

UNIVERSITY OF KWAZULU-NATAL

**OPPORTUNITIES PRESENTED BY INFORMATION AND COMMUNICATION
TECHNOLOGIES FOR WOMEN LED SMMES IN KWAZULU-NATAL**

By

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DECLARATION

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ABSTRACT

In South Africa, and especially in KwaZulu-Natal, small, medium, and microenterprises (SMMEs) contribute significantly to the economy. However, these businesses operate in a highly competitive environment and have to contend with many larger enterprises. Within the SMME sector in South Africa many women are operating their small businesses, thus contributing to the country's gross domestic product (GDP). These women, however, are subjected to many challenges, and face many barriers when operating their small businesses. Access to and the use of information and communication technologies (ICTs) for business development and growth cannot be overemphasised. It is for this reason that this study aims to determine the opportunities ICTs can present to women-led SMMEs; the barriers and challenges to accessing and using ICTs in business; as well as to make recommendations that enable and support the use of ICTs for women-led SMMEs in KwaZulu-Natal and the rest of South Africa. In order to gain a better perspective of the opportunities that ICT plays in women-led SMMEs, a sample of 32 women in KZN were chosen on whom to conduct a study. A mixed-methods research methodology was undertaken which included both quantitative and qualitative data. A non-probability sample of 32 women-led SMMEs were chosen from a population of 80 from the greater Durban area of KwaZulu-Natal. Data was collected by using a questionnaire designed by the researcher which comprised of close-ended questions. An additional structured interview schedule was also used which included open-ended questions in order to gain a deeper understanding of the problem. Statistical analysis included statistical testing using hypothesis testing, Cronbach's alpha, factor analysis and correlations. Statistical analysis revealed that women-led SMMEs face many barriers and challenges in accessing and using ICTs in their businesses; these include time, family responsibilities, finance, as well as lack of skills and infrastructure. This study can benefit governments as well as women SMME owners, and other role players involved in women empowerment, in identifying the barriers and challenges these women face when accessing and using ICTs. It also makes recommendations for the use of ICTs in improving their business performance. This study recommends the elimination of bias, access to finance, education, skills training, access and awareness of ICT services, as well as government and business support for women-led SMMEs, in order for them to utilise ICTs to develop and grow their businesses.

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CHAPTER 1

INTRODUCTION

1.1. Introduction

With the progress of civilization, the information revolution has brought about a new knowledge economy. This knowledge economy, which includes Information and Communication Technologies (ICTs) has “revolutionised” the growing world. Moreover, especially for many women globally, ICTs enable the creation of a vast number of economic opportunities, and opens up new avenues for trade and investment (Tandon 2006: 5). While many see these changes as positive, for women in many countries all over the world there is still a “huge digital divide” (Gurumurthy 2004: 1). According to the World Bank paper series (2009: 5) “ICTs have been compared to a double-edged sword – in addition to promoting knowledge on the one hand it increases gender disparities on the other.”

Despite these gender disparities, women within these countries are playing significant roles in boosting the economy, as owners of small, medium and microenterprises (SMMEs) (MasterCard worldwide insight 2010: 2). The economic advantages of these SMMEs can never be overrated. According to Kotelnikov (2010: 1), these SMMEs contributed to economic uplifting by ensuring that jobs are created and the status of communities is elevated.

However, according to Chacko and Harris (2005) cited by Kotelnikov (2007: 1) in the SMME and ICT book, these small businesses are not capitalising on the opportunities presented by ICTs for their business, compared with many larger enterprises (LEs) in the new era, which are relying more on the use of ICTs to transmit information to and from their businesses.

Within South Africa in particular, research conducted by MasterCard revealed that the average growth rate of SMMEs had declined between 2000 and 2009 by -1.65% (MasterCard worldwide insights 2010: 22). Kotelnikov (2007: 1) citing Chacko and Harris (2005) in the SMME and ICT book stated that this was because many SMMEs are not accessing and using ICTs to ensure that they can impact on global markets.

This study explored the role of ICTs for women-led SMMEs, and determined the opportunities that ICTs can present to these women in order for them to grow their businesses and access new markets. This chapter reflects on the background to the study and highlights the focus of the research. This study focused on SMMEs that were operating in KwaZulu-Natal. In addition, the motivation for the study, the research problem, the hypothesis formulated and objectives of the study will be presented. The limitations experienced by the researcher will also be discussed.

1.2. Background to the study

Globally, the subject of the new information era is one of the most discussed topics. This new information era impacts on our daily lives as well as on businesses all over the world (Gurumurthy 2004: 3). The Internet has created a world of “hyperconnectivity” where communication is instant, and “people and business” can link with each other, other businesses, “governments” and clients. This in turn has caused major shifts in the way we interact as human beings, and in the way we do business today (Global IT Report 2012: v). According to Antlova (2009: 2) these businesses experience continuous “changes” in the business environment. These include changes in the ways that they deal with the competition, as well as the way in which they present their goods in the ever-changing marketplaces. This means that businesses, more especially SMMEs, must adapt quickly in order to survive. If they fail to react, they will be beaten by their competitors, which will eventually lead to their demise. This in turn means that these companies require ongoing innovation of their products and services. These companies therefore must continuously upgrade their information and knowledge resources with the use of ICTs.

Within these companies, many women are involved in the SMME sector. However, as pointed out by Gurumurthy (2004: 3), many women have not been able to enjoy the advantages provided by this new information era, and they are still being excluded.

1.3. Focus of the study

This exclusion leads to many barriers and challenges that women experience, especially in the business environment of South Africa. Some of these challenges are highlighted as follows and throughout this study.

According to (Gurumurthy 2004: 1) within the rural parts of South Africa, access to ICTs is not realised. Infrastructural impediments as well as the high cost factor involved in

accessing ICTs, renders its deployment virtually impossible. Many rural women also have insufficient education and lack the appropriate skills needed to use ICTs. Many are not literate in the English language and experience many sociocultural barriers which have suppressed their freedom of movement as well as their ability to participate freely in the business world, and in the way in which they use ICTs. More especially, owing to the many caps that a woman wears as wife, mother and entrepreneur, many businesswomen fail in their business endeavors (Hafkin and Taggard 2001: 31). Financial barriers cause further limitations to the use of ICTs in their businesses.

In order to gain a better understanding of the focus of this study, the researcher will draw on the findings of three researchers in the field, namely, the research conducted by the South African Women's Network Enterprise (SAWEN) in 2007; the research conducted by The GEM report in 2009; as well as the research conducted by Dlodlo, and presented in her study in 2009. These studies reflect on this study, conducted as they were on samples of South African women. They highlight the role of ICTs for their economic empowerment. These reports have motivated the research as presented by this study.

1.4. Motivation for the study

This study will seek to explore the role of ICTs within the SMME sector wherein women are operating, and will further determine how they access and use ICTs in their businesses. In so doing, the opportunities presented by ICTs for women-led SMMEs will be discussed, followed by an investigation into the barriers and challenges that these women entrepreneurs face when using ICTs for the growth of their SMMEs.

SMMEs were chosen because of their ubiquity and potential to bridge the digital divide (Liedholm 2001; Nichter and Goldmark 2005). Women as a source of research comes from the sense that their increased access to ICTs can ensure their empowerment on a personal level as well as in business (Gurumurthy 2003; Huyer 2005).

This research will provide further insights for governments, businesses and other role players in the field of women empowerment; and contribute to determining a means of bridging the digital divide that most women are a huge part of, in developing South Africa. Chapter 1 will clarify the problem statement. The objectives, as well as the research questions, will guide the study; the limitations of the study will also be discussed.

1.5. Problem Statement

The study seeks to elucidate the role of ICTs in women-led SMMEs and identify the many challenges and barriers that women face when they access and use ICTs in their businesses.

1.6. Objectives

The following are presented:

- to explore the role and opportunities that ICTs can present to women-led SMMEs in KwaZulu-Natal;
- to identify the barriers and challenges that women face when using ICTs in their businesses in KwaZulu-Natal;
- to make recommendations to governments, women in business and other SMMEs, and any other role players, so that they may gain a better perspective of the way in which women within the KZN business field can improve their access to and use of ICTs, thus enabling them to attain new markets and to grow.

1.7. Research questions and hypothesis

What is the role of ICTs in women-led SMMEs in KwaZulu-Natal?

- Hypothesis 1 – Gaining access to technology positively influences a businesswoman's performance.

What are the barriers and challenges to the implementation of ICTs in women-owned SMMEs in KwaZulu-Natal?

- Hypothesis 2 – The high cost of infrastructure limits access to new markets for women-led SMMEs.

What recommendations may be presented for strengthening the use of ICTs in women-owned SMMEs in KwaZulu-Natal?

- Hypothesis 3 – Enhancing women's knowledge and skills leads to growth of their businesses.

1.8. Limitations of the study

- The study focused on SMMEs that are being led by women. The researcher found that it was extremely difficult to obtain a database of women SMME owners in

KZN. All databases that were available or listed for public use did not differentiate or were not selective of gender. Even the organisations within government did not have an available database based on gender. The other organisations that existed within the country that have been established to empower women also were unable to assist, citing that these details were confidential and could not be disclosed to the public.

- In addition, the available entrepreneurs selected to participate in the study were limited in terms of their time. Most of them did not return the questionnaires that were sent out. The researcher thereafter had to hand - deliver some of the questionnaires. The sample size therefore, was very limited with regard to age and race, as well as industries of business operations.
- This sample was also too small to render an accurate analysis of the study. Creswell (2006: 112) states that in quantitative samples a large sample is needed to generalise the results of the population. The researcher focused only on participants covering a few sectors that responded to the study. This sample was not representative enough to make any general conclusions of the result but rather gave an idea of the kind of challenges in the SMME sector. Babbie (2008: 207) states that accuracy and representation of the population is limited when one uses non-probability sampling. The sample size also restricted the researcher in making cross-sector comparisons in terms of business operations, opportunities and challenges. It was also therefore not possible for the researcher to perform any scientific calculations.
- The researcher found that, when recruiting the study participants, most of them had listed an email address or a fax. However, when the questionnaires were sent out, many did not respond or some of the details given were undeliverable. This indicated that many of these mail addresses were not current or these entrepreneurs were no longer in business.
- Due to the small number of responses, the researcher found that it was necessary to conduct further qualitative research to reflect on the women's experiences and to

obtain further data. For the benefit of some of the respondents who were prepared to participate fully, the researcher prepared an additional interview schedule and conducted a qualitative study. This, however, owing to time constraints experienced by the researcher as well as study participants, only allowed the researcher to interview 7 respondents.

1.9. Chapter Summary

This chapter aimed to provide an introduction and a brief background to the study wherein its importance was highlighted. The focus and motivation for the study was also presented. The study problem determined the research objectives as well as the research questions aiming to clarify the problem. The research limitations that were experienced when conducting the study were explained. This chapter briefly highlighted some of roles and barriers related to ICTs for women-led SMMEs. The following chapter sought to explore and discuss these issues in detail, by drawing on literature from previous researchers in the field.

CHAPTER 2

REVIEW OF LITERATURE

2.1. Introduction

In order to conduct this research, the researcher drew on literature from various primary and secondary sources, as well as books and journals on the topic. This chapter will focus firstly on the role of ICTs for SMMEs, by explaining the many opportunities that ICTs can present to SMMEs. Definitions of the relevant terms will be presented, and the researcher will then discuss how this will impact on SMMEs led by women. This will be followed by examining the characteristics of women-led SMMEs in South Africa. The study will then deal with the objectives of this study, by exploring the role and opportunities presented by ICTs for women-led SMMEs. Finally, the barriers faced by these women, as well as the means of overcoming these barriers, will be highlighted.

2.2. SMMEs and their use of ICTs

The importance of SMMEs is cited in the literature, including government's policies, reports and guideline documents. SMMEs have been identified as businesses that can improve the socio-economic conditions of their countries, especially within South Africa (Modiba 2010:1). However, rapid changes in business patterns require SMMEs within South Africa to continuously update their "products and services." This requires the use of ICTs in order to gain competitive advantage (Modimogale and Kroeze 2011: 1).

According to Research ICT Africa (RIA 2006: 1) the usage of ICTs in developed countries continues to grow. Within South Africa, by comparison, the uptake of ICTs is not significant (Goldstuck 2006: 27), although, according to Maier and Nair-Reichert (2007: 45) "ICTs are consistently hailed as one of the most effective tools for economic development especially in the business world" that can provide many opportunities for businesses.

2.2.1. Opportunities provided by ICTs for SMMEs

ICTs provide many opportunities for businesses, especially for SMMEs in developing countries to participate freely in the global economy. Through ICTs, SMMEs can market their services and products, as well as identify new opportunities, using websites and electronic mails (Mpofu; Milner and Watkins-Mathys 2009: 5). According to Sahlfeld

(2007: 22), if SMMEs expect to maximise their profits, they must consider tapping into ICT solutions to reach the market. This will assist SMMEs in accessing information and identifying niche markets at a faster rate (Schubert 2006: 9).

Sales may also be performed online through electronic commerce with local and international clients (Kew & Herrington 2009: 36). However, if SMMEs do not have access to sophisticated technologies, this could put them at a disadvantage, because international competitors will use such technologies to invade their local markets (Kew and Herrington 2009: 14).

2.2.2. Women-led SMMEs and ICTs

Within local markets in South Africa in particular, many women-led SMMEs are operating. It is said that SMMEs may assist in achieving parity in terms of economic redistribution, giving these women a chance to contribute to economic growth through their business ventures (SEDA 2007: 35 and 36). These women-led business ventures, however, are operating in the new “hyper-connected” world, which requires them to create environments that can keep up with the constant changes brought about by technology and ICTs in the business world (Greenhill in the Global IT Report 2012: v).

These changes created additional challenges for women, which limit their full participation in business and ICTs. There are sociocultural factors that prescribe gender roles which only allow women to do household activities, discouraging them from being technically oriented (Bridges.org 2005: 8; Fischer, Reuber and Dyke 2006: 43). This prevents women from experimenting with ICTs (Modiba 2010: 1), and in turn affects the businesses wherein women entrepreneurs are operating (Maas and Herrington 2006: 49). In order to understand this effect, this study will seek to present a clear definition of the term ICTs as follows.

