research was found that discusses e-business from an internal business perspective. Once this literature was reviewed, a table showing the gaps in literature was then developed (table 1 in chapter 2).

5.2.1.2 Which elements are fundamental within an SME for the achievement of e-business value?

To answer this question, the researcher started off by exploring theories that explain e-business value. Three main theories were discovered, which were Porter's (1985) Value Chain Model, which posits that overall value is created when business activities add value to the value chain within a business; Resource Based View (Barney 1991, Peteraf 1993), which asserts that value is created by using resources that are efficient and effective, cannot be copied by any other firm, and cannot be moved across the firm; and the economic theory (Bakos and Kemerer, 1992), which suggests that value is created by using Information Systems on a large scale, and where the demand to use technology is high. Each of these theories looked at value from different perspectives, and it was from these theories that the fundamental elements necessary for e-business value were derived.

The elements discovered from these theories as being critical for e-business value in SMEs were business mission and strategy (alignment), availability of resources, human actor, process viewpoint, value viewpoint and architecture viewpoint (technology). Each of these elements was discussed and the specific theories explaining them were discovered. Table 24 below shows a summary of the elements, the theories that explain them and their focus.

Table 24: E-Business Value Elements, Theories and their focus

Construct	Theory	Focus of Theory
Alignment of Business Mission and Strategy	Strategic management theory (Drucker, 1988)	The development of innovative business strategies to support the business mission .
E-Business Usage in Business Processes	Porters (1985) Value chain Theory	Value adding primary and support activities of a business.
Human Actor (Entrepreneurial Drive and Management Capabilities)	Entrepreneurship theory (Miller, 1983)	Entrepreneur capabilities in the business.
Availability of Resources (Financial Resources and Users)	Resource Based View (Barney 1991, Peteraf 1993)	Business resources that are efficient and effective, cannot be copied across firms, and cannot be moved across firms.
Technology	Technology Theory (ICT as an enabler) (Venkatraman, 1994)	The technology leveraged throughout the entire business.
E-Business Value (Adopts Gordjin and Akkermans (2001) e ³ -value ontology)	Economic Theory (Bakos & Kemerer, 1992)	Supply of IS and demand of IT.

5.2.1.3 How can a conceptual model that evaluates e-business value in SMEs in Southern Africa be developed?

Once literature on the critical elements necessary for e-business value was explored, and all the theories that explain these elements discovered and discussed, it was essential to develop an integrative framework. This framework encompassed all the theories discussed and guided the development of the conceptual model. Its key importance was to overcome the limitations that each of the discovered theories had, thereby providing a broader perspective of the research problem and the theories that explained this. In order to develop this comprehensive framework, McLarty's (2000) SME value chain model, which adopts Porter's (1985) value chain model was used in the context of SMEs as a template or theoretical glue holding these theories together. This model was identified as being the most suitable as it addresses the business in terms of processes, resources and value as well as business interactions internally and externally. Therefore, each of the levels and processes in McLarty's (2000) SME value chain model was explained by the theories discovered that explain the critical elements necessary for e-business value. The developed integrative theoretical framework is presented in chapter 2, section 2.5 (figure 3) and the development of the framework is also discussed in more detail in this section.

5.2.1.4 How can a conceptual model be used to evaluate the value of e-business in SMEs in Southern Africa?

Based on the developed integrative theoretical framework, a conceptual model consisting of the elements critical to e-business value was developed. The value creation elements which are the independent variables were the alignment of business mission and strategy, e-business usage in business processes, human actor (entrepreneurial drive and management capabilities), availability of resources and technology. The dependent variable in the model was e-business value, which consisted of sub-constructs derived from the e³-value ontology (Gordijn and Akkermans, 2001), that together form economic value (firms' financial performance and competitive advantage), social value (customer satisfaction, marketing, effectiveness and efficiency of business processes) as well as moral value (transparency of the business processes). This conceptual model was developed based on the integrative theoretical framework as the framework provided a theoretical foundation for the conceptual model. By using the model as a guide within an SME, and having the elements proposed as the independent variables in the model, an SME could predict the kind of value created from e-business adoption. Chapter 2, section 2.5 (figure 4) presents this model (the e-business value evaluation model or EBVE model).

5.2.2 Primary Research Question

In summary, to evaluate the value of e-business in Southern African SMEs and provide an answer to the primary research question, e-business was firstly discussed in the context of Southern Africa by exploring the various literature in Botswana and South Africa. Once this was understood, literature was explored and theories discovered that explain e-business value, and from this the elements critical to e-business value were derived and discussed in terms of literature and the theories that explain them. An integrative theoretical framework was then developed, that provided a theoretical foundation and a broader perspective of the research problem. This framework integrated the various theories that explain the elements that are fundamental in the creation of e-business value. Grounded on this framework, a conceptual model of the elements critical to e-business value was then developed in order to guide the evaluation of e-business value in Southern African SMEs. Figure 11 below shows a summary

of how the secondary research questions were answered in order to answer the primary research question.

