

# ALIGNMENT OF HUMAN COMPETENCIES WITH MOBILE TECHNOLOGY AND BUSINESS STRATEGY IN WOMEN-LED SMES

A DISSERTATION PRESENTED TO THE

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UNIVERSITY OF CAPE TOWN

BY

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*In partial fulfilment of the requirements for the Masters in Information Systems*

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## **ABSTRACT**

Studies show that women entrepreneurs are constrained and faced with challenges that inhibit the growth and performance of their businesses. Such challenges include race and gender differences, inadequate education, family responsibilities, lack of access to capital and other socio-cultural factors. However, with their human competencies, mobile technology and the appropriate business strategy, women-led small and medium-sized Enterprises (SMEs) can steer their businesses to better performance.

While the need for SMEs to align these three elements (human competencies, mobile technology and business strategy) has been suggested, there is limited knowledge on how SMEs can achieve this; no studies, to the author's knowledge, have examined this in women-led SMEs. This study therefore sought to fill this gap by investigating how women-led SMEs can best align these three elements to enhance their business performance. In light of this, extensive literature review and theoretical work on the phenomenon was conducted. Given the existence of the interplay between these three elements (human competencies, mobile technology and business strategy), the study adopted the perspective of alignment as Gestalts as the most appropriate method in determining the best way women-led SMEs may align these three aspects.

Data was collected from 70 women in Cape Town, KwaZulu-Natal, Gauteng and the Free State; the data collected was analysed using cluster analysis in order to sieve out patterns and configurations of human competencies, mobile technology and business strategy that resulted in improved business performance. Two clusters of the four clusters of women-led SMEs that emerged from the analysis performed highly in comparison to the other two clusters which had low performances. The women-led SMEs with the highest performance were able to reinforce their business strategies with the use of mobile technology applications such as: instant messaging apps (such as Whatsapp), internet browsers to access the internet; and memo application to keep information and take notes. They also complemented their business strategies and use of mobile technology applications with competencies such as the ability to effectively communicate with people, to use technology and to plan effectively.

The findings asserted that indeed, human competencies, the use of mobile technology and business strategy in women-led SMEs need to complement or reinforce each other in order to achieve improved business performance. In instances where otherwise was the case; that is; human competencies, mobile technology and business strategy did not complement or reinforce each other; the business performance will be low.

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## **DEDICATION**

I dedicate this dissertation to God Almighty, His grace has been sufficient thus far. I would also like to dedicate this dissertation to my grandmother, my mother, my brother and my sister – I am very grateful for your endless love and support.

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## **LIST OF COMMON ACRONYMS**

ANOVA.....	One-way Analysis of Variance
BWASA.....	Business Women Association of South Africa
CEO.....	Chief Executive Officer
DTI.....	Department of Trade and Industry
GPS.....	Global Positioning System
IBM.....	International Business Machines
ICT.....	Information and Communication Technology
IFC.....	International Finance Corporation
IT.....	Information Technology
MIT.....	Massachusetts Institute of Technology
SME.....	Small and Medium-sized Enterprises
SMS.....	Short Message Service
TAM.....	Technology Acceptance Model
UCT.....	University of Cape Town
UK.....	United Kingdom
US.....	United States

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## **CHAPTER 1: INTRODUCTION**

### **1.1 Background and the problem statement**

Women-led SMEs refers to firms or businesses that are owned, managed or partnered by women. These women can be said to be entrepreneurs. As defined by Ripsas (1998), an entrepreneur is someone who makes it a constant duty to engage in planning and executing business activities and undertakes the risks of a business in order to make profits. An entrepreneur generally sees or perceives an opportunity and starts a company in order to pursue such an opportunity (Bygrave, 1997).

Women entrepreneurs who run women-led SMEs possess various human competencies that have been noted to be major drivers behind the success of many women-led Small to Medium-sized Enterprises (SMEs) (Winn, 2005). Such competencies range from strong skills in social adroitness, interpersonal skills and human relations management (Mitchelmore & Rowley, 2013). However, in a dynamic environment, these competencies need to be developed otherwise they may become core rigidities (Prahalad, 1998). Furthermore, there is increasing evidence to suggest that human competencies alone may not ensure business competitiveness, hence the need for them to be developed in line with global developments (Schlemmer & Webb, 2006). One way in which the renewal and reconstruction of competencies can be achieved is through alignment with appropriate business strategies and Information and Communications Technology (ICT), which in turn will help them to sustain their competitiveness. Alignment in this context can be defined as the strategic approach of combining different aspects of an organization that can influence its performance, growth and success (Maes et al., 2000; Luftman et al., 2008; Silvius et al., 2013)

On the other hand, studies also assert that women are generally faced with several constraints that inhibit their business performance and success. These relate to race and gender differences, inadequate education, family responsibilities, lack of access to capital and other socio-cultural factors (DTI, 2005; Woldie & Adersua, 2004). These constraints have also been noted to be more apparent in developing countries (Sadi & Al-ghazali, 2010). While there is a growing concern for the need for women entrepreneurs to achieve

improved business performance, the focus of most studies on entrepreneurship and how SMEs can attain improved business performance and success has been on men-led SMEs (Winn, 2005).

While the importance and need for alignment has been recommended (Maes et al., 2000; Levy, Powell, & Yetton, 2003; Ndubisi & Kahraman, 2005), the constraints women face limit this and their ability to effectively utilise ICT and promote their development in general. Researchers point to how many women entrepreneurs have not leveraged effectively even the mobile technology readily available to them (Hilbert, 2011; ICRW, 2012). It has been observed that mobile technology usage has the potential to offer strategic impacts on businesses (Sheng, Nah, & Siau, 2005); however, mobile technology usage, particularly amongst women-led SMEs, has gained little popularity in research. Furthermore, there are also major concerns that the very technology recommended for enhancing women competencies and competitiveness is a double-edged sword (Middleton 2008; Volkow et al., 2011). Therefore, while such an ICT tool is necessary to protect and enhance competencies, it could also negatively affect existing competencies. This creates a major challenge for women entrepreneurs and there is limited knowledge on how exactly women entrepreneurs can appropriately match ICT with their competencies to ensure competitiveness. To the researcher's knowledge, no studies have presented solutions for women entrepreneurs to deal with this problem.

Some authors have observed that women-led SMEs tend to apply different strategies in their business, based on the personal goals of the women entrepreneurs running them. Some pursue growth while others pursue maintaining the stability of the business (often referred to as running lifestyle businesses) (Nichter & Goldmark, 2009). Women apply strategies from proactive strategies to those involving risks and those concentrating on customer satisfaction (Mitchelmore & Rowley, 2013). With this difference in the types of strategies and the personal goals of the women entrepreneurs running women-led SMEs, knowing what kind of strategy will contribute to improved performance is debatable. In addition, some authors caution that, due to the evolving nature of market environments, for firms to maintain a competitive advantage and improve their business performance, they should include individual activities involving competencies as well as the use of technology

(Porter, 1996; Chanaron & Jolly, 1999; Singh, Garg, & Deshmukh, 2010). Hence, business strategies on their own are not sufficient to lead to improved performance; rather, they should be reinforced with organisational aspects such as human competencies and the use of technology. This again raises the need for women-led SMEs to be aware of how they can match these variables to ensure improved business performance.

While the need to match human competencies with the use of mobile technology applications and business strategy is evident (Porter, 1996; Singh, Garg, & Deshmukh, 2010), there is limited knowledge on how exactly SMEs may achieve this. No studies to the author's knowledge have examined the alignment of these three elements in women-led SMEs. The present study therefore seeks to fill these gaps by investigating how women entrepreneurs can best align their human competencies with the use of mobile technology applications and business strategy, to enhance business performance. Understanding the business practices of women-led SMEs and how they align their competencies and business strategies with the use of mobile technology, can help sift out patterns that can help gain new insights into the influence of mobile technology usage, human competencies and business strategy to improve business performance in SMEs, especially in women-led SMEs.

The study has followed the perspective of alignment as Gestalt which is defined as the configurations or patterns of organisational elements that have attained an adequate level of fit with one another (Venkatraman, 1989). In other words these elements are considered to complement or reinforce each other. The Gestalt approach has not been used before in the study of women-led SMEs and it is hoped that it will contribute to the better understanding of the complex relationship between human competencies, use of mobile technology application and business strategies in these organisations, as well as how they can best be aligned.

This study also heeds the call by OECD (2004) that there should be a periodical evaluation of the impact of any SME-related policies on the success of women-owned businesses and the extent to which such businesses take advantage of them. This is intended to identify good practices and disseminate and share them internationally. It is also recommended that we should listen more to the voices of women, as women already in business have important

insights into the changes needed to improve women's entrepreneurship (OECD, 2004; Ahl, & Marlow, 2012).

The following section presents the research objectives and research questions that will guide this study.

## **1.2 Research objectives and questions**

***The primary research question for this study is:*** How can women-led SMEs align human competencies, mobile technology applications and business strategies to achieve improved business performance?

***The sub research questions are:***

1. What kinds of human competencies do women entrepreneurs in women-led SMEs possess and how do they impact on business performance?
2. How does the use of mobile technology impact on the performance of women-led SMEs?
3. What kind of business strategies do women-led SMEs apply to their business and how does this impact on the overall performance of the business?

***The primary objective of this study is as follows:***

To identify the combinations of human competencies, mobile technology applications and business strategies that can result in improved business performance in Women-led SMEs

***The secondary objectives are:***

- To investigate the level of use and impact of mobile technology applications in women-led SMEs
- To identify the kinds of human competencies women entrepreneurs in women-led SMEs have and examine the level of impact of competencies in achieving business performance in women-led SMEs
- To examine the types of strategies applied by women-led SMEs and how they apply these strategies

### **1.3 Importance of research**

Literature shows the need for focused research in women-led SMEs. Literature brings to light the importance of women entrepreneurs' competencies to their businesses and the concerns about these competencies becoming rigidities if they are not developed and aligned with other aspects such as the use of mobile technology and business strategy. Nevertheless, there is limited knowledge on how women-led SMEs can achieve an optimum balance between these variables and align them to achieve better business performance. This study sought to identify how this balance and alignment of these variables can be achieved by using the Gestalts approach. This approach has not been used in the study of women-led SMEs before.

In addition, the use of cluster analysis helped to sift out the patterns and combinations of human competencies, mobile technology and business strategy that provide better business performance.

This study contributes to knowledge by filling research gaps relating to women-led SMEs' focused research and providing women entrepreneurs with knowledge on how they can effectively align their competencies, their use of mobile technology and their business strategy. The results and findings from this study can also transcend into empowering women entrepreneurs by improving their business efficiency and, because of this, translate into positive economic and welfare outcomes in the communities and societies in which they serve or work. In addition, this study contributes to the body of knowledge by showing the value of cluster analysis in deriving and identifying the interactions between the variables in a phenomenon.

This study is also important as it will be of value to practitioners by exposing them to alignment methods and patterns in women-led SMEs, especially those in developing countries. This will help direct policies and initiatives that are focused on women in a more purposeful path. Finally, this study will contribute to theory by building on the body of knowledge on the application of the Gestalt approach that has not gained wide use in research area.

## **1.4 Limitations of the research**

The sample size of this study is one of the limitations of this research. The sample was based on only four regions in South Africa; hence caution should be taken in generalising the findings of this study, particularly beyond South Africa.

The method used in determining the business strategies applied was based on the perception of respondents and there was no confirmatory test carried out to verify these strategies beyond the surveyed respondents.

In addition to the above limitations, the cross-sectional timeline of this study should also be taken into consideration. The study was conducted based on the current situation and state of the surveyed women-led SMEs, therefore the nature of their alignment of human competencies, mobile technology usage and business strategy may change over time.

## **1.5 Dissertation overview**

The rest of the dissertation is presented in the following order:

**Chapter 2:** comprises of the review of literature on women-led SMEs, the concept of alignment and the perspective of alignment taken, and the three variables proposed for alignment, that is, human competencies, mobile technology and business strategy. It also shows the gaps identified in the literature review and the conceptual model developed, based on the review done and the gaps identified. This conceptual model illustrates the relationship between the constructs and the proposed outcome. The last section outlines the hypotheses formulated and tested in the study.

**Chapter 3:** provides detail on the research design by discussing the philosophical stance taken; the research methodology which comprises of the research paradigm adopted; the research purpose; research approach; research strategy; the data collection and analysis method; and the ethics and confidentiality issues considered for the study.

**Chapter 4:** includes a presentation of results and findings from the data analysis carried out, as well as a discussion of these findings and results of the hypothesis testing.

**Chapter 5:** consists of the conclusion to the dissertation, which includes theoretical and practical implications, recommendations and suggestions for future or further research.

## **CHAPTER 2: LITERATURE REVIEW**

The previous chapter gave a background to the study as well as the scope of the study. This chapter presents the literature review conducted for this study.

### **2.1 Introduction**

The involvement of women entrepreneurs in changing the face of modern business has been recognised, regardless of the constraints they face that in turn inhibit their business performance and success. While there is a growing concern for the need for women entrepreneurs to achieve better business performance and growth, many studies still tend to focus mainly on men-led SMEs; little is still known about how women-led SMEs can attain better business performance and success (Winn, 2005).

Studies show that women entrepreneurs often possess great competencies that can steer their business to success and good performance. However, they are advised to develop those competencies further and keep them in line with global developments in order to avoid the chance of these competencies resulting in core rigidities (Prahalad, 1998; Schlemmer & Webb, 2006). One way that has been proposed is the alignment of these competencies with technology and business strategy (Ndubisi & Kahraman, 2005; Maes et al., 2000).

This chapter presents a literature review that sheds light on women-led SMEs as well as the three variables (human competencies, mobile technology and business strategy) proposed for alignment in this study and the concept of alignment itself. It is sectioned as follows:

Section 2.2 discusses women-led SMEs and the issues surrounding their business performance and success.

Section 2.3 involves an overview of human competencies, particularly those involving women-led SMEs, as well as the link of women entrepreneurs' competencies with mobile technology and business strategy.

Section 2.4 provides insight into business strategy and how this is perceived in a women-led SMEs context.

Section 2.5 discusses mobile technology by first taking a holistic view on ICTs in general, as well as the various thoughts on women and ICT adoption.

Section 2.6 provides a summary of the relationships and interplays identified between human competencies, mobile technology and business strategy.

Section 2.7 discusses business performance and the way it will be measured in this study.

Section 2.8 examines alignment and its underlying concepts; it then zooms in on the perspective of alignment adopted for this study.

Section 2.9 and 2.10 presents a summary of the literature review and the gaps identified in literature respectively.

Section 2.11 centers on the conceptual model developed from the literature review; the constructs are briefly discussed. This model will serve as the lens to guide the phenomenon examined in this study.

Lastly, section 2.12 gives an overview of the research hypotheses to be tested in this study.

## **2.2 Women-led SMEs**

SMEs can be defined based on criteria such as size, location, sales turnover, age of the company, type of organisation, number of employees, structure and type of ownership (Singh, Garg, & Deshmukh, 2010). For the purpose of this study, the definition of SMEs by the Department of Trade and Industry (DTI) for the South African context has been adopted, hence, an SME is “ . . . a separate and distinct business entity, including co-operative enterprises and non-governmental organisations, managed by one owner or more which, including its branches or subsidiaries, if any, is predominantly carried on in any sector or sub sector of the economy . . . ” (DTI, 2008). The number of employees in these SMEs is usually between 0 and 200. SMEs are significantly being recognized as drivers for economic growth in many countries (Forsman, 2008). Women-led SMEs on the other hand are SMEs likened to the same definition but are either owned, managed or partnered by women. It should be noted that in parts of this dissertation, the term ‘women entrepreneurs’ is used to also refer to women who own, manage or are partners in businesses, as the researcher sees this as a more suitable term when discussing the individuals and not just the firms as a whole.

Women’s engagement as entrepreneurs and owners or leaders of businesses has been remarkable as women are beginning to change the face of modern business. Women have long been known as an important part of economy development in any country. Reports

show that women make up one third of the independently owned businesses in the US, generating sales of about \$1.5 trillion (Winn, 2005). In the UK, women are said to make up 26% of business owners. Women in the sub-Saharan parts of Africa produce about 80% of the food and 34% of the food in North Africa is also produced by women (Woldie & Adersua, 2004). Several reasons that influence women's decisions to becoming entrepreneurs have been observed in various studies. The common identified factors are flexibility, autonomy, occupational segregation, child-bearing and rearing concerns, social influences and family business succession, income and personal satisfaction (Winn, 2004; Winn, 2005; Orhan & Scott, 2001; DTI, 2005).

Being an entrepreneur is not an easy option, as noted by Winn (2005); therefore, it is important that entrepreneurs possess certain management and planning skills in order to ensure success. Winn (2005) explains that women have been known to start businesses with unrealistic expectations; they often neglect necessary skills and strategies to run a business, which leads to the failure of the business. For instance, in the case of obtaining capital from banks, women have been observed to liquidate assets before approaching the bank (Weiler & Bernasek, 2001), thereby creating difficulties for themselves by not providing enough assets and proven track records.

Also, it has been observed that women employ different management competencies to operate their business in comparison to their male counterparts. This is reflected in their preference to employ the same gender of workers (Weiler & Bernasek, 2001). Women entrepreneurs often tend to operate within their personal competencies and sometimes find it difficult to separate their personality and behaviours from the needs of the business. Many women find that their perceived competencies do not match the required management skills for business, after they have gone into the business (Winn, 2005). Therefore, in order to keep the business on a good level of performance, they should also ensure that they build on proper strategies, leverage the use of ICT and combine this with their competencies.

Apart from the limitation of proper planning, lack of strategies and inadequate skills and knowledge, women entrepreneurs in the developing countries are faced with several

challenges (Sadi & Al-ghazali, 2010). The DTI (2005) reports that for women in South Africa, race, gender, inadequate education, family responsibilities, lack of access to capital, vulnerability and socio-cultural factors are constraints to establishment of businesses by women who desire to be entrepreneurs and for expansion by women who already own businesses (Witbooi & Ukpere, 2011). Many of these women are concentrated in businesses relating to crafts, personal services, the retail sector and hawking. The dimension of poverty is highly skewed towards African women and they are often denied access to financial services (DTI, 2005; Witbooi & Ukpere, 2011). Many of the women entrepreneurs are not completely aware of or formally trained and educated about, topics such as markets targets, budgeting and business performance (DTI, 2005). Overall, access and control of resources are still governed by gender, class and racial differences (Witbooi & Ukpere, 2011; Kehler, 2013).

A similar group of constraining factors were identified for women-led SMEs in Nigeria by Woldie & Adersua (2004), with the inclusion of lack of skills or competencies to drive a business and lack of a support system such as necessary resources and technology to aid the business operations. These constraints make it difficult for women-led SMEs to gain the deserved recognition as well as increased growth and success in their businesses as their male counterparts receive (Winn, 2005). Although several authors have recommended ICT as a useful tool to assist women in empowering themselves and a tool that can reinforce their strategies thereby improving their business performance (Mathew, 2010), it has been noted that women tend to shy away from ICT use and have negative perceptions about IT.

Kikooma (2011) raised certain observations in regards to research on women and entrepreneurship. He lent support from Harding (1987), arguing that: *“while the research on female entrepreneurship has provided much insight into the behaviours and characteristics of some women business owners, much of the focus has remained on strategies through which female entrepreneurs can mimic the male norm. Such an orientation is guided by an interest in sex-equality, defined as women’s similar access to success in business ownership as that of men”* (Kikooma, 2011:8). This argument follows the premise that many researches aimed at aiding women in businesses, rarely consider the representation of women in regards to their perspectives and in terms of their own voice. Such researches are usually

controlled by past studies and theoretical underpinnings that have been based on men, their perspectives and voices (Kikooma, 2011). This present study seeks to gather information from women entrepreneurs who own, manage or are partners of women-led SMEs, in order to gain insight on their competencies; their use of mobile technology for their business and the kinds of business strategies they apply; the way they align these three elements; and how this impacts their business performance.

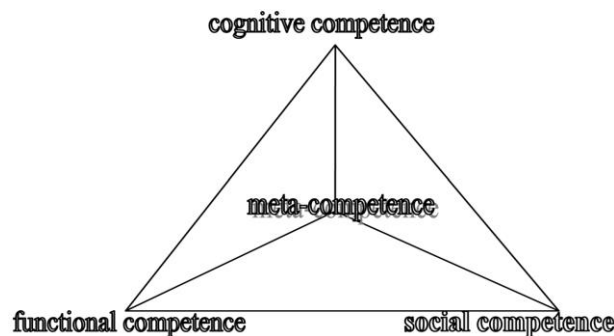
The following sections start with a discussion on human competencies in SMEs with emphasis on those possessed and exhibited by women-led SMEs. Following this is a look into strategies in SMEs with a focus on strategies in relation to women-led SMEs. A general overview of the impact of ICT in SMEs and to women entrepreneurs in particular then follows, with an overview of mobile technology, reviewing the underlying concepts related to women-led SMEs. Next is a summary of the relationship and interplay identified in literature. Business performance and how it is assessed is then examined. Lastly, the researcher presents the concept of alignment and the perspective of alignment taken for this study.

### **2.3 Human competencies**

Competencies have been identified to have the potential to help a firm realise its objectives and gain competitive advantage. It is therefore important for firms to be aware of and identify these competencies, as well as leverage the understanding and knowledge of them, for the benefit of the firm's growth (Prahalad & Hamel, 1990). Prahalad & Hamel (1990) define core competency as the collective gaining of knowledge on the coordination of diverse skills and integration of multiple streams of technologies in an organisation. It involves people at different levels and with different functions engaging in communication, and providing input and commitment that cuts across organisational boundaries. Although the focus of several studies has been on core competencies in large firms, competencies, especially individual and managerial competencies, have been examined and found to be of value to small firms (SMEs) for gaining competitive advantage (Scupola, 2008).

Human (individual) competencies have been noted to be an important part of core competencies needed for a business's competitive advantage (Nordhaug, 1998). Human competencies can be defined as a set of knowledge, abilities and skills that are influenced by motives, personal goals, personal values, standards, attitudes and needs (Schmiedinger, Valentin, & Stephan, 2005).

The holistic model of competence developed by Le Deist and Winterton (2005) gives a holistic overview of classifying the different components of human competencies. The model consists of cognitive competence – which covers knowledge and understanding; functional competence – which covers skills; social competence – which covers behaviours and attitudes; and Meta competencies – which cover the ability to facilitate the acquisition of other substantive competencies.