2.3. ICTs defined.

Despite the wide research and literature available on the concept of ICTs all over the world, there is still a minimum amount of literature on the subject in Africa, compared with other European countries (Mpofu; Milner and Watkins-Mathys 2009: 2). This study emphasises the need for a better understanding of “the key factors” that define ICTs, and draws on the definition provided by Benkinsale and Ram (2006: 850) who classified ICTs

as “any technology used to support information gathering, processing, distribution and use.”

Manueli, Latu and Koh, (2007) went further, adding that this technology includes many tools such as “computers, Internet, websites as well as fixed-line telephones, mobile phones and other wireless communications devices, networks, broadband and various specialised devices.” “Moreover, advanced technological developments and "paperless" workplaces, have made ICTs a domestic name (Jain 2008: 1).”

“Information and communication technology today is a powerful tool for empowerment and income generation in developing countries like South Africa (Mutula 2008: 478).” It promotes productivity and enhances innovation and growth (Kroes 2009:14).

For the purposes of this study, and in order to understand the opportunities ICTs afford SMMEs, as well as to identify the challenges and barriers that inhibit the access and use of ICTs for women-led SMMEs, the researcher will draw on a more recent definition provided by Anitha and Sundharavadivel, as follows:

ICTs consist of many different tools and resources that ensure the creation, storage and sending of information. They ensure that information adds value, is managed effectively, and includes a range of tools such as a those highlighted above (Anitha and Sundharavadivel 2012: 143). Many of these tools are used by businesses, including SMMEs in many countries all over the world. In order to obtain a clearer understanding of the term SMMEs many countries have provided various definitions of the term over the years (Esselaar and Gillward 2007: 88). For the purposes of this study, however, the following definitions of SMMEs will be used.

2.4. Definition of SMMEs

Businesses are classified as microenterprises, small or large businesses, by a number of different criteria (Coetzee 2008). Coetzee’s (2008) definition relates to turnovers of less than 1 million rand. However, in contrast with a turnover of R1 million, the 2006 FinScope survey of small businesses in Gauteng, South Africa, considers turnover of less than R500 000, as well as the formality and education levels of the business owner, as applicable (Finscope 2006).

This definition, as well as that following which defined SMMEs in terms of number of employees will be used in this study. Divisions in the SMME space include microenterprises consisting of fewer than 10 workers, small businesses with between 10 and 50 employees, and medium businesses with between 50 and 100 employees (Kozak 2007: 8). This definition is also applicable to the numerous SMMEs led by women in developing countries such as South Africa.

2.5. SMMEs led by women

According to the UNIDO, WSIS Report (2003), the above business sector served as a means of providing jobs and financial means for many of its citizens in both developed and developing countries. Additionally, according to MasterCard worldwide insights (2010: 2), many governments and economies worldwide have constantly and fervently alluded to the contribution of the SMME sector in the many aspects of gender empowerment and advancement in the business world.

The UNCTAD report (2011: 45-46) recognised the need for the increased participation of women in the SMME sector, stating that these enterprises add to their “gross domestic product (GDP)” and their participation in global markets.

In South Africa, the SAWEN report (2007: 1) indicated that government and the Department of Trade and Industries (DTI) efforts to encourage the growth of women in business also recognised their contribution to the country’s economy. In order further to understand this sector, the report details the many different characteristics of women entrepreneurs operating in South Africa. These characteristics will be discussed as follows.

2.5.1. Characteristics of women-owned SMMEs in South Africa

According to research conducted by SAWEN (2007: 5), 71 per cent of women entrepreneurs are from the Black race group, with 11 and 8 per cent being Indian and Coloured, respectively. The further 10 per cent are White. The age groups varied, with most being between 35 and 49 years of age. A level of expertise, as well as business acumen, is indicated by the dominance of this age group. The majority of women possessed a high school education, with a minimum number having some sort of tertiary qualification such as a diploma or trade course. Most of them had a good command of the

English language. Many of the women were in a marriage or in a full-time spousal relationship; most had children.

In the business environment many women had a business account with local banks and many used landline communications. The use of online tools, however, was lacking, and many had not ventured into the global business markets. Most of these businesses were currently operating in local markets.

The above business trends, as well as social demographics of women in business in South Africa, highlighted the exclusions of the use of ICTs where women in business are operating. Based on the existing social exclusions that are highlighted, women are not using technology in their businesses (Maas and Herrington 2006: 49).

2.6. The Role and Opportunities of ICTs for women-led SMMEs

Dutta and Osario in the Global IT report (2012: xi) emphasised the role of ICTs as “hyper-connectivity” tools throughout the growing world. Additionally, Chew, Levy and Ilaravasan (2010: 1) recognised the wide range of support for ICTs as “positive change agents in developing countries.” This they attributed more especially to ICT tools and resources such as “mobile phones, landline communication, computers and Internet cafes” as empowerment tools. “There is also a growing body of evidence on the use of ICTs to empower women all over the world, including in Africa (Jain 2008: 2).” The African Women’s Network of the Association for Progressive Communications (APC) which is an online support group uses ICTs to offer support by conducting online training workshops. In Senegal, the Multimedia Caravan project offers women the opportunity to develop and grow their ideas with the use of ICTs. In Kenya, the Internet is used to generate new business ideas and market products of women weavers. In Uganda, the Uganda Media Women’s Association has set up a radio network station called Mama Africa. In Ukraine the United Nations Development Program telecentre project promotes management and support to local farmers. This program has highlighted the impact of lack of information and networking as obstacles to women entrepreneurs successes in new markets (Jain 2008: 22).

Bhatnagar (2000) also stated that many SMMEs and citizens in rural India are using and providing ICT applications such as “e-government and electronic mail” as well as short

messaging services. The roles and opportunities presented by ICTs are also visible in many initiatives such as “the Grameen Village Pay Phones and the Gyandoot Rural Intranet projects.” Many scholars have alluded to the varying roles and opportunities presented by ICTs especially for women all over the world (Slater and Tacchi 2005; Huyer 2005; Garrido and Roman 2006; Maier and Nair-Reichert 2007). Some of these, which include communication, education and knowledge and research, will be discussed below.

2.6.1. Communication

Information and communication technology provided many tools that are used for the purposes of communication. The potential efficacy of radio, mobile phones, computer and Internet as tools of effective communication in SMMEs is undeniable (Chew; Levy and Ilavarasan 2011: 11).

It has been found that radio is used mostly in developing countries as a communication medium (Milek; Stork and Gillwald 2011: 134). The mobile phone provides for communication in places where there are no avenues that are present for landline communication (Jones 2010: 424).

Dutta and Osario, in the Global economy report (2012: xiv) stated that an increase in the use of cellphones, online applications, as well as “social media” and networks, has brought about rapid changes to individuals as well as to businesses. Instantaneous interactions, seamless connections and speedy information access are re-engineering the business world, generating higher outputs and increasing profits. METI (2001) also showed that, with the use of the various ICT tools in their businesses, SMMEs can maintain effective communication in their internal dealings with their clients. One of these tools is the popular personal computer (PC) which serves as a medium for daily operational use in many businesses. The PC enhances productivity when combined with other technologies, and makes up an important part of the operational environment in many businesses (Eurostat 2008; OECD 2004; UNCTAD 2008) as cited in the UNCTAD report (2011: 24).

The mobile phone has been cited by many scholars as the fastest-growing ICT tool throughout the world. This technology is also receiving substantive recognition as a business tool in SMMEs (Castells, Fernandez-Ardevol, Qiu and Sey 2007; Katz 2008; Ling and Donner 2009). An increasing number of these SMMEs within developing

countries are using mobile phones to access the Internet, to send and receive short messages, as well as to transfer monies. They are also aiding entrepreneurs in maintaining relationships with their clients, and for updating “market information and business networking”. This in turn is leveraging their outputs, and saving costs when searching for information, or when being used as a business communication medium. Businesses such as SMMEs can also use mobile telecommunication to track and update progress with their sales representatives or even to enable them to ensure that while they are away they are still in touch with their businesses (Donner and Escobari 2010: 642). According to Meena and Rusimbi (2009: 198) communications in the business world have now been facilitated through continuous upgrades in computer hardware, software as well as online technology. ICTs ensure minimum travel and save on travel costs (UNCTAD 2011). This in turn, as indicated by Jain (2004: 3) also allows women to balance their family and working lives.

The Intuit future of small business report (2007: 10) added that mobile technology, which now encompasses online applications such as smart phones, has evolved from a communication tool to a tool that will be vital for every small business’s survival globally. Ledgard (2011) in the UNCTAD report (2011: 26) concurred when he indicated that in Africa, “7 out of 10” cellphones will be wirelessly enabled by 2014”.

Currently in Africa, as pointed out by Esselaar, Stork, Ndiwalana and Deen-Swarray (2007: 90), a very large percentage of entrepreneurs use the mobile phone with which to keep in touch with their customers. In South Africa, according to Blanke (2007) in the GEM report (2009: 106), the use of mobile phones has increased rapidly. However, South Africa, by comparison with the rest of the developing world, is still in the background when it comes to communications.

Chew, Levy and Ilaravasan (2010: 2) mentioned that communication depends on availability of the necessary infrastructural support, as well as a person’s wants and needs. Donner (2007: 6) argued that more especially in SMMEs, the use of ICT for communication in business is not yet fully realised. This effect is also visible in many SMMEs owned by women, as indicated by Gurumurthy (2004: 1) who added that increasing the availability of communications technology can alter the course of women in society and in their businesses. However, Jain (2008: 3) stated that, in order for women to use the necessary ICT tools for their empowerment, they also require the necessary

education and knowledge.

According to Modiba et al. (2009: 167) the implementation and use of ICTs also depends on continuous and sustainable education efforts. The rapid changes in technology requires constant updates to knowledge gained and if this is not updated regularly such knowledge will not be sufficient for the changing business world (Huyer and Hafkin 2007: 1). The rate of change in contemporary society requires that in order to be efficient and effective, entrepreneurs must have some kind of education, and must work to keep their knowledge and skills current as improvements take place (Jain 2008: 8).

With the advent of social media and contemporary trends in education, there has been a movement toward online learning and assessment. This has seen investment from private corporations, governments and universities (Noveck 2009: 119). The communication that is facilitated through ICTs is often used as a channel to promote and / or aid learning processes.

2.6.2. Education and Knowledge

According to Chen (2004: 3), ICTs can assist women by providing them with information and knowledge to access education through distance learning and telecommuting from their homes. This is made possible through the power of learning over the Internet which in turn allows women to participate in the labour markets, overcome challenges with regard to geographical distances, and to access lower costs of using ICTs. The Internet may also be used for gaining knowledge (Modiba 2010: 90).

Websites are used for promotional purposes. According to Maier and Nair-Reichert (2007: 49) internet sites are being developed exclusively by women to provide samples of business plans, for advice on seeking start-up capital, market analysis, business leads, and as support networks.

Within the business world, the internet is being used as a source of information (especially market-related) and also for sharing information with foreign partners and colleagues (McDade & Spring 2005: 29).

According to Yitamben and Tchinda (2009: 137), women can use the internet as a virtual

boutique. Customers can, therefore, log onto the website and experience in real time, the fashions of various boutiques. Yitamben and Tchinda (2009: 140), also state that learning through the Internet enhances many women's dynamic competence, which enables them to acquire knowledge for themselves and their enterprises. McDade and Spring (2005: 35) found that women use virtual sites for educational and business purposes, as they think that these sites will give them good business advice. Such uses of ICTs illustrate how the CD-ROM project in Uganda enabled the empowering of women entrepreneurs. What the CD-ROM project did was to give women business information that they had to translate into personal, economic enhancement (Bakesha, Nakafeero and Okello 2009: 148). These authors further explained that, once women in Uganda had taken part in the CD-Rom project, they understood the importance of customer relations and providing customers with quality goods. Upon improving the quality of their products, they saw an increase in their sales. In cases where they failed to use the skills learnt at the CD-ROM project, they found themselves engaging in activities that affected the productivity of their business (Bakesha et al. 2009: 145). For example, they stated that, as part of their lessons, they were taught not to spend all the business funds on household essentials. Those who spent most of their cash on family welfare, found their businesses stagnating. These women also learnt how to appropriate the many benefits associated with using the Internet in their businesses (Bakesha et al. 2009: 146).

Women in businesses such as manufacturing are also using the Internet to stimulate their creativity and broaden their capacity to innovate, by surfing the Internet and finding new design ideas (Modiba 2010: 89). According to Maier and Nair-Reichert (2007: 49) internet sites are being developed exclusively for women, and also as support networks. Barba-Sánchez, Martínez-Ruiz and Jiménez-Zarco (2007: 110) mentioned that businesses can use ICTs for internal business support as well as a support tool to gain business acumen in the global field, by streamlining processes such as customer and competitor knowledge that can assist in making informed market-related choices. Also, the use of social media can enhance their access to information.

The use of many social media applications has further allowed an open arena for information and knowledge transfer between various role players, on a personal as well as on a business level (Chew et al. 2010: 33). However, as indicated, knowledge and skills are a necessary requirement if one wishes to invest in such modern technologies, especially for

business use (Barba-Sánchez et al 2007: 106).

Harindranath, Dyerson and Barnes (2008: 94-95) also found in their research that, even though many of the business women surveyed were extremely satisfied with their choice of ICT as a business investment, many indicated that training and skills were important in making decisions regarding ICT adoption. They also indicated that, because of a lack of these skills, women in business are not utilising ICTs optimally and to their advantage. However, according to the GEM report (2009: 112), when women are empowered with these skills, they are able to use ICTs to research business opportunities before and also after they “start up”, thereby allowing them to make informed choices. This is currently visible in the many SMMEs operating in Africa.