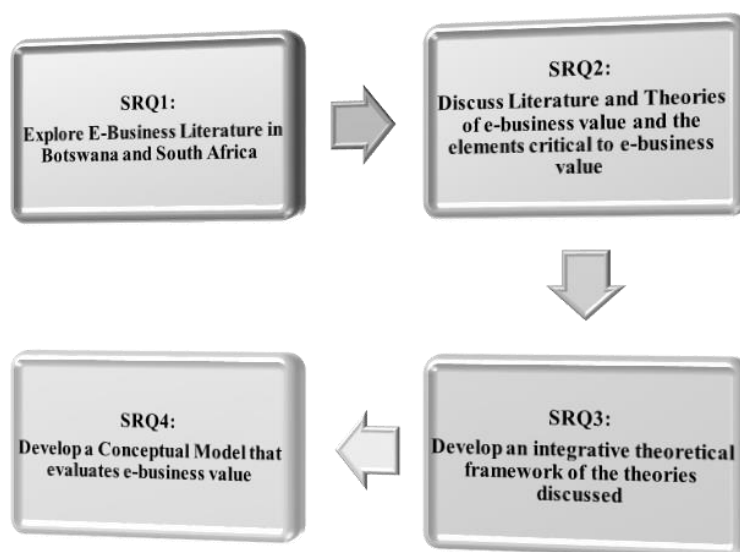


Figure 11: Secondary Research Questions Solutions

5.3 Addressing the Analysis and Research Propositions

From the developed conceptual model and the literature, research propositions were formulated. Data was collected, and analyses was conducted on this data and the propositions tested in the previous chapter (chapter 4). In this sub section, the propositions shall be discussed to determine how the propositions were derived.

5.3.1 The Propositions

The formulated propositions from the literature review (chapter 2 section 2.6) were analysed and tested in chapter 4. Table 25 below shows the propositions, the tests conducted on them to indicate whether they were supported, and their results. The propositions are discussed in detail below the table.

Table 25: Formulated Propositions and Status

Proposition		Tests Conducted	Status
1	The alignment between business mission and business strategy in an SME is positively related to value activity	Correlation, T-Test, Correlation	Supported
2a	E-Business usage in business processes in an SME is significantly associated with value activity	T-Test, T-Test	Supported
2b	E-Business usage in business processes in an SME is significantly associated with the creation of value objects		Supported
3a	Human actor capabilities in an SME are positively related to value activity	T-Test, Correlation	Supported
3b	Human actor capabilities in an SME are positively related to value exchange		Supported
3c	Human actor capabilities in an SME are positively related to value interface		Supported
3d	Human actor capabilities in an SME are positively related to value offerings		Supported
4a	Financial resources and employees in an SME are significantly associated with value activity	ANOVA, T-Test	Supported
4b	Financial resources and employees in an SME are significantly associated with value exchange		Supported
4c	Financial resources and employees in an SME are significantly associated with a value interface		Supported
4d	Financial resources and employees in an SME are significantly associated with value offerings		Supported
5a	The technology in an SME is significantly associated with value ports	T-Test, T-Test	Supported
5b	The technology in an SME is significantly associated with a value interface		Supported
6	The value creation elements in an SME will have a positive effect on e-business value.	Regression	Supported

5.3.1.1 Proposition 1

Research shows that a high alignment results in firm performance. Gerow et al. (2014) argue that there is a positive relationship between alignment and business success. Additionally, Fry and Schellenberg (1984), also suggested that a positive outcome is derived if there is alignment between two or more independent variables. As shown in table 10 and 11 in the previous chapter, alignment exists between business mission and business strategy, and as can be seen in table 12, this created a positive association with value activity. Thus this confirms the proposition that the alignment between business mission and business strategy in an SME is positively related to value activity. Assertions made by Ekpe et al. (2015), suggested that value is derived when a business mission provides direction for the business and fits with the business

strategy. According to Bart, Bontis and Taggar (2001) this may be, because the sense of mission influences employees' to perform with enthusiasm and determination. Thus this mission has a positive effect on their behaviour and commitment to it, which impacts the financial performance and business success.

5.3.1.2 Proposition 2a and 2b

Soto-Acosta et al. (2016) argued that the use of e-business technologies in an SME, lead to firm performance. This is also supported by assertions made by Zhu and Kraemer (2005), who also made similar claims. This implies that e-business usage in a firms processes has a significant association with value creation. Additionally, it brings out the importance of understanding the extent to which e-business is integrated in the processes of Foley and Ram's (2002) PIT model (used in this study) in SMEs in Botswana and South Africa as this could have an impact on their value creation. As shown in table 13 in the previous chapter, there are no significant differences in the usage of e-business in these processes between Botswana and South Africa. The implication of this is that, the value created in SMEs in both countries cannot be negatively impacted by a lack of e-business integration in some processes, as this integration is the same in all the processes. Based on this equal integration of e-business usage in business processes in Botswana and South Africa, a significant relationship with value activity and value objects exists with the business processes (table 14). Indications by Jardim-Goncalves, Popplewell and Grilo (2012) suggested that internet based technologies improve the efficiency and effectiveness of processes, reduce product/process production time and costs and increases the customer response rate. This confirms the positive association of e-business usage in business processes with value activity and value objects.