**Figure 1: Holistic Model of Competence**

**Source:** Le Deist & Winterton (2005)

Rangone (1999) suggests that resources that can aid a company's sustainable competitive advantage should be leveraged and exploited to a firm's strategic advantage. He further argues that competencies can be grouped under a company's resources. As defined by Wernerfelt (1984), resources can be seen as anything that can either be a source of strength or weakness to a firm. Wernerfelt (1984), in his resource-based theory, further posits that firm's should identify resources that can yield high profits. This implies that once identified, human competencies that can be exploited to achieve a firm's objective should be continually evaluated and constructed as a way of working out competitive strategy in the firm.

### **2.3.1 Human competencies of women entrepreneurs**

Several studies have examined the development of women's competencies in different contexts. For instance, Apter (2013:77) explains how Yoruba women in Nigeria historically have controlled town and village markets by organising into associations, pooling credit and selling agricultural produce. They used to occupy stalls at strategic positions to market their goods, e.g. in the centre of kingdoms and subordinate towns, and played an active role in trade along the Atlantic seaboard. They made locally-woven and dyed textiles which they exported. These competencies can be likened to and classified under the social and meta competence illustrated in Le Deist and Winterton's (2005) holistic model.

Women's entrepreneurial competencies on the other hand have been identified to be unique from that of their male counterparts (Winn, 2005). Women have been observed to have strong suits in social adroitness and interpersonal competencies. It has also been asserted that they possess less financial, marketing and managerial skills (Lerner & Almor, 2002; Mitchelmore & Rowley, 2013). Mitchelmore and Rowley (2013) developed a framework to divide the competencies found in women entrepreneurs into four groups. The categorisation is listed as follows: personal and relationship competencies, business and management competencies, entrepreneurial competencies, and human relations competencies. In each of these groups are particular competencies such as: effective communication, networking, budgeting, being proactive, exploiting opportunities, innovation and risk-taking competencies (Mitchelmore & Rowley, 2013).

According to Winn (2004), women rely on their skills and abilities when starting up a business, thereby seeking little or no managerial knowledge before embarking on entrepreneurship. This level of competence helps at the beginning of the business but has been observed to not be sufficient at the later stages in the business, which may in turn affect the business performance and growth. Moreover, it has been asserted that there is indeed a link between competencies, especially in the possession of entrepreneurial skills, and business performance and growth (Lerner & Almor, 2002). Therefore it is important that women possess all the required competencies to aid their business success.

Nevertheless, some authors argue that human competencies on their own cannot make contributions to business growth and performance (Schmiedinger, Valentin, & Stephan, 2005; Walker & Webster, 2006). These competencies need to be developed in line with global developments and complemented with other organisational variables such as business strategy and technology (Prahalad, 1998; Ravichandran & Lertwongsatien, 2002; Schlemmer & Webb, 2006). Authors recommend that competencies should be aligned with appropriate business strategies and Information Technology (IT) to get the most from them in terms of contributing to improved business performance (Ravichandran & Lertwongsatien, 2002; Griffy-Brown & Chun 2007). Theoretical studies on organisational productivity, work design and business process design also emphasise the interdependence between human resources, technology and business goals (Emery & Trist, 1969; Reese, 1995). Hence, there is a need for competencies to be aligned with the business goals or strategies and Information Technology (IT), for SMEs to sustain their competitiveness (Schmiedinger, Valentin, & Stephan, 2005; Ndubusi & Kahraman, 2005; Hilbert, 2011).

The next section reviews business strategies with a view to the SME context and particularly women-led SMEs.

## **2.4 Business strategy**

There are several definitions of business strategy. For this study, business strategy is defined as the process of identifying an organisation's objectives and long-term goals, and formulating ways to embark on a course of action and allocation of resources to achieve these goals and objectives. It is the ability of an organisation to engage in interactions with markets, competitors and other environmental factors (Kerin et al., 1990). In other words, strategy can be said to comprise of the following components: a focus on the long-term directions of the organisation, matching the activities of the business to the environment in order to minimise the threats and maximise opportunities, as well as matching the organisation's activities to the resources available (O'Regan & Ghobadian, 2002; Aldehayyat, 2011). Strategy involves business owners making deliberate decisions to choose different set of activities to derive a unique mix of value (Porter, 1996; Kuratko & Audretsch, 2009).

SMEs face the emerging need to get their business to respond to the globalisation era by engaging in new activities and processes that will ensure they maintain and sustain competitive advantage as well as success. This raises the need for SME owners to employ approaches that involve business strategies that can aid their strong stand in new markets. Porter (1991) suggests that strategic approaches should include intangible factors (reputation, organisation, know-how or patents) as well as tangible factors (human, financial or physical resources).

While there are several studies that enumerate different kinds of strategies that can be employed by businesses, there are also those that establish strategy-making modes or approaches that can be or are employed by businesses (Verreynne, 2005; Kyobe, 2008). For example, Kyobe (2008) classifies SME strategy types into planned, adaptive and entrepreneurial. A planned strategy-making mode is one in which the environment is analysed in order to come up with a way to evaluate and formulate alternatives and eventually implement one. For an adaptive mode, decisions involve stakeholders and are carried out incrementally, whereas an entrepreneurial strategy-making mode does not involve stakeholders but mainly involves a great use of emerging strategies by the managers (Verreynne, 2005).

Companys and McMullen's (2007) classification suggests that in the case where entrepreneurial opportunities are based on objective situations, the strategy type is adaptive, whereas in the case where the entrepreneurial opportunities are based on subjective situations, the strategy type is proactive. Strategy can be in form of (but not limited to) innovating and establishing networks that can aid the commercialisation of goods and services effectively, having time to look out for new opportunities and exploit them, and using social networks to recognise and exploit new entrepreneurial opportunities.

#### **2.4.1 Business strategy in women-led SMEs**

Women entrepreneurs, especially women in Africa, are observed to be proactive, innovative and creative (Watson, 2006; Nwoye, 2007). This could be why they are observed to often take proactive approaches to strategies. Watson (2006) also found that not only do women

entrepreneurs often take proactive approaches to strategies; they are most likely to employ strategies that have less risk involved. Similarly, Mitchelmore and Rowley (2013) found that women entrepreneurs who had interest in growing their business paid particular attention to strategies that aided in improving their products or services, and expanding their advertising and promotions. Interestingly, Nichter and Goldmark (2009) suggest that some women-led SMEs are not particular about business growth; rather they are concerned with simply performance and returns. This in turn has an effect on the kinds of strategy they employ. Such women-led SMEs often take less proactive approaches to their business rather than focus on maintaining their domain and market share.

#### **2.4.2 Barriers to implementing business strategy**

Studies point to several factors that pose as constraints to SMEs in developing and implementing strategies. One pressing factor points to the knowledge levels and competencies of SME owners being insufficient for the development of strategies. SMEs, in comparison to larger firms, may not possess the means of seeking corporate expertise on developing strategy, thereby resulting in the planning and implementation of strategies being solely the responsibility of the owner of the business (Keogh & Evans, 1998; Hotho 2013). As observed by Kisfalvi (2002), the personal desires, competencies and characteristics of SME owners/managers play an important role in the shaping, orientation, development and implementation of strategies.

Moreover, for women entrepreneurs in particular, other factors such as recession shortage of resources and finance; family responsibilities; qualifications; skills; experience and training facilities; and access to and use of ICT to support their business activities, inhibit them in regard to the level of strategy approaches they employ (Watson, 2006; Robb & Watson, 2012).

#### **2.4.3 Classifying business strategy**

Morgan and Strong (2003) discuss three ways in which strategy orientation can be viewed or measured for businesses. These include the narrative approach, classificatory approach and the comparative approach. The narrative approach is based on the premise that the classification of strategy should be done in a holistic view that is peculiar to a setting or situation or group of interest by getting a verbal or descriptive nature of the strategy

(Czarniawska, 1998; Czarniawska, 2004). The narrative approach is often carried out using qualitative methods and is not suitable in cases where theory is to be tested but is for cases where a phenomenon is being explored (Morgan and Strong, 2003). The classificatory approach is one that has gained wide use in many studies. It involves classifying firms' strategy through conceptual or empirical grounds (Morgan and Strong, 2003). The conceptual groupings are referred to as typologies (e.g. Miles and Snow, 1978; Porter, 1980) and the empirical groupings are referred to as taxonomies (e.g. Miller and Friesen, 1980). The comparative approach bases the assessment, classification and measurement of strategy by examining multiple and key traits or dimensions pertaining to the firms. This approach captures the varying underlying dimensions across the strategy classifications. An example of this is Venkatraman's six dimensions of strategy orientation (Venkatraman, 1989).

For this study, the narrative approach will be used in capturing the strategy applied by women-led SMEs by capturing the business strategies they apply through open ended questions. This approach is deemed appropriate by the researcher because the overall phenomenon being studied is exploratory. The researcher also believes the strategies applied by these women-led SMEs in the context studied will be unique to them. Therefore, the strategies identified should be captured based on what they actually apply not on brought down or past defined classifications and categories. Also, it is important to know how they apply these strategies to their business with consideration for their competencies and their use of mobile technology.

#### **2.4.4 Importance of strategy**

Porter and Siggelkow (2008) suggest that the activities of a business being in a strategic fit is crucial to attaining competitive advantage and also to sustain the competitive advantage. As explained by Porter (1996), competitive advantage stems from an entire system of activities, therefore individual activities involving competencies cannot be detached from the strategy. This emphasises the need for strategies to be enhanced and includes factors such as competencies as well as the use of IT. This view is supported by Singh, Garg, and Deshmukh (2010) where they acknowledge that competencies are an important element to achieving competitiveness. In addition, as noted by Bubou, Ejim-Eze and Okrigwe (2012), the current

dynamic evolving the nature of market environments, now makes global competitive strategies technology-inclined. Therefore, in the case where business strategy is the driving force for business growth and performance, technology has the ability to be of influence to aiding this objective. Also, in regard to technology, SMEs can enhance their resources and leverage its use, particularly for innovative growth-oriented strategies (Borch & Madsen, 2007).

The following section looks at women and ICT adoption in general, then discusses mobile technology and how it can serve as an important tool to aiding women-led SMEs when its applications are utilised for business activities.

## **2.5 Women and ICT adoption**

While this study is concerned mainly with the use of mobile technology by women-led SMEs, it is imperative that a brief discussion on the issues revolving around women and ICT adoption and use in general be examined.

Although the adoption and use of ICTs have been observed and proven with valid statistics to be beneficial to business growth and performance, studies show that women are disadvantaged in relation to the access and use of ICT, even though women have been identified to be of value to economic growth in countries (Arun & Arun, 2002).

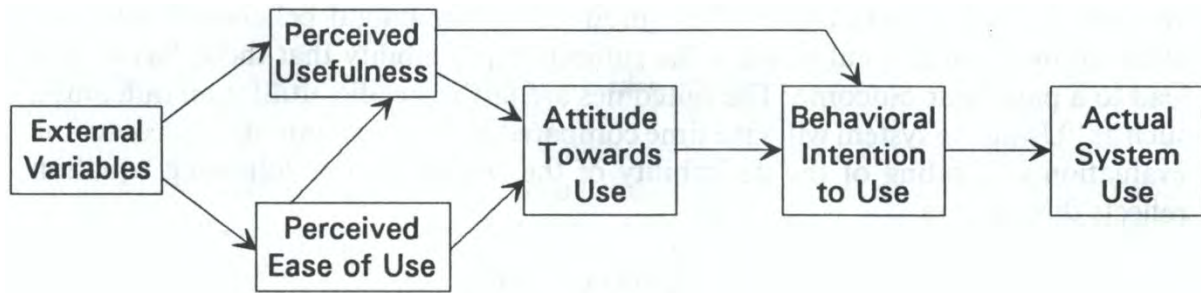
Several authors have raised the inequity of women to men with regard to the access and use of ICTs (Hilbert, 2011; Zainudeen, Iqbal, & Samarajiva, 2010; Ramilo, 2008). For this reason, there has been a call for policies that will ensure equity for women in ICT-adoption and usage (Gurumurthy, 2004). However, Gillwald, Milek, and Stork (2010) argue that in cases where men and women have the same background, level of income and equal livelihood status, there is less difference in the level of access and use of ICTs. The rate of use of mobile phones has also been statistically proven to be higher with women. Hilbert (2011) showed that in developing countries such as Ghana, Benin, Uganda, Namibia and South Africa, women with equal livelihood opportunities as men are even known to have a higher adoption rate regarding mobile phone usage. However, reports show that the

benefits of this technology are still to be exploited and leveraged fully to support and enhance businesses (ICRW, 2012).

ICTs can be defined as a set of technological tools used to create, store, disseminate, manage information and provide value addition. They consist of various sectors that are found in different segments such as telecommunications, software, hardware, television and radio broadcasting, electronic media and mobile phones (Jain, 2006).

ICTs have the potential to help women widen the scope of their activities and provide them with the ability to make viable decisions concerning issues that were formerly beyond their capacity (Jain, 2006). For women in SMEs, ICTs can offer a means to access quick information without leaving the comfort of their homes. For instance, with the use of mobile phones, they can find the prices of products without incurring extra costs on transportation to the markets or their suppliers, and save time from constant juggling of activities that can have effects on paid or unpaid family activities.

While many have used the Technology Acceptance Model (TAM) in the IS research area to understand perception and influence in relation to acceptance and use of IT, it does not consider the influence of gender as well as social norms. Some authors have critiqued TAM and called for the extension of the model to include gender and social norms (Venkatesh & Morris, 2000). TAM was first proposed by Davis (1989). It posits that there are two key determining variables that influence a user's acceptance of information technology, perceived usefulness and perceived ease of use (Davis, 1989). Perceived usefulness refers to the degree to which a user believes that using a system will improve his or her job performance. Perceived ease of use refers to a user's belief that a system will be free of effort. Apart from the gender divide and inequity issues, these determining variables can be used to predict reasons for adoption and use of ICT by women who seem to be less disadvantaged due to their 'equal footing' with the men around them. Gillwald et al. (2010), in their findings about the rate of adoption and use of ICT by women in Africa, shows that perceived usefulness is a major determining variable.



**Figure 2: Technology Acceptance Model**

Source: Mathieson (1991)

Apart from individual differences that come to play in the general use and adoption of ICTs, several factors have been raised as factors posing as constraints to the access to and use of ICTs by many women in urban and rural areas and especially in developing countries. The commonly recurring factors are level of income, educational level, social and cultural norms and illiteracy (Gillwald et al., 2010). Ramilo (2008) shows that the disadvantage that women have to ICT access and use is increased with the influence of general gender differences in mobility, access to income and resources, safety and security, roles in decision making, discrimination, violence against women, religion and other socio-cultural factors that affect women in their local context and even further across wider borders.

Gurumurthy (2004) suggests that in order to bridge the divide between men and women regarding ICT access and use, there should be incentives to education, which can in turn improve chances of better paying jobs. He further suggests that there should be policies in place that act against discrimination. Not only will the right level of education and such policies eliminate discrimination of women with access and use of ICT, women will be empowered and enabled to eliminate the stereotypes that come with ICT-related jobs and positions (Elnaggar, 2008).

### **2.5.1 ICTs and their value to SMEs**

ICTs can help improve the practices of women in their businesses and offer them the means to ensure business growth and performance. The inequity faced by women regarding ICT access and use is not only an influencing factor in the adoption and use of ICTs in general; it

also poses an influence in how women benefit or otherwise from the value of ICT in SMEs (Ramilo, 2008).

Not only do ICTs have the potential to aid economic growth and development. They have been identified to be of great use to SMEs in improving their productivity and efficiency (Ongori, 2009). Therefore it is important that SMEs adopt ICTs for their operations in order to aid business growth and performance, as well as help them gain competitive advantage. With today's era of globalisation, SMEs can implement ICTs to help improve their competitive position in relation to larger firms. ICTs can serve as important competitive tools that aid increase in productivity, and ensure better response time and customer satisfaction (Beheshti, 2004).

As opposed to the use of ICT as simply a tool to automate processes, automate financial and accounting service, and improve productivity and efficiency, business owners/managers of SMEs need to recognise IT as a strategic resource that can help enhance their competitive position and in turn achieve customer satisfaction. The owners/managers of SMEs need to identify and be aware of the strategic essence of ICT and exploit it, in order to boost their competitive stance in the global business environment.

This study concentrates on the use of mobile technology by women-led SMEs, as it has been noted to be the most widely used of all ICT types by women entrepreneurs. The section that follows discusses mobile technology.

### **2.5.2 Mobile technology**

Mobile technology in the form of mobile phones is a segment of ICT that has gained wide recognition and is asserted to have the highest growth rate in many countries worldwide (Jain, 2006). Mobile technology involves mobile devices that provide the ability to access information and services in real time and in mobility through the use of wireless networks and mobile devices (Liang, Huang, Yeh, & Lin, 2007). An example of such is mobile phones. Rice and Katz (2003) state that the use of mobile phones provides benefits in areas such as remote accomplishments; pursuit of jobs; easy social interaction; real-time coordination of

personal; household and business activities; and access to emergency hotlines. The widespread use of mobile phones has been studied ( Chabossou et al., 2009; Wamuyu & Maharaj, 2011) and noted to be increasing, even in rural areas and the poorest segments of developing countries (Chabossou et al., 2009).

The mobility and portability feature of mobile technology makes it highly advantageous, whereby one can engage in communication and coordination wherever and whenever the need arises – eliminating time, space and cost of transportation constraints. The increasing rate of adoption and use of mobile devices has created opportunities for organisations to develop new, strategic and innovative services (Sheng, Nah, & Siau, 2005; Bolat, 2014). According to Gump & Pousttchi (2005), the use of mobile technology can provide better support for business processes and can be used to ensure mobility where it was not deemed possible before. In broader terms, the adoption of mobile technology can create two types of impacts on business operation, one of which is to enhance communication among customers, employees and suppliers and in turn increase an organisation's productivity and profitability. The second impact is achieved by changing data access patterns to help with business processes (Liang et al., 2007).

Melchioly and Sæbø (2010) show that in African countries SMEs have adopted mobile technology to aid their business performance. With the use of mobile phone technology, SME owners have the opportunity to grow their business with the simplicity that comes with information exchange and easier access to goods, customers, services and economic opportunities. According to Frempong (2009), business owners have reported certain problems that are encountered with mobile technology usage, especially in developing countries. These problems are: cost of subscription, call charges, quality of service, and underdeveloped level of mobile phone financial services.

Although not specific to women-led SMEs, studies have examined mobile phone usage by women in rural areas in particular, and how using mobile phones has helped to improve their livelihood and even their business for those who are entrepreneurs. For example, Buskens and Webb (2009), reported some studies that looked at the paradox impact of mobile phone usage by women in areas such as Dakar and Nairobi whereby, while mobile

phones helped to raise income or improve their businesses, it also affected social structures and cultures. Some of these women entrepreneurs reported that in receiving calls or messages from customers, their fidelity was questioned. Others had to ignore the comments around them of choosing to be bread winners over their husbands. These women sometimes had to choose between the option of the livelihood the use of mobile phones provided or giving in to the social and cultural expectations and pressures of being a woman.

ICRW (2012), show that many women, especially those with low incomes and in rural areas, face financial constraints and lack technical skill in operating a mobile phone. However, they do record that mobile phones, more than computers and the Internet, are the most widely used ICTs by women to support their business growth. This can be traced to the ease of use and portability that come with mobile phones, thereby making them more of a friendly ICT tool in building entrepreneurial success. Mobile phone technology helps women with businesses by eliminating travel, encouraging multi-tasking and aiding them in coordinating their businesses with domestic responsibilities.

To the researcher's knowledge, there are no studies that have studied mobile phone usage and its benefits in an organisational context by women who own or lead SMEs in urban areas and, more importantly, in developing countries, despite the record of wide adoption and usage of this technology in these parts of the world.

## **2.6 Summary of relationships and interplays between human competencies, mobile technology and business strategy as identified in literature**

Literature has shown the evidence of relationships, interactions and interplay among human competencies, mobile technology and business strategy. Due to the complexity of this interplay, there is a need to assess and measure how these three variables can be effectively aligned. It is important that women-led SMEs align these three variables in order to attain optimum benefits and value from them, as well as to use this to gain better performance in their businesses. Some of these relationships and interplays are discussed below.

### **2.6.1 Human competencies and mobile technology**

As acknowledged by Avison et al. (2004), the use of IT can be leveraged to enhance core competencies which, in turn, results in improved efficiency. However, the adoption of IT (including mobile technology) has both positive and negative implications; hence IT is considered to be a double-edged sword (Middleton 2008; Volkow et al., 2011). Jarvenpaa and Lang (2005) argue that as technology transcends facets of our lives, it blurs the boundaries between work and leisure and impacts on performance. Nevertheless, women entrepreneurs need to find an optimum balance between preserving their traditional knowledge while at the same time leveraging the potential of IT to develop their competencies and businesses (Ess, 2007). Workplace studies also show that while technology can positively transform work, it can make skills obsolete as well (Gallie, 1991). Some authors have suggested that IT can compromise existing competencies, thereby making them become core rigidities (Leonard-Barton, 1992). In addition, competencies have been noted to sometimes serve as hindering factors to the investment in and use of technology by organisations (Tsai, Julia, & Ching-Hsiang, 2006).

### **2.6.2 Human competencies and business strategy**

As Porter (1996) suggested, since competitive advantage stems from an entire system of activities, individual activities involving competencies cannot be detached from the strategy. SME owners are therefore advised to enhance their competencies by employing effective strategies (Schmiedinger, Valentin, & Stephan, 2005; Walker & Webster, 2006). However, the personal traits and skills of SME owners have been acknowledged to have an impact on the nature of strategies employed in their businesses.

### **2.6.3 Mobile Technology and Business Strategy**

Due to the dynamic evolving nature of market environments, global competitive strategies are becoming technology-inclined (Gosenpud & Vanevenhoven, 2011). Levy, Powell, and Yetton (2001), show that in the case where business strategy is the driving force for business growth and performance, IT has the ability to be of influence to aiding this objective. It has also been observed that the increasing rate of adoption and use of mobile devices has

created opportunities for organisations to develop new, strategic and innovative services (Sheng, Nah, & Siau, 2005).