2.6.3. Research

The use of social media sites as platforms of learning enables businesses and professionals with similar interests, roles and responsibilities to engage and learn from each other (Chew et al. 2010: 33).

Information and communication technology innovations allowed businesses to operate on global levels and to share and deal in open marketplaces. Even small businesses have become global through the efficient use of relevant ICTs. (Maier and Nair-Reichert 2007: 45).

Business is often concerned with facilitating transactions, be it receiving and sending of goods or offering of services. Information and communication technology has the potential to broaden the reach of these transactions, by facilitating speedy communication regardless of physical distance or other constraints that may have previously hampered them (Pandey 2007: 11). The online trading of goods and services has been made trade easier and often safer thanks to ICT improvements. For example, banking can now be conducted over the Internet, cellular telephone and even telephonically; saving businesses time and money (Singh 2012: 38).

Several online and electronic tools can be used to conduct research for the modern-day business organisation. Free survey software, reports and statistical information are among the available tools that can be used by organisations in operation today. Social media and

popular search engines have revolutionised how business is done in the contemporary environment (Castells, Fernandez-Ardevol and Sey 2007).

In Africa, as indicated by Essoungou (2010), cited by Bosch in the eLearning report (2012: 33), the use of online sites via cellphones is on the increase. Bosch, in the eLearning report (2012: 33), refers to the dual purpose provided by this technology as an individual tool as well as an open space for the creation of further business opportunities and research.

The report also cited (Huges and Lonie 2007), who highlighted the many initiatives that are currently in place, such as the “M-PESA online banking payment system in Kenya”, that enables the transfers of cash between family members that are in distant locations. (LaFraniere 2005) added that farmers use the Internet to research the going rate for their supplies, as well as to gain important information needed in their dealings with the go-betweens for the sale of their supplies. Online technology, web searches and browsing enable better operational capabilities for many businesses in their dealings with clients as well as with governments (Castells, Fernandez-Ardevol and Sey 2007).

According to UNDESA (2010: 77) businesses may use information via the Internet to access the government’s information portals, for the purpose of gaining information. However, merely gaining information about government sites is inadequate, and this limits many businesses in transacting with governments in order to secure business. This could also be as a result of many countries offering a very small number of “e government services” for SMMEs.

Dlodlo (2008: 9) emphasised the need for governments in South Africa to engage in strategic initiatives, such as the use of media and awareness campaigns to encourage women to utilise ICTs for their personal empowerment, in order to support their families as well as to contribute to the economic uplifting of their communities. Governments can also ensure better access to basic resources such as electricity and roads, especially to aid women in the rural areas of sub-Saharan Africa.

The internet is being used as a source of information (especially market-related) and also for sharing information with foreign partners and colleagues (McDade & Spring 2005: 29). Even though in Egypt collaborative work that can be done through the Internet is not

known to most of the women, they know that it can assist in stimulating their creativity and capacity to innovate (Modiba 2010: 89). Women in manufacturing can surf the Internet and find new design ideas. According to Yitamben and Tchinda (2009: 137), they can use the Internet as a virtual boutique. Customers can, therefore, log onto the website and experience in real time the fashions displayed their boutiques. The Internet is also used for learning (Modiba 2010: 90).

According to Yitamben and Tchinda (2009: 140), learning through the Internet enhances their dynamic competence which enables women to acquire knowledge for themselves and their enterprises. A case was mentioned of a young woman who discovered that utilizing ecommerce technology helped her to market her business. It is believed that her sophisticated IT skills made it possible for her to utilize the Internet as a marketing tool (Hassanin 2009: 38).

2.7. Women and ICTs

Muller cited in Bushkens and Webb (2009: 33) pointed out that in many areas of sub-Saharan Africa, between 50 and 80 per cent of families are led by women, because their husbands move on to the cities to gain employment. This in turn leaves the women with the burden of supporting their families. However, many of these areas lack the necessary energy resources needed for the use of income-generating ICTs and support. Although the popular ICT tools such as radio and the mobile phone are being used, the advantages of more income-generating ICT tools such as the Internet, which enables connectivity, are not realized (Muller 2009: 34). Buskens and Webb (2009: 7) highlighted the many opportunities that ICTs provide for these women to empower themselves, as well as to ensure the survival of their families, especially in Africa.

Also, in many other parts of the world, there are positive examples which indicated the numerous opportunities that ICTs present to women (Jain 2008: 2). Maier and Nair-Reichert (2007: 45) suggested that women must share ideas and gain expertise in their fields through the use of the various ICT tools. There is also a large amount of literature on ICT tools such as email and the internet that enable women to use their marketing skills to broaden their markets and grow. These tools, according to Anitha and Sundharavadivel (2012: 145), enable women to involve themselves and engage with other players such as governments, other businesses and men in the global market space. This promotes

innovation and growth of their “products”.

The use of ICTs also promotes productivity and enhances innovation and growth (Kroes 2010: 14) for both sexes. According to Kelkar and Nathan (2002: 433) ICTs can synthesize the way in which society views women by comparison with men, as it offers benefits to both sexes, more significantly to those that have challenges in terms of skills and resources to gain a better education. ICTs create equal opportunities across the gender lines (Drucker 2001: 40). However, Maier and Nair-Reichert (2007: 45-46) argued that “ICTs for women are not a “panacea”, and women, compared with men, face many challenges in their businesses. Women experience many barriers and challenges, especially in their use of ICTs in the business world.

2.7.1 Barriers

The following barriers which include lack of government support, finance, education and skills shortage, as well as the social barriers that women experience, affect them in business and in their personal lives. Most of these barriers are generic, and are experienced by many women all over the world. Some of the most pertinent barriers will be discussed below, including lack of support from governments.

2.7.1.1. Lack of government support

Arendt (2008: 84) citing Perry and Jupp (2001) stated that many governments are reinforcing gender barriers, as they are not targeting issues that relate to women’s empowerment through ICT use. Kozak (2007: 7) also indicated that many of government’s initiatives are inappropriate and not focused on small business support. The GEM report (2009: 106) also highlighted barriers related to nonexistent or insufficient online ICT support for SMMEs in South Africa.

It has been noted that most SMME owners are not aware of which ICT structures can add value to their business; they lack knowledge of support structures available to them for accessing ICTs. This is relevant to many women entrepreneurs that are operating in South Africa, and more especially those that are operating in KwaZulu - Natal (SAWEN 2007: 7). Orford, Herrington and Wood (2004: 4) are of the opinion that small enterprises do not utilise the support services offered by governments as they do not know that they even exist. This is not a surprise because they might not know the procedures that they have to

follow in order to access such support programs.

In South Africa research conducted by SAWEN (2007: 6) revealed that government support is essential for women-owned businesses. Most of the women interviewed cited that governments could assist in providing training and financial support, which included marketing, counseling and business advice. They also stated that communication in the form of television, newspapers and magazines could assist in the marketing of their businesses in South Africa. It has been pointed out that access to finance is currently inadequate in South Africa (SME Survey 2006: 85).

2.7.1.2. Finance

One of the key problems identified in the GEM (2009: 90) report indicated access to finance as a barrier to entrepreneurship when compared with many other countries in the developed world. The findings revealed that many entrepreneurs approach their families and use their own capital to start up their businesses, rather than approach formal institutions. The report further revealed that, owing to this factor, many businesses owned by women face difficulties in starting up. Because of limited access in South Africa, women use private funding such as that obtained from friends, family members and personal savings, as well as reinvestment of business savings (CAWTAR 2007: 19).

Even with the promotion of affirmative action which stipulated that many individuals should not be discriminated against on the basis of gender and race in South Africa, Black women still experience difficulties in obtaining financial assistance (World Bank 2008: 19). Despite the many finance options such as micro finance options that have been made available in South Africa, many women have to wait for finance to become available (Modiba 2010: 57). This also inhibits their use of ICTs to grow their businesses and access new markets (SAWEN 2007: 5).

Modiba (2010: 74) pointed out that the loan requirements in South Africa appear to be different for women and men, which creates a financial appropriation gap amongst SMMEs (Modiba 2010: 74). In South Africa many financial institutions need some sort of collateral for women to acquire finance (GEM 2009: 10). Von Broembsen (2008: 13) in her study found that another reason preventing women from seeking institutional funding is the lack of collateral. When women do not have collateral they are required to provide a

surety. Women also tend to be treated harshly with respect to the processes that are in place to secure funding. It has been noted that, even though financial institutions do not use gender as a determinant to offer a loan, the collateral requirements for women were too high (Greene, Brush and Saporito 2006: 68). In South Africa, where most women only have Rural Development Program (RDP) houses (those built by government for residents) as assets, banks do not consider such houses as collateral (von Broembsen 2008: 13). This is also evident in the rest of Africa.

It has been established that in many parts of Africa, some venture capital lenders that are supposed to assist SMMEs do not relate well to businesswomen (Lee 2004: 10). In Swaziland, for example, banks still refuse women financial applications if they are not accompanied by male sureties (Modiba 2010: 74). Tanzania also reported low levels of women who banked - they were estimated at 5 per cent by contrast with their male counterparts at 11 per cent. This negatively affects applying for bank finance (World Bank 2008: 32).

Furthermore, the cost factors related to ICT infrastructures, and the implementation of ICT tools for business is high (Esselaar and Gilward 2007: 4). Radebe (2009: 2) argued that the availability of funds, whether they are borrowed or emanating from profits, also influences whether an SMME will invest in technology for business purposes. Arendt (2007: 89), in his research, also found that funding for ICT implementation for SMMEs was a problem; many women lack education and skills needed to invest and use ICTs (Dlodlo 2008: 1).

2.7.1.3. Education and skills

Anita and Sundharavadivel (2012: 145) stated that knowledge improves the lives of women in “developing countries.” According to Isaacs and Hollow, as stated in the eLearning Africa report (2012: 9) there are many barriers that affect knowledge and skills, especially for women in Africa.

Dlodlo (2008: 7), in her research in South Africa, found that many women lacked education and skill; this affected the way in which they use ICTs for their businesses. Arendt (2007: 89) added that knowledge and skills were a problem for many SMMEs. Furthermore, many authors concur when they added that the majority of women in business do not possess a tertiary qualification, owing to existing sociocultural norms,

demographic issues, socio-economic conditions and infrastructural problems (Dewar 2005: 12; Maas and Herrington 2006: 41, 44; Taylor and Newcomer 2005: 20; Velkoff 1998: 4). This limits their use of ICTs in their businesses.

The eLearning Africa Report (2012: 14) emphasised the need for the use of technology to promote learning for Africa's citizens, including women. Jain (2008: 2) stated that ICTs can empower women to share experiences, concerns and knowledge for further enrichment of their businesses. Also, according to Merret and Gruidl (2000: 430), higher educational levels assist in utilising ICTs to increase marketing and management capabilities for many women in their businesses. Ahmed, Islam, Hasan and Rahman (2006: 6) added that the use of ICTs for women will increase their levels of recognition in their home lives as well as in the local and worldwide structures within which they operate. This in turn will assist in penetrating the sociocultural barriers confronting women.

The majority of women do not possess a tertiary qualification owing to existing socio-cultural norms, demographic issues, socio-economic conditions and infrastructural problems (Dewar 2005: 12; Maas and Herrington 2006: 41, 44; Taylor and Newcomer 2005: 20; Velkoff 1998: 4). Statistics show that women make up two thirds of the world's 880 million illiterate adults (UNDESA 2010). This disturbing figure already includes the few women who are leading SMMEs. Education networks do have an important role in assisting women led SMMEs to learn and appreciate the possible benefits of using ICTs, especially in Africa (FAS 2007: 6).

Given the above, it is understandable that a significant portion of women globally lack basic computer literacy (Modiba 2010: 65). The World Bank (2008: 25) reports that women all over the world have little access to skills and training. This also means that fewer women have computer skills and fewer women are operating and using computers. Milek; Stork and Gillwald (2011: 130) reiterate this point. They found that Internet usage in Africa was particularly low – with the major driver of this being a lack of basic computer literacy and skills. Hafkin (2002: 5) also points out those women in developing nations are less likely to have the necessary skills, knowledge and literacy to engage with technological developments.

2.7.2. Sociocultural Barriers

There are also several social and cultural barriers that impaired women-led SMMEs. These include family responsibilities, cultural barriers and language.

2.7.2.1. Family Responsibilities

Many women in many countries and more especially in Africa are rooted in social norms, customs, and family responsibilities, which consume much of their time. In many countries, a patriarchal social structure prevails. This means that the freedom for women successfully to engage in business and to use ICTs is limited (Aleke; Ojiako and Wainwright 2011: 75).

Hafkin and Taggard (2001: 24) concurred when they added that a women's time is limited owing to the many roles that she had to play. Women entrepreneurs who are leading SMMEs, tend to have less time to spend on their businesses owing to family responsibilities and children (McDade and Spring 2005: 25; Pretorius and Villiers 2009: 182). Domestic demands limit their time in the running of their small businesses and in using ICTs (Winn 2004: 148).

These domestic demands also placed limits on the growth and development of women-led SMMEs, especially in the way in which they invested in and use ICTs. Comfort and Dada (2009: 54) stated that women were more likely to choose domestic roles and needs over their use of ICTs. In addition, Muraryev, Schafer and Talavera (2007: 34), explained that women tend to use their added finances on their home and for groceries, instead of investing in ICT devices as would their male counterparts.

This biased division of labour in the household prevented women from the daily running of their small businesses (Winn 2004: 148). When systems such as ICTs are introduced to improve women's lives, this must be seen as a way of empowering women, and not as an additional burden to the many existing barriers facing them. Another of these barriers is the low literacy levels that women have, which negatively affects their businesses.

2.7.2.2. Language

Low literacy levels impacted negatively on the language skills of women when conducting

their businesses (Hassanin 2009: 56). Language skill was a problem for most women. English is, in most cases, the business language, hence women were left behind. Language as a barrier, especially in developing countries, is also highlighted by Modiba, Ngassam and Eloff (2009: 167) who stated that, owing to the low literacy levels in general, and English specifically for some South Africans, Internet access will be a problem. Dlodlo (2008: 7) found that a lack of English literacy in South Africa led to many women not being able to obtain an education, which in turn led to their not being able to understand the dynamics of ICT use; this became detrimental to their economic survival.