5.3.1.3 Proposition 3a – 3d

Table 15 indicates that the entrepreneurial drive is significantly higher than the management capabilities in an organisation. This is backed up by arguments made by Malatjie et al. (2017) who suggested that it is critical for the entrepreneur's orientation (which comprises of a strategic vision that shapes the organisational mission) to be supported by top management. This asserts that both the entrepreneurial drive and management capabilities contribute to

shaping the organisational mission. However, the entrepreneurial orientation drives the direction in which this mission can be achieved. Hence, both fall under one structure and are intertwined as their goal is the same, but they cannot be confounded into one as the way they shape the mission is significantly distinctive. This also confirms why table 16 revealed that both the entrepreneurial drive and management capabilities are significantly associated with value activity, value exchange, value interface and value offering in a similar way (see p-value), but the level of association is higher for most of these variables with the entrepreneurial drive (see spearman coefficient).

Indications by Malatjie et al. (2017) further pointed out that the entrepreneurship orientation positively influences employees' perceptions of organisational performance which impacts their attitude towards achieving the business mission. Additionally, Petter et al. (2013) emphasized the importance of good management skills for the encouragement of IS use within the firm. Therefore, based on both these claims, it can be said that while the entrepreneurial orientation drives the business goals and mission, the managers drive the strategies of achieving these goals and mission. This also explained why overall, the human actor capabilities (entrepreneurial drive and management capabilities) were significantly associated with value activity, value exchange, value interface and value offering.

5.3.1.4 Proposition 4a – 4d

SMEs are characterized by a smaller number of employees (Bordonaba-Juste et al., 2012). Therefore, as they adopt and implement e-business technologies, employee training is required to develop their traits and capabilities that distinguish them from others. This equips them with the requisite ability to use the e-business technologies, create e-business value and be more aware of this value. Therefore, understanding if this employee size affects the technical and intellectual traits that they develop during training was essential as this could impact e-business value and business performance. As shown in tables 17 and 18, the employee size had no significant effect on the employees' technical and intellectual capabilities. This also supported why there was a significant association with resources, value activity, value exchange, value interface and value offering (table 19). Malik, Butt and Choi (2015) suggested that employees

with a positive attitude to their work, encouragement and motivation from their managers/supervisors in the form of financial (incentives and bonuses) and non-financial rewards (recognition), would be willing to commit and contribute to their jobs. Consequently, this suggested that irrespective of the employee size, if the employees have a positive attitude, encouragement and motivation from their managers, then they would be more willing to perform value activity within the business through value offerings and value exchanges, and also be able to implement e-business technologies (Harter et al., 2002). Arguments made by Zhu and Kraemer (2005) further supported the preceding as they suggested that smaller firm sizes achieve e-business usage and value since they are fewer employees who would resist its adoption.

5.3.1.5 Proposition 5a and 5b

As shown in table 20, when it comes to technology equipment (the technology equipment owned by the business); technology support (support of integrated systems on the business vision, efficiency, customer service and/or decision making); technology interaction (interdependencies of processes with external businesses created by technology); technology scope (the impact of IT on the whole business and its network) and technology transformation (electronically transferring information online), these technological variables were significantly higher in South Africa than in Botswana. This is partially supported by assertions made by Ifenado (2005) who stated that South Africa has a high e-readiness compared to other Southern African countries. This significant difference implied that when it comes to some aspects of IT diffusion (Venkatraman, 1994) in SMEs, Botswana still lags behind. For instance, in terms of the technology equipment, this indicated that SMEs in Botswana could invest more in technology equipment. Overall, the results of table 20 show that on average, there was no significant difference in technology as a whole between Botswana and South Africa. This refutes the argument made by Ifenado (2005).

The results of table 21, indicate that a significant relationship exists between technology, value ports and value interface. This may be due to the internet technologies that facilitate e-business integration in a business and its external interactions (Cassidy, 2016). According to Chen and

Lewis (2010) these internet technologies use telecommunication infrastructure for electronic connections which enable information transactions. These transactions have been made easier by the introduction of wireless infrastructure and networks which leads to other benefits such as transactional efficiencies and market expansion (Zhu & Kraemer, 2005).

5.3.1.6 Proposition 6

As indicated in table 22, the value creation elements had a great and direct influence on e-business value (percentage variance of 68%). Furthermore, each of the value creation elements had a positive influence on e-business value. According to Sahim (2012), firm competitiveness is enhanced by factors such as financial resources, technological resources, a strategic business plan, employees and management capabilities as well as processes. This supports why all the value creation elements had a positive influence on e-business value. However, even with this positive influence, the analysis revealed that the alignment of business mission and strategy and human actor did not have a significant relationship with e-business value. This might be because compared to the other value creation elements, these two elements are not directly associated with e-business usage. Bart et al. (2001) argued that a business mission and strategic direction will have a positive effect on employees' behaviours and commitment to it as this sense of mission influences them to perform with enthusiasm and determination. This implies that this alignment influences e-business adoption and implementation, and encourages employees to achieve e-business usage and value. Therefore, the alignment of business mission and strategy positively influences e-business value but is indirectly associated with it. The human actor capabilities are also indirectly associated to e-business value even though it positively influences it. According to Malatjie et al. (2017), the entrepreneur vision positively influences the employees' perceptions of organisational performance which impacts their attitude. Conversely, employees would be more motivated and contribute more to their work if they receive encouragement from their managers/supervisors in the form of monetary and non-monetary rewards (Malik et al., 2015). Both sub-constructs of the human actor capabilities affect the employees and both shape the organisation mission (Malatjie et al., 2017). This suggests that the human actor capabilities positively impacts employees' approach and capabilities to achieving e-business usage and ultimately, e-business value.