Theoretical studies on organisational productivity, work design, and business process design also emphasise the interdependence between human resources, technology and business strategy; providing further support to the need to properly align these three elements (Emery & Trist 1969; Reese, 1995). Based on these relationships and interplay discussed above, with consideration for the perspective of alignment as Gestalts, the conceptual model to guide this study has been developed and is presented and discussed in section 2.11.

The following section discusses business performance and how it is measured and observed.

## **2.7 Business performance**

While business performance has been a widely assessed and researched construct theoretically (Chakravarthy, 1986), a standard or key definition for it is yet to be established. There is controversy on what business performance means. There are many established theoretical models on business performance, but the one that has gained most popularity is the high performing systems model (Porter, 1991). This model posits that high performing firms are determined by comparing their business performance to that of their closest or direct competitors. Several studies have adopted various ways in operationalising or measuring or assessing business performance (Morgan & Strong, 2003). Amidst these studies lie several school of thoughts on what determines business performance and how it should be assessed. On one hand there are those who subscribe to using only financial indicators while, on the other hand, there are those who suggest the inclusion of non-financial indicators (Hoque, 2004; O'Regan & Ghobadian, 2002).

Many studies often adopt a single-item measure approach (using one item to measure business performance) to assessing business performance. The most common way of assessing business performance using the single-item approach has been through profitability and this has often been measured using return on investment (Reese & Cool,

1978, p. 28). However, several authors have criticised this way of assessment and measurement, particularly for small firms (Jacobsen, 1987).

Business performance is not one-dimensional in nature, therefore assessing it via accounting measures alone may not be sufficient. It is recommended that accounting-based performance be combined with market-based performance (e.g. sales) to provide a more compound assessment of business performance (Otley & Pollanen, 2000).

The need to take a multi-dimensional approach to evaluating business performance arises from the awareness that market-based performance is core to future growth and increase in operational efficiency. In addition, financial reports and statements are usually poorly documented or under-reported, thereby making them not entirely reliable. Also, the ever-changing mode of business and environment and the need to take into consideration the role of customers in businesses make it essential that market-based issues be added to business performance evaluation.

The activity or processes of a manager or owner of a small firm may have an impact on performance dimensions in various ways (Cameron, 1978; Chakravarthy, 1986). For instance, a company that pursues successful penetration into a new market will most likely invest highly in research and product innovation which could improve sales growth on a long term note. However, this could hinder short-term profitability as there will be less resource commitment. Therefore, measures of performance should not only include popular accounting-based indicators such as sales growth and profitability, but should also include the aspirations and satisfaction levels of the firm or firm owner (Kirchhoff, 1977).

Small firms that operate a lifestyle business may not be interested in growing beyond a particular size and be content with simply their existence and regard this as a satisfactory measure to high performance; therefore, in such cases, overall satisfaction and non-financial goals of the owners or managers of these firms may be more accurate and valid in evaluating their business performance (Birley, 1987). Nevertheless, in order for such firms to survive or exist, there is still need for them to be financially viable.

Therefore, while small firms may be more interested in simply attaining their personal goals in comparison to financial gains, the existence of a non-financial measure suggests that a level of financial stability has been reached. This makes it important to not focus on narrow measures of business performance but to adopt a number of combined measurements to determine business performance.

Besides the argument about considering financial and non-financial indicators for business performance, there is the argument pertaining to whether performance is measured subjectively or objectively. Business performance can be measured in both these ways (Naman & Slevin, 1993), but the objective way is not advised in an instance involving small firms. This is because small firms are weak at proper documentation of actual performance (Chandler & Hanks, 1993). Therefore, a subjective approach is more suitable for small firms and particularly in instances where there is multi-industry comparison (Covin & Slevin, 1991). The subjective approach to measuring business performance involves the owner or manager's satisfaction with both financial and non-financial aspects and also their perception of their performance in comparison to their competitors (Chandler & Hanks, 1993; Hoque, 2004; O'Regan & Ghobadian, 2002).

This study will be adopting a subjective approach to measuring business performance with consideration for adding both financial and non-financial indicators.

The next section discusses alignment and the perspective of alignment that is adopted for this study, in order to get the combinations of human competencies, use of mobile technology and business strategy that gives improved business performance in women-led SMEs.

## **2.8 Alignment**

Alignment can be said to be a strategic approach that is employed by managers to combine different aspects that can influence an organisation's performance, growth and success (Maes et al., 2000; Luftman et al., 2008; Silvius et al., 2013).

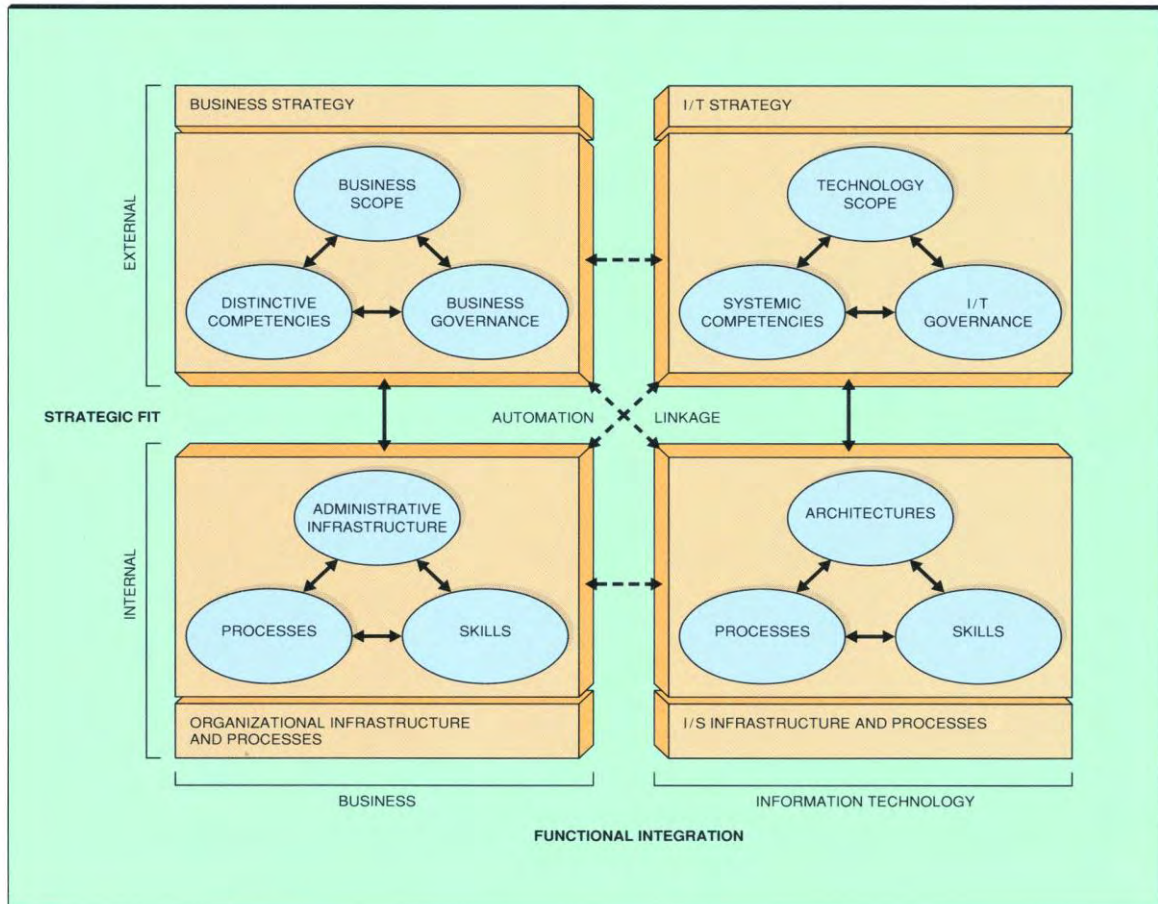
Many studies have assessed alignment in organisations (Avison et al., 2004; Levy et al., 2003), Maes et al., 2000; Henderson & Venkatraman, 1999), asserting that the concept of alignment as well as how it can be achieved has been a major concern for managers. According to Hsiao and Ormerod (1998), alignment involves attaining synergy between strategy, processes, organisation, people and technology, for the purpose of sustaining the quality interdependence between these elements to achieve competitive advantage (Luftman, 2007).

Avison et al. (2004) state that alignment aids a firm in the following ways: by ensuring that the investment in IT is maximised, by aiding it in attaining competitive advantage through the application of IT, and by ensuring that the firm is flexible and focused in the right way to respond to new opportunities that may arise. With proper alignment, firms are also provided with increase in their profitability and efficiency. These benefits direct managers to leverage the use of IT to enhance their core competencies, skills and technology scope, which in turn results to improved efficiency.

It has been observed that organisations now see the investment in IT not just as a cost reduction tool but also as a value-adding tool. This is achieved by the integration of IT strategy in business strategy (Levy et al., 2001). Studies show that large firms have developed tools such as the balance score card; to ensure strategic alignment (Bili & Raymond, 1993), this is reflected in their established use of IT. In comparison to SMEs, the constraints of fewer resources, less technical know-how and inadequate management skills inhibit their wide and strategic use of IT.

Several theories and models have been developed to assess alignment, particularly in the context of leveraging IT effectively in businesses. One such is the MIT90's model, as proposed by Scott Morton (1991) in his research at MIT. This is the first model to assess the strategic influence that leveraging IT has on businesses. Scott argued that as long as the key elements (strategy, structure, roles and skills, management processes and technology) constitute alignment, with strategy as the major driver of alignment, investment in IT would inevitably ensure sustainable success in an organisation.

Likewise, Henderson and Venkatraman (1999) developed a model to assess business and IT alignment. This model has been extensively discussed and used in many studies with empirical support (Avison et al., 2004; Levy et al., 2001; Maes et al., 2000). This model is based on the proposition that IT and business strategy should be aligned between and within four domains of strategic choices that face managers. These domains are: business strategy, IT strategy, organisational infrastructure and processes, and IS infrastructure and processes. Henderson and Venkatraman's (1999) concept on strategic alignment was based on categorising these domains into two distinct parts, strategic fit (which involves the link between the internal and external domains) and functional integration (which reflects the influence of IT strategy and business strategy on one another). They argue that successful integration between these domains influences the potential of IT to support business strategies. However, there is a limitation to this model in its application to SMEs as this model was developed based on the structure and context of large organisations, with no consideration for that of smaller organisations who are not as for deep into the application of IT like large organisations.



**Figure 3: Strategic Alignment Model**

Source: Henderson & Venkatraman (1999)

On the other hand, Levy et al. (2001) propose different alignment paths by considering the key elements proposed in the MIT90's model and applying it to the focus-dominance model to assess how alignment is achieved in SMEs. The focus-dominance model describes four scenarios that emerge from the strategic contexts of SMEs (low cost IT investments or value-adding IT investments). The four scenarios are as follows: efficiency, co-ordination, collaboration and repositioning quadrants. Levy et al. (2001) argue that four different paths exist for SMEs; these paths are driven by the strategic focus of SMEs which is either as a result of low-cost response to gain efficiency or as a strategic response stemming from the desire for growth. In order to benefit from alignment, SMEs need to manage the synergy between the elements presented in the MIT90's model under the umbrella of business strategy. This is only supported in the repositioning quadrant scenario (Levy et al., 2003). From previous discussion in this literature review, the strategic context of women-led SMEs

can be categorised under the efficiency quadrant, where the focus of IT use is mainly on controlling the business (ICRW, 2012). This can be as a result of the nature of the industry or because the business is in its start-up stage. The strategic context of Women-led SMEs can also be categorised under the coordination quadrant where IT is used for the primary purpose of maintaining customer relationships (Watson, 2006).

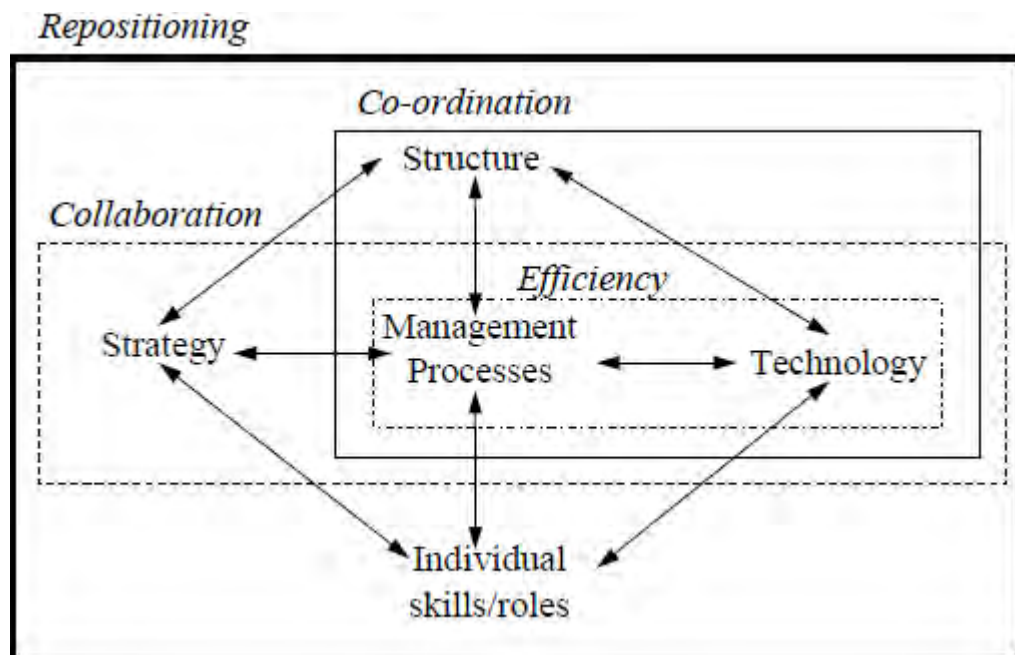


Figure 4: Different paths identified through the merge of MIT90's Model and Focus Dominance Model

Source: Levy et al. (2003)

### 2.8.1 Measuring and assessing alignment

The necessity for measuring and assessing alignment has been acknowledged. It is important that alignment be measured as this can aid better understanding for practitioners and enable them to manage alignment, as well as boost the rigour in alignment studies by academics (Chan & Reich, 2007). Venkatraman (1989) suggests six perspectives by which fit or alignment can be assessed and measured. They are:

- Fit as mediation: this perspective holds the view that for an antecedent variable (e.g., strategy) and the consequent variable (e.g., performance), there exist intervening effects (e.g., organisational structure) which are usually indirect, between them (Venkatraman, 1989).

- Fit as profile deviation: this perspective posits that fit is measured by the degree of adherence to an externally defined profile (Venkatraman, 1989).
- Fit as covariation: this suggests that fit is a pattern of internal consistency among a set of variables that are related due to some underlying theoretical basis (Venkatraman, 1989). While this is similar to the Gestalts approach, the difference between them lies in that covariation is more of a confirmatory approach to test internal consistency amongst variables, while the Gestalts approach is an exploratory approach to sieve out patterns and provide the configurations that show internal consistency amongst variables (Matyusz, 2012).
- Fit as moderation: this posits that there exists a variable termed the moderator (e.g., environment) that determines the impact a predictor variable (e.g., strategy) has on a criterion/dependent variable (performance) (Venkatraman, 1989).
- Fit as matching: this perspective posits that fit is measured as a theoretically defined match between two related variables. It further posits that the measure of fit between the variables is not dependent on any performance anchor (Venkatraman, 1989).
- Fit as Gestalts: this involves more than two variables, whereby Gestalts are identified in terms of the degree of internal coherence among a set of theoretical attributes. This is discussed in more detail below.

For the purpose of this study, the perspective of Gestalts is adopted to measure alignment between human competencies, mobile technology and business strategy in women-led SMEs. There is evidence in literature, as will be examined in the latter part of this chapter, that there exists interplay between these three elements, hence assuming a linear approach to match and measure their alignment will be difficult and unsuitable. This is why the Gestalts approach is deemed most suitable in comparison to other methods for measuring alignment since, instead of assuming a linear association between these variables, it posits that they should be analysed with a view to the interplay and cross relationship amongst them (Pollalis, 2003).

Gestalts can be defined as configurations or patterns of organisational elements, constructs or variables that have attained an adequate level of fit or unity with one another (Venkatraman, 1989). In other words, the patterns or configurations portray that the variables complement or reinforce each other (Heneman & Milanowski, 2011). Some authors argue that business performance is successfully realised when the configurations or gestalts among two or more organisational attributes (e.g., strategy, culture, environment and processes) reach an adequate level of fit (complement or reinforce each other) (Van de Ven & Robert, 1985). Gestalts also support configurational equifinality which suggests that there are many paths to arriving at the same result or outcome (Van de Ven & Robert, 1985). That is, as long as organisational attributes complement or reinforce each other, they would result in improved business performance regardless of the manner of configurations or patterns amongst them.

Venkatraman (1989) states that deciding on the perspective of fit to adopt is not a straightforward task, but can be guided by the definition and description of the variables of interest as shown in theories in literature; from past research in a particular field. He further suggests that the objectives of one's research should also be a major determinant of the perspective of fit adopted. These suggestions have also guided the selection of Gestalts as the perspective of alignment adopted for this study as well as the little recognition and use of the Gestalts approach in IS research (Hoehle and Huff, 2012), particularly one relating to alignment.

### **2.8.2 Barriers to achieving alignment**

Chan, Sabherwal, and Thatcher (2006) identify the following factors to be major challenges to alignment in organisations: organisational size, prior success, quality of planning, environmental uncertainty and the shared domain knowledge. They further assert that in the case of SMEs, the organisation size also determines the structure and coordination, where the structure is centred on functions and coordination of sub-units is achieved by the use of a centralised structure.

In addition, Hussin, King and Cragg (2002) show that IT maturity and the level of knowledge of the Chief Executive Officer (CEO) pose as major factors to achieving strategic alignment in

SMEs. The lack of knowledge on strategy is also a bottle neck to attaining alignment in many SMEs (Chell, Kennedy & Roberts, 1992). Chan & Reich (2007) lend support to these by identifying challenges related to knowledge (unknown corporate strategy, lack of awareness or belief in importance of alignment, lack of industry and business knowledge), locus of control and status of IT, and organisational change as constraints that affect alignment in organisations).

According to Gupta, Karimi, and Somers (1997), there is no sole and absolute solution to alignment challenges. However, they suggest that alignment capabilities be developed and possessed by an organisation in order to reap the benefits of IT to gain competitive advantage.

## **2.9 Summary of literature review**

The literature review has given insight into the constraints women entrepreneurs face in relation to their businesses and their performances. It has also brought to light the importance of human competencies and the need for these to be aligned with mobile technology and business strategies in order for women to achieve better business performance which, in turn, improves their competitiveness and development as a whole. The literature review has also provided an understanding of the relationships and interplay between human competencies, mobile technology and business strategy, thereby enforcing/emphasising the need for these three variables to be aligned in women-led SMEs. While there are various perspectives of alignment that can be used in measuring or assessing alignment, the most suitable for this is the Gestalts approach. The Gestalt approach is employed in instances where there is no assumption of a linear causality of relationships in organisations; it attempts to analyse the various components of an organisation simultaneously to assess cross-causality. The section that follows outlines the gaps identified in the literature review; thereafter is the section that presents the conceptual model and the definition of constructs.

## **2.10 Identified gaps in literature**

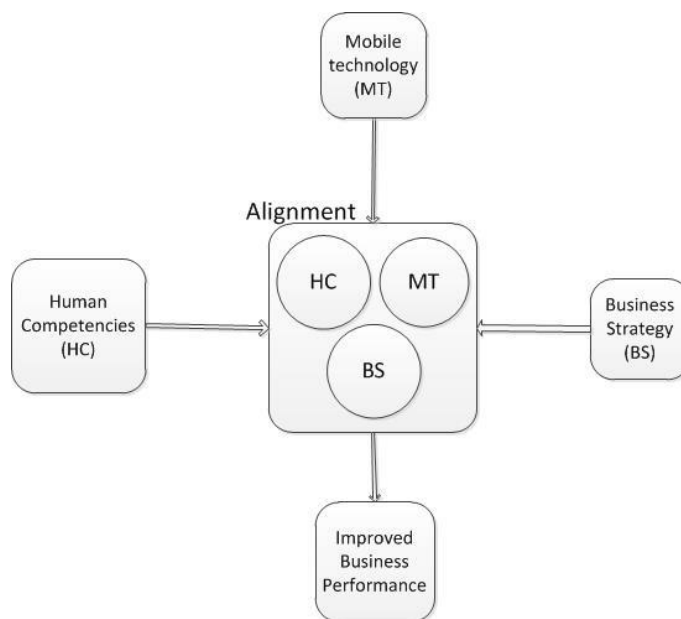
Following the review of literature above, the following gaps have been identified and are hereby raised:

- 1) As discussed earlier in the literature review, there are few studies on women-led SMEs, most especially in understanding the alignment concepts relating to them. This raises concern as women have been noted to face inequities. More so, it has been observed that women face specific constraints relating to strategy and overall alignment, therefore studies need to examine alignment in SMEs with particular focus following this concern.
- 2) The body of literature has extensively assessed alignment, and models have been developed to this effect (Henderson & Venkatraman, 1999; Levy et al., 2001). However, the focus has been mainly on large firms. Very few studies have assessed alignment in small firms (Levy et al., 2003) and even the few that have done so have merely simply adapted the models as proposed for large firms. There is no concentration on studying alignment paths in SMEs, even though it has been acknowledged that the strategic contexts in SMEs vary from that of large firms, and that the levels of resources and technical expertise in SMEs are lower in comparison to large firms. The need for alignment-focused studies on SMEs has been raised by several authors (Chan & Reich, 2007; Cragg, Tagliavini, & Mills, 2007)
- 3) The importance of human competencies to alignment has been surprisingly unacknowledged. Although the major concept of alignment lies in leveraging IT to support strategies, the researcher argues that the role of human competencies in alignment should be established. This is due to the fact that human competencies have been seen as an important influence to strategies in general (Porter, 1991). Entrepreneurial competencies have major impacts on the adoption of IT and also on the applications of strategies. Therefore, their role/impact on alignment should be considered, as the knowledge/skills of managers have been noted to be major constraints to alignment, especially in SMEs (Hussin, King & Cragg, 2002). The researcher argues that human competencies should not simply be considered as a sub-element in strategies, but their role in alignment should be examined, following the proposition of the 'people' element in the MIT90's model.

With these gaps, this study re-establishes its objectives (as earlier stated) and presents a conceptual model to assess and measure alignment in women-led SMEs, with consideration to an additional variable (human competencies).