In another study conducted by Comfort and Dada (2009: 51), it was found that women were aware that using the short message service (SMS) feature for communication was cheaper. However, because of their low literacy levels, it was impossible for them to use this feature. Also, they are unable to reach export markets, as they cannot gain information and communicate with other parties (Modiba 2010: 65).

Huyer and Mitter (2003: 7) stated that having knowledge of “information” can allow women to search, analyse and use this knowledge gained to obtain further skills. This opens up avenues for numerous opportunities for women to penetrate the technology divide. This technology divide is also further entrenched, because women in many developing countries are unable to reach ICTs owing to their geographical locations.

2.7.2.3. Geographical locations

Ngwenyama and Morawczynski (2009) stated that, although ICTs can assist in reaching remote or rural townships, many of these places in South Africa lack resources, and have inadequate infrastructures or even addresses. Even though cellphone use is high, “fixed line connectivity” is still a huge problem.

For women in these areas, the prospect of accessing public facilities is therefore a problem for their business use. Also, the places where community online sites are found are out of many women’s reach. The creators of these centres, furthermore, when designing them, do not consider the challenges of women. (Anitha and Sundharavadivel 2012: 150).

Boros, Murray and Sisto (2002: 28), concur when they added that, compared with men, women, when accessing services in public areas, could be faced with many security issues.

Therefore it is necessary that the location of these ICTs be well planned so that they cater for the many women entrepreneurs wishing to use them (Hulbert and Snyman 2007: 2 - 3).

Esselaar and Gillward (2007: 25) stated that telecentres should be set up in an area where this will be most needed and accessed by users. The authors also highlighted that these telecentres must cater for the numbers of people who need to access them. For instance, in Gauteng Province (South Africa), there are 13 telecentres which are designed to serve over 2.5 million people within a radius of 5 kilometers. This creates problems for users, especially women entrepreneurs, who have time limitations, yet have to stand in long queues to use these facilities.

This meant that more time will be spent waiting for these services rather than accessing them for their personal or for business purposes. (Esselaar and Gillward 2007: 26). Mbambo-Thata, Mlambo and Mwatsiya (2009: 72) provided an example, where the only alternative for accessing computers for women who were resident at the University of Zimbabwe was Internet cafés, which had obvious cost implications.

Also, access to computers was a challenge for many women who also had sociocultural constraints preventing them from visiting the laboratories later in the day owing to household commitments; there were also the negative implications of being on the streets late at night (Mbambo-Thata et al. 2009: 70).

Anitha and Sundharavadivel (2012: 150) added that, in addition to the above challenges mentioned, mobility also presents barriers for women's use of ICTs in their personal and business lives.

2.7.2.4. Mobility

Mobility may be defined as the movement of people from one place to another (Modiba 2010: 69). Effective transport facilities are necessary in allowing people to travel safely to their desired destination and to conduct their business (Turner, Grieco, Apt and Holmes 2000: 68). These facilities enable women to reach these destinations. However, many women have limitations in terms of mobility, and they therefore need reliable access to transport infrastructures that are essential for their businesses (Modiba 2010: 69).

As stated by Anita and Sundravadivel (2010: 150), women must be mobile, so that they can travel to community centres, to enable them to take advantage of the many opportunities presented to them by ICTs in their personal and business lives. Jain (2008: 3) concurred when he added that women must be mobile so that they can use ICTs in order to gain valuable “information” for their businesses. However, being mobile depends on transport infrastructure.

According to Modigomale and Kroeze (2011: 5) the “lack of infrastructure” was a huge barrier for many women-owned SMMEs in South Africa. Owing to these limitations, SMME owners have to force themselves to combine various tasks into one, in order to avoid having to undertake multiple trips (Turner et al. 2000: 68). There is also a demand for low cost, flexible and responsive transport in South Africa. This will assist women in balancing their domestic and business demands, without having to ‘squeeze’ in a number of activities in one trip in order to save money. Thus, with affordable transport, they do not have to do everything at once. It is imperative that infrastructural problems which can save time and cost for women are attended to, in order to enable women-led SMMEs to access ICT services (Turner et al. 2000: 72).

2.7.2.5. Time and Cost of ICTs

According to Terry and Gomez (2010: 10) time is of vital importance for women who need to consider their many responsibilities. Best and Maier (2007) concur when they add that women have many responsibilities to their homes, businesses and within the societies in which they exist. Owing to these responsibilities, women lack time which affected their use of ICTs (Hafkin 2002: 5). In many developing countries such as South Africa “cost of access” to ICTs is a problem (Jorge 2002: 8). Juma (2003: 23) indicated that women in business fail to use ICTs for their businesses owing to the high cost factors involved. Dlodlo (2008: 7) adds that the high prices related to implementing ICTs for women’s economic uplifting in South Africa are an enormous barrier. It is for this reason that “Telkom (the local telephone company that is partly-owned by government) has been mandated through ICASA (Independent Communications Authority of South Africa) to ensure that it reduces its communication costs, so that most of the country will be well connected” (Modigomale and Kroeze 2009: 6).

2.8. Overcoming the barriers

Several challenges to the implementation of ICT initiatives in women-led SMMEs in KwaZulu-Natal have been identified in the literature above. However, there are several means of dealing with these challenges. This literature provides several solutions to be considered in dealing with the above-mentioned obstacles.

2.8.1. Government support and policy changes

According to the United Nations Development Program (UNDP) (2002: 18), concerted efforts must be made by governments and other stakeholders to support women. Women also need support from the developers of technologies. The design of computer hardware and software must take into account the needs of women-led SMMEs prior to manufacture (Modiba et.al 2009: 71). Strong linkages between various stakeholders in business as well as good infrastructural support will also facilitate the growth, creation and development of women's businesses (ICT Report 2011: 102).

Dutta and Osorio in the Global IT report (2012: xiv) pointed out that "governments can encourage ICT convergence in three key ways":

- By ensuring that they consider existing legal frameworks that surround trade restrictions and create an environment that is conducive to healthy competition.
- They must provide additional advantages or compensation to businesses that engage and use ICTs in their operations.
- They should also ensure that they take responsibility to create a business climate that allows for direct ICT investment especially one that many SMMEs can access.

Government's policies should be geared towards providing women with opportunities in e-commerce initiatives which have contributed to many empowering functions for women in their personal as well as business lives. Several examples of such initiatives have been documented throughout the developing world. (Maier and Nair- Reichert 2007: 47). One such initiative was the Grameen telecom program where women in Bangladesh may obtain access to communication infrastructures through the Grameen telecom by becoming phone operators. This enables them to run their own businesses in a sector of which they do not have experience, while obtaining access to market-related information (Ahmed, Islam and Rahman 2006: 2).

Maier and Nair-Reichert (2007: 51) added that governments can also assist women in training and development as well as in accessing new markets, by offering more financial support which currently is a huge barrier for many women in many developing countries such as South Africa. They can also seek to overcome market failures by creating demand aggregation (e.g. by developing e-government services, such as e-procurement, and encouraging firms to use them) and by supporting the development of ICT skills especially for women (Qiang, Clarke and Halewood 2006; UNCTAD 2009).

According to The United Nations report (2010: 12) in India, the establishment of new technology in parks and business premises allows women to meet, learn and appreciate ICT programs. These places bring together women entrepreneurs, scientists, financial institutions and industry, and include a technical resource centre which assists with quality testing, technology development and training.

The ICT Report (2011: 91) also recognised the importance for women leading small businesses to have access to information. This can only be achieved through the use and promotion of ICT tools among the women in SMMEs. It is for this reason that this report has offered standards on the running these ICT projects. These are national and international policy goals that can influence women to take full advantage of the use of ICTs.

According to RIA (2006: 139:140), Esselaar, in his report added that “governments” must strive to implement “competitive ICT markets” in order to bring down the prices of ICTs for SMMEs. Esselaar therefore proposed policies that should focus on lowering the prices as well as enabling and urging SMMEs to utilise ICT resources in their businesses. This would ensure that enterprises become more competitive and sustainable. Governments should put more effort into making businesses more aware of the support services that they provide.

2.8.2. Awareness

Awareness of the benefits of ICTs is lacking in most women led SMMEs. An awareness campaign could possibly yield positive results and lead to an increased uptake of ICT initiatives (Hafkin 2002: 5).

In addition to the awareness of the benefits of ICTs, women, particularly those leading SMMEs or those considering entrepreneurial ventures, need to be educated (Barba-Sánchez et.al. 2007: 106) on other aspects of business that will become crucial to their sustainability and profitability. These may include accessing of financial services and even legal considerations (Arendt 2008: 96).

Ashrafi and Murtaza (2008: 125) recognised and stressed that SMMEs must also play a role in ensuring that they engage in ICT deployment, in order to grow and become “more productive and competitive.” Arendt (2008: 90) concurs when he stated that there exists a need to change mindsets and to establish programs enabling SMMEs to concentrate on building their ICT skills. These efforts will ensure that women SMME owners will also be able to participate freely in the global “hyper-connected” world of business.

According to Anitha and Sundravadivel (2012: 144,145), raising awareness could include workshops, seminars and online groups. Research and government industry partners could also assist. Gurumurthy (2004: 39) emphasises the need to include “gender in policy and program intervention”. However, she adds that there are not many efforts that focus on gender, with the exception of Korea and South Africa, where the Telecommunications Act includes stipulations on gender. However, according to Hafkin (2002), this has not yet materialised, and the gender barrier is still prevalent. Another barrier that is largely gender-based is finance, as indicated above. Means to overcome this huge barrier is required.

2.8.3. Financial support

According to Jayamaha (2008: 1), access to finance referred to providing an environment that allowed people in general to have access to formal financial services through the use of different financial products at affordable prices. Financial services further contribute to expanding people’s choices and ability to respond to opportunities (Swain 2006: 7).

“Financial support for women” is cited as one of the main drivers for SMMEs in South Africa. Without finance, SMMEs will not be able to indulge in ICTs for their expansion or to compete in global markets; nor can they establish any relationships with larger companies (Turner, Varghese and Walker 2008: 8 -10).

It has been pointed out, that in South Africa access to finance is currently inadequate (SME

Survey 2006: 85). The IFCGEM report mentions many financial initiatives that exist in South Africa; however they are not all equally distributed, with race and gender being major discriminators (IFC report). This places SMMEs led by women at a disadvantage, owing to the lack of access to funding.

With access to funding, women entrepreneurs will be able to invest in tools that will enhance the productivity of their businesses (Radebe 2009: 2). In India, for example, 90 per cent of microfinance clients are women (Swain 2006: 13). “In addition, the Grameen Bank in India was the first lender to provide microcredit to impoverished females who did not qualify for credit from conventional banks.” These women would work in teams, only making reapplications for loans once the other borrowers had paid back. This allowed women to take responsibility when they borrow, ensuring that they honour their commitments to their team members. The success of this concept speaks for itself, as the bank has lent out a considerable amount of money, and its repayment rate is 98.9 per cent. The Grameen initiative has now spread throughout the developing world and has been recognised as a key approach to poverty alleviation. This has also contributed to women’s being able to obtain funding by accessing necessary information (Rambarran 2006: 1).

Due to limited access, women use private funding such as that obtained from friends, family members and personal savings, as well as re-investment of business savings (CAWTAR 2007: 19). Radebe (2009: 2) further argued that the availability of funds, whether they are borrowed or emanating from profits, also influences whether or not an SMME will invest in ICTs. What this means is that once women have gained the funds to grow and develop their businesses and their business processes, there is a need for them to acquire the right ICT devices to use in their businesses (Modiba 2010: 77).

However, the option of micro-financing is also viable, depending on the availability of such services (Modiba 2010: 57). In India, it was found that 90 percent of microfinance clients were women (Swain 2006: 13). By comparison, even with the promotion of affirmative action which stipulated that individuals should not be discriminated against on the basis of gender and race in South Africa, Black women still experienced difficulties in obtaining financial assistance (World Bank 2008: 19). Tanzania also reported low numbers of women who banked - they were estimated at 5 percent by contrast with their male counterparts at 11 percent. This has a negative impact on applying for bank finance (World

Bank 2008: 32).

2.8.4. Access to information and networking

According to Anitha and Sundravadivel (2012: 145-146) “Access to information” is essential in allowing the use of ICTs for women to participate in open markets, and to provide them with relevant information. It allows them the freedom to articulate and reflect on their business encounters, thus empowering them as well as others. This, the authors referred to as “technological empowerment” through networking.

In the report compiled by SAWEN (2005: 11), it is clear that through networking women will be more familiar with the “opportunities” that are available for their business expansion and “sustainability.” This will also cause other role players within society to promote networking initiatives and to lend support to business organisations of women. They will gain knowledge of other supporting bodies, financial institutions and government bodies that can assist them with funds to start up and sustain their businesses (Modiba 2010: 14). This is not surprising, because they may not know the procedures to follow in order to access such support programs. It is therefore necessary for information hubs and campaigns to be introduced, to enable females to have access to information as well as to training and skills (Modiba 2010: 14).

2.8.5. Education and training

Education could take place in the form of formal programs, experiential learning and networking (Barba-Sánchez et al. 2007: 106). These have been identified as imperative elements of success for accessing finance, learning new skills and utilising ICT tools.

Gurumurthy (2004: 44) advised of the need for capacity building for women, not just improving on their technical skills. She suggested the need for online technology to be used to encourage women to become verbally articulate through “communication and networking” enabling them to form new partnerships, and to venture into the global marketplaces. Dlodlo (2008: 10) added that in South Africa more strategic efforts should be made to enable the use of ICTs by encouraging knowledge through learning.

In Africa, according to Issacs and Hollow in the eLearning report (2012: 9), the efforts provided by the “eLearning Africa News Portal” could provide many women with

information and “knowledge sharing”. It also allowed for information transfer and facilitates learning through best practices. This report entailed the hype surrounding the utilisation of technology to bring about exhilarating change to business in Africa, especially for women.