5.3.1.7 The importance of value creation elements for e-business value

Zhu, Kraemer and Dedrick (2004) defined e-business value as the increase in sales and improvement of customer service, the reduction in costs of purchasing business goods and products, improvement in coordination with the suppliers and employee effectiveness and efficiency of inter-organisational processes. This technology value offers several benefits to an organisation, but an SME needs to have the right value creation elements in order to reap these benefits. Cassidy (2016) discussed some challenges to e-business adoption that may deter e-business success. These challenges mainly revolve around a lack of planning. Some of them include inefficient business processes, lack of training and investment, lack of strong ownership and lack of technology use. A business plan is formulated during mission and strategy development (Chen & Lewis, 2010), which indicates how crucial the alignment of business mission and strategy is in an SME. Moreover, the human actor capabilities are essential in order to drive the achievement of the business mission and also influence e-business adoption, implementation and usage. It is therefore important that financial resources are available to invest in the right e-business technologies and employee training. The SME's business processes also need to enable a direct connection with business customers/clients, so as to facilitate the integration of e-business in these processes. An SME that comprises of each of these value creation elements will attain e-business value.

CHAPTER 6: CONCLUSION AND RECOMMENDATIONS

The previous chapter presented the discussion of the research. This comprised of a discussion on how the research questions were answered and the results of the analysis. This chapter will conclude the dissertation and offer recommendations for future research in the area of e-business value in Southern African SMEs.

6.1 Conclusion

The continued use of the internet has become a predominant game changer in business practices in both developed and developing countries. With the rapid growth of electronic business (e-business) and as more companies adopt and invest in it, it is crucial to investigate its value creation, more so in Small and Medium-sized Enterprises (SMEs) as they have become significant contributors to employment creation and helpers of local improvement and innovation. The main objective of the study was to learn and acquire from different viewpoints to create a comprehensive model that evaluates the value of e-business in SMEs in Southern Africa.

The literature review drew from several different disciplines and theoretical works in order to understand the nature of e-business value in Southern African SMEs. Some gaps were identified, and important theories and concepts that are fundamental to the nature of e-business value and its achievement were discovered. Impediments to e-business adoption and value in most studies done in Southern Africa have been found to be on challenges of technology, a lack of resources such as financial and user capabilities and challenges in business processes. However, some impediments to e-business adoption and value such as a misalignment of business mission and strategy, lack of entrepreneurial drive and management capabilities were found to have not been sufficiently explored in the existing e-business literature. To understand the concept of value in this study, the e³-value ontology (Gordijn & Akkermans, 2001) was found to be an effective model that captures the full essence of value creation in terms of economic value, social and moral value, as it breaks down value into individual interlinked aspects that address the value activity, processes and technology in an e-business value system. Some

important theoretical works which include the economic theory, value chain model, resource-based view, entrepreneurship theoretical perspective, strategic management theoretical perspective, technology theoretical perspective (IT-enabled business transformation framework), and contingency theory was found to be applicable to the environment of e-business value and to fully capture its nature. This theoretical work led to the development of a multi-theoretical framework that provides a broader perspective of this nature of e-business value. Ultimately, from this multi-theoretical framework, a conceptual model (named the EBVE model) was developed that evaluates the value of e-business in SMEs in Southern Africa.

Through the use of the EBVE model as a guide, data was collected from 100 websites of SMEs in both Botswana and South Africa (which were used to represent the rest of Southern Africa), using quantitative website content analysis. Gerbner's theory of communication exchange was adopted as the backbone to the data collection strategy and process. This theory posits that by studying the events of the communication exchange, one can infer about the state of the systems engaged in the exchange and their relationships.

The analysis revealed that a positive relationship with value activity occurs when there is alignment of business mission and strategy in an SME. This alignment brings about a sense of purpose within the business, which positively influences employees' to perform with enthusiasm and determination, thereby creating value in the business. Equal integration of e-business usage in business processes in both Botswana and South Africa was found to exist which has a significant association with value activity and the creation of products and services within a business. While the entrepreneurial orientation drives the business goals and mission, capabilities of managers that support this orientation were found to be important in encouraging the strategies of achieving these goals and mission. Both the entrepreneurial orientation and management capabilities are therefore deemed to be important in shaping the business mission and in encouraging and motivating employees (in terms of monetary and non-monetary rewards), which has an impact on their attitude towards achieving this business mission. Therefore, the entrepreneurial orientation, management capabilities and employees were found to have a positive relationship with the creation of value activity, value offerings and exchanges

with external actors and the use of value interfaces to communicate with these actors. The employee size of an SME was not seen to be a hindrance to e-business value as fewer employees cause little resistance to e-business adoption.

It was found that when it comes to aspects of technology, excluding South African SMEs, SMEs in Botswana could develop on the technology equipment that the businesses own, on successfully integrating their systems within the businesses and their IT on the entire businesses and their networks, on creating technology interdependencies of processes with external businesses, and on using online means to transfer information to clients/customers. However, even with Botswana SMEs lagging behind in these technology aspects, overall infrastructural e-readiness was found to be the same between SMEs in both Botswana and South Africa. Electronic connections which enable information transactions through value interfaces are significantly associated with technology. Overall, this analysis reveals that an SME that comprises of a properly aligned business mission and strategy, business processes that are enabled by e-business, an entrepreneurship orientation, management capabilities and employees as well as technology integration will achieve e-business value.