## 2.11 Conceptual model

The conceptual model presented below (Figure 5) has been developed to show the links between mobile phone technology, human competencies and business strategies. It is proposed that these variables impact on each other and, as a result, proper alignment between them will have a positive influence on business performance and growth. The conceptual model below was developed, based on the literature review conducted. As illustrated in the model, the alignment of human competencies with mobile technology and business strategies will yield better performance in women-led SMEs.



**Figure 5: Conceptual Model of alignment of human competencies with mobile technology and business strategies in Women-Led SMEs**

As stated earlier, the Gestalt approach will be applied to measure and test this model, as suggested by Chan and Reich (2007). By applying this approach to this study, it will help to identify clusters that will help to gain insight into the alignment paths present in women-led SMEs. Below is a brief definition of each construct in the conceptual model as it relates to this study.

### **2.11.1 Definition of constructs**

**Human competencies:** As stated earlier in the literature review, human competencies can be defined as a set of knowledge, abilities and skills that are influenced by motives, personal goals, personal values, standards, attitudes and needs (Schmiedinger et al., 2005). However, for this study, the focus is on competencies possessed by women in and with businesses. The selection of the competencies to measure and make up this construct is guided by the work of Mitchelmore and Rowley (2013), who found that various women entrepreneurs' competencies cluster into four groups namely: conceptual and relationship competencies; business and management competencies; entrepreneurial competencies and; human relations competencies. Particular competencies from each group such as effective communication, networking, budgeting, being proactive, exploiting opportunities, innovation and risk-taking competencies will be selected for this study. The selection of these particular competencies has been guided by literature as they are often mentioned when women entrepreneurs' competencies are discussed or examined (Lerner & Almor, 2002; Watson 2006). Also, since this study is not solely focused on women's competencies as done by Mitchelmore and Rowley (2013); the researcher selected the competencies that were most relevant to the present study.

**Mobile technology usage:** The type of mobile technology that is being referred to in this study is the mobile phone. It has been noted that it enables one to engage in communication and coordination wherever and whenever the need arises – eliminating time, space and cost of transportation constraints. Studies also show that it is widely used, particularly by women for their businesses (ICRW, 2012). Mobile technology is able to provide better support for business processes and can be used to ensure mobility where it was not deemed possible before (Gumpp & Pousttchi, 2005). While there are no studies, to the researcher's knowledge, that have examined the use of mobile phones by women-led SMEs, there are those that have studied the use of mobile phones in general (Esselaar et al., 2006; Park et al., 2007) and in other contexts such as by women in informal businesses/sectors in South Africa (Jiyane & Mostert, 2010).

**Business strategy:** For the purpose of this study, business strategy is defined as the process of identifying an organisation's objectives and long-term goals; formulating ways to embark on a course of action and allocation of resources to achieve these goals and objectives; and the ability of an organisation to engage in interactions with markets, competitors and other environmental factors (Kerin et al., 1990). The narrative approach, as mentioned earlier, will be used to capture the business strategy of women-led SMEs. This is because the researcher believes that it will be interesting to explore and understand business strategies from women-led SMEs points of view. This approach is also followed in response to suggestions by several authors who argue that models and classifications that were developed for large firms or male-led firms may not give absolute insight into studies relating to women (OECD, 2004; Ahl, 2006; Kikooma, 2011)

**Business performance:** Although there is no particular definition for business performance, it will be measured and assessed using both financial (e.g., profit, cash flow, market share) and non-financial indicators (e.g., personal satisfaction, customer satisfaction). The subjective approach will be taken in measuring business performance and this involves assessing the owner or manager's satisfaction and also their perception of their performance in comparison to their competitors (Chandler & Hanks, 1993; Hoque, 2004; O'Regan & Ghobadian, 2002).

This study will be adopting a subjective approach to measuring business performance with consideration for adding both financial and non-financial indicators. Also, the choice of measurement will be guided by the relevance of the indicators to the context and target population.

**Alignment:** For this study, the perspective of alignment that has been adopted is that of Gestalts. Therefore, alignment is defined as configurations or patterns of organisational elements, constructs or variables that have attained an adequate level of fit or unity with one another (Venkatraman, 1989). In other words, the patterns or configurations portray that the variables complement or reinforce each other (Heneman & Milanowski, 2011)

## 2.12 Hypotheses

The development of hypotheses has been guided by literature and the perspective of alignment that is being adopted in this study (Gestalts), as well as the conceptual model for this study. These hypotheses will be tested to either confirm or reject the claims. They are presented below.

Studies show that an adequate level of fit among the configuration of organisation variables will result in realising a successful business performance (Venkatraman, 1989; Van de Ven & Robert, 1985). Hence, this study proposes that with a more adequate level of fit among the configuration or patterns formed with human competencies, mobile technology and business strategy, the better the business performance realised in women-led SMEs will be. Based on the perspective of alignment taken, the adequate level of fit will be determined using cluster analysis. Therefore, the following proposition holds:

**Hypothesis 1:** *The greater the level of alignment among human competencies, mobile technology and business strategy, the more improved the business performance in women-led SMEs will be.*

Based on the view of configurational equifinality (that is, multiple paths to the same outcome); and the assertion that business performance is successfully realised when there is an adequate level of fit (Van de Ven & Robert, 1985); there can be several configurations or patterns of human competencies, mobile phone usage and business strategy in women-led SMEs that will result in better business performance. Therefore, it is proposed that as long as the different configurations and patterns of human competencies, mobile phone usage and business strategy in some women-led SMEs have attained an adequate level of fit, they will have higher levels of business performance in comparison to those who have not attained an adequate level of fit. Therefore, the following proposition holds:

**Hypothesis 2:** *As long as women-led SMEs have achieved successful alignment between human competencies, mobile phone usage and business strategy, they will have a higher level of business performance.*

## **CHAPTER 3: RESEARCH DESIGN AND METHODOLOGY**

The previous chapter was based on the literature review carried out for this study. This chapter presents the research design employed in this study.

### **3.1 Introduction**

The sequence of appropriate choices selected and decisions made throughout the research process are presented and discussed (Cavana et al., 2001; Sekaran, 2003). As suggested by Myers (2009), a research design should give an overview of the road map, plans, guidelines and procedures followed in a research and these are presented in the following order in the following sections.

Section 3.2 begins with a discussion on the research philosophies adopted for this study. Section 3.3 involves the description of the research methodology which consists of the research strategy, purpose of research, research approach, population and sampling, data collection and instrumentation, data analysis technique and the time frame. Section 3.4 is a discussion on the ethics and confidentiality issues and how these were addressed.

## **3.2 Research philosophy**

Research philosophies are of key interest in the IS field because they depend on the researcher's thoughts concerning knowledge development and reflection (Orlikowski & Baroudi, 1991; Saunders et al., 2003). Philosophies applied by a researcher can influence the research questions, while research questions shape the assumptions being investigated (Orlikowski & Baroudi, 1991).

In terms of philosophical standpoints, there are two assumptions that exist; they include ontology and epistemology. These are described below.

### **3.2.1 Ontology**

Ontology refers to the beliefs based on a premise that describes the nature of the empirical world under investigation. According to Saunders et al. (2009), there are two major ontological stances; they are objectivism and subjectivism, which present two distinct views of the world in relation to being independent of humans or dependent on humans, and created or recreated only through the actions of the humans in it (Orlikowski & Baroudi, 1991).

The ontological stance taken for this study is objectivism. Objectivism assumes that social entities exist in reality which is external to social actors; due to this view of reality, it further assumes that the nature of these social actors (humans) can be apprehended, characterised and measured (Saunders et al., 2009; Orlikowski & Baroudi, 1991).

### **3.2.2 Epistemology**

Epistemological assumptions are based on providing a premise on which decisions made from the knowledge about a phenomenon is adequate and properly constructed (Orlikowski & Baroudi, 1991). It is mostly concerned with the views surrounding the nature, sources, processes and interpretations of knowledge (Crotty, 1998; Koskinen et al., 2003).

There are three major epistemological stances that exist in social science research. They are the positivistic, interpretivist and critical realist stances.

A critical realist stance is based on the premise that while people may be constrained by social, cultural and political factors, they should and can endeavour to change their social and economic situations (Bhattacharjee, 2012). Therefore, critical researchers concern themselves with emancipation, human empowerment issues and ways to improve the world (Cavana et al., 2001). Critical realists seek to critique alienating situations by drawing on conflicts and contradictions and attempting to address the causes of alienation. Some authors argue that the assumption for this stance is that social reality stems from historical backgrounds and is produced and reproduced by people through social and economic situations (Alvesson & Willmott, 1992; Hirschheim & Klein, 1994).

Interpretivists follow the assumption that social reality is determined by understanding the meaning and purpose humans attach to their actions, therefore this social reality has to be studied through interpretive methods (Bhattacharjee, 2012). Interpretive research involves providing insight to a phenomenon under study through shared meanings, language, artefacts and consciousness (Klein & Myers, 1999). This stance does not assume objectivity as in the case of the positivistic stance; it is based on the assumption that researchers are subject to the interactions that take place when a phenomenon is being researched, and subject to the meanings people assign to the phenomena (Walsham, 1993).

The assumption for a positivistic stance is that knowledge is readily available and can be observed and measured objectively (Dikow et al., 2013). It further posits that by focusing on causality, the phenomenon of interest can be reduced to its simplest elements. According to Orlikowski and Baroudi (1991), a positivistic study is one in which there is a quantifiable measure of variables and one where inferences are made about a phenomenon from the stated sample of a target population. The stance taken in this study is positivistic. This is in line with the study as there will be an empirical measurement of the relationship and configurations among human competencies, mobile phone technology, and business strategy, and how they are or can be aligned in women-led SMEs. The researcher has followed the perspective that there is cross-causality between these three organisation variables following the evidence in literature that this exists (Avison et al., 2004; Tsai et al., 2006; Schmiedinger et al., 2005; Walker & Webster, 2006; Porter, 1996; Fabi et al., 2009); and that the measurement of their configuration and patterns can be carried out

objectively. Therefore, the researcher will be taking an objective approach to the study whereby there will be no involvement with the objects of study and tests will be carried out empirically (Johnson & Onwuegbuzie, 2004).

### **3.3 Research methodology**

Mingers (2001) defines research methodology as an ordered set of activities that one employs to aid in deriving valid and reliable research outcomes. It usually comprises of various approaches, methods or techniques. The following sections present the research strategy, approaches, methods and techniques considered for this study and how it will be applied, as well as the reasons for the researcher's choice to adopt these choices.

#### **3.3.1 Research strategy**

The research strategy this study followed is to conduct a survey research to find support for the developed propositions, as well as to answer the research questions and also realise the research objectives. A survey research strategy involves using standardised questionnaires or interviews to collect data involving people, in order to capture their preferences, thoughts and behaviours in a systematic way (Bhattacharjee, 2012). For this study, questionnaires were used. The survey research strategy through the use of questionnaires was deemed suitable because it has its strength in aiding the ability to collect data about a population that is too large to observe directly. Furthermore, it supports the philosophical stance taken for this research whereby the researcher can carry out the research objectively, i.e., without involvement with the participants. In addition, it is economical in terms of the amount of time, effort and cost necessary for conducting research. However, survey research has its weakness lying in biases that can affect the inferences derived from it. Two biases that have been recognised as potential biases for this study are non-response bias and sampling bias. These biases are accounted for in other sections of this chapter; the steps taken to address them are therein discussed.

#### **3.3.2 Purpose of research**

Neuman (1994) explains that the purpose of a research can be categorised into three groups based on what the researcher is trying to achieve: to explore a new topic or phenomenon,

to describe a social phenomenon or to explain why something occurs. Therefore a research can either be exploratory, descriptive or explanatory.

For this study, the purpose of the research is exploratory – to explore a new phenomenon. Saunders et al. (2009) define an exploratory study as one that provides a way to find out what is happening, to gain new insights and to assess new phenomena. The study seeks to explore the interactions between mobile phone technology, human competencies and business strategies and how they are applied in women-led SMEs, as well as to identify the best combinations of these three variables that result in best performance. The researcher also believes that this type of research will help gain new insights on the phenomena.

### **3.3.3 Research approach**

There are two major research approaches involved in building and testing theory: they are deductive and inductive approach. For the purpose of this research, a deductive approach was applied. The researcher deems this approach suitable because of the nature of the study, whereby the ideas in theory have been logically connected to the emerged evidence of the phenomena in this study. Furthermore, the current study is not based on building new theory from the ground up as is the case for inductive approach (Neuman, 1994) but rather seeks to test the conceptual framework informed by literature and existing theoretical work against ‘hard data’ and to find support for the theory (Neuman, 1994).

A deductive approach involves developing propositions or hypotheses based on existing theory or theoretical work and then engaging in an approach to test these propositions or hypotheses, after which they are either confirmed or rejected (Bhattacharjee, 2012). The present study has followed this approach by conducting an extensive literature review on all key areas in relation to the study. The literature review resulted in the development of a conceptual model that consists of five constructs as informed by literature. In addition, the conceptual model, as well as the literature, has led to the development of four hypotheses that were tested using quantitative measures. From the tests conducted, the findings confirm or reject the hypotheses, as shown later in this dissertation. This approach also served as a guide in answering the research questions and realising the research objectives of this study.

### **3.3.4 Population and sampling**

In order to make observations and statistical inferences about the population of interest for a study, one has to carry out a statistical process of selecting a subset, often called a sample, from that population (Bhattacharjee, 2012). This statistical process is termed sampling. This section discusses the different aspects and steps involved in arriving at the sample for this study. It includes the target population, the sampling frame, the sampling strategy/method and the sample size.

#### ***3.3.4.1 Target population***

When considering the population for a study, one is concerned with the full set of cases a sample will be drawn from (Neuman, 1994). However, the target population is more concerned with the specific sample or pool of cases to be studied. For this study the population is primarily South Africa while the target population is women-led SMEs in South Africa. The population for the study was chosen based on the fact that the researcher presently resides and is studying in South Africa. However, distribution of questionnaires was mainly in Gauteng, KwaZulu-Natal, Free State and Cape Town. These geographic locations were targeted because of the large concentration of women-led SMEs in these areas, as shown in the report by DTI (2008). The researcher would have extended to other parts in South Africa but time and cost were constraints in this regard. The sampling of women-led SMEs was, however, not limited to only women entrepreneurs who were South African; it covered all those residing in and with businesses in South Africa. As suggested by some authors, there are cultural differences when carrying out studies related to entrepreneurship. Culture could play a major role in the individual traits and decisions of entrepreneurs (Pearson & Chatterjee, 2001; Marino et. al., 2002).

The researcher also targeted women entrepreneurs in the formal sector, that is, those with established businesses. This is because it has been observed that information about business inclined to the informal sector is usually more difficult to obtain due to the lack of proper records relating to them (DTI, 2005). In addition, the researcher also believed that the technical know-how and level of exposure in terms of the nature of constructs being observed for this study would be better understood and relatable with women entrepreneurs in the formal sector.

### ***3.3.4.2 Sampling frame and sample size***

A complete and accessible list of information about the cases of the target population of a study from which the sample will be drawn is referred to as a sampling frame. Authors suggest the importance of having a sampling frame that is accurate, complete, current and unbiased (Neuman, 1994; Bhattacharjee, 2012; Saunders et al., 2009) as this consequently has an effect on the representativeness of the sample and the extent to which generalisability of the findings or from the sample can be achieved. In light of these, the researcher carefully researched and identified sources that would be contacted in order to get a list of women-led SMEs from which the study sample would be drawn. They include: STATS SA – Statistics South Africa (<http://www.statssa.gov.za/>); South Africa SME toolkit – developed by IBM, IFC and the Department of Trade and Industry (<http://southafrica.smetoolkit.org/>). The researcher could not get a list specific to women-led SMEs, therefore business women networks and associations were contacted to seek the participation of their members. They include: Business Women’s Association of South Africa (BWASA) (<http://www.bwasa.co.za/>), and Fine Women Business Network ([www.finewomen.co.za/](http://www.finewomen.co.za/)). Other women entrepreneurs in the surrounding area were also approached to seek their participation in the study. The sample of women-led SMEs was drawn based on the definitive criteria of the employee number being between 0-200 (DTI, 2008), and particularly those who used mobile phones for their business.

Studies on entrepreneurs and small firms show that there is usually a non-response rate occurrence which in turn affects the desired sample size (Kyobe, 2004). Saunders et al. (2009) suggests that in order to have a representative sample that has a low and tolerable margin of error, one should aim for large sample sizes. However, they propose a rule of thumb that can govern studies of this nature, which allows a minimum number of 30 for a sample size. Due to the researcher’s limited knowledge on the number of Women-led SMEs in South Africa and also the lack of possession of a comprehensive list containing information about women-led SMEs, the sample size for this study was not specific to a certain number. However, based on studies relating to SMEs in general, the desired sample size for the study was above 200 women-led SMEs. This was believed to be sufficient to

ensure a representative sample size and a low margin of error, given the target population of the study.

#### **3.3.4.3 Sampling technique**

A simple random sampling (Creswell, 2009) was chosen as the sampling technique for this study. This involved a random selection of participants across the various sources that were contacted to get a list and, in some cases, access to the women who owned, managed or were partners in the women-led SMEs. This technique provides an equal probability avenue for all the possible cases of a target population to be selected (Bhattacharjee, 2012). This sampling technique was selected due to the nature of the target population and sampling frame for this study. Furthermore, it was selected because it allows the selection of the sample to be done without bias and, consequently, ensures that the sample is representative of the whole population. Therefore, inferences made from the sample can be generalisable.

#### **3.3.5 Research instrument**

The choice of research instrument was guided by the research philosophy and the research strategy adopted in this study. The research instrument for the collection of data for this study was a questionnaire. The questionnaire was prepared, based on a number of surveys by studies relating to this research. These studies included the work of: Ahmad, 2007; Man, 2001; Esselaar et al., 2006; Jiyane & Mostert, 2010; Li, Zhang, & Chan, 2005; Ndubisi & Kahraman, 2005; Ürü et al., 2011. A summary of these sources and the items in the questionnaire are presented in **Appendix C**.

The questionnaire involved both closed- and open-ended questions that formed the items measured for each construct in the conceptual framework. Most of the items were measured on a five point Likert scale with 1 representing the lower value and 5 representing the highest value. There were five sections in the questionnaire and a brief description of what each section covered is given as follows:

- Section one: This covered demographics such as the position of the respondent in the firm, the age of the respondent, the marital status, the business sector, the age of business, number of employees and the educational qualification.

- Section two: This measured the human competencies construct with 12 items and a Likert scale of 1 – 5 where 1 = Strongly disagree and 5 = Strongly agree.
- Section three: This measured the mobile technology construct with seven major items. The first four questions obtained general information on the number of phones used, number of years in which phones had been used for the business and the type of phone used. The fifth question measured the frequency of use of the mobile phone application, using a Likert scale of 1 – 5, where 1 = Never and 5 = Always. Questions 6 and 7 measured the most used functions of the mobile phone and the derived benefits from the use of mobile phones for the business as open-ended questions.
- Section four: This measured business strategy with an open-ended question.
- Section five: This measured performance in two parts. The first part involved the satisfaction of the respondents using a Likert scale of 1 – 5, where 1 = Not at all satisfied and 5 = Extremely satisfied. The second part involved comparison with competitors using a Likert scale of 1 – 5, where 1 = Much worse and 5 = Much better.

A copy of the questionnaire is attached in **Appendix B**. Some of the questions were re-worded (particularly those under the competencies section) after the pilot test in order to provide more clarity and capture the purpose for the study. **Appendix D** shows a table illustrating the match of items in the questionnaire with the variables/constructs, propositions and research question.

#### ***3.3.5.1 Reliability and Validity of Research Instrument***

**Reliability** is concerned with determining whether the measures for constructs are dependable or consistent (Neuman, 1994; Bhattacharjee, 2012). Creswell (2009) suggests that in a case where one has modified an instrument of research or combined various instruments for the study, the original validity and reliability may not hold for the new instrument, therefore, re-establishing the validity and reliability during the data analysis is required. Bhattacharjee (2012) proposes four types of reliability tests: inter-rater reliability, test-retest reliability, split half reliability and internal consistency reliability. For the instrument used in this study, the internal consistency reliability test was done. This was chosen because of the researcher's level of knowledge and familiarity with carrying out this test. Internal consistency reliability involves measuring the different items of a construct to

test for consistency. This measurement can be done using Cronbach's alpha. It can be calculated using statistical software. The researcher calculated Cronbach's alpha using Statistica 10 software; the results are presented in Chapter 4.

Furthermore, in response to Neuman's (1994) suggestion, the researcher ensured that reliability was increased by applying four principles: clearly conceptualising constructs, using a precise level of measurement, using multiple indicators and using pilot tests. The researcher adhered strictly to two of these principles in order to ensure increased reliability of the research instrument; with the first being to, clearly conceptualise the constructs and the second to use pilot tests. Although the constructs being measured were clearly distinctive, the researcher ensured that there were clear definitions given for each in the literature review. Neuman (1994) explains that there should be clear theoretical definitions and each measure should solely indicate one concept. Secondly, the pilot tests conducted involved the supervisor and about five women entrepreneurs.

**Validity** involves the level of adequacy of a measure in representing the construct it is meant to measure. According to Bhattacharjee (2012), there are validity tests concerned with measurement procedures and there are those for hypothesis/propositions testing procedures. For the validity of the measurement procedures in this study, face validity, content validity and construct validity are accounted for. Face validity addresses whether, on the face of it, there is a fit between a measure and its underlying construct. Content validity checks that the full definition of a construct is represented in a measure. Construct validity addresses whether generalisations can be made from the measurement questions to the constructs. In other words, do the measurement questions truly measure the presence of the constructs they are meant to measure? In order to achieve the validity tests mentioned above, the researcher consulted the supervisor of the research as well as other experts in the department. This follows the suggestion by Bhattacharjee (2012) as these validity tests do not have a direct measurement but can be ensured by consulting experts in the research field.

In addition to the above tests, the researcher was aware of the threats to validity that may arise, therefore, internal validity, external validity and statistical validity were checked and

herein accounted for (Creswell, 2009). With regard to internal validity, which checks the appropriateness and ability to draw inferences from the target population (Bhattacharjee, 2012), the sampling technique for this research was selected in order to ensure that the characteristics of the participants were equally distributed. Furthermore, the researcher aimed to get a large number of respondents who would be suitable for this purpose and also targeted areas in which women-led SMEs were known to exist in large numbers.