In the report compiled by SAWEN in 2005, it is clear that through networking women will be more aware of the opportunities that are available for their businesses growth and sustainability. This will also cause other role players within society to promote networking initiatives and to lend support to business organisations of women (SAWEN 2005: 11). They will also gain knowledge of other supporting bodies, financial institutions and government bodies that can assist them with funds to start up and sustain their businesses (Modiba 2010: 14).

Orford, Herrington and Wood (2004: 4) were of the opinion that small enterprises are unaware of government initiatives to support them or, if they are aware of them, have not used them. This is not a surprise because they may not know the procedures that they have to follow in order to access such support programs. It is therefore necessary for information hubs and campaigns to be introduced in order to ensure that women have access to information (Modiba 2010: 14).

2.9. Chapter Summary

The above discussion in this chapter made use of the available literature on the topic to further understand the problem presented. The previous works of many authors in the field were consulted and reviewed and the subject matter was explored in detail. This included exploring the role of ICTs for women-led businesses, examining the many ICT tools that are available for women’s business support and growth. Further to this, the researcher investigated the many barriers and challenges that women face in their use of ICTs for their business needs. Finally, the means for overcoming some of these challenges was mentioned. Chapter 3 will highlight the research methodology that was adopted to address the research problem and its objectives, as indicated in Chapter 1.

CHAPTER 3

RESEARCH METHODOLOGY

3.1. Introduction

The contents of this chapter will explain the aim and objectives of the study as well as the data-collection strategies employed. The survey instrument used and reasons for choosing this instrument will be explained. Further, the research that was conducted and the types of methodologies used, taking into account the issues regarding reliability and validity, will also be discussed. The reason for choosing this type of methodology will also be explained. Finally, the SPSS tools used in the study analysis will be presented.

3.2. Aims and Objectives of the Study

The aim of the study was to research SMMEs owned by women in KwaZulu-Natal, in order to explore the opportunities that ICTs can present to their businesses. The research objectives of this study were:

- to explore the role of ICTs in women-led SMMEs in KwaZulu-Natal;
- to understand the barriers to implementation of ICTs in women-led SMMEs in KwaZulu-Natal; and
- to make recommendations aimed at improving the uptake of ICTs in women-led SMMEs in KwaZulu-Natal

3.3. Data-collection strategies

This study made use of primary and secondary sources of literature, which included books, publications, articles, previous papers and journals as well as wide use of the Internet to access additional sources on the subject matter. A literature review refers to analysing as well as studying existing data collected by other researchers in the field. According to Babbie (2011: 95), a literature review helps in revising the designs of past studies by other researchers and in turn identifying gaps and inconsistencies with existing findings. This research was conducted by conducting a review on the subject of SMMEs, ICTs and women entrepreneurs. Opportunities and challenges faced were noted and included in the questionnaire for further field research to be conducted. A literature review was compiled from these sources and provided a more in-depth analysis of the study and its problem. This also assisted in the collection of the data. From this information the researcher was able to decide on the data-collection strategies. The researcher then used mixed methods of

research, which included qualitative and quantitative research, to guide this study (Hyndman 2008: 53).

For the mixed method of research the researcher used an exploratory design to explore some aspects of the problem. This entailed the researcher collecting and analysing quantitative data with an open-ended question that allowed for a follow up interview schedule that consisted of qualitative analysis. The quantitative results affected the qualitative research questions, sampling and the data collection. Creswell (2012: 57) explained that this design is used when new questions emerge from quantitative results and certain important variables are available. This design helped in identifying and describing the opportunities that ICTs presented to women-led SMMEs, and enabled the researcher to identify associations that existed among the variables selected (Cooper 2003: 151). Other opportunities of ICTs were identified and explored for further analysis.

3.3.1. Data collection

According to Hyndman (2008: 17) data that is collected must be prioritised, because this affects the way in which data is interpreted for further use. In so doing, the data collected must consider the problem and ensure its impact on the study “objectives” which will determine the studies recommendations. The data will also be able to justify the selection of the participants, as well as enabling the researcher to make the relevant findings. For the purposes of data collection a data-collection instrument ensures that data is collected and analysed for further use (Hyndman 2008: 30-31).

According to Cooper (2006: 207) when conducting interviews the use of a structured questionnaire that will guide the respondent will ensure that similar questions are asked as well as maintain the order and manner that the questions will be posed. This is not possible with self-administered questionnaires. Therefore, for the purposes of this research, the researcher utilised survey tools in the form of a questionnaire for the quantitative research, as well as an interview schedule for the qualitative interviews to be conducted. The reason for using both these methods of enquiry is that, from the responses highlighted in the open-ended question on the questionnaire, it was apparent that a further understanding of the problem was needed. It was also evident that the quantitative analysis would not be sufficient to generalise findings related to the views of the many other respondents. (Tashakkori and Creswell 2007: 7).

For the quantitative analysis, the questions were designed so that the respondents could tick in the boxes provided or tick off the choices that they found which answered the question provided. These questions were close-ended; they provided statistical and quantitative information to the research. The questionnaire used is attached (Annexure A).

For the qualitative study, the researcher made use of an interview schedule which allowed the researcher to conduct individual in-depth interviews with 7 of the participants. This allowed the researcher to ask a few more follow-up questions to probe the research questions and objectives. If the questionnaire required either a yes or a no, the follow-up questions would help in probing more details of why that answer was either a yes or a no. The interview schedule used is attached (Annexure B).

In order to ensure that the data could be used for further analysis the researcher utilized a digital recorder. Notes were also taken down so that this could be used for further analysis. According to Maxwell (1988: 89) data should be analysed whilst the researcher is conducting an interview as well as immediately after conducting an interview. This would assist the researcher to finalise the editing process sooner as well as allow for the replacement of symbols and abbreviations recorded during the interview (Cooper 2006: 442).

This allowed the researcher the opportunity to make observations of the environment wherein the respondents were operating as well as their reactions to questions posed. Babbie (2011: 287) stated that “it is possible to go to the social phenomenon that is being studied to observe it in order to gain a deeper and fuller understanding of this subject.” Also the use of “direct observation enables the researcher to observe subtle communications and other events that might not be anticipated or measured otherwise (Babbie, 2008: 326).”

3.3.2. Construction of the instrument

When considering the survey tools being used, the researcher must ensure that this is thorough and without any faults. This can be done prior to the design implementation, by taking all the research objectives and its aim into account (Hyndman 2008: 30-31). Many points have to be considered prior to design of the survey. These include the depth of the

study, the outcomes required, as well as the cost factors and “time” required to complete the survey (Hyndman 2008: 28).

According to Saunders, Lewis and Thornhill (2000: 93) “the use of surveys is popular” as it enables data to be collected economically, from a large population. “The survey approach is also easily understood and gives the researcher more control over the research process (Saunders et al. 2000: 94).”

For the purposes of this research the researcher devised the survey tools based on the information that was deduced from the literature review conducted. Hyndman (2008: 24) adds that when a researcher designs the instrument this enables the researcher to be flexible with the information and questions therein. These can include questions that can prompt only either a negative or positive response “(close-ended)” or questions which will illicit further detail “(open-ended).” This study will place emphasis on utilising both forms of enquiry. The researcher also made use of the Likert scale to identify the different levels that needed to be answered by the respondents.

3.3.2.1. Likert Scales

According to Carmines and Zeller (1981: 22-23), Likert scales comprise a given selection of questions that have a required group of answers with either a positive or negative response from which participants may choose. The Likert scale serves as a basic prototype of other similar data-collection instruments. According to Uebersax (2006) Likert scales are easy to develop, have high reliability scale and provide ease of use. Considering the fact that many of the respondents in this study were extremely busy the scale used provided ease of use and was easy to respond to. Respondents had to tick in the appropriate boxes that they either agreed or disagreed with.

3.3.3. Questionnaire design

When considering the design of a questionnaire, the researcher deliberately sought to obtain information about an “objective, universal reality” by using quantitative Likert scales and information about “multiple, subjective realities”, by conducting a constant comparative analysis of open-ended questions on the survey. This design must be “selected to address the research questions or hypotheses at a technical, philosophical, or political level (Greene & Caracelli 1989: 258).”

The researcher ensured that the details of the questionnaire she had designed were precise and clear. The researcher thus gave a short summary, as well as the purpose of the study, at the beginning of each questionnaire. This provided each respondent with a brief overview of the study and its expectations, prior to their answering the questionnaire. This was to ensure that the respondents were clear on the method of completing the questionnaire. This question was included so that respondents could add any other information that they felt was pertinent and important to the study. The answers to this question were relevant to the study, providing the researcher with additional information to address the research questions and make recommendations. This question also allowed the respondents to express the difficulties experienced as business owners, as well as to highlight any best practices experienced. The researcher, from the responses of this question, was then able to compile an interview schedule that was used to further collect data for qualitative analysis.

The interview schedule consisted of a list of questions so that the study participants could provide more depth to the study and the problem. The data that was extracted from the scheduled interviews added to the limited number of responses to the questionnaires that were received. Considering the time constraints that the respondents had the researcher limited the interviews to 30 minutes. The design of the interview schedule aimed to understand the problem from the respondent's viewpoint. This schedule was drafted after the literature was conducted thus allowing the researcher to administer relevant questions in order to gain better responses and greater cooperation from the respondents that were interviewed.

After development of the questionnaire this was tested on 5 respondents who were willing to participate fully. The questionnaire was designed from the information gathered in the literature review. The respondent's answers in the questionnaire helped to develop some of the questions and also served as a measurement of validity and reliability. Cronbach's alpha was used with a factor loading greater than 0.50.

3.3.4. Recruitment of the study participants

According to Hyndman (2008: 17), when defining a "sample" we consider a small part of an entire "population". Researchers use this "sample" to make certain deductions about the

whole, which is the “population.”

In this study the researcher utilised an attendance list that was obtained and kept on record by the researcher for the purposes of networking, after the researcher had attended a workshop on “Women in business” in 2012. This list comprised the names and contact details of a total of 80 women who owned businesses in the Greater Durban area; 38 questionnaires were sent to these women via their emails as per the list, and an additional 42 questionnaires were sent via their cellphone emails. However, after contact with the DTI the researcher established that there was approximately 1 000 women-led SMMEs registered within the province of KZN. The organisation, however, refused to pass on any contact details of the business owners. The researcher was therefore only able to identify the population from the list that she had in her possession. This the researcher identified as a limitation when conducting the survey. According to Sekaran and Bougie (2010: 398) for a population of 1 000, the researcher should survey a total of 100 respondents.

Of the 80 questionnaires sent out, the researcher received a total of only 5 returns. What must also be noted is that, although the questionnaires were sent many women did not respond. It was therefore also necessary to hand-deliver an additional 20 questionnaires. These questionnaires were delivered after the researcher contacted these women telephonically and obtained their business addresses. The researcher gave the respondents a time period of two weeks for the completion of the questionnaire and thereafter collected the questionnaires personally; 7 respondents were also contacted who agreed to be individually interviewed. The respondents who had not completed the questionnaires in detail were contacted, and the questionnaires were sent back for completion. The sample used therefore comprised 32 responses.

3.3.5. Non-probability sampling

Non-probability sampling was used as the sampling technique and was purposive. According to Henry (1990: 17) non-probability sampling techniques involve researchers’ drawing samples from a larger population without the requirement of random selection. These samples were drawn from the specific business sectors within which the SMMEs operated in (Cooper 2006:203). Hyndman (2008: 41) adds that this type of sampling is not expensive, and has no time limits. There is no control over the representativeness of the sample chosen, because the corresponding units are not known to the researcher.

According to Creswell (1998) purposive sampling involves intentionally selecting respondents who can provide the most important information on the topic. Maximal variation sampling involves choosing respondents who have different perspectives on the topic. This would involve persons within a particular age group, race or in this study a particular sector. Särndal (1992: 694) contends that “purposive sampling methods select samples from the population in ways that provide zero probabilities of selection for many units of the population. With such samples, accurate estimation of a population attribute may be possible, and often this type of sampling cannot be avoided.” For the purposes of this research the specific sectors within which the respondents participated were ranked according to their contribution to Gross Domestic Product (GDP). It was the intention of the researcher to choose the 4 largest sectors, choosing a total of 20 respondents from each sector to participate in the study. This, however, did not prove possible, owing to the poor response of participants as well as the time constraints experienced. Therefore a small sample size was used.

According to Creswell (1998) for the qualitative study a smaller sample would be suitable to provide in-depth information. If the sample is too big this would result in less detail. The number used would depend on the approach used. For a reported study a small number such as 4 to 10 is suitable.

With a quantitative analysis the results of a sample must be generalised to a population. It is therefore imperative that the sample be large enough to be representative, to be statistically calculated, so that inferences may be drawn from this with confidence (Creswell 2009: 112, 113).

The sample of this study consisted of 32 respondents of a population of 80 which was 40% - (n=48). McCracken (1988) stated that in a qualitative study a few participants with a good knowledge of the subject should be suitable. The small sample size of 7 for the qualitative enquiry was therefore sufficient as indicated.

However, with regard to the quantitative enquiry, the sample size of 28 is too small, posing a limitation to the study. It would not be possible therefore to use a scientific calculation

as the sample is too small to be representative of the population (Sekaran and Bougie 2010: 398).

3.4. Research Methodology

3.4.1. Description and purpose

When we conduct research we use specific methodologies which consist of the implementation of a research design as well as specific research methods (Creswell and Plano Clarke 2007: 5). According to Van Manen (1990), cited in Creswell and Plano Clarke (2007: 4), these methods are based on a research structure that outlines past theory gathered in the field. The “design” in turn ties up both of these aspects (Creswell 2003).

According to Tashakkori and Creswell (2007: 4) mixed-methods research involves both collecting and analysing quantitative and qualitative data in a single study so as to understand a research problem. In order to ensure a clearer understanding of the problem the researcher found that it was necessary to conduct a mixed-research methodology.