6.2 Recommendations and Future Research

The EBVE model can guide further research in assisting stakeholders in SMEs on e-business operations and elements necessary for the smooth running of the e-business. Such studies will have implications in practice as they can help guide government policies and initiatives in order to encourage the diffusion of new ICT technologies in Southern Africa. There is also a need to educate and train entrepreneurs and managers on the benefits of e-business as well as technology as a whole, as they are drivers of the business. Such training would help them possess competent capabilities necessary for them to make informed and innovative decisions on the business mission and strategy, processes and practices. 68% of the e-business value is directly derived from the value creation elements discussed in this study. This suggests that 32% of e-business value influence comes from external elements that have not been explored in this research. Future research could explore and discuss more on elements such as the market (competitors) and/or customers etc. in addition to the value creation elements discussed in this

paper. Furthermore, the study revealed that the level of e-readiness is the same in Botswana and South Africa. This contradicts old existing literature that suggests that e-readiness is higher in South Africa than other Southern African countries. The researcher discovered that very little current research exists on e-readiness. E-readiness is important as it influences the adoption of technology within a country or company. Therefore more current studies could be conducted on this. Future research could also adopt the data collection strategy used in the study. However, using a secondary data collection tool alongside the website content analysis would be essential in order to gain richer data were it is not sufficiently provided in the content that's being analysed on the websites.

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Section B: Coding the Content

Where 1 = strongly disagree; 2= Disagree; 3= Somewhat agree; 4= Agree; 5= strongly agree, indicate the choice of agreement for the following statements by providing the number of the choice of agreement on the Excel sheet. If the statement is not applicable, please write N/A.

B1: Business Mission and Strategy (Mst)

		Strongly disagree	Disagree	Somewhat agree	Agree	Strongly agree
1.	The business mission is provided/or it is evident	1	2	3	4	5
2.	The business strategy is provided/or it is evident	1	2	3	4	5
3.	The business strategy enables the business to establish a direct link with customers	1	2	3	4	5
4.	The business strategy enables the business to use technology	1	2	3	4	5
5.	The business strategy enables the business to develop and provide new products and services (Value object)	1	2	3	4	5

B2: E-business Usage in Business Processes (Bp)

		Strongly disagree	Disagree	Somewhat agree	Agree	Strongly agree
1.	The business processes/services are clearly stated on the web page	1	2	3	4	5
2.	There is interaction between customers and suppliers through automated communication systems such as online chats	1	2	3	4	5

3.	There is automation of some/all business activities e.g. real-time tracking of deliveries, automated billing etc.	1	2	3	4	5
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B3: Human Actor (Entrepreneur and Managers capabilities) (Ha)

		Strongly disagree	Disagree	Somewhat agree	Agree	Strongly agree
1.	The entrepreneur is visionary i.e. she/he has an outlook of the business and its future	1	2	3	4	5
2.	The entrepreneur's attitude to technology is positively responsive and accepting (based on the use of technology)	1	2	3	4	5
3.	The entrepreneur is willing to take risks in adopting new technology and ideas	1	2	3	4	5
4.	The entrepreneur shows commitment and dedication to the business	1	2	3	4	5
5.	The entrepreneur has knowledge about IT and outlook on innovation (Based on how much technology is being used in the company e.g. social media)	1	2	3	4	5
6.	The managers have knowledge on ICT information (Based on whether technology is being used in the company)	1	2	3	4	5

7.	The managers have good managerial skills, e.g. leadership, influencing and delegating, initiative, problem solving skills, critical thinking, decision making	1	2	3	4	5
8.	The managers allocate their time, resources and encouragement for the use of IS within the firm	1	2	3	4	5

B4: Availability of resources (Finances and Users) (Res)

		Strongly disagree	Disagree	Somewhat agree	Agree	Strongly agree
1.	The company financial statements have been provided	1	2	3	4	5
2.	There is an increase in the company financials (net assets)	1	2	3	4	5
3.	The company website is well maintained i.e. it is relevant and user friendly, has the necessary tabs on the homepage and they are easily accessible	1	2	3	4	5
4.	The company has employees that have some IT knowledge and IT technical capability (based on whether there is technology adopted in the business)	1	2	3	4	5
5.	The company has employees that have intellectual resource i.e. educational qualification and work	1	2	3	4	5

	experience that distinguish them from the others					
6.	The company quickly responds to client/customer feedback and comments (to show if the website and social media is being monitored and actively used)	1	2	3	4	5

B5: Technology (Tech)