External validity checks that no incorrect inferences are made from the sample data (Bhattacharjee, 2012). In light of these, the researcher ensured that there was an adequate level of representativeness in the sample based on the sample frame and that the demographics section of the research instrument covered a number of key classifications.

Lastly, with the advice of the supervisor and also careful selection of adequate statistical measurements on the researcher's part, the statistical conclusion validity was carefully carried out.

### **3.3.6 Data collection**

Data collection was carried out following the formulation of hypothesis, development of the research instrument and approval of the ethics committee of the researcher's faculty to conduct the research.

An initial number of 250 women-led SMEs were contacted to participate in the study. These women were either owner, managers or partners in the women-led SMEs following the definition that has been earlier stated for women-led SMEs. Some of the questionnaires were served primarily through the use of an online-based platform called Survey Monkey or Qualtrics. This was used to ensure a wide reach of the subjects and eliminate cost and time constraints where necessary. About a 100 subjects were contacted by email to inform them about the study and the link to the online survey was included in the email. Subsequently and as alternative methods, another 100 set of questionnaires were sent to the subjects of study via posts. 50 questionnaires were administered in person. These different methods of administering the questionnaire was done depending on the convenient or suitable method for the participants. The alternative methods to using an online platform were employed so

as to ensure a better response rate. For every questionnaire, the following was attached: a cover letter that included an introduction of the research and the researcher, co-signed by the supervisor of this study, and a participant consent form.

In order to ensure a high response rate and also check for non-response bias as earlier mentioned, the researcher applied a similar suggestion of a three-phase administration process devised by Creswell (2009). This included: Sending a first notice of intent to request the participation of the subject; followed up with the actual message containing the questionnaire, either as a link to the online platform hosting the survey or a physical copy (this will be 3 to 7 days afterwards); and lastly a courtesy reminder either by email, post or phone call to the participants to complete the survey (this will be about 7 to 10 days later).

A total number of 89 questionnaires were received (18 from the online based platform – Qualtrics and 71 from those administered in person), of these, 19 were excluded due to incompleteness and improper filling of the questionnaires, giving a response rate of 36%. This response rate is not surprising and does not invalidate the study as the response rate for studies on SMEs is usually very low (Brophy, 1986; Kyobe, 2004).

### **3.3.7 Data analysis techniques**

The research instrument was designed to include the following quantitative data types in the data gathered: categorical (e.g. marital status, competence ability and educational qualification) and quantifiable data (e.g. number of employees). The data gathered from the questionnaires administered were analysed primarily through the use of quantitative measures and techniques. This is because of the quantitative nature of the research instrument. Firstly, the data gathered from the closed questions were cleaned by removing anomalies in the data. After cleaning, the data was coded into numbers based on the scaling as stated above (e.g. 1 – 5) and prepared into number formats to be exported into Statistica for further analysis. The cleaning, coding and preparation of the data was done using Microsoft Excel. The prepared data were then captured onto and analysed with Statistica 10 software. Statistica 10 software was chosen mainly because of the researcher's level of use and familiarity with the software and also because it is one of the most widely used statistical software and is easily accessible.

Quantitative analysis on data usually consists of statistical techniques grouped into two major ways: descriptive statistics and inferential statistics (Bhattacharjee, 2012). For this research, in order to describe the data and the general properties of the variables in the data, descriptive statistics such as frequency distribution (to check the nature of the distribution), mean, and standard deviation was conducted. In order to draw inferences and test the propositions, the major statistical analysis that was carried out was cluster analysis. It is discussed below.

#### ***3.3.7.1 Cluster Analysis.***

In this study, the argument is that there exists a relationship between three variables, i.e., human competencies, mobile technology and business strategy, whereby these three variables impact on each other, which in turn has an overall effect on the performance of a business. In order to measure and assess these interplays, the perspective of alignment as Gestalts (configurations or patterns that have achieved an adequate level of fit or coherence with one another) has been adopted. Therefore, since the combination between these variables is presumed to occur in different patterns (clusters), cluster analysis has been deemed suitable for this research to identify the various groupings or clusters. Cluster analysis was carried out in order to sift out patterns that would guide the inference from the findings necessary to test the propositions and answer the research questions.

Cluster analysis is an exploratory statistical method that organises similar objects into the same group or cluster. The strength of this statistical method lies in being able to rearrange the data, in order to enable the researcher or analyst to become more aware of patterns that can be recognised or discovered (Fonseca, 2013). The major aim of cluster analysis is to find groups of objects that are mutually exclusive, thereby making the similarities and differences between these objects as distinct as possible. Cluster analysis is a similar technique to factor analysis; however, the difference comes in the fact that rather than grouping variables together as in the case of factor analysis, cluster analysis is concerned with grouping cases. In other words, rather than creating groups of variables based on people's responses to the variables, cluster analysis helps to group people based on their responses to the various variables. There are three most common clustering approaches, which can be computed using statistical software such as SPSS or STATISTICA. They are:

partitioning methods (k-means), hierarchical methods and two-step clustering (a combination of the first two methods) (Mooi & Sarstedt, 2011).

The two-step clustering algorithm is based on a distance measure that is applied in cases where the data set is really large or in cases where there is need to form clusters on categorical or continuous data. It provides the best results in the following instances: all continuous variables in the data set have a normal distribution, all variables in the data set are independent, and when the categorical variables in a data set have a multinomial distribution.

Hierarchical algorithms achieve clustering by following a set procedure that either involves adding an individual element to or deleting this element from clusters, whereby the resulting outcome is a tree-like structure. The adding of elements is linked to agglomerative algorithms and there exist five of them namely: single linkage, average linkage, complete linkage, centroid method, and Ward's method (Hair et al., 1992). On the other hand, deleting elements is linked to divisive methods, and there exist two types: monothetic and polythetic.

Hierarchical algorithms have several disadvantages. Many researchers do not have knowledge on the underlying structure of how a sample will be, thereby making it difficult to choose the 'right' algorithm. In addition, poor clustering cannot be changed as these algorithms only take one pass through a data set. Lastly, in instances where cases are dropped, the solutions become unstable, particularly in the case of small sample sizes. These disadvantages, therefore, pose a threat to the validity of a solution derived using hierarchical methods.

K-means algorithms are non-hierarchical methods that group a data set into a pre-specified number of clusters. The major advantage k-means has over the hierarchical method is that it is not affected by outliers or the inclusion of irrelevant clustering variables. In addition, due to the multiple passes made through the data, the final clusters derived contain between-cluster heterogeneity and within-cluster homogeneity. Nonetheless, k-means algorithm's

disadvantage lies in the need to specify a number of clusters to derive from the data set, especially in the case of exploratory research.

The researcher decided to use the k-means clustering algorithm for the following reasons: firstly, the data set is not very large, therefore the use of two-step algorithm will not be appropriate; secondly, it has fewer disadvantages in comparison to the hierarchical clustering algorithm. The researcher also took into consideration the need to specify the number of clusters and decided to run several iterations of number of clusters that can best represent the data in terms of demographics, such as the geographic zones and the business sector. The researcher decided on four clusters after several iterations of different numbers of clusters. These four clusters showed the best patterns and had adequate groupings in terms of number of cases across all clusters.

#### ***3.3.7.2 Thematic analysis***

In addition to the statistical techniques mentioned above, due to the open-ended questions in the questionnaire, thematic analysis was conducted on the data gathered for the measured items. Thematic analysis is used to identify, analyse and report patterns or themes within data. In order to conduct this method appropriately and adequately, the steps and guidelines suggested by Braun and Clarke (2006) were followed. This includes getting familiar with the data, generating codes to identify this data, searching for themes from the coding done, reviewing the themes found, defining and naming these themes, and producing the report of the patterns or themes gotten.

#### **3.3.8 Timeline**

The timeline for a research can either be cross-sectional or longitudinal. A cross-sectional time dimension involves collecting data at a particular period of time which does not exceed months; while a longitudinal time dimension involves collecting data over a long time period (usually years) to study a phenomenon (Sekaran, 2003). This research will be done by using a cross-sectional time dimension as the study is concerned with gaining understanding from present occurrences and present time (Saunders et al., 2009). This is deemed appropriate because of the amount of time given to complete the Masters program and also in line with the survey method applied for this study (Saunders et al., 2009).

### **3.4 Ethics and confidentiality**

The researcher was aware of the integrity and value concerns related to research (Neuman, 1994; Bhattacharjee, 2012). Therefore, in line with the requirement for ethical considerations, the survey instrument used to test the conceptual model was first sent to the ethics committee of the University of Cape Town (UCT) for review, along with a filled copy of the ethics application form (See **Appendix E**). Permission was obtained to conduct the study as well as to follow necessary procedures required for conducting the research. Regarding the business directories and databases consulted for the information on the participants and the sampling frame in general, the researcher ensured that their terms and condition were adhered to. The researcher was also aware of ethical concerns that may have been raised.

For every questionnaire served physically, a cover letter with an introduction of the research and researcher co-signed by the supervisor of this study was attached, while, for those served electronically, an introduction was sent with a link to the survey. The participants were informed that theirs was a voluntary participation in the study. The participants were also informed of the intention of treating their responses with anonymity.

Although the identity of the participants in this study would be anonymous, demographic information such as type of business sector and the number of employees would be disclosed and used in assessing and analysing the data collected. The raw data collected would, however, be treated with strict confidentiality and would be in the sole possession of the researcher.

### **3.5 Summary of the chapter**

The objective of this research was to identify the combination of human competencies, mobile technology and business strategy that could yield better business performance in women-led SMEs. In light of this, this chapter has provided an overview of the research design and methodology adopted for this research; it has also shed light on the philosophical underpinnings for research which determine the choice of research paradigms, methods, approaches and techniques adopted for a study. This research

adopted a positivistic paradigm, a survey strategy, an exploratory research and the use of quantitative methods for data collection, quantitative and qualitative methods for data analysis. The research instrument involved both open- and closed-ended questions. A total of 89 questionnaires were collected from women-led SMEs in four parts of South Africa, and a final selection of 70 responses was used for the study. Table 1 below shows a summary of the research methodology for this study.

**Table 1: Research methodology summary**

<b>METHODOLOGY</b>	<b>APPROACH</b>
<b>Philosophy</b>	Positivist
<b>Research strategy</b>	Survey
<b>Research purpose</b>	Exploratory
<b>Research approach</b>	Deductive
<b>Target population</b>	South African women-led SMEs
<b>Type of research</b>	Quantitative research
<b>Data collection techniques</b>	Questionnaire (Closed and open ended questions)
<b>Data analysis</b>	For Quantitative analysis <ul style="list-style-type: none"> <li>• Microsoft Excel 2010 and Statistical Tests using Statistical Analysis Software</li> </ul> For Qualitative analysis <ul style="list-style-type: none"> <li>• Thematic Analysis</li> </ul>
<b>Time-Frame</b>	Cross - Sectional

## **CHAPTER 4: ANALYSIS, FINDINGS AND DISCUSSION**

The previous chapter gave an overview of the research design and method for this study. This chapter presents the findings of the study and a discussion on these findings.

### **4.1 Introduction**

This study sought to identify the combinations of human competencies, mobile technology and business strategies that can yield better performance in women-led SMEs as its primary objective. The secondary objectives involved investigating the level of use and benefits of mobile technology in women-led SMEs; identifying the kinds of human competencies possessed by these women-led SMEs; and examining the type of strategies applied by women-led SMEs. For this purpose, research questions, propositions and a research design

were formulated, followed by the collection of data from women-led SMEs to capture their human competencies, the level of use of mobile technology, the kinds of business strategies they apply and their business performance.

Quantitative and qualitative analysis techniques were employed to analyse the data collected. The quantitative analysis involved running statistical tests to get descriptive statistics for the data, testing for reliability, checking for correlation amongst variables for each constructs, and running cluster analysis to derive patterns and configurations amongst the constructs as shown in the conceptual model. On the other hand, the qualitative analysis was mainly carried out in order to perform thematic analysis on the open-ended question that measured the business strategy construct in the questionnaire.

## 4.2 Reliability testing

The internal consistency of the variables used to measure each construct was determined using Cronbach's alpha test. This has been employed to determine the reliability of variables to check that they are dependable and consistent (Bhattacharjee, 2012). A threshold of 0.70 is normally used and is the acceptable value of Cronbach's alpha; however, a threshold of 0.60 can be considered in the case of an exploratory research (Fornell & Larcker, 1981; Hair et al., 2006). Table 2 shows the results of Cronbach's alpha test on each construct. Human competencies had a Cronbach's alpha of 0.76, mobile technology had a Cronbach's alpha of 0.83 and business performance had a Cronbach's alpha of 0.91. These scores suggest that the variables are reliable.

**Table 2: Reliability test results**

Constructs	No of items/variables measured	Cronbach's Alpha
Human competencies	12	0.76
Mobile technology	12	0.83
Business performance	10	0.91

## 4.3 Demographic analysis

Respondents who partook in the survey were asked to indicate their position in the firms, their ages, their marital status, the type of business they were in, the age of the business,

the number of employees they had and their educational qualifications. Data on the type of mobile phone they used for their business was also captured. The information derived from the responses to these demographic categories is presented below.

#### 4.3.1 Position in firm

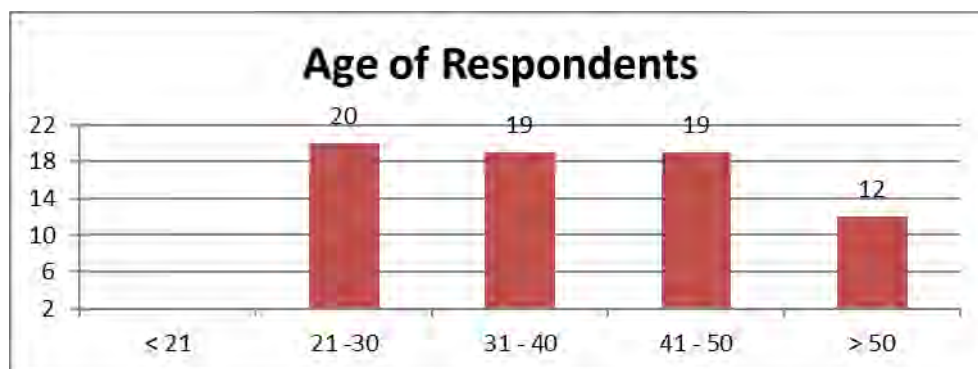
Of the 70 SMEs surveyed, the majority (54) were owners of the surveyed SMEs as shown in table 3; followed by a count of 11 who were the business managers and 5 who were business partners.

**Table 3: Position of respondents in the firm**

Position	Count	Percentage
Business owner	54	77.14
Business partner	5	7.14
Business manager	11	15.71

#### 4.3.2 Age of respondents

As seen in figure 6, none of the respondents belonged to the “lower than 21” age group. The age group of ‘31-40’ and ‘41-50’ had the highest count with a frequency of 19 respondents respectively. The ‘21-30’ age group had a frequency of 18 respondents while the “less than 50” age group had a frequency of 12 respondents.



**Figure 6: Age of respondents**

#### 4.3.3 Marital Status of Respondents

**Table 4: Marital status of respondent**

Marital Status	Count	Percentage
Single	23	32.86
Married	47	67.14

As shown in table 4, the majority of the respondents were married with a count of 47 respondents, while 23 of the respondents fell into the single category.

#### 4.3.4 Business sector

The business sector with the highest representation consisted of the community, social and personal services sector with a count of 28 respondents. Under this sector we have businesses relating to hair and beauty parlours, wellness centres, printing services, tailoring and interior design. As shown in figure 7, the Wholesale and Retail trade, Catering, Accommodation and Restaurants, and Repair Services Sector had the next highest representation with 19 respondents. Following is the Financing, Insurance, Real Estate and Business Services sector with a count of 11 respondents. The Education and Training sector and the Transport, Storage and Communication sector had a count of five respondents each falling under these. Manufacturing and construction sectors had the lowest representation with a count of one respondent each.

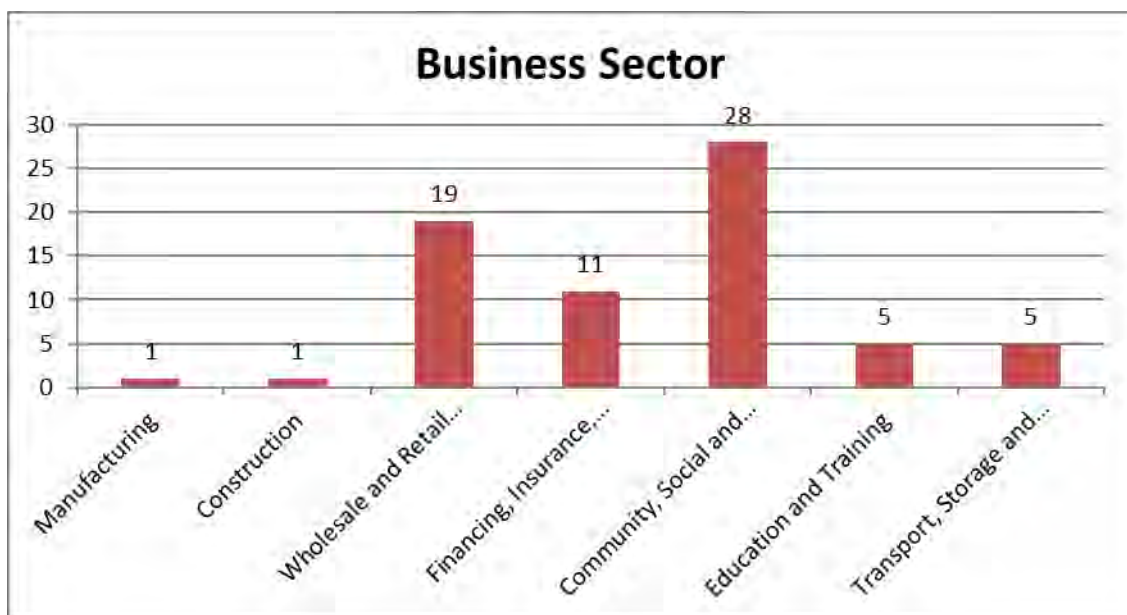


Figure 7: Business Sector of survey women-led SMEs

#### 4.3.5 Age of business

As shown in table 5, most respondents had been operating their business for more than 10 years. Another highly represented group were those that had been operating their business between 3 and 5 years, followed by those who had been operating their business between 1

and 2 years and those between 6 – 9 years respectively. The least represented group are those that had only just established their businesses which were less than a year old.

**Table 5: Age of business of surveyed women-led SMEs**

Age of Business	Count	Percentage
Less than one year	4	5.71
1 – 2 years	15	21.43
3 – 5 years	17	24.29
6 – 9 years	12	17.14
10 and above	22	31.43

#### 4.3.6 Number of employees

Respondents were asked to state how many employees they had. Their responses were then grouped as shown in table 6 and this classification was guided by the definition and grouping given by the DTI report for 2008. The majority had less than 5 employees followed by those who operated their business alone and those with between 6 and 20 employees. Only one of the surveyed women-led SMEs had over 50 employees and two had between 21 and 50 employees.

**Table 6: Number of employees in surveyed women-led SMEs**

Number of Employees	Count	Percentage
Self only	13	18.57
Less than or equal to 5	43	61.43
6 – 20	11	15.71
21 – 50	2	2.86
50 and above	1	1.43

#### 4.3.7 Educational qualification

The majority of the surveyed women entrepreneurs had only a high school certificate; yet some had obtained university degrees. As seen in table 7 very few had vocational certificates and no educational qualification respectively.

**Table 7: Educational qualification of women entrepreneurs**

Educational Qualification	Count	Percentage
None	2	2.86

High school certificate	22	31.43
Vocational Certificate	5	7.14
Diploma	19	27.14
University degree	22	31.43

#### 4.3.8 Type of mobile phone used

Figure 8 shows that most of the surveyed women entrepreneurs asserted that they used a smartphone for their business; while others asserted the use of a basic phone.

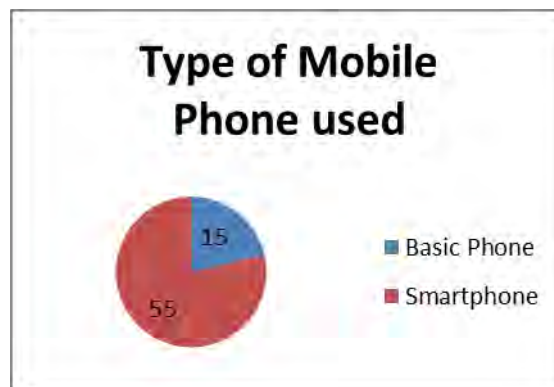


Figure 8: Types of Mobile Phone used

#### 4.3.9 Most important competency

Table 8: Most important competency to respondents

Competence	Frequency/Count
Effective communication (and establishing networks)	29
Being able to look for business	12
Budgeting	5
Formulating and Implementing ways to exploit opportunities	3
Planning everyday business effectively	1
Engaging in effective ways to manage finances	2
Implement new ideas, products or services in the business	7
Risk-taking	9

As shown in table 8 above, the competence that seemed to be the most important to women entrepreneurs involved been able to effectively communicate with people. A significant number also asserted that being proactive was the most important competency to them. Very few held competencies that involved planning their everyday business effectively, engaging in effective ways to manage the finances of the business, and

formulating and implementing ways to exploit opportunities as the most important competency to them.

#### 4.3.10 Competencies of women entrepreneurs in women-led SMEs

Table 9: Competencies of women entrepreneurs in women-led SMEs

		Valid N	Mean	Min	Max	Std.Dev.
Cmp1	Communication	70	4.57	3	5	0.63
Cmp2	Networking	70	4.40	2	5	0.71
Cmp3	Proactive	70	4.36	2	5	0.80
Cmp4	Perseverance	70	4.34	2	5	0.72
Cmp5	Budgeting	70	4.16	2	5	0.79
Cmp6	Exploiting opportunities	70	4.11	2	5	0.86
Cmp7	Planning	70	3.94	2	5	0.81
Cmp8	Managing finances	70	4.04	2	5	0.81
Cmp9	Use of technology	70	4.23	2	5	0.73
Cmp10	Innovation	70	4.23	2	5	0.82
Cmp11	Creativity	70	4.17	2	5	0.85
Cmp12	Risk-taking	70	3.96	1	5	1.13

Table 9 shows a summary of the results of the competencies possessed by women entrepreneurs in women-led SMEs. On average, the women entrepreneurs were mostly strong in their possession of the ability to communicate effectively with other people (cmp1 = 4.57). They also possessed all other measured competences, although some seemed to slightly tilt towards fairly agreeing to possessing competences regarding planning the everyday business (cmp7 = 3.94) and taking risks (cmp12 = 3.96).