Creswell (2008) stated that it is best to use the mixed-method of research because using both qualitative and quantitative data will provide a better understanding of the problem than would each alone. When one type of data is not sufficient to answer the problem, then both methods would be necessary. One type of research may not be able to generalise the findings of many individuals (Tashakkori and Creswell 2007: 7).

Denzin (1989: 307) advised that researchers can overcome intrinsic bias by using mixed methods of research rather than relying on one form of enquiry. This would require combining multiple observers, theories, methods, and data sources. As indicated by Patton (2002: 585), both forms of enquiry are used by researchers so that they can be “responsive to the nuances of particular empirical questions and the idiosyncrasies of specific stakeholder needs.”

Tashakkori and Teddlie (2010b: 803-804) make mention of the popularity and advantages of this research for many disciplines across the field of research. Creswell and Plano Clarke (2007: 10-11) also highlighted the following advantages of mixed methods research:

- Since both types of research methods are being used the advantages of one offsets the disadvantages of the other.
- Whereas quantitative research does not consider the attitudes and behaviour of people involved, qualitative research makes inferences from this.
- In the case where qualitative research makes “personal interpretations” which in turn may be biased, also using a smaller amount of data, quantitative analysis does not allow for this.
- Mixed-methods research allows for the usage of a variety of tools that could not be used with one type of methodology alone.
- The respondents are allowed the opportunity to “solve problems using deductive as well as inductive reasoning.”

However, according to Creswell and Plano Clarke (2007: 10) this type of methodology also has its drawbacks as follows:

- It is time-consuming to gather and collate the data.
- Most researchers are only trained on one type of research methodology.

However, Creswell and Plano Clarke (2007: 10) also considered these as minor issues that can be resolved. This method also ensured that the researcher gained a more complete understanding of the issues identified as well as ascertaining the importance of certain factors that affect the study and its respondents. In order to understand the dynamics of each type of research mentioned the researcher will further describe them as follows.

3.4.2. Quantitative versus qualitative research methods

Quantitative data involved using an instrument that would be able to test “behaviour, attitude or a performance.” This type of instrument would consist of questions that are “close ended”. Data would require statistical analysis in order to “test certain hypothesis or research questions (Golafshani 2003: 598).” According to Hoepfl (1997), quantitative research involved experimental methodology by use of quantitative data analysis to test hypothesis. It also tests causal relationships between variables (Denzin and Lincoln 1998).

Patton (2001: 39) “classified qualitative methods that allow for participants to be observed in their natural setting and in their personal capacity.” Whereas quantitative research is

concerned with a causal relationship between variables, and generalises the conclusions, the researcher in a qualitative analysis makes sense of a situation from direct observations made of participants (Hoepfl 1997). According to Glesne and Peshkin (1992: 8) in quantitative analysis, the researcher uses statistical analysis by way of surveys to reach conclusions, whereas in qualitative research, the researcher uses interviews and observations to interpret the data.

3.4.3. Reliability and validity

Crocker and Algina (1986) noted that the focus of reliability of the research should be on the reliability or replicability of the instrument being used. Joppe (2000: 1) defined reliability as an accurate representation of a study over time. Maxwell (1988: 89) added that the researcher must ensure that these findings are flawless when being used again by others.

Hyndman (2008: 44) mentioned that reliability is concerned with the way in which data is collected, whereas validity impacts on the research findings and how this formulates the researcher's recommendations. Babbie (2011: 320) stated that personal interviews allow the researcher to gain deeper insights into respondent's responses, which ensured greater validity of the data. Although there may be bias in utilising an interview schedule with scheduled questions this guides, the researcher to ask the same questions in order to prevent manipulation of the data (Babbie 2011: 321).

Wainer and Braun (1998: 1) stated that validity in a quantitative study concerns a construct that may be measured. The data may support or refute the construct that will be used for further theory or hypothesis on the subject (Cronbach and Meech 1995: 20).

Golafshani (2003: 604) stated that when the researcher uses many methods of collection of data this will ensure greater validity and reliability of the data. The use of recording and transcribing aids such as note keeping and recording ensured that the interviews were precisely documented for later analysis and was valid.

Statistical data was also analysed with the use of reliable scientific tools to eliminate any "bias or assumptions." For measures of reliability the researcher made use of Cronbach's alpha which refers to "a test or reliability that requires only a single test administration to

provide a unique estimate of the reliability for a given test. Cronbach's alpha is the average value of the reliability coefficients one would obtain for all possible combinations of items when split into two half-tests" (Gliem and Gliem 2003: 84). A further discussion of the various statistical analyses to test the hypothesis in this study will be presented further.

3.4.4. Data analysis for quantitative analysis

SPSS software was used to conduct statistical tests of Cronbach's alpha, hypothesis testing, chi square testing, factor analysis and correlation. Forms of representation included pie charts and bar graphs (Hyndman 2008: 139). Pearson's correlation was also used in order to determine a correlation between certain factors. This was measured by use of SPSS software (Kerr, Hall and Kozuh 2004).

3.4.4.1. Cronbach's alpha

When analysing data using Cronbach's alpha, the researcher considered the range from 0 to 1 to determine which factors were closer to the 1, and based the findings on the formula below:

$$\alpha = \frac{kr}{1 + (k - 1) r}$$

"k" represents the factors while "r is the mean" (Gliem and Gliem 2003: 87).

"While increasing the value of alpha is partially dependent upon the number of items in the scale, it should be noted that this has diminishing returns." Greater numbers are positives; however, this does not render the scale "unidimensional. "Factor analysis" will therefore have to be considered (Gliem and Gliem 2003: 87).

3.4.4.2. Factor Analysis

These models are based on "exploratory analysis which determines whether a set of constructs are influencing responses in a predicted way. Factor analysis entails viewing the various measurements and scoring them from high to low and then grouping them accordingly, to ascertain which factors are influenced by others (De Coster 1998: 1). "In factor analysis a principle component analysis is used as an extraction method which involves a rotation method called Varimax with Kaiser Normalisation. Loading of the items above 0.5 effectively measured the various components (Willemsse 2009: 210)."

3.4.4.3. Regression

Within this model it is already predetermined that the “variables” are connected (Render, Stair and Hanna 2009: 139). Regression therefore involves a determination between different constructs, “the dependent variable being y and the independent variable being x”, and whether one adds “value to the other”. “Scatter graphs” help to measure this type of data (Render, Stair and Hanna 2009: 138, 139). For the purposes of this study, an Excel spreadsheet and Pearson’s correlation were used to obtain a regression model.

3.4.4.4. Hypotheses test: p-values and statistical significance

Hypothesis testing defined “null and an alternative hypothesis.” These are depicted as “ H_0 and H_1 .” When examining the problem under study, the question of which to accept must be answered by the researcher (Hyndman 2008: 82).

Hypothesis testing involved the acceptance or rejection of the hypotheses based on the greater value of “p.” If the “p value” is larger, then it will be accepted as the possibility of an event having taken place; the opposite obtains if it is lower (Hyndman 2008: 83-84). Chi-square testing for independence evaluates statistically significant differences between proportions for two or more groups in a data set (Willemse 2009: 209 – 214).

3.5. Chapter Summary

The contents of this chapter described the aims and objectives of the study; highlighting the data-collection strategies employed. This discussion included more details on the instrument and sampling technique used. This study utilised a mixed-methodology to conduct the study. The choice of this type of research methodology was explained and presented. Finally, the SPSS analytic tools utilised to analyse the data was presented. The next chapter will provide a more detailed descriptive analysis of the data gathered.

CHAPTER 4 RESULTS

4.1. Introduction

This chapter presented the data collected in the form of tables and graphs. Brief explanations of the data gathered will also be provided. The demographics of the study group will be presented and highlighted. The data gathered that indicates the role of ICTs, the barriers to ICT adoption as well as perceptions of ICTs for women-led SMMEs will be provided. Lastly, open-ended responses gained from the interviews conducted will be discussed and presented.

4.2. Demographic Characteristics

A sample size of eighty (80) respondents was chosen for this study. A total of 32 respondents with the following demographics responded to this study. The tables and figures below provided a summary of the biographical data of the respondents.

4.2.1 Age Distribution of Respondents

The age of the respondents are matched with their race and represented below:

			Race of owner			Total
			Black	Indian	White	
Age of owner	20 - 29 years	Count	2	2	1	5
	30 - 39 years	Count	14	3	1	18
	40 - 49 years	Count	4	2	0	6
	50 years	Count	2	1	0	3
Total		Count	22	8	2	32

Table 4.2.1 – Age Distribution

The sample constituted 22 Black women. A total of 18 of the respondents were between the ages of 30 to 39 years. This is useful in terms of the responses as older respondents would have answered based on their experience. A further 8 constituted the Indian population of respondents and only 2 whites were represented. The Indian women did not fit into a specific age group and were distributed evenly between all age groups. However, the white women were both below the age of 40. None of the respondents was below the age of 20.

4.2.2 Racial Breakdown

The racial composition of the respondents surveyed was as follows:

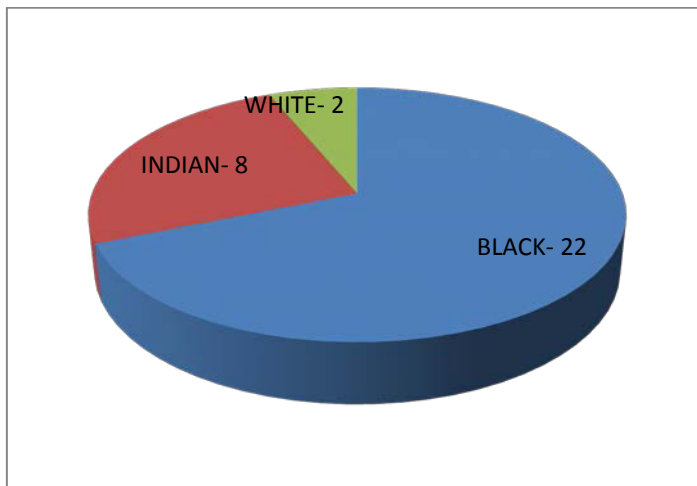


Figure 4.2.1 Racial composition

Nearly 7 out of every 10 respondents were Black. According to Maas and Herrington (2006: 43), in South Africa, all races are adequately represented in the SMME sector. It has been noted that Black women constitute a majority of 71.6 per cent, whites 14.9 per cent, Indians 7.5 per cent and Coloureds 6.0 per cent (Maas & Herrington 2006: 73).

4.2.3. Marital status

The marital status of the respondents is represented below:

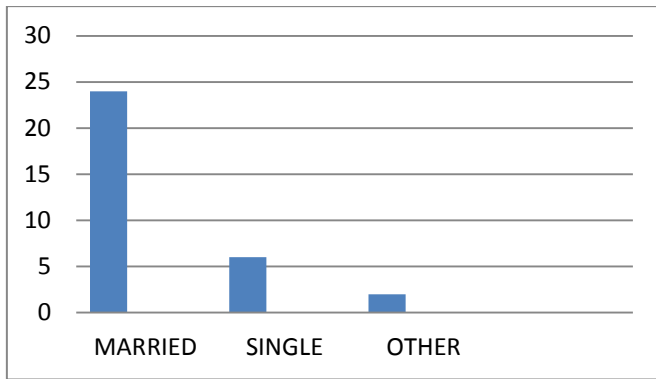


Figure 4.2.2 Marital status

Most of the respondents (24) surveyed were married. A small percentage of respondents was single (6) and the others (2) indicated the “Other” category.

4.2.4. Qualifications

The qualifications that the respondents have gained were represented in the table below:

			Race of owner			Total
			Black	Indian	White	
Education al level	Primary education	Count	6	0	0	6
	Secondary education	Count	13	6	1	20
	Tertiary education	Count	3	2	1	6
Total		Count	22	8	2	32

Table 4.2.2 Qualifications of the respondents

The majority of the respondents (20) had completed high school, but only 6 had continued to university. There is generally a lack of formal skills as well as skills development of women past the tertiary levels.

4.2.5. Business sector of operation

The business sectors of operations wherein the respondents operated were represented below:

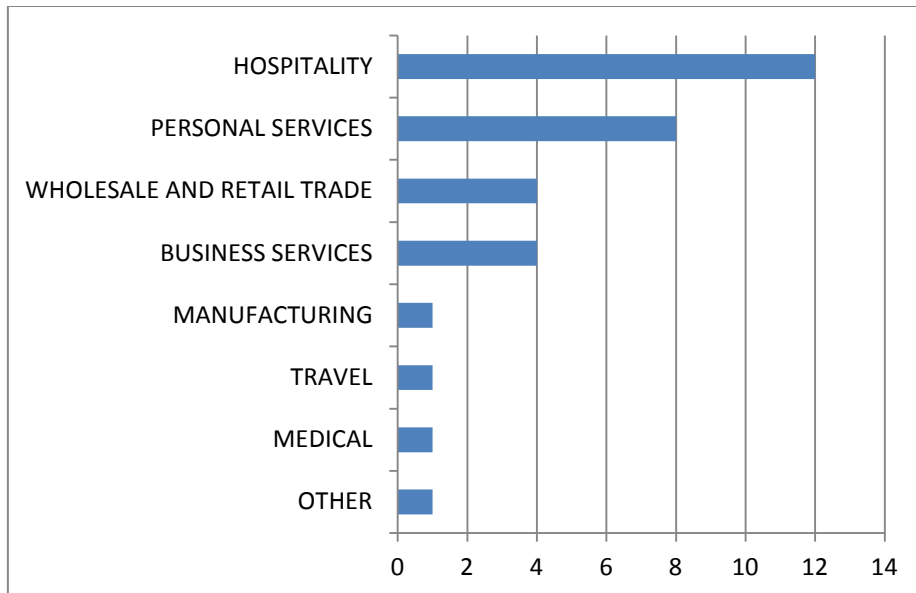


Figure 4.2.3 Business sector of operation

The two predominant sectors from which the respondents were drawn were Hospitality (12) and Personal Services (8). Personal services included services such as laundromats. Business services such as graphics and signwriting as well as photocopy and printing services were represented by 4 participants. Hospitality services were densely represented. However, none of the women ventured into business sectors such as agriculture, technology and education.