		Strongly disagree	Disagree	Somewhat agree	Agree	Strongly agree
IT Functionality: IT Functionality within the business						
1.	The company uses technology in their business (i.e. the technology, business systems that they have in place, e.g., databases, reservation systems, performance assessment systems, customer order entry systems, toll free customer service system, inventory control system, internal e-mail etc.)	1	2	3	4	5
2.	It is clear that the company owns some technology equipment	1	2	3	4	5
Internal Integration: Leveraging of IT throughout the entire business						
3.	The company uses technology in their processes	1	2	3	4	5
4.	The company uses integrated (all in one) systems for their core processes e.g. integrated customer service communication systems	1	2	3	4	5

	that integrates all the customers communication (queries, purchasing), an integrated payment system					
5.	The integrated systems support the business vision, improve efficiency, customer service or decision making	1	2	3	4	5
Business process integration/redesign						
6.	The technology in the company is superimposed into the processes, i.e. there is smooth integration	1	2	3	4	5
7.	The technology integration has a good impact on the company	1	2	3	4	5
Business network integration/redesign						
8.	Technology is used in the company to communicate, exchange data and interact with clients/customers	1	2	3	4	5
9.	Technology is used to create interdependencies of processes with external businesses e.g. transaction processes (electronic payments and billings, purchase orders, invoices, material scheduling), inventory movement (systems showing what product/service is available (e.g. reservation systems showing available seats, rooms, dates etc.)), process and knowledge linkages	1	2	3	4	5

	with external businesses (Do they outsource processes and skills, e.g. manufacturing, consulting))					
Business scope integration						
10.	IT enables and impacts the whole business and its network	1	2	3	4	5
11.	The company electronically sends information online e.g. request for quotes, purchase orders, invoices, information	1	2	3	4	5
12.	The company electronically performs these: reservations, production scheduling, material shipments	1	2	3	4	5
13.	The company leverages technologies such as web services, online social media, collaboration software, kiosks, videoconferencing and mobile technologies	1	2	3	4	5

B6: E-Business Value (Ebv)

		Strongly disagree	Disagree	Somewhat agree	Agree	Strongly agree
1.	Value objects are being offered by the company through the website i.e. the company provides services or products	1	2	3	4	5
2.	The company provides/requests value objects to external actors for	1	2	3	4	5

	value exchange through the website (e.g. the company can send quotations online, provide enquiry forms online, receive purchase orders via email etc.)					
3.	The company can determine which value actors are willing to exchange value objects through the website (i.e. interested clients/ customers can contact the company via email to make a purchase or request a service or even purchase the product/service online)	1	2	3	4	5
4.	The company is using its company website as a platform to show clients/customers the value objects it offers/provides	1	2	3	4	5
5.	The clients/customers are able to see and know which value objects are being offered by the company through the website	1	2	3	4	5
6.	Value objects (services, products, money or consumer experiences) are being exchanged between actors for profits i.e. There is value activity in the company	1	2	3	4	5

Appendix B: Online Secondary Data Collection Tool

University of Cape Town



Department of Information Systems

QUESTIONNAIRE FOR:

EVALUATING THE VALUE OF E-BUSINESS IN SMALL AND MEDIUM-SIZED
ENTERPRISES: A MODEL AND ANALYSIS IN SOUTHERN AFRICA

Section A:

Please provide the following information.

Country: _____

Number of employees: _____

Section B:

Where 1 = strongly disagree; 2= Disagree; 3= Somewhat agree; 4= Agree; 5= strongly agree, please indicate the choice of agreement for the following statements. If the statement is not applicable, please leave it blank.

B1: Human Actor (Entrepreneur and Managers capabilities)

		Strongly disagree	Disagree	Somewhat agree	Agree	Strongly agree
1.	The entrepreneur is visionary i.e. she/he has an outlook of the business and its future	1	2	3	4	5
2.	The entrepreneur's attitude to technology is positively responsive and accepting	1	2	3	4	5
3.	The entrepreneur is willing to take risks by adopting new technology and ideas	1	2	3	4	5
4.	The entrepreneur is committed and dedication to the business	1	2	3	4	5
5.	The entrepreneur has some knowledge about IT and outlook on innovation	1	2	3	4	5
6.	The managers have some ICT knowledge and information	1	2	3	4	5
7.	The managers have good managerial skills	1	2	3	4	5
8.	The managers allocate their time, resources and encouragement for the use of IS within the firm	1	2	3	4	5

B2: Availability of Resources (Financial Resources and Company Employees)

		Strongly disagree	Disagree	Somewhat agree	Agree	Strongly agree
1.	The company financials enable the company to invest in the right technology and regularly maintain it	1	2	3	4	5
2.	The company financials have improved in the past 12 months	1	2	3	4	5
3.	The company has some employees that have some IT knowledge and IT technical capability	1	2	3	4	5
4.	The company's employees are well qualified and experienced in their job roles	1	2	3	4	5

If you have any additional comments please write them here: _____

Thank you very much.

Appendix C: Signed Ethics Form

EVALUATING THE VALUE OF E-BUSINESS IN SMALL AND MEDIUM-SIZED ENTERPRISES: A MODEL AND ANALYSIS IN SOUTHERN AFRICA

Submitted to [UCT Ethics in Research - Commerce Faculty Ethics Application 2018](#) on 2/6/2018

UCT Student / Staff Number

TSMMED001

Degree Being Studied (For Students Only)

Information Systems

Cellphone Number / UCT Extention

0733783559

UCT Email Address

TSMMED001@myuct.ac.za

Alternative Email Address

mlatsumake@gmail.com

1. PROJECT DETAILS

n/a

Project title:

EVALUATING THE VALUE OF E-BUSINESS IN SMALL AND MEDIUM-SIZED ENTERPRISES: A MODEL AND ANALYSIS IN SOUTHERN AFRICA

Principal Researcher/s:

TSMMED001@myuct.ac.za

Status of Applicant

Master Student

Please specify "Other"

n/a

Supervisor Name (For Students Only) :

Prof Michael Kyobe

Supervisor email address

michael.kyobe@uct.ac.za

Department:

Department of Information Systems

Co-researcher(s) Names:

n/a

Co-researcher(s) Email Addresses:

n/a

Review Track

Normal

Motivation for an Expedited Review

n/a

Brief description of the research project

The implementation of electronic business (e-business) in organisations has led to a major improvement in business performance in both developed and developing countries. This improvement as well as market forces have put pressure on Small and Medium-sized Enterprises (SMEs) to adopt e-business. However, the e-business models adopted by SMEs are often abstruse and poorly represented, which leads to time consumption and miscommunication between the stakeholders involved, the business operations and Information Technology (IT) functions. These unclear e-business models make it difficult to evaluate its value.

In Southern Africa, SMEs are the major drivers of the economy. This study argues that there is no conceptual model that measures this e-business value creation in SMEs in Southern Africa. Such a model could assist stakeholders of SMEs in Southern Africa that have adopted e-business, or would like to adopt e-business to recognise the essential elements that are critical to the company and an e-business model and to understand e-business operations in order to create e-business value.

This research will therefore learn and acquire from different viewpoints to create a comprehensive model that evaluates the value of e-business in SMEs in Southern Africa. It aims to develop a comprehensive model by providing an answer to the question – How can the value of e-business in SMEs in Southern Africa be evaluated? Such a model could also assist SMEs to be able to successfully integrate e-business in their business processes and practices, and to avoid the failure of e-business.

Data collection: (please select)

Other*

*Other - please specify below

website content analysis of SMEs in South Africa and Botswana

File Upload

[E-Business Value Evaluation Codebook.pdf](#)

[Letter of Consent.pdf](#)

[Management Consent form.doc](#)

Have you attached a research proposal with research methodology?

Yes

2. PARTICIPANTS

n/a

2.1 Please indicate below the affiliations of participants from the list below :

Other*

* Other - Please specify below

SME managers in South Africa and Botswana

2.2 Please describe how you plan to protect the participants

The information to be collected will be published information on the SMEs websites. Privacy and confidentiality will not be a matter of concern since the information will be public information. However, details of the SMEs will be kept private.

2.3 Does the research discriminate against participation by individuals, or differentiate between participants, on the grounds of gender, race or ethnic group, age range, religion, income, handicap, illness or any similar classification?

No

2.4 Does the research require the participation of socially or physically vulnerable people (children, aged, disabled, etc.) or legally restricted groups?

No

2.5 Will you be able to secure the informed consent of all participants in the research? (In the case of children, will you be able to obtain the consent of their guardians or parents?)

Yes

2.6 Will any confidential data be collected or will identifiable records of individuals be kept?

Yes

2.7 In reporting on this research is there any possibility that you will not be able to keep the identities of the individuals involved anonymous?

No

2.8 Are there any foreseeable risks of physical, psychological or social harm to participants that might occur in the course of the research?

No

2.9 Does the research include making payments or giving gifts to any participants?

No

2.10 Race / Ethnicity - Are you asking a question about race/ethnicity in your questionnaire?

No

Which race categories have been used?

n/a

2.13 Gender - Are you asking a question about gender in your questionnaire?

No

2.14 If you answered Yes to 2.13 - Have you included the option: "Prefer not to answer" as part of your gender question?

n/a

* If you have selected "No" in 2.14, please explain why

My data collection tool does not include a question about gender as I will not be using human subjects for the research, and will only be collecting the data directly from the SME's website. No human subject is required to participate in the research.

3. PROVISION OF SERVICES

n/a

3.1 Does your research involve the provision of services to communities?

No

* If your answer is YES, please provide a brief description below:

n/a

3.2 Is the community expected to make decisions for, during or based on the research?

No

*If your answer is YES, please provide a brief description below:

n/a

3.3 At the end of the research will any economic or social process be terminated or left unsupported, or equipment or facilities used in the research be recovered from the participants or community?

No

*If your answer is YES, please provide a brief description below

n/a

3.4 Will any service be provided at a level below the generally accepted standards?

No

*If your answer is YES, please provide a brief description

n/a

4. ORGANISATIONAL PERMISSION

n/a

4.1 If your research is being conducted within a specific organisation, please state how organisational permission has been/will be obtained:

The study will not be conducted within any specific organisation. The data will be collected from websites in Botswana and South African SMEs, using website content analysis. Managers of the selected SMEs will be informed about using their website as part of the study.

4.2 Have you attached the letter from the organisation granting permission? (please select)

No but it will be obtained before commencing the research

4.2.1 If you have selected "Yes" in the question above please upload a the letter granting permission.

n/a

4.3 Are you making use of UCT students as respondents for your research?

No

4.4 Have you already contacted the Department of Student Affairs for permission?

n/a

4.5 Are you making use of UCT staff as respondents for your research?

No

4.6 If yes, have you contacted Executive Director: Human Resources for permission ?

n/a

4.7 Was approval granted?

n/a

Contact Details

Executive Director: Human Resources - Miriam.Hoosain@uct.ac.za

Executive Director: Student Affairs - Moonira.Khan@uct.ac.za

5. INFORMED CONSENT

n/a

5.1 What type of consent will be obtained from study participants?

Written Consent

5.2 How and where will consent/permission be recorded?

The written management consent letters will be kept in a locked file during the data collection process, which will be stored in a password protected laptop.