#### 4.3.11 Mobile technology usage by women entrepreneurs in women-led SMEs

As seen in table 10, the women entrepreneurs asserted that they used the SMS, clock, email, calendar and camera applications most of the time; the results also suggest that these are the applications they used the most on their mobile phones. In the case of the Internet browser, social media, instant messaging, directory, memo and file storage applications, they used them sometimes. However, the GPS application seems to be the only application that is rarely used by women entrepreneurs. Studies have shown that SMSs

are usually widely used and by women in particular; besides using mobile phones for the primary and basic expected function of calling, they often use SMS to communicate as it is generally cheaper (Jiyane & Mostert, 2010).

**Table 10: Mobile technology applications usage by women entrepreneurs in women-led SMEs**

	Valid N	Mean	Min	Max	Std.Dev.
Sms	70	3.81	1	5	1.07
Email	70	3.60	1	5	1.53
Internet browser	70	3.39	1	5	1.48
Social media	70	3.21	1	5	1.47
IM	70	3.10	1	5	1.56
File storage	70	2.99	1	5	1.42
Camera	70	3.57	1	5	1.30
GPS	70	2.23	1	5	1.44
Calendar	70	3.90	1	5	1.33
Memo	70	2.79	1	5	1.42
Directory	70	3.44	1	5	1.46
Clock	70	3.81	1	5	1.30

#### 4.3.12 Business performance of women-led SMEs

In terms of their business performance, the women entrepreneurs were very satisfied with their ability to satisfy customers, their ability to attract customers and the level of progress in the business over the last 12 months, as indicated in table 11. They also asserted that they were doing much better in terms of their growth in sales in comparison to their competitors. However they seemed to be moderately satisfied in terms of their self-satisfaction, the rate of profit in their business and the growth in sales in their business. They also believed that their cash flow, net profits and market share were just about the same with their competitors.

**Table 11: Business Performance of Women-led SMEs**

	Valid N	Mean	Min	Max	Std. Dev.
The rate of profit of the business	70	3.16	1	5	0.93

<b>The growth in sales</b>	70	3.14	1	5	0.94
<b>Self-satisfaction</b>	70	3.47	1	5	0.96
<b>Level of progress in business</b>	70	3.51	1	5	0.88
<b>Ability to satisfy customers</b>	70	4.09	1	5	0.85
<b>Ability to attract and keep new customers</b>	70	3.83	1	5	1.02
<b>Growth in sales</b>	70	3.50	2	5	0.88
<b>Cash flow</b>	70	3.49	2	5	0.81
<b>Net profits</b>	70	3.46	2	5	0.86
<b>Market share</b>	70	3.40	2	5	0.82

#### 4.4 Open-ended question analysis

This section presents the findings from the analysis of the open-ended questions that measured/captured the benefits the women entrepreneurs derived from the use of mobile phones for their business and also the business strategy they applied in their business. The analysis of each question was done through thematic analysis (as discussed earlier in chapter 3).

##### 4.4.1 Business strategies applied by women-led SMEs

The guidelines proposed by Braun and Clarke (2006) for carrying out thematic analysis were followed in analysing the responses to this question. The respondents were asked to give a short detail of the kind of business strategies they applied for their business. Table 12 below shows the profile of the respondents referenced in this section. As discussed in the research design chapter, the business strategies of the surveyed women-led SMEs were categorised from a narrative point of view. This standpoint was followed through during the thematic analysis. Four major categories emerged from the responses gathered from the surveyed women-led SMEs and these categories were named with guidance from literature. These include: market share and growth oriented strategy; leveraging the use of IT trends; customer relationship and satisfaction oriented strategy; and conservative strategy.

**Table 12: Profile of respondents with comments on Business strategy**

<b>Respondent</b>	<b>Position</b>	<b>Age of Business</b>	<b>Qualification</b>	<b>Type of business</b>	<b>Type of strategy</b>
X1	Owner	1 – 2 years	University	Consulting	Market share and growth

			degree		oriented strategy
X2	Owner	6 - 9 years	Diploma	Entrepreneurial development	Market share and growth oriented strategy
X3	Partner	1 – 2 years	Diploma	Tailoring materials retail business	Market share and growth oriented strategy
X4	Owner	Less than a year	Diploma	Cosmetics and beauty Parlour	Market share and growth oriented strategy
X5	Owner	6 – 9 years	University degree	Franchise - Retail	Leveraging the use of IT trends
X6	Owner	1 – 2 years	High School cert.	Transport solutions	Leveraging the use of IT trends
X7	Owner	1 – 2 years	Diploma	Interior design	Leveraging the use of IT trends
X8	Owner	1 – 2 years	High School cert.	Bakery	Leveraging the use of IT trends
X9	Owner	6 – 9 years	Diploma	Craft	Customer relationship and satisfaction oriented strategy
X10	Owner	1 – 2 years	University degree	Sole proprietor	Customer relationship and satisfaction oriented strategy
X11	Manager	3 – 5 years	Diploma	Cosmetic store	Customer relationship and satisfaction oriented strategy
X12	Partner	3 – 5 years	High School cert.	Retail store	Conservative strategy
X13	Owner	6 – 9 years	University degree	Videography	Conservative strategy
X14	Manager	3 – 5 years	None	Hair salon	Conservative strategy

Those who applied the market share and growth oriented strategy were those who were involved in networking, seeking opportunities, seeking new business or new products and ideas, those who trained themselves to improve, those who kept abreast of the industry they fell under and the changes in the environment. They achieved this using different methods and resources. The following comments were made:

*I use my networks to extract business opportunities, and keep up to date with developments in my area of interest . . . I attend talks and networking events where I think that these will add value, and ensure that I keep abreast of developments in my area of interest. – X1*

*Networking is my business – need to have contacts by either meeting people, using social media and creating events that bring people together to grow business contacts. – X2*

*Advertise, use of telkom to gain access to old and new customers (to get ourselves out there), put ourselves in a strategic market space, sell unique items, train ourselves and research ways to be better at the business. – X3*

*Attend training to know about products and how to attract customers, pass knowledge to employees, seek opportunities, being different in the market . . . – X4*

These women entrepreneurs also applied the strategy that involved leveraging the use of IT trends such as social media, instant messaging application and other IT tools and services, for the purpose of marketing or advertising, sharing information and getting information, getting feedback from customers and keeping in touch with them, using search engines such as Google to get information and keep updated. The comments made by respondents are stated below.

*We use social media and bulk text messaging as our primary means of marketing and reaching our target audience. – X5*

*Our strategy is using social media to find suitable candidates for our projects and then showcasing them through the same media. – X6*

*We use online marketing in the form of a landing page and adwords to reach new clients, and use social media to create a buzz and display projects. – X7*

*The use of social networks has made me get many opportunities in terms of getting more customers and improving in my advertising – X8*

Focusing on good customer relationship and customer satisfaction towards products and services was another business strategy applied by some of the women-led SMEs. They achieved this using several methods, although different in some cases, as shown in some of the comments given below.

*Giving excellent personal service, talking to the people who enjoy my work through newsletters, twitter, (less so) facebook/establishing a mailing list to email latest ideas etc. . . . – X9*

*. . . we establish what products or service attributes are important to customers through research . . . – X10*

*In every way we make sure that our clients are always enticed and we build relationships with them to receive loyalty . . . – X11*

The final category of strategies, the conservative strategy, involved those that reduced costs in order to entice and attract customers by organising promotions and mark down sales and being focused on cost effective services. This category also involved those that only relied on word of mouth and fliers to get customers. Below are some responses that were given by respondents.

*We make our prices to be within the customer's budget, and conduct mark down sales. – X12*

*We reduce prices, organise specials . . . – X13*

*...WORD OF MOUTH has been our biggest asset - good service, good communication, good product and the word spreads. – X14*

In order to be able to make further inferential statistics and perform cluster analysis with the categorised data on the business strategies (as this is one of the key constructs in the conceptual model), the responses were captured under each theme based on a scale of 1 – 5, where 1 = 'Not discernible'(meaning the strategy category was not discerned from the response) to 5 = 'Mostly dominant'(meaning the strategy category was the dominant strategy applied as noted from the response). This was done by quantifying the responses as they were captured using open ended questions. Table 12 shows the four major themes and the frequency of the responses in relation to the scaling.

**Table 13: Strategies applied by women-led SMEs**

Strategy type	Mostly dominant	Partly Dominant	Completely discernible	Partly discernible	Not stated/discernible
Market share and growth oriented strategy	22	17	6	4	21
Leveraging the use of IT trends	10	15	3	2	40
Customer relationship and satisfaction oriented	23	5	9	3	30
Conservative strategy	6	1	1	8	54

The results showed 'customer relationship and satisfaction oriented strategy' as the category of business strategy that had the highest count as the dominant strategy applied by the surveyed women-led SMEs. Followed by this was the 'market share and growth oriented strategy' category, the 'leveraging new IS/IT trends for business activities' and the 'Conservative strategy' categories respectively. Some of the SMEs had other strategies as partly dominant in their businesses which suggested that they also applied these other strategies although not in the same magnitude or with as many resources as the mostly dominant strategy. It further suggested these SMEs applied a combination of strategies. Although not explicitly stated, it could be completely discerned or partially discerned that some of the SMEs applied some other category of strategies apart from the ones that were mostly dominant or partly dominant in their businesses.

#### 4.4.2 Benefits derived from the use of mobile phones for the business

The respondents were asked to indicate if they had derived any benefits from the use of mobile phones for their business or if the use of mobile phones had improved their way of doing business in any way, using a 'yes' or 'no' response. Those who indicated with a yes response were asked to state briefly how this had been achieved. Figure 9 shows that the majority of the respondents asserted that they had derived benefits from using mobile phones for their business.

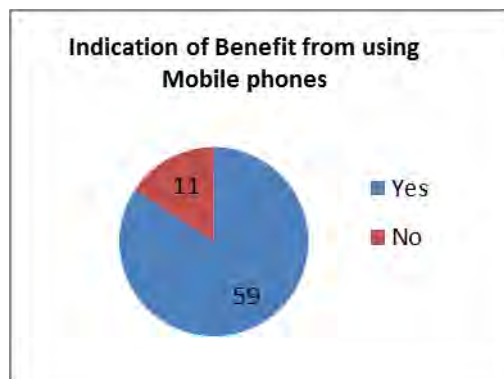


Figure 9: Indication of Benefit from using Mobile phones

The guidelines proposed by Braun and Clarke (2006) for carrying out thematic analysis were followed in analysing the responses to this question. Table 14 below shows the profile of the respondents referenced in this section.

Table 14: Profile of respondents with comments on Mobile Technology

Respondent	Position	Age of Business	Qualification	Type of business
X15	Owner	Less than a year	University degree	Communications
X3	Partner	1 – 2 years	Diploma	Tailoring materials retail business
X10	Owner	1 – 2 years	University degree	Sole proprietor
X17	Owner	6 – 9 years	University degree	Retail
X18	Owner	1 – 2 years	University degree	Security solutions
X19	Owner	6 – 9 years	University degree	Videography
X20	Partner	3 – 5 years	High school cert.	Retail
X21	Owner	1 – 2 years	Diploma	Cosmetics parlour
X22	Owner	1 – 2 years	University degree	Marketing and event planning

X23	Owner	Less than a year	Diploma	Cosmetics and beauty parlour
X24	Owner	1 – 2 years	University degree	Training and development
X25	Owner	6 – 9 years	High school cert.	Event coordination
X26	Owner	1 – 2 years	High school cert.	Bakery
X27	Owner	10 years and above	University degree	Consulting firm
X28	Owner	6 – 9 years	High school cert.	Printing service
X29	Manager	3 – 5 years	University degree	Psychology practice

Initial codes were derived from the data and were further refined to a total of 13 codes. These codes were then grouped into themes, as drawn from literature on benefits that can be derived from the use of mobile phones. A total of five major themes emerged from the thematic analysis done on the responses to how the women entrepreneurs had derived benefits from using mobile phones for their business. They include: convenience and ease, provides mobility advantage, provides useful applications for business activities, encourages time management and multi-tasking, cheap (low cost of running). Table 15 shows the frequency of each theme with regard to the number of respondents that fell under each theme.

**Table 15: Category of benefits derived from the use of mobile phones by women-led SMEs**

Themes	Frequency
Convenience and ease	26
Provides mobility advantage	21
Provides useful applications for business activities	11
Encourages time management and multi-tasking	3
Cheap (low cost of running)	4

The theme with the highest frequency was ‘Convenience and Ease’. Respondents indicated that mobile phones provided them: with ease of communicating with clients, employees and vendors/suppliers; ease of use of the technology itself; ease of access to information; a faster means of communication and in general it was very convenient. Below are some of the responses by the respondents.

*Mobile phones keep me constantly in touch with business and clients. Ability to access and respond to email via phone has been amazing. – X15*

*Eliminates the need to go out to customers or go out to get orders, all can be done from a convenient location. – X3*

*Used to gain relevant information about the market, competitors and other environmental changes. – X10*

*Easy and quick, you don't have to use a computer all the time to communicate and make transactions. – X17*

The theme with the next highest frequency was 'Provides mobility advantage'. Mobile phones provided mobility advantage for the women entrepreneurs; this in turn eliminated transportation and movement costs for them. It also enabled real time coordination of business activities and remote accomplishments. Some of the responses of respondents are given below.

*I'm able to receive e-mails when I'm not at my computer & keep track of urgent matters that need immediate attention. / I'm able to work remotely, when necessary. – X18*

*Our job requires us to be on set or out of town, often in remote locations. By using my phone I can still keep in touch with clients whether for quoting, confirmation, general messaging . . . – X19*

*We don't lose on sales since every customer can get hold of us all the time. – X20*

*I save money for transporting and I let my customers know when their orders have arrived. – X21*

Respondents also indicated that one of the benefits derived from the use of mobile phones was that it *'provides them with useful application for engaging in business activities and promoting the business's activities'*. Below are some comments:

*I've grown my event planning and social media marketing business from having my smart phone. It helps me to stay engaged and on top of daily news. – X22*

*I am able to have and get knowledge and pass it on, I can store information, it is an alternative to using a laptop when it's not available, and I use it in googling events to know if products can be show cased at these events. – X23*

*All my important business functions are on my phone. I can't live or work without it. – X24*

*I take photos of my designs and events that I have catered for then use them as references. – X25*

The use of mobile phones also helped with time management. Below are some comments by the respondents X26 and X27.

*It has improved in time management in terms of delivering goods to the customers. – X26*

*This helps time management tremendously. – X27*

Respondents also indicated the 'cheapness and low cost of using the technology' factor as a benefit they derived from using mobile phones for their business. Some comments are presented below by respondent X28 and X29.

*. . . it is cheaper than landlines for calls and SMS and has helped to save money. – X28*

. . . it is easier to communicate using less expensive media. – X29

#### 4.5 Cluster analysis

Cluster analysis was performed by selecting the items that measured the four constructs in the conceptual model. K-means clustering method was used. Before carrying out cluster analysis, the data on the clustering variables was standardised. Standardisation is used in cases where variables are measured on different scales and levels in order to avoid a distortion of results (Mooi & Sarstedt, 2011). Standardisation rescales all variables to have a mean of 0 and a standard deviation of 1. Several authors have recommended standardisation particularly for cluster analysis (Edelbrock, 1979), as it ensures that each variable contributes equally to the clusters. It is also possible that due to different scales and variable range, large values would contribute more to the distance measure in comparison to small values. For this study, due to the varying levels of scaling amongst the variables in the data, standardisation was performed on the data; this was also done as a response to the recommendation by experts who perceive the need to eliminate potential effects scale differences amongst variables which can affect the eventual outcome of analysis (Hair et al., 1992).

**Table 16: Cluster Analysis result**

	Anova						Clusters			
	Btw - SS	df	Within SS	df	F	signif. p	1(n = 29)	2(n = 17)	3(n = 12 )	4(n = 12)
<b>COMPETENCIES</b>										
<b>Communication</b>	24.43	3	44.57	66	12.06	0.00	<b>0.35</b>	-1.00	<b>0.02</b>	<b>0.55</b>
<b>Networking</b>	19.33	3	49.67	66	8.56	0.00	<b>0.31</b>	-0.89	<b>0.02</b>	<b>0.49</b>
<b>Proactive</b>	14.96	3	54.04	66	6.09	0.00	<b>0.42</b>	-0.74	-0.13	<b>0.18</b>
<b>Perseverance</b>	11.50	3	57.50	66	4.40	0.01	<b>0.34</b>	-0.56	<b>0.33</b>	-0.36
<b>Budgeting</b>	19.45	3	49.55	66	8.63	0.00	-0.33	-0.42	<b>0.43</b>	<b>0.96</b>
<b>Exploiting opportunities</b>	13.70	3	55.30	66	5.45	0.00	<b>0.07</b>	-0.34	-0.52	<b>0.84</b>
<b>Planning</b>	6.34	3	62.66	66	2.23	0.05	-0.01	-0.44	<b>0.17</b>	<b>0.48</b>
<b>Managing finances</b>	10.18	3	58.82	66	3.81	0.01	-0.22	-0.27	<b>0.15</b>	<b>0.77</b>
<b>Use of technology</b>	12.15	3	56.85	66	4.70	0.00	<b>0.16</b>	-0.64	-0.09	<b>0.60</b>
<b>Innovation</b>	13.01	3	55.99	66	5.11	0.00	<b>0.14</b>	-0.49	-0.38	<b>0.74</b>

<b>Creativity</b>	16.19	3	52.81	66	6.75	0.00	<b>0.45</b>	-0.62	-0.50	<b>0.29</b>
<b>Risk taking</b>	19.13	3	49.87	66	8.44	0.00	<b>0.31</b>	-0.58	-0.62	<b>0.70</b>
<b>MOBILE TECHNOLOGY APPLICATIONS USED</b>										
<b>SMS</b>	15.06	3	53.94	66	6.14	0.00	<b>0.21</b>	-0.43	-0.61	<b>0.72</b>
<b>Email</b>	20.29	3	48.71	66	9.16	0.00	<b>0.51</b>	-0.86	<b>0.10</b>	-0.12
<b>Internet browser</b>	26.39	3	42.61	66	13.62	0.00	<b>0.46</b>	-1.06	<b>0.08</b>	<b>0.30</b>
<b>Social media</b>	16.38	3	52.62	66	6.85	0.00	<b>0.44</b>	-0.78	<b>0.14</b>	-0.09
<b>Instant messaging</b>	15.63	3	53.37	66	6.44	0.00	<b>0.31</b>	-0.59	-0.49	<b>0.58</b>
<b>File storage</b>	5.24	3	63.76	66	1.81	0.15	<b>0.30</b>	-0.36	-0.05	-0.17
<b>Camera</b>	13.16	3	55.84	66	5.19	0.00	<b>0.33</b>	-0.71	-0.12	<b>0.33</b>
<b>GPS</b>	10.21	3	58.79	66	3.82	0.01	<b>0.42</b>	-0.53	-0.16	-0.10
<b>Calendar</b>	11.27	3	57.73	66	4.30	0.01	<b>0.28</b>	-0.63	-0.18	<b>0.39</b>
<b>Memo</b>	10.74	3	58.26	66	4.05	0.01	<b>0.22</b>	-0.63	-0.08	<b>0.44</b>
<b>Directory</b>	1.82	3	67.18	66	0.60	0.62	-0.02	-0.22	<b>0.10</b>	<b>0.27</b>
<b>Clock</b>	22.97	3	46.03	66	10.98	0.00	<b>0.28</b>	-0.49	-0.82	<b>0.85</b>
<b>BUSINESS STRATEGY ADOPTED</b>										
<b>Market share and growth oriented strategy</b>	15.94	3	53.06	66	6.61	0.00	<b>0.45</b>	<b>0.01</b>	-0.88	-0.23
<b>Leveraging the use of IT trends</b>	16.38	3	52.62	66	6.85	0.00	<b>0.51</b>	-0.45	-0.66	<b>0.05</b>
<b>Focus on customer relationship and satisfaction</b>	16.72	3	52.28	66	7.04	0.00	-0.51	<b>0.13</b>	<b>0.85</b>	<b>0.19</b>
<b>Conservative strategy</b>	3.95	3	65.05	66	1.33	0.03	-0.27	<b>0.15</b>	<b>0.33</b>	<b>0.12</b>
<b>BUSINESS PERFORMANCE INDICATORS</b>										
<b>The rate of profit of the business</b>	38.03	3	30.97	66	27.01	0.00	-0.65	-0.30	<b>0.91</b>	<b>1.09</b>
<b>The growth in sales</b>	30.90	3	38.10	66	17.85	0.00	-0.52	-0.40	<b>1.00</b>	<b>0.83</b>
<b>Self-satisfaction</b>	18.82	3	50.18	66	8.25	0.00	-0.20	-0.61	<b>0.64</b>	<b>0.73</b>
<b>Level of progress in business</b>	25.28	3	43.72	66	12.72	0.00	-0.23	-0.72	<b>0.74</b>	<b>0.84</b>
<b>Ability to satisfy customers</b>	5.85	3	63.15	66	2.04	0.05	-0.18	-0.24	<b>0.29</b>	<b>0.49</b>
<b>Ability to attract and keep new customers</b>	13.27	3	55.73	66	5.24	0.00	-0.10	-0.58	<b>0.41</b>	<b>0.66</b>
<b>Growth in sales</b>	31.63	3	37.37	66	18.62	0.00	-0.57	-0.30	<b>0.66</b>	<b>1.14</b>

<b>Cash flow</b>	27.43	3	41.57	66	14.52	0.00	-0.60	-0.02	<b>0.33</b>	<b>1.15</b>
<b>Net profits</b>	24.52	3	44.48	66	12.13	0.00	-0.53	-0.19	<b>0.53</b>	<b>1.02</b>
<b>Market share</b>	25.67	3	43.33	66	13.04	0.00	-0.49	-0.27	<b>0.42</b>	<b>1.13</b>

\* The positive values are indicated in bold format

Table 16 presents the results of the cluster analysis carried out on the data collected. As stated earlier, the data for the cluster analysis was standardised, therefore the numbers derived are either in negative values or positive values, where negative values represent a below average response and positive values represent an above average response. In table 16 above, the positive values are indicated in bold. The values in each cluster are the mean score of a particular variable in each cluster (e.g. Cmp1 = Communication), and not the mean score of a particular variable across the entire sample (e.g. N = 70). The one-way analysis of variance (ANOVA) test was also carried out and the values are also presented in table 16. This was done in order to check the equality of the means of the variables as well as their distinctiveness across all clusters. It was also to determine the significance level (P value, where  $p \leq 0.05$ ) of each variable. Of all the variables, only file storage and directory customers had p values greater than 0.05, hence they were not significant. These variables were excluded in further analysis. Cluster 1 had a total of 29 women-led SMEs, cluster 2 a total of 17 and cluster 3 and 4 both had a total of 12 women-led SMEs.