4.2.6. Work premises

The business premises from which the respondents operated their businesses were represented in the figure below:

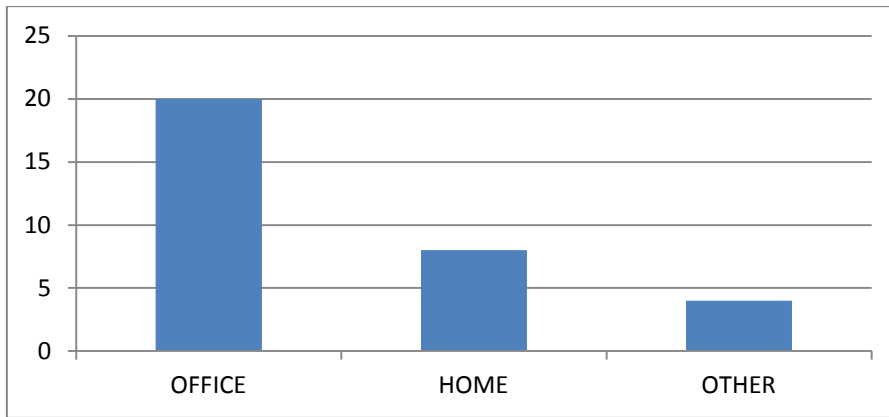


Figure 4.2.4 Work premises

The largest percentage of the women operated from offices or company premises. A small percentage, (8) operated from home. There were 4 women who indicated the “other” category.

4.2.7. Children

Approximately 88% indicated that they did have children. A very small percentage did not have any children.

In the following diagrams and data presentation, the data collected that was guided by the objectives of the study will be presented. This will entail the role of ICTs for women-led SMMEs; the barriers that these women experience when they use ICTs in their businesses; and their perceptions of the use of ICTs. The data that was statistically analysed using the SPSS tool will also be provided. Further to this, data collected for advice regarding the use of ICTs to other businesses will also be presented.

4.3. Role of ICTs in women-led SMMEs

The figures below indicate the scoring patterns of the respondents for the variables that constitute the different categories.

4.3.1. Technology tools used

This section investigated the technology tools that respondents use in their business.

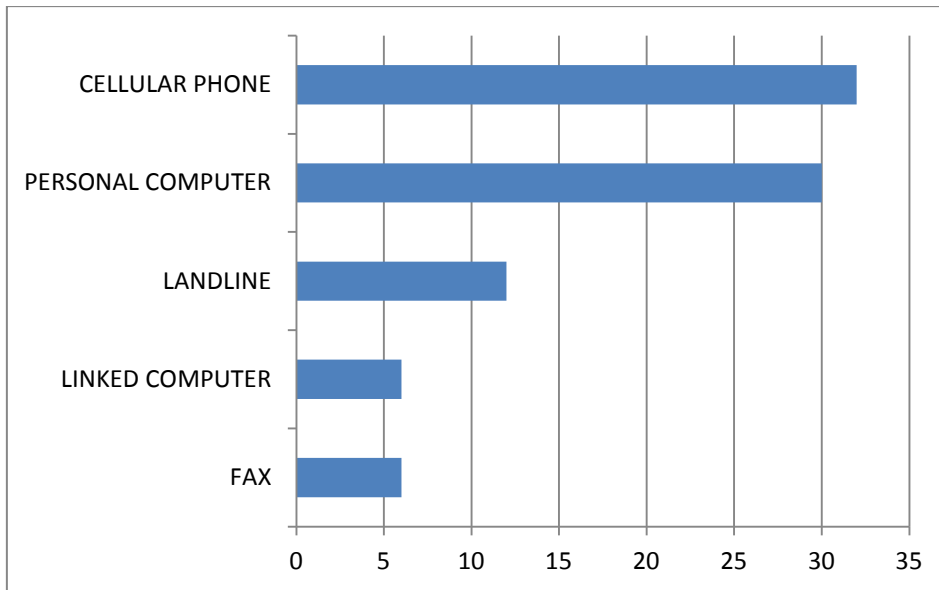


Figure 4.2.5 Technology tools used

The two most common technology tools used were a personal computer (30) and a cellular phone (32). A total of 8 respondents had more than one computer for their business, and a small percentage used the fax machine. All of the respondents indicated that they used the mobile phone. Of the 7 respondents that were interviewed all indicated that theirs was a private cellphone. They used this cellphone to set up email addresses as provided by the cellular provider so that they can access emails.

4.3.1.1. Use of the Internet

The following diagram indicated the ways in which the respondents used the internet for their businesses.

The results are summarised below.

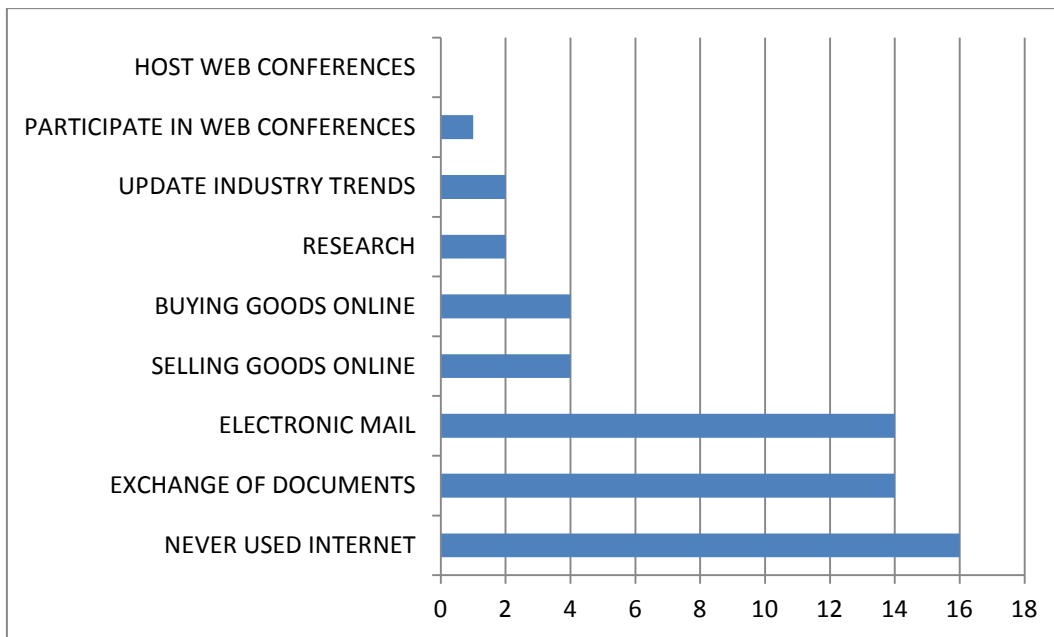


Figure 4.2.6 Use of the Internet

Considering the growing importance of the internet in the literature it is surprising that most of the women indicated that they had never used the Internet in their business (Harindranath, Dyerson and Barnes 2008: 91). For those that did use the internet, this was mainly for electronic mail and other communication as well as for exchange of documents. Most of the respondents did not make full use of the internet for their businesses, with many indicating that they did not use it for buying and selling goods or for hosting and participating in web conferences or research.

4.3.1.2. Company Website

None of the respondents studied had a company website set up for their business.

	Frequency
Number	32

Table 4.2.3 Company website

4.4. Reported barriers

The figure below summarised the main barriers that are faced when using ICTs.

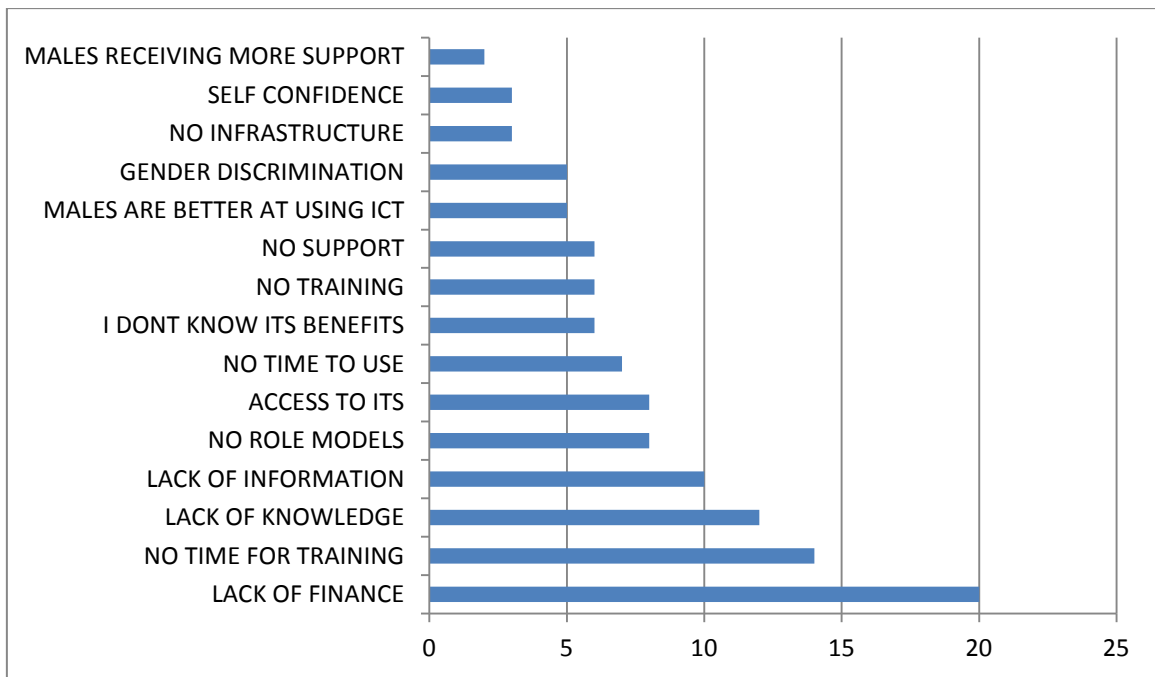


Figure 4.2.7 Reported barriers to use of ICTs

The lack of finance was the highest ranked obstacle (20). Time and access to ICTs was also important. Training, lack of knowledge, support from governments and information dissemination ranked immediately below. Gender issues, although important, ranked at the lower end as being a problem.

4.5. The Perceptions of ICT use for women-led SMMEs

In this section the perceptions related to ICTs for women led SMMEs were presented.

4.5.1. Current business importance

The current importance of the businesses of the respondents is represented in the figure below:

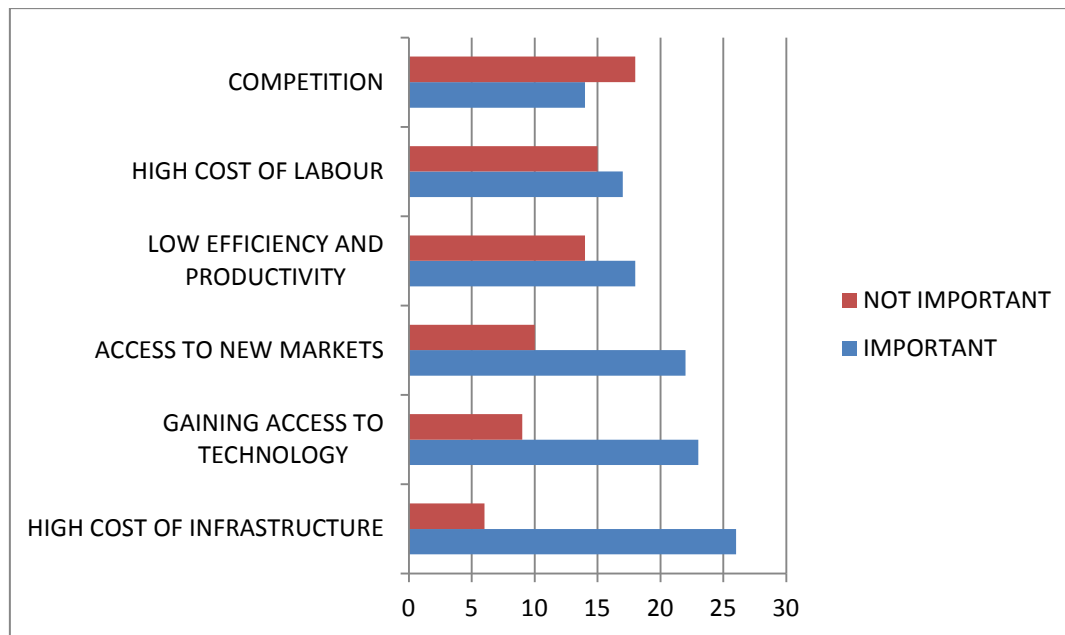


Figure 4.2.8 Current business importance

All the factors had levels of agreement of more than 50% for importance, except for competition (14). The factors with the highest levels for importance were the high cost of infrastructure (26) and gaining access to technology (23).

The degree of relevance is also similar (average = 25.0%) for all factors except for infrastructure costs which is half of the average (12.5%). The only non-zero response for non-importance was for competition (14).

4.5.2. How important are the following success factors for women to get ahead when using ICTs?

The following success factors for the respondents to get ahead when operating their businesses are represented in the table below:

	Not important	Important
Optimise own and business performance	18	14
Consistently exceed performance expectations	10	22

Encourage growth of business	7	25
Successfully manage others	25	7
Gain expertise in my field	18	14
Optimise my entrepreneurial spirit and skills	20	12
Accessing equal opportunities	20	12

Table 4.2.4 Success factors

The largest number of respondents (25) indicated that they wanted their businesses to grow.

Many also wanted to exceed performance in their businesses. A total of 18 and 20 felt that gaining expertise in their fields as well as improving their entrepreneurial skills was very important for their businesses. Obtaining equal opportunities was, however, rated quite low compared with what was important for the respondents surveyed.

4.5.3. How well does using ICTs meet your expectations?

The following figures represented the ICT expectations of the respondents surveyed:

	Not important	Very Important
Allows me work life balance	14	18
Increases financial rewards	11	21
Promotes communication	10	22
Enhances my career/ personal development	20	12
Allows me to use initiatives	17	15
Promotes better management	12	20
Promotes equal opportunities	26	6
Enhances growth	5	27
Allows sharing of information	7	25
Allows flexibility for working from home	16	16
Saves me time	16	16

Table 4.2.5 ICT expectations

The highest-rated fields were that ICT enabled sharing of information (25) and enhanced growth (27). Communication, better management and personal and career development was rated highly. Most of the women felt that the factors indicated were important with a considerably high number indicating certain factors.

4.5.3.1. Cronbach’s Alpha Testing

The results as indicated in the table below represented results of the Cronbach’s Alpha tests done:

Question	Measure	Cronbach’s alpha
5	Importance of current business issues	0.490
6	Success factors	0.634
8	ICT expectations	0.688

Table 4.2.6 Cronbach’s Alpha results

The data deduced from the test done is presented above. It was noted that the values for Questions 6 and 8 were only slightly below the accepted norm. The value for Question 5 was below the acceptable standard. This was mainly due to a couple of statements that could have been interpreted or presented negatively, leading to negative co-variances. The values were obtained by eliminating the negative values.

4.5.3.2. Chi square tests – indicated as per attached Appendix 3

	Educational levels	Marital status
Use of ICTs saves time		0.037
Use of ICTs optimises my entrepreneurial skills	0.011	

Table 4.2.7 Chi square test results

A comparison of the variables using Chi square tests revealed that the respondents’ having children did not affect how the statements were rated. This was also true for marriage, except for the last variable, where the value between marriage and “saves me time” was significant ($p = 0.037$). That is, the expectation of saving time does help in terms of being

married. This test also revealed the “p-value” between “Optimise my Entrepreneurial skills” and “educational level” is 0.011. This implies a significant relationship between the variables. Respondents from the various educational groups did not share a common rating for the statement.

4.5.3.3. Factor Analysis

Factor 1	Factor 2	Correlation scores
High cost of infrastructure	Access to new markets	-0.427
Exceeding performance	Access to technology	0.364
High cost of infrastructure	Gain expertise in my field	-0.422
Exceeding performance	Enhances career	0.458

Table 4.2.8 Factor analysis

The positive values indicated positive relationships between ranges of factors while negative factors revealed negative relationships between the factors. Sub-themes were identified from the positive factors, which indicated that when women have access to information, they will be able to optimise their own as well as their business performance, thus increasing their financial rewards in order to invest in ICT to deal with the competition that they are faced with. This will enable them to grow their businesses. In order for women to access new markets, they would have to build on their entrepreneurial skills and use their initiative.

4.5.3.4. Correlations and hypotheses

All significant relationships are indicated by a * or ** as per attached Appendix 4.

- Hypothesis 1 – Gaining access to technology positively influences a business women’s business performance. The correlation value between “Consistently exceed performance expectations” and “Gaining access to technology” is +0.364. This was a positive relationship.” That meant as one variable increases, so does the other, and vice versa.” That is, the more access to technology becomes available, the greater the ability consistently to exceed performance expectations.

- Hypothesis 2 – The high cost of infrastructure limits access to new markets for women-led SMMEs. The correlation value between “High cost of infrastructure (electricity, water, telephone, bandwidth)” and “Access to new markets (international or selling new products or to new customers)” is -0.427. This was a negative correlation, implying that the relationship was inverse. That is, the greater the costs of infrastructure, the less likelihood of accessing new markets.
- Hypothesis 3 – Enhancing women’s knowledge and skills leads to growth of her business. Enhancing a women’s career and her personal development influenced the growth of her business. The correlation value between “enhancing a women’s career and her personal development and “growth of her business” was + 0.458. This was a positive relationship.” That means that, as one variable increases, so does the other, and vice versa.”

4.5.4. Business Goals

The figure below depicted the positive responses for each statement separately.

(Each statement may receive a maximum of 32 responses)

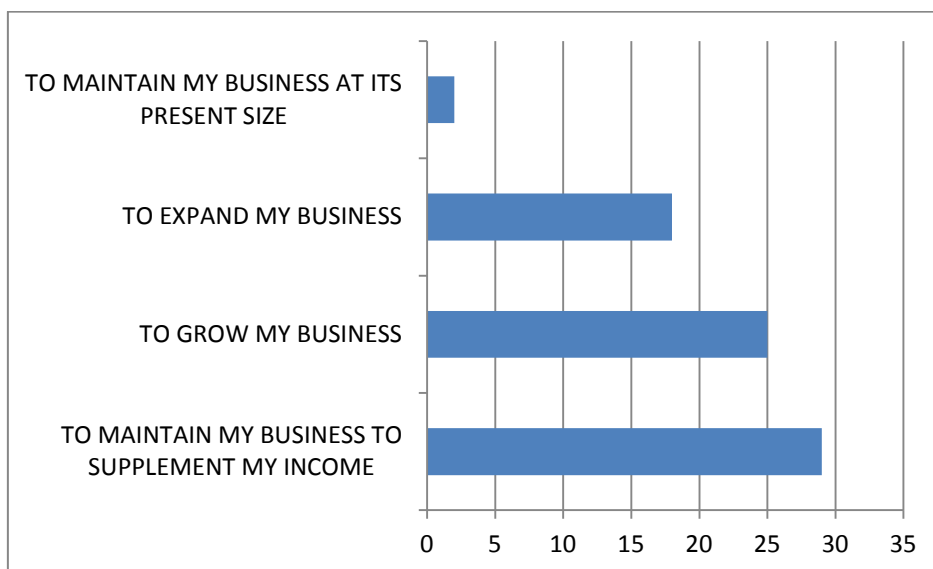


Figure 4.2.9 Business goals of the respondents

The main driver was financial stability. Hence, 29 respondents indicated that they would strive to increase the household income; 25 indicated that they would grow their businesses, while 18 indicated the importance of expanding into new markets.

Two respondents indicated that they were satisfied with the level at which their company was at present therefore none stated that they would consider closing down.

4.6. Business advice on the use on ICT for other entrepreneurs.

	Frequency
Absolute must for success	32

Table 4.2.9 Business advice

All the women surveyed stated that the use of ICTs for business was an absolute necessity and that they would definitely recommend ICTs use to others.

4.7. Interviews

During the interviews, many of the women were generally not very happy with the business environments in which they were operating. Most of them were unaware of how government could assist them, and many did not even recognise the many women's organisations that are available in South Africa. Many did not tender for government business and had never tried to at any stage. Most of them sourced their own work. Many of the women were not aware of any of government efforts to promote ICT initiatives for small businesses.

One of the women stated that she had heard of business "Indabas", as well as some of the initiatives offered by the Department of Trade and Industry, yet she had never attended any. When asked the reason for not attending, she indicated that she did not know how to, and had not received a formal invitation. She felt that an invitation was necessary before she could attend; the times and dates were not suitable for her business and for her, every second counted in her business. She believed that she would lose out on profits if she left her business unattended to go to such events. Most were, in general, unaware of these events.

Many of the women stated that, although there were no problems with telecommunications for ICT use, they did not really use the internet to a great extent, with many citing that they did not use it at all. Many of the women felt that the use of ICTs had associated costs and

that they could not afford to use them. Many just accessed whatever they wanted by using “Google” on their cellphones. Most of the women indicated that they used their private cellphones as email boxes. They also had the latest technological cellphones offering email and Internet access. Although most indicated that they did not use advanced ICT tools, many did not feel that they needed them at the moment. The respondents stated that this was not because they did not understand the power of ICTs for business use, but because of the cost factors involved in obtaining them. Many said that if their businesses grew really big and they had enough money they would invest in ICTs. However, many also indicated that this would add additional cost factors such as training and employment of qualified staff to maintain and use the relevant applications. This was an obvious additional cost factor.

With regard to accessing finance most of the women stated that they had used their own money to start the business. They stated that they would be reluctant to approach banks or other financial institutions to gain finance for the application of ICT tools for their business. Many of them felt that this was not possible for them, as banks would not give them the money to upgrade their business tools. One of the women actually felt very unhappy that “the use of technology” is so vital for business in South Africa and more especially for women, yet banks cannot fund this initiative. One of the women remarked that getting finance for her current business was extremely hard in the first place so she doubted that, were she to request any further monies to invest in ICTs that she would be given this. Many of the women felt that they lacked time and money to use ICTs in their business.

4.8. Chapter Summary

This chapter provided a summary of the research survey findings as well as social demographics and how these factors relate to some of the other factors in the study. The role, barriers and perceptions of ICT use by women in SMMEs was tested and revealed using the hypothesis testing, factor analysis and correlations. A more detailed account of some of the open-ended questions that were surveyed in the interview schedule was presented. This chapter formed the basis of the discussions in Chapter 5 and gives a clearer understanding of how this study relates to the various views presented by scholars in the field. Chapter 5 will either accept or reject some of the findings of this study.

CHAPTER 5

DISCUSSION

5.1. Introduction

This chapter provided a deeper understanding of the factors displayed in Chapter 4. The chapter led with a detailed discussion on the demographic data analysed and the way in which this related to women in business and their use of ICTs. The roles, barriers and perceptions for implementation of ICTs in women-led SMMEs were then discussed, and interpretations based on the literature were either accepted or refuted. The responses received from the interviews were also discussed and interpreted. As previously mentioned, the interpretation of many aspects in this chapter were compared and contrasted with three very pertinent studies conducted. These included the SAWEN research report undertaken in 2007; the GEM report of 2009; as well as the research report concluded by Dlodlo in 2009, and her analysis of women in rural South Africa.

5.2. Social Demographic Characteristics of Sample Population

In this section the results of the characteristics of the women surveyed will be presented and discussed.

5.2.1. Age Breakdown

Women within the age group of 30 to 39 were largely represented. This is consistent with findings by Taylor and Newcomer (2005: 20) who stated that globally, the majority of women who own small businesses are between the ages of 30 and 40, with a further 23.5 per cent being older than 45 years. In a study conducted in Gauteng by SAWEN in 2009 it was indicated that most women are in the 35 to 49-year-old age group. However, in a study conducted by Modiba (2010: 94) in Gauteng province a year later, it was concluded that more than 57 per cent of entrepreneurs are below the age of 34. This was an indication that younger women are becoming interested in business. However, women below the age of 20 were not represented in this study. This factor in itself is detrimental to the economy of developing countries such as South Africa.

According to the GEM (2009: 110) report, because of the increase in the number of youth, research into their activities is recommended. Schoof (2006) estimated that 88 million young people worldwide are currently unemployed. He referred to studies by the

International Labour Office (ILO) which indicated that youth are three-and-a-half times more likely than adults to be unemployed. By 2015, 660 million young people will be looking for work.

The GEM report (2009: 110) added that in South Africa the youth and women are most affected by unemployment. In a survey conducted in the Cape, KZN and Gauteng provinces it was found that women and youth were most uninterested in business by comparison with their male and older counterparts. Therefore, further entrepreneurial support for this section of the population is essential.

It was also possible that the age groups of women entrepreneurs differed according to different provinces. This figure could also imply that maturity levels with regard to age play a role in women's participation in the entrepreneurial sector in South Africa. As reflected in the chi square analysis the age of the respondents was a determining factor in the business growth. The non-participation of youth in the SMME sector limited innovation and creativity. Dlodlo in her research (2009:1) found that, for a country to be competitive, enhancing the skills levels of girls from a young age spurs their innovative nature, which can contribute to the uplifting of the economy. Most of the respondents in this study were from the 30 to 39 year old age group, and most of them lacked good formal education. School programs geared towards enhancing the use and acceptance of ICTs is essential. However, these aspects were not inclusive of this study and need to be explored in further studies.

With the opportunities that are currently available in South Africa, it is surprising that the youth are not taking advantage of the business sector. However, the small sample size also limited proper figures in this sector, and it was possible that more respondents rather than those represented here were operating in this sector.

The chi square tests also revealed that the age of the owner impacted on their idea of saving time. This also limited their use of ICTs in their businesses, because within this age group, most of them were married with children. As pointed out in the literature by Hafkin and Taggard (2001: 24), the many roles that a women plays limits her business time and the way in which she would use ICTs to empower herself and her business.

5.2.2. Racial Profile

The race group with the largest racial profile was the Black African category, followed by Indians and Whites, respectively. This is not consistent with the findings of the GEM report (2009: 72), which indicated that Indians and Coloureds make up a greater percentage of entrepreneurs in South Africa. However, the research further concluded that most Black entrepreneurs were found in the SMME sector, as this sector is community based (GEM 2009: 73). This finding is consistent with the findings of the SAWEN report (2007: 1) where it emerged that African women owned businesses with less than R1000 00 turnover. It was also possible that this sample may be reflective of the social demographic characteristics of KwaZulu-Natal.

5.2.3. Marital Status

The marital status of women impacted on their businesses, because women have many roles to play, including those of wife and mother. This was indicated widely in the literature review, as well as by many scholars in the field. Hafkin (2002: 5) and Hafkin and Taggard (2001: 24) stated that a women's time is limited owing to the many roles that she has to play. The results of this study indicated that most of the respondents were married. When comparing the factors of time and marriage was is evident that women who are married struggle to find time for their business endeavors, owing to their many responsibilities.

5.2.4. Education Level

Most of the women surveyed indicated that they possessed a secondary education. However, Dlodlo (2008: 4) in her research found that most women in South Africa are not educated. She found that even economically, women depended on men. This was because most girls dropped out of school for lack of fees or owing to pregnancy; they do not have education with which to pursue jobs or to engage in any business ventures. Most are unaware of government funding or bursary schemes that they may apply for. (McDade and Spring, 2005: 25; Pretorius and Villiers, 2009: 182; Webb, 2000: 59) found that many women do not enroll in colleges or further their education, owing to family responsibilities and their being in spousal