6. CONFLICT OF INTEREST

n/a

6.1 Is there any existing or potential conflict of interest between a research sponsor, academic supervisor, other researchers or participants?

No

6.2 Will information that reveals the identity of participants be supplied to a research sponsor, other than with the permission of the individuals?

No

6.3 Does the proposed research potentially conflict with the research of any other individual or group within the University?

No

6.4 Are you aware of any other conflict of interest that you would like to declare ?

No

If you have answered YES to any of these questions, please describe how you plan to address these issues (Questions 6.1 - 6.4)

n/a

7. RISK TO PARTICIPANTS

n/a

7.1 Does the proposed research pose any physical, psychological, social, legal, economic, or other risks to study participants you can foresee, both immediate and long range? (please select)

No

* If YES, please answer the following questions:

n/a

7.2 Describe in detail the nature and extent of the risk and provide the rationale for the necessity of such risks

n/a

7.3 Outline any alternative approaches that were or will be considered and why alternatives may not be feasible in the study

n/a

7.4. Outline whether and why you feel that the value of information to be gained outweighs the risks

n/a

I certify that I have read the the Commerce Faculty Ethics in Research policy
(<http://www.commerce.uct.ac.za/Pages/ComFac-Downloads>)

true

I hereby undertake to carry out my research in such a way that

- * there is no apparent legal objection to the nature or the method of research; and
 - * the research will not compromise staff or students or the other responsibilities of the University;
 - * the stated objective will be achieved, and the findings will have a high degree of validity;
 - * limitations and alternative interpretations will be considered;
 - * the findings could be subject to peer review and publicly available; and
 - * I will comply with the conventions of copyright and avoid any practice that would constitute plagiarism.
-

Supervisor has seen the application

true

Signature

[COM Ethics Signatories 2018 Meduduetso.pdf](#)

8. CHECKLIST - Please complete the section below.

n/a

A full copy of a research proposal or a literature review with methodology is attached

true

Interview schedules / cover letters / questionnaires / forms and other materials used

true

Organisational consent letter / UCT student or staff approval letter

true

On your cover letter to your questionnaire have you included the following?

n/a

1. The circular UCT Logo - Please see

<http://www.uct.ac.za/images/uct.ac.za/about/intro/logo/logocircless.gif>

true

2. A sentence explaining the aim of the research

true

3. Sentences of a similar nature to below must be included in the cover letter or consent form:

true

List of sentences

- * This research has been approved by the Commerce Faculty Ethics in Research Committee.
- * Your participation in this research is voluntary. You can choose to withdraw from the research at any time.
- * The questionnaire will take approximately X minutes to complete
- * You will not be requested to supply any identifiable information, ensuring anonymity of your responses.

OR

- * Due to the nature of the study you will need to provide the researchers with some form of identifiable information however, all responses will be confidential and used for the purposes of this research only.
- * Should you have any questions regarding the research please feel free to contact the researcher (insert contact details).

4. Have you scanned in your signature for the last section of the form?

true

Appendix D: Letter of Consent



Department of Information Systems

Leslie Commerce Building
Engineering Mall, Upper Campus

OR

Private Bag X3 - Rondebosch - 7701

09 February 2018

Dear Sir/Madam,

My name is Meduduetso Tsumake. I am a Masters of Commerce degree student specialising in Information Systems at the University of Cape Town. As part of the requirements for completing a masters degree a research study is needed.

My study which has been approved by the commerce faculty Ethics in Research Committee is titled "*Evaluating the value of e-business in SMEs: A model and analysis in Southern Africa*". I will be collecting data from Botswana and South African SMEs and would like to request a list of Botswana SMEs. The objective of the research is to develop a comprehensive model that evaluates the value of e-business in SMEs in Southern Africa.

All information received from your organisation will be treated in a confidential manner and used exclusively for the purpose of this study. Furthermore, letter of consents will be sent to each of the SMEs to request permission to conduct the research. The data collection method will be website content analysis, in which I will be collecting data from the SMEs websites. No individual or organisation names that appear on the website will be recorded or published.

Should you have any questions regarding this research, please feel free to contact me on +2733783559 or mlatsumake@gmail.com. Your assistance would be greatly appreciated.

Sincerely,

Meduduetso Tsumake

Signature Removed

Masters Candidate/Research Assistant
Information Systems Department
University of Cape Town
mlatsumake@gmail.com

Prof. Michael Kyobe

Signature Removed

Research Supervisor
Department of Information Systems,
University of Cape Town
michael.kyobe@uct.ac.za

Appendix E: Management Consent Form



Department of Information Systems

Leslie Commerce Building
Engineering Mall, Upper Campus

OR

Private Bag X3 - Rondebosch - 7701

February 2018

Management Consent Form

I, _____, give the researcher of this study consent to conduct the study titled: *Evaluating the value of e-business in SMEs: A model and analysis in Southern Africa*. This study will be conducted in both South African and Botswana SMEs using the website of the following organization:

Signature

Date