#### 4.5.1 Competencies across clusters

In terms of competencies, Cluster 1 women-led SMEs were above average in all of their competencies except in budgeting, planning and managing their finances. Their strongest competency seemed to be in creativity. For cluster 2, they were below average in all of their competencies, suggesting that they did not agree they possessed these competencies. Cluster 3 women-led SMEs performed above average in competencies such as communicating effectively, establishing networks, persevering, budgeting, planning and managing their finances, with budgeting being the strongest competency they possessed. However, they performed below average in competencies relating to being proactive, exploiting opportunities, their ability to use some form of technology, being innovative, being creative and taking risks. For cluster 4 women-led SMEs, they were above average in all competencies except in the competency relating to being able to persevere in the face of

all factors and situations. Their strongest competency seemed to be in being able to budget efficiently and effectively.

#### **4.5.2 Mobile technology usage across clusters**

Cluster 1 women-led SMEs seemed to be well acquainted with all mobile phone applications. As seen in the table above, they were above average in the usage of all the mobile phone applications, suggesting that they leveraged the use of these mobile technology applications for their business. The results also show that they used the email function the most. Cluster 2 women-led SMEs performed below average in the usage of all the mobile phone applications, which suggests they were not well acquainted with the use of mobile phones for their business. In cluster 3, the women-led SMEs were above average with the use of email, Internet browser, and social media, with the social media application being the application that was mostly used. However, they were below average with the use of SMS, camera, GPS, calendar, memo and clock applications, suggesting that they rarely used these applications for their business. Cluster 4 women-led SMEs were above average in their use of SMS, Internet browser, instant message, camera, calendar, memo and clock applications. The application they used mostly was the clock application which can be used to set alarms and reminders. However, they were below average in their use of email, social media and GPS applications.

#### **4.5.3 Business strategies across clusters**

In terms of strategy, Cluster 1 seemed to only apply the strategy relating to the market share and growth oriented strategy and leveraging the use of IS/IT trends, as these were the strategies where they were above average, as shown in the table above. They were below average in the customer relationship and satisfaction-oriented strategy and the conservative strategy. Also, cluster 1 women-led SMEs seemed to apply the strategy relating to leveraging the use of IS/IT trends for the purpose of the business the most. Cluster 2 women-led SMEs applied strategies relating to the market share and growth-oriented strategy, customer relationship and satisfaction-oriented strategy and the conservative strategy. The strategy they applied the most was the conservative strategy. However, they were below average in terms of leveraging the use of IS/IT trends. Cluster 3 women-led SMEs applied strategies involving customer relationship and satisfaction-oriented strategy and the conservative strategy as they were above average with these strategies. The

strategy they seemed to apply the most was the customer relationship and satisfaction-oriented strategy. Nevertheless, they did below average in strategies that involved the market share and growth oriented strategy and leveraging the use of IS/IT trends. Cluster 4 women-led SMEs applied the strategy that involved leveraging the use of IS/IT trends, the customer relationship and satisfaction-oriented strategy and the conservative strategy. They seemed to apply the customer relationship and satisfaction-oriented strategy the most. However, they were below average in applying the strategy relating to the market share and growth oriented strategy, suggesting that they did not apply this strategy to their business.

#### **4.5.4 Business performance across clusters**

The results of the level of performance across clusters shows that for cluster 1, they were below average in all indicators for the rating of their performance, suggesting that they were not really satisfied with their performance and believed their performance was somewhat worse than that of their competitors. The indicator with the lowest value was that relating to their satisfaction with the rate of profit of the business in the last 12 months. For cluster 2, they were also below average in all indicators for the rating of their performance, which also suggested that they were not really satisfied with their performance and believed their performance was somewhat worse than that of their competitors. The indicator with the lowest value was that relating to their satisfaction with the level of progress in the business in the last 12 months. For cluster 3, they were above average in all indicators for the rating of their performance, which suggested that they were really satisfied with their performance and believed their performance was somewhat better than that of their competitors. The indicator with the highest value was that relating to their satisfaction in terms of the growth in sales in their business in the last 12 months. Cluster 4 women-led SMEs also were above average in all indicators for the rating of their performance, which suggested that they were really satisfied with their performance and believed their performance was somewhat better or even much better than that of their competitors. The indicator with the highest value was that relating to their comparison of their cash flow to that of their competitors in the last 12 months.

## **4.6 Discussion of clusters**

### **4.6.1 Cluster 1**

This cluster was the second lowest performing cluster of the four clusters that emerged (see table 16). The women in Cluster 1 women-led SMEs (n=29) consisted of business owners, business managers and business partners although most were business owners. There was a mixture of both single and married women entrepreneurs. Most of these firms belonged to the catering, wholesale and retail trade sector; the social and personal services sector; and the financing and business services sector. The businesses comprised of those which were less than one year old to those that were older than 10 years old, although most were between a year and two years old. Many of the women-led SMEs did not have more than five employees and most of the women entrepreneurs in this cluster had a university degree.

The women-led SMEs in this cluster had strong competencies in creativity, being able to look for business, being able to communicate effectively with people, persevere in the face of all factors and situations and were able to establish networks with people. They leveraged the use of the SMS, email, Internet browser; social media, instant message, camera, GPS, calendar, memo, and clock mobile applications. Their dominant strategy was leveraging the use of IT/IS trends for the business. They also applied the market share and growth-oriented business strategy.

The women-led SMEs in this cluster applied the strategy that involved leveraging the use of IT/IS trends for their business as seen in their use of social media, the Internet and emails and applied market share and growth oriented strategy that involved networking, seeking opportunities, seeking new businesses and keeping up to date with latest trends and developments. Although not specific to women-led SMEs alone, this type of strategy has been widely observed in many studies. It has been termed in ways such as prospector and proactiveness strategy (Miles et al., 1978; Venkatraman, 1989). As most of the SMEs were still between a year and two years old, they seemed to be pursuing market penetration and growth. Researchers have also found that women-led SMEs who pursue growth tend to have incremental innovation and take proactive strategies (Mitchelmore & Rowley, 2013).

These strategies, especially the market share and growth oriented strategy, have been reported to usually result in high performance for firms (Morgan & Strong, 2003). However, in this case, the women-led SMEs in this cluster seemed to have very low performance. This could be explained by the fact that the majority of these firms were still young and were still trying to get their balance; it is possible that their performance would get better as the business grew older. However, Verreyne (2005) suggests that past models and typologies that were developed for large firms may not be able to fully give insight into what will or what will not work for smaller firms, especially with regard to defining what strategy will constitute great performance. Gupta & Basu (2013) also argue that there is no better or worse strategy and that these kinds of strategies may not necessarily result in better performance for small firms in emerging economies (Gupta & Basu, 2013).

**Table 17: Profile of qualitative responses**

Respondent	Position	Age of Business	Qualification	Type of business
Y1	Owner	1 – 2 years	University degree	Security
Y2	Owner	6 – 9 years	Diploma	Communication and marketing
Y3	Owner	1 – 2 years	University degree	Marketing and event planning
Y4	Owner	10 years and above	University degree	Wellness
Y5	Owner	10 years and above	University degree	Funeral service
Y6	Owner	6 – 9 years	High school cert.	Printing services
Y7	Partner	3 – 5 years	University degree	Psychology practice
Y8	Partner	3 – 5 years	High school cert.	Retail service
Y9	Owner	6 – 9 years	Vocational cert.	Catering
Y10	Owner	6 – 9 years	University degree	Videography & editing
Y11	Owner	1 – 2 years	Diploma	Tailoring
Y12	Owner	1 – 2 years	Diploma	Cosmetics parlour
Y13	Owner	Less than a year	Diploma	Cosmetics and beauty parlour
Y14	Owner	10 years and above	Diploma	Catering
Y15	Owner	6 – 9 years	High school cert.	Event coordinators

ZA	Manager	3 – 5 years	Diploma	Cosmetic store
ZB	Owner	10 years and above	Diploma	Catering
ZC	Owner	1 – 2 years	University degree	Sole proprietor

These firms leveraged the use of all mobile phone applications for their business but rarely made use of the directory application. Similar use of mobile phones was recorded by Jiyane and Mostert (2010) in their study about women in South Africa. These women-led SMEs (see Table 17 for their profiles) seemed to leverage the use of the email, Internet browser and social media applications the most for their businesses. They mentioned in their comments the benefits they derived from the use of mobile technology and how it improved their way of doing business, that it afforded them the ability to receive and respond to emails when they were not at their computers; they also got to market and advertised using social media and kept themselves up to date with what was new in the market via the Internet. The following comments show in detail what was stated.

*I'm able to receive e-mails when I'm not at my computer and keep track of urgent matters that need immediate attention. . . – Y1*

*Mobile phones keep me constantly in touch with business and clients. Ability to access and respond to emails via my phone has been amazing. – Y2*

*I've grown my event planning and social media marketing business from having my smart phone. It helps me to stay engaged and on top of daily news. – Y3*

*I can check my stock and know what's new in market. – Y4*

*I use social media to broadcast information. – Y5*

As seen in the responses above, by using mobile technology to keep track of urgent matters, keep constantly in touch with business, grow the business through social media, and keep up-to-date with what is new in the market, the women-led SMEs in this cluster

complemented their strategy choice with this nature of use of mobile technology. Their use of mobile technology also reinforced their competences such as: the ability to exploit opportunities, their being able to look for new business opportunities and their ability to establish networks.

The strongest competency for those in this cluster was creativity (see table 16) whereby they were able to develop new and different useful ideas for the business. This could have been as a result of the high representation of businesses such as interior designing, craft, web designing, baking, training and entrepreneurial development in this cluster. Businesses in craft and design are usually classified as belonging to creative industries (CAJ, 2007). Such businesses often require having a level of creativity. Nwoye (2007) also confirmed that women are able to be very creative when it comes to business. Nevertheless, the ability to budget effectively, plan the business activities and managing their finances did not seem to be the strongest suit of the women-led SMEs in this cluster. This confirms the observation by Kyobe (2004) that some SMEs do not plan or keep books.

While these women-led SMEs applied strategies that complemented some of their competencies and some of the mobile technology applications they used, they were not satisfied with the overall performance of their business and felt they performed somewhat worse in comparison to their competitors in the past twelve months. They seemed to be mostly dissatisfied with the rate of profit of their business. As stated earlier, their low level of performance could be attributed to the fact that many of them were still in the early stage of their business, therefore they may not have performing as much as they would have wanted to, yet but they may have done so eventually as the business grew older. Also, these women-led SMEs may have wanted to pay attention to and develop their competence in terms of managing their finances and planning their business activities efficiently.

#### **4.6.2 Cluster 2**

Cluster 2 was the lowest performing cluster of the four clusters (see table 16). Most of the women entrepreneurs in this cluster (n=17) were business owners; others were business managers and business partners. They were from age 21 and above and most of them were married. Most women-led SMEs in this cluster fell under the community, social and personal

services sector with businesses such as hair and beauty salons. The majority of the women-led SMEs had been operating for 10 years and above. The majority of the women entrepreneurs leading these SMEs were high school certificate holders.

The women-led SMEs in this cluster had no strong competency (see table 16) and rarely leveraged the use of any of the mobile technology applications. Their dominant strategy was the conservative strategy, however, they were also customer relationship and satisfaction-oriented and partially market share and growth oriented with regard to the business strategy they applied.

The most dominant strategy applied in these firms involved conservative strategies such as relying on word of mouth to get customers and cost reduction to attract and entice customers. Such conservative strategies have been noted by authors to not drive good performance (Avlonitis & Salavou, 2007). Although these women-led SMEs were also customer relationship and satisfaction-oriented and partially applied the market share and growth-oriented strategy by seeking new business, they needed to break more grounds and seek more market share, new business and sales opportunities. They could leverage the use of applications such as social media, instant messaging applications to reach people and tap into opportunities (Companys & McMullen, 2007). Their inability to fully leverage the use of any of the mobile applications explains why they were unable to apply the strategy that involved leveraging the use of IT/IS trends for the business.

A number of women in this cluster mentioned they had not derived any benefit from the use of mobile phones. Others (see Table 17 for their profiles) seem to only use the technology because it was cheaper than landlines to make calls, or because it enabled them to answer business related calls when they were not in their offices by their landline phones, as seen in the comments below:

*It is cheaper than landlines for calls and SMS and has helped to save money. – Y6*

*Our clients can contact us outside working hours and even on weekends; it is easier to communicate using less expensive media. –Y7*

*We don't lose on sales since every customer can get hold of us all the time. – Y8*

*Everyone can get hold of me while I'm out of the office. – Y9*

None of the women entrepreneurs in this cluster seemed to utilise this technology for many of their business activities or more sophisticated purposes. They had also not leveraged the use of mobile technology to complement their chosen strategies. ICRW (2012) reports that, due to the low level of education of women and their low technical skills, they are limited in how much they leverage the use of mobile technology for their business. Therefore, the fact that the women entrepreneurs leading these SMEs were mostly high school certificate holders can explain why they did not fully utilise this technology.

The overall performance of these SMEs was low, indicating that they were not satisfied and seemed to be performing somewhat worse in comparison to their competitors. Their major dissatisfaction was with the level of progress of the business. The low performance could be explained by the lack of competencies and the lack of use of mobile phone application for their business and how this lack did not complement the choice of strategy they seemed to apply in their business. Studies have confirmed the importance of competencies in business as they are able to drive a firm to success (Winn, 2005; Mehta et al., 2011; Mitchelmore & Rowley, 2013) and have also shown the need to leverage the use of IT to reinforce competencies and complement strategies (Schmiedinger, Valentin, & Stephan, 2005). It is therefore important for the women-led SMEs in this cluster to improve on their competencies and maintain a good use of mobile phone applications to complement and reinforce their strategies, if there is to be any significant improve on the level of their performance.

#### **4.6.3 Cluster 3**

This cluster was the second highest performing cluster of the four clusters (see table 16). The women-led SMEs in this cluster (n=12) were either run by women who were the owners or partners in the business. Most of them were between age 21 and age 40 and majority of the women were also married. These women-led SMEs belonged to the community, social

and personal services sector with businesses in areas such as videography and editing, tailoring, cosmetics and fashion design. Most of these SMEs had been in operation from six years upwards and did not have more than five employees. Most of them had diplomas or university degrees and others were high school certificate holders.

The women-led SMEs in this cluster had strong competencies in budgeting, planning their business activities effectively and managing the finances of their business. They mostly used the email, Internet browser, and social media applications for their business. Their dominant strategy was the customer relationship and satisfaction-oriented strategy and they also applied the conservative strategy.

One of the managers of one of the women-led SMEs (see profile in Table 17) gave the following comment in relation to applying the customer relationship and satisfaction oriented strategy as their dominant strategy:

*In every way, we make sure that our clients are always enticed and we build relationships with them to receive loyalty. – ZA*

The dominant strategy of the women-led SMEs in this cluster can be likened to the defensive strategy of the Miles and Snow (1978) typology; that has been widely described and examined in several studies (Morgan & Strong, 2003; Raymond & Bergeron, 2008). The defensive strategy is one that is more inclined to keeping a steady domain and focuses on good customer relationships. In addition, firms that focus on good customer service and relationship have been noted to have high performance (Morgan & Strong, 2003; Bowen et al., 2009). It was therefore no surprise that these women-led SMEs had a high level of performance in comparison to cluster 1 and cluster 2 women-led SMEs. These women-led SMEs also applied the conservative strategy to attract and entice customers.

Their dominant strategy was complemented by the way they leveraged mobile technology for their business. As indicated in the comments below, they used these applications mostly to keep in touch with their clients and vendors and pass on information to their clients via their social media pages, and provide good customer service.

*Our job requires us to be on set or out of town, often in remote locations. By using my phone I can still keep in touch with clients whether for quoting, confirmation, general messaging or updating our social media pages. – Y10*

*It helps to look for information, provide good customer service and inform customers of changes. – Y11*

*I save money for transporting and as I can let my customers know when their orders have arrived through my mobile phone. – Y12*

The women entrepreneurs in this cluster were highly competent in budgeting, planning their business activities effectively and managing the finances of their business. Authors like Kyobe (2004) and Omar & Frazer (2010) emphasise the importance of budgeting and planning for firms. However, these women were not very competent in being able to seek new business, exploit opportunities, being able to use various forms of technology and being able to develop and implement new ideas and products for their business. Their low level of competence in these areas could be as a result of the age of these businesses. These women-led SMEs seemed to be well established and may not have seen the need to seek new business opportunities or change their way of business but, rather, maintain their performance and a stable domain.

Their low ability to use technology reflected in the number of applications they leveraged for the purpose of their business. They seemed to not fully utilise mobile technology for their business, which confirms the observation by ICRW (2012) on women entrepreneurs not leveraging the use of mobile technology. They only used the email, Internet browser, and social media applications and even these applications were solely for communication with vendors and customers. Such mobile technology applications could be leveraged to seek opportunities and seek new business opportunities as in the case of cluster 1 SMEs.

The women-led SMEs in this cluster were highly satisfied with the growth in sales of their business and were also somewhat better than their competitors with regard to the growth

in sales. Nonetheless, these SMEs needed to improve some of their other competencies and leverage the use of mobile phones more. This could improve their performance level. This could also have an effect on their ability to apply the strategy that involves leveraging the use of IT/IS trends for the business. However, it is evident that these women-led SMEs had managed to complement their competencies with the applications they used and the business strategy they had applied to a great extent in comparison to cluster 1 and 2, hence the significance on the level of their performance.

#### **4.6.4 Cluster 4**

This was the best performing cluster (see table 16) amongst all the four clusters. Most of the women-led SMEs in this cluster (n=12) were business owners and others were business managers. Most of them were between the age of 31 and 40 and most of them were married. The majority of these women-led SMEs fell under the community, social and personal services sector; and the businesses varied from printing services to beauty and cosmetics to event coordination. Most of the businesses had been running between six to nine years. There was an equal mixture of high school certificate holders and diploma holders amongst the women in this cluster.

The women-led SMEs in this cluster had strong competencies in budgeting, exploiting opportunities, being innovative, taking risks, planning their business activities effectively and managing the finances of their business. They mostly leveraged the use of the SMS, Internet browser, instant messaging, clock, calendar, and memo mobile applications for their business. Their dominant strategy was the customer relationship and satisfaction-oriented strategy. They also applied the conservative strategy and partially applied leveraging the use of IT trends strategy.

These women-led SMEs ensured they satisfied their customers and built good relationships with them as their most dominant strategy implied. As indicated by one of the women entrepreneurs (see profile in Table 17) in the comment below, their firm ensured communicating effectively with customers to know what they needed.

*I use whatsapp to communicate effectively with my customers. . . – ZB*

*Another mentioned that:*

*We establish what products or service attributes are important to customers through research and face to face communication. This is also used to inform buyers about the products/service. – ZC*

Again, the observations by authors such as Morgan & Strong (2003), and Bowen et al. (2009) is confirmed as these women-led SMEs who focused on good customer service and relationship performed highly as well.

In addition to their dominant strategy, these firms also applied the conservative strategy and leverage IT trends for their business. Some of the women entrepreneurs mentioned that they were able to access the internet to seek information and knowledge which they could pass on to their employees and customers that sought them.

The strategies these women-led SMEs apply were reinforced by the nature of use of mobile technology for their business. Some owners stated that they often used mobile phone applications to manage their business activities and relationship with customers, seek and gain knowledge on what is new in the market via the internet, store information, and take photos of their designs and events to showcase to customers. The comments below were given.

*It helps in having and getting knowledge and passing it on, storing information, and serves as an alternative to using a laptop when it's not available. – Y13*

*I am able to manage different events at the same time; most of my customers enquire quotations over the phone. – Y14*

*I take photos of my designs and events that I have catered for then use them as references. – Y15*

These women-led SMEs also leveraged the use of mobile technology applications such as clock, calendar and memo which complemented their competences such as planning business activities efficiently. They were mostly competent in their ability to budget effectively and efficiently (see table 16). However, they were not strong in being able to persevere in the face of all factors and situations.

The findings for these SMEs confirm the argument by Verreyne (2005) that a combination of a number of strategies can result in a higher level of performance. However, in the case of cluster 2, this argument did not hold and could be explained by the lack of other supporting variables that were also important in achieving high performance, especially where successful alignment was concerned.

Cluster 4 women-led SMEs had managed to attain the greatest level of fit across all clusters as they had the highest level of performance. They were mostly satisfied with the rate of profit of their business and performed much better in comparison to their competitors in terms of growth of sales, cash flow, net profits and market share.

#### **4.6.5 Alignment across the four clusters**

The nature of alignment across the four clusters varies. It emphasises that, for women-led SMEs to have improved business performance, the human competencies of the women entrepreneurs leading them; plus their use of mobile technology applications for the business; and the business strategies they apply, have to complement or reinforce each other to a very great extent. Cluster 4 women-led SMEs were competent in their ability to effectively communicate, ability to use technology, and plan effectively. These competencies complemented their use of instant messaging apps such as Whatsapp, their use of the Internet browser to surf the Internet and their ability to keep information and take notes using their memo application. Their competencies and the nature of use of their mobile technology reinforced the application of the strategy that involved leveraging the use of IT trends for business activities and their customer relationship and satisfaction-oriented strategy.

Cluster 1 and cluster 2 women-led SMEs had not succeeded in achieving good performance as their competencies, use of mobile technology and business strategy had not attained a great level of fit (that is, did not complement or reinforce each other to a great extent). Therefore, in terms of achieving alignment from the Gestalts perspective, these women-led SMEs had not been successful at it.

Cluster 3 and cluster 4 women-led SMEs had high performances hence, they had achieved successful alignment. Cluster 4 women-led SMEs who had a higher performance than cluster 3 SMEs, were very good in all competencies except one. They had attained the greatest level of fit amongst their competencies, use of mobile technology applications and their business strategies (that is, the three elements complemented or reinforced each other to a great extent).

From the results of these clusters (see Table 16), the two hypotheses for this study are supported. Cluster 4 women-led SMEs had the best performance in comparison to all other clusters. Therefore, they had attained a greater level of fit among their human competencies, their use of mobile technology and their business strategy. Hence, hypothesis 1 is supported.

Of the four clusters, cluster 3 and 4 were the high performing clusters as shown in table 16. Although they differed in the type and level of competencies, use of mobile technology and type of business strategies applied (different configuration and patterns), they had both attained a great level of fit which resulted in a higher and improved level of performance in comparison to cluster 1 and 2. Hence, the notion of configurational equifinality as discussed earlier, which posits that the same outcome (improved performance) can be achieved regardless of the way the level of fit has been attained (different configurations or patterns), held. Therefore, hypothesis 2 is supported.

To answer the primary research question for this study, women-led SMEs can align their competencies, use of mobile phones and business strategy to achieve improved business performance, the way cluster 4 women-led SMEs have. That is by: strongly possessing competencies in budgeting, exploiting opportunities and managing finances. In addition,

they should also be competent in effective communication, establishing networks, being proactive, planning their everyday business activities effectively, innovation, taking risks and being able to use some form of technology. These competencies should then complement the use of mobile phone applications such as SMS to communicate quickly and in bulk with customers, the Internet to research information, instant messaging to communicate in real time and quickly too, and calendar to help manage time and appointments. They should also apply strategies that involve leveraging the use of IT trends, relying on word of mouth and cost reduction to entice and attract customers and mostly focus on having good customer relationship and service.

#### **4.6.6 Summary of the chapter**

## **CHAPTER 5: CONCLUSION & RECOMMENDATION**

The previous chapter was involved the presentation of findings for this study and discussion on these findings. This chapter is the concluding chapter for this dissertation and includes recommendation for policy and future research.

### **5.1 Conclusion**

This study followed the premise that human competencies, mobile technology and business strategy each have their individual contribution to the success of a business. However, due to the existence of the interplay and complementing relationship between these three elements as seen in the literature (Avison et al., 2004; Tsai et al., 2006; Schmiedinger et al., 2005; Walker & Webster, 2006; Porter, 1996; Fabi et al., 2009); they need to be aligned to achieve improved business performance. Therefore, as the primary objective of this study, the study sought to identify the combinations of human competencies, mobile technology applications and business strategies that can yield improved business performance in women-led SMEs. In order to achieve this objective, the study adopted the Gestalts approach. With the Gestalts approach, a cross causality and a holistic view of this causality was assumed amongst the three variables of interest in women-led SMEs (human competencies, mobile technology usage and business strategy). Using the Gestalts approach for this study, cluster analysis was employed to derive the varying patterns and configurations of the interplay among human amongst competencies, mobile technology usage and business strategy in the surveyed women-led SMEs.

The results indicated that for women-led SMEs to achieve the highest level of improved business performance, the dominant business strategies they apply (leveraging the use of IT trends for business activities and focusing on customer relationship and service) should be reinforced by their competencies and the use of these mobile technology applications, as seen in the case of cluster 4 women-led SMEs. These women-led SMEs need to be strongly competent in their ability to effectively communicate with people, to use some form of technology, to budget effectively, to manage the finances of the business, to be innovative, to take risks and to plan effectively and efficiently. These competencies should then be complemented by their use of instant messaging apps such as Whatsapp, their use of the Internet browser to search information, their use of the calendar and clock applications for

time management and planning, and their ability to keep information and take notes using their memo application for their business activities. By combining these three aspects this way, they would achieve successful alignment.

The findings of this study also revealed that in an instance where there is no successful alignment between these three elements (i.e., they do not complement or reinforce each other), the business performance will be very low (as in the case of cluster 1 and cluster 2 women-led SMEs).

This study was also able to realise the three secondary objectives. For the first objective, the study highlights that these women-led SMEs mostly leverage the use of mobile applications such as SMS, clock, email, calendar and camera applications for their business purposes. They also use the email, social media and Internet browser application. In terms of the benefits they derive from the use of mobile technology, the women-led SMEs asserted that mobile technology mostly affords them convenience and ease regarding communicating with their clients and vendors and seeking information, and it also provides them mobility advantage by eliminating movements costs and enabling them have real-time coordination of business activities. These findings are similar to those in the study by Rice and Katz (2003) about the advantages the use of mobile technology affords.

These women-led SMEs are mostly competent in their ability to communicate effectively with other people. They are averagely competent in planning their everyday business activities efficiently and effectively and in taking risks. Most of the women entrepreneurs in this study believe the most important competencies to be: to communicate effectively with other people and be able to look for business opportunities and not just wait for these opportunities to come by chance. These findings have met the second objective.

The study also brought to light the type of business strategies applied by these women-led SMEs. They mainly apply the customer relationship, the satisfaction-oriented strategy, the market share and the growth-oriented strategy. The customer relationship and satisfaction-oriented strategy seem to have contributed more to improved business performance as

seen in the case of cluster 3 and cluster 4 women-led SMEs. Therefore, realising the third objective.

This research established the perspective of alignment as Gestalts as the most appropriate approach to measuring and assessing the alignment of human competencies, mobile technology and business strategy, in order to sift out the patterns and combinations that will yield improved business performance in women-led SMEs. With the use of cluster analysis, this was achieved.

## **5.2 Recommendations**

### **5.2.1 Policy and practice**

It is evident from this research that various women entrepreneurs pursue different goals for their businesses. While some pursue growth and market share, others are concerned with maintaining their current business status and keeping a stable domain. Therefore, government initiatives, business development service providers and other initiatives, programmes and associations directed or concerned with women entrepreneurship, may want to consider this when advising or supporting women entrepreneurs. Women-led SMEs at their early stages are more market share and growth oriented and pursue ways to achieve this, while those who have been running their business for at least five years seem to be more concerned about maintaining their attained business status.

Business development service providers and other support initiatives, programmes and associations should also emphasise how valuable the use of mobile technology is and how women entrepreneurs can leverage this technology for more sophisticated functions and purposes than just the default calling or sending SMS function. Mobile technology can provide them with the ability to find and tap into opportunities using social media, the ability to keep themselves up-to-date with the market environment, and the ability to develop their skills and reinforce their competencies.

Women entrepreneurs need to also be shown or taught the importance of planning (particularly on a long-term basis), budgeting and managing the finances of their business

whilst pursuing market share and growth. This study has revealed that being strong in such competences can contribute to improved business performance. Women entrepreneurs should also not ignore the need to complement their competencies with their use of mobile technology and the kind of strategies they apply.

This study has provided a view into the benefits of proper alignment and established that, indeed, human competencies of women entrepreneurs with the use of mobile technology applications for business activities and business strategies, if properly aligned, will result in improved business performance. Therefore, business development service providers and other support initiatives, programmes and associations should take this into consideration when advising women entrepreneurs.

### **5.2.2 Future research**

Future research can adopt qualitative methods to go more in-depth to capture the perceptions of women-led SMEs about their competencies, mobile technologies and their business strategies. This can help in gaining more insight into why women-led SMEs focus on particular competencies; or the use of particular mobile technology applications; the purposes as well as the nature of the business strategies they apply; and what influences the decision for such strategies. Such insight could also help to know if demographics such as the age of the business, the qualifications of the women entrepreneurs and the type of business play a part in how alignment of these three elements is achieved.

A longitudinal study based on the same phenomenon should also be carried out to examine what the performance of young companies would be after a number of years. Future research could observe older companies to see whether the nature of their competencies and their use of mobile technology applications and business strategies would have been altered or would have changed, considering that there would be new global developments and change in business environment as well as the economy. The findings from such a study will yield interesting insights.

Future research should endeavour to have a larger sample size and extend the sampling to other geographical areas within South Africa and even outside South Africa. The conceptual

model developed should be tested to establish the constructs and measure alignment in women-led SMEs, using the perspective of alignment adopted in this study.

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## Appendix A – Survey Introduction Letter



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### OR

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Dear Madam,

I am a full-time Masters programme of the Department of Information Systems at the University of Cape Town and I am conducting a study titled “Alignment of human competencies with mobile technology and business strategy in women-led SMEs”. The study in which your participation is required has been approved by the ethics committee of my faculty.

The purpose of this study is to examine the best way women entrepreneurs can leverage mobile technology to enhance their competencies and business strategy and in turn achieve improved business performance in their businesses. Your participation in this research will be greatly appreciated.

You are not required to supply any specific identifiable information for this survey and your participation is entirely voluntary. All information will be treated as confidential and used solely for the purpose of this study. The findings of this research study will be compiled and presented to the University of Cape Town for academic purposes.

Participants' details will not be published as part of the report and all participants will remain anonymous. Also, on request, a summary of the outcomes of the study will be made known to you. The questionnaire will take approximately 10 minutes to complete.

Thank you for your time and participation.

Sincerely,

\_\_\_\_\_

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## Appendix B – Questionnaire

### Section One: Demographics

1. Please tick one position:  business owner  Business Partner  Business Manager
2. Your current age:  < 21  21 – 30  31 – 40  41-50  > 50
3. Marital Status:  Single  Married
4. Please state your type of business or the type of sector it falls under: \_\_\_\_\_
5. Age of Business:  Less than one year  1-2  3-5  6-9  10 and above
6. Please state your number of employees: \_\_\_\_\_
7. Educational Qualification:  
 High School Certificate  Vocational Certificate  Diploma  University Degree

### Section 2: Competencies

1. Kindly indicate the extent to which you agree or disagree with the following statements:

		Strongly Disagree	Disagree	Fairly Agree	Agree	Strongly Agree
1	I am able to engage in effective communication with others	1	2	3	4	5
2	I am able to establish networks with people	1	2	3	4	5
3	I am proactive	1	2	3	4	5
4	I persevere in the face of all factors and situations	1	2	3	4	5
5	I am able to budget efficiently and effectively	1	2	3	4	5
6	I am able to formulate and implement ways to exploit opportunities	1	2	3	4	5
7	I plan the everyday business activities effectively	1	2	3	4	5
8	I engage in adequate ways to manage the finances of the business	1	2	3	4	5

9	I am able to use some form of technology	1	2	3	4	5
10	I am able to implement new ideas, products or services in the business	1	2	3	4	5
11	I develop new and different useful ideas for the business	1	2	3	4	5
12	I do not mind taking risks	1	2	3	4	5

2. Kindly state which of the competence above is most important to you:

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**Section 3: Mobile Technology**

1. How many phones do you use? \_\_\_\_\_

2. Do you use a separate phone for your business? s No

3. How long have you been making use of mobile phones?  
Less than a year 1-3 years 4-6 years 7-10 years above 10 years

4. What type of phone do you use? (Please tick one) Basic/Feature Phone Smartphone

5. Please rate your frequency of use of the following applications in relation to your business.

	Never	Rarely	Sometimes	Most of the Time	Always
Short Message (SMS)	1	2	3	4	5
Email	1	2	3	4	5
Internet Browser	1	2	3	4	5
Social Media	1	2	3	4	5
Instant Messaging	1	2	3	4	5
File storage	1	2	3	4	5
Camera	1	2	3	4	5
GPS	1	2	3	4	5
Calendar	1	2	3	4	5
Memo	1	2	3	4	5
Directory	1	2	3	4	5
Clock/Time Keeping/Alarm	1	2	3	4	5

6. What function or purpose do you mostly use your mobile phone for in regards to the running of your business? (Kindly state all if there is more than one)

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7. Have you derived any benefits from the use of mobile phones for your business or has the use of mobile phones improved your way of doing business? Yes No

a. If yes, kindly state how: \_\_\_\_\_

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**Section 4: Business Strategy**

Kindly give a short detail about the kind of business strategy you apply in your business (e.g. establishing networks with people in order to improve sales, using social network to tap into opportunities for the business, being innovative by seeking new products or services for customers, etc.)

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**Section 5: Business Performance**

1. Please rate the degree to which you are satisfied with your business’s performance over the past 12 months with the following criteria and circle your corresponding choice.

		Degree of satisfaction with own business performance				
		Not at all satisfied	Slightly satisfied	Moderately satisfied	Very satisfied	Extremely satisfied
1	The rate of profit of the business	1	2	3	4	5
2	The growth in sales	1	2	3	4	5
3	Self-satisfaction	1	2	3	4	5
4	Level of progress in business	1	2	3	4	5
5	Ability to satisfy customers	1	2	3	4	5
6	Ability to attract and keep new customers	1	2	3	4	5

2. Please rate your business’s performance in relation to that of your major competitors over the past 12 months with the following criteria and circle your corresponding choice

	Much worse	Somewhat worse	About the same	Somewhat better	Much better
Growth in sales	1	2	3	4	5
Cash flow	1	2	3	4	5
Net profits	1	2	3	4	5
Market share	1	2	3	4	5

**Appendix C – Summary of measurement and sources**

Variable/Construct Name	Items on Questionnaire	Sources
<b>Section 2:</b> Human Competencies	Items 1.1 - 1.11, 2	Mitchelmore & Rowley (2013); Ahmad(2007); Man (2001)
<b>Section 3:</b> Mobile Technology	Items 1 -7	Park et al. (2007); Jiyane&Mostert(2010); Esselaar et al. (2006); Sheng et al. (2005)
<b>Section 4:</b> Business Strategy	Item 1	Companys & McMullen (2007)
<b>Section 5:</b> Business Performance	Items 1.1 – 1.4, 2,1 – 2.4	Ahmad (2007); Man (2001)

**Appendix D – Table of Variables/Constructs, Measuring Items on Questionnaire, Relating proposition(s) and Research question(s)**

Variable/Construct Name	Items on Questionnaire	Proposition(s)	Research Question(s)
<b>Section 2:</b> Human Competencies (Independent Variable)	Items 1.1 - 1. 11, 2	Proposition 1,2 and 4	Sub Question 1
<b>Section 3:</b> Mobile Technology (Independent Variable)	Items 1 -7	Proposition 1, 3 and 4	Sub Question 2
<b>Section 4:</b> Business Strategy (Independent Variable)	Item 1	Proposition 1 and 4	Sub Question 3
<b>Section 5:</b> Business Performance (Dependent Variable)	Items 1.1 – 1.4, 2,1 – 2.4	Proposition 1 and 4	Primary Question

## APPENDIX E – ETHICS FORM



UNIVERSITY OF CAPE TOWN  
**FACULTY OF COMMERCE**  
Igniting Knowledge and Opportunity



# Commerce Faculty Ethics in Research Committee

## Updated Ethics Form March 2013

Any individual in the Faculty of Commerce at the University of Cape Town undertaking any research that involves the use of human subjects, or research that may hold ethical consequences for the University of Cape Town, is required to complete this form and obtain approval before conducting research. The completed form should be submitted as an electronic document to departmental Ethics Committee representatives for submission to the Commerce Faculty Ethics in Research Committee. Please also submit electronic copies of your research proposal, informed consent form or other information used to obtain consent, and any questionnaires or other material shown to subjects.

### 1. PROJECT DETAILS

<b>Project title:</b>	ALIGNMENT OF HUMAN COMPETENCIES WITH MOBILE TECHNOLOGY AND BUSINESS STRATEGY IN WOMEN – LED SMEs
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<b>Principal Researcher/s:</b> DEBORAH AJUMOBI	<b>Email address(es):</b>	ajmolu001@myuct.ac.za
<b>Research Supervisor:</b> MICHAEL KYOBE	<b>Email address(es):</b>	Michael.kyobe@uct.ac.za
<b>Co-researcher(s):</b>	<b>Email address(es):</b>	
<p><b>Brief description of the project:</b> The study adopts the perspective of alignment as Gestalts to identify the configurations or patterns among human competencies, mobile technology and business strategy; that have attained an adequate level of fit or coherence between one another. The argument therefore follows that, attaining this level of fit will result in better business performance in women-led SMEs</p>		
<p><b>Data collection:</b> (please select)</p> <p> <input type="checkbox"/> Interviews ✓                   <input type="checkbox"/> Questionnaire ✓                   <input type="checkbox"/> Experiment                   <input type="checkbox"/> Secondary data                   <input type="checkbox"/> Observation             </p> <p> <input type="checkbox"/> Other (please specify): _____             </p>		
<p><b>Procedure:</b> (please describe) The primary method will be through questionnaires. The questionnaire will be hosted on an online platform called Qualtrics. As an alternative method, some questionnaires will be sent out via posts or administered face to face with the participant. Each questionnaire will have a cover letter that follows the requirement of the ethics committee. At the end of each questionnaire, a section requires an indication by the participant of their willingness to partake in an interview. Before every interview, the participants will be given a consent form to fill and sign. All data collected from these two methods will be solely in the possession of the researcher.</p>		

## 2. PARTICIPANTS

### Characteristics of participants:

Gender: FEMALE  
Race / Ethnicity: NOT APPLICABLE  
Age range: 21 and Above  
Location: SOUTH AFRICA (AND ANOTHER COUNTRY BUT SUBJECT TO AVAILABILITY OF FUNDS)  
Other:

### Race / Ethnicity:

Have you included a "Prefer not to Answer" response category in your questionnaire? (please select)

Yes  No  Not applicable ✓

If you answered 'No' why not?

### Affiliations of participants: (please select)

Company employees  UCT staff  General public  UCT Students  
 Other (please specify): SME OWNERS/MANAGERS \_\_\_\_\_

**If your sample includes children (aged 18 and below), mentally incompetent persons, or legally restricted groups please explain below why it is necessary to use these particular groups. If subjects are minors or mentally incompetent, please describe how and by whom permission will be granted? If you are including children under the age of 18 and are not getting parental consent, please explain why you believe that their parents would consent if it was possible to contact them.**

### 3. ORGANISATIONAL PERMISSION

If your research is being conducted within a specific organisation, please provide organisational permission or explain how permission will be obtained.

**Are you making use of UCT students as respondents for your research?** (please select)  Yes  No ✓

**If yes, have you contacted Executive Director: Student Affairs for permission?** (please select)  Yes  No

**Was approval granted?** (please select)  Yes  No  Awaiting a response

**Are you making use of UCT staff as respondents for your research?** (please select)  Yes  No ✓

**If yes, have you contacted Executive Director: Human Resources for permission?** (please select)  Yes  No

**Was approval granted?** (please select)  Yes  No  Awaiting a response

Contact Emails: Executive Director: Human Resources ([Miriam.Hoosain@uct.ac.za](mailto:Miriam.Hoosain@uct.ac.za))  
Executive Director: Student Affairs ([Moonira.Khan@uct.ac.za](mailto:Moonira.Khan@uct.ac.za))

### 4. INFORMED CONSENT

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

- written consent ✓
- anonymous survey ✓
- oral consent (please justify)

other (please specify)

Type equation here.

Oral Consent

Written Consent

Anonymous survey questionnaire (covering letter required, no consent form needed)

Other (please specify)

**How and where will consent/permission be recorded?**

All consent forms signed by each participant upon administration of questionnaire or before interviews will be kept in a file and will be in the possession of the researcher

## 5. CONFIDENTIALITY OF DATA

**What precautions will be taken to safeguard identifiable records of individuals? Please describe specific procedures to be used to provide confidentiality of data by you and others, in both the short and long run. This question also applies if you are using secondary sources of data that is not anonymous.**

All records of participants will be treated with anonymity both in short and long term. Their contact information will not be matched with their responses and will be in the sole possession of the researcher.

## 6. RISK TO PARTICIPANTS

**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)**

Yes       No ✓

**If yes, answer the following questions:**

1. Describe in detail the nature and extent of the risk and provide the rationale for the necessity of such risks
2. Outline any alternative approaches that were or will be considered and why alternatives may not be feasible in the study
3. Outline whether and why you feel that the value of information to be gained outweighs the risks

1.

2.

3.

**What authorship agreement have you reached with your co-researchers or supervisor?**

- This research is not intended for publication
- Standard authorship agreement (principal researcher first author, co-researcher(s) and supervisor(s) co-authors)
- Customised agreement (please specify below):

**I certify that we have read the the UCT Authorship Policy, and Commerce Faculty Authorship Guidelines**   
<http://www.commerce.uct.ac.za/Commerce/Information/research.asp>


**I certify that that the material contained herein is truthful and that all co-researchers and supervisors are aware of the contents thereof.**

**I understand that it is my responsibility to conduct research in accordance with the ethical requirements of UCT.**

Signed by candidate  Signature Removed

**Applicant's signature:**

**Date: 27/11/2013**

CHECKLIST	SELECT
A full copy of a research proposal or a literature review with methodology is attached	√ <input type="checkbox"/>
Research proposal/ interview schedules / cover letters / questionnaires / forms and other materials used in the study are attached/ consent form	√ <input type="checkbox"/>
Organisational consent letter / UCT student or staff approval letter	NA <input type="checkbox"/>
On your cover letter to your questionnaire have you included the following? 1. The following UCT Logo 	√ <input type="checkbox"/>

<p><b>2. A sentence explaining the aim of the research</b></p> <p><b>3. Sentences of a similar nature to below must be included in the cover letter or consent form:</b></p> <p><b>This research has been approved by the Commerce Faculty Ethics in Research Committee.</b></p> <p><b>Your participation in this research is voluntary. You can choose to withdraw from the research at any time.</b></p> <p><b>The questionnaire will take approximately X minutes to complete</b></p> <p><b>You will not be requested to supply any identifiable information, ensuring anonymity of your responses.</b></p> <p><b>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.</b></p> <p><b>Should you have any questions regarding the research please feel free to contact the researcher (insert contact details).</b></p> <p><b>4. Have you scanned in your signature for the last section of the form?</b></p>	<p>√<input type="checkbox"/></p> <p><input type="checkbox"/></p> <p>√<input type="checkbox"/></p> <p>√<input type="checkbox"/></p> <p>√<input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><b>OR</b></p> <p>√<input type="checkbox"/></p> <p>√<input type="checkbox"/></p> <p>√<input type="checkbox"/></p>
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<p><b>FOR ETHICS COMMITTEE REPRESENTATIVE ONLY</b></p> <p><b>Recommendation(s):</b></p> <p><b>Signature:</b></p> <p><b>Date:</b></p>
<p><b>FOR ETHICS COMMITTEE CHAIRPERSON ONLY</b></p> <p><b>Recommendation:</b></p> <p><b>Signature:</b></p> <p><b>Date: :</b></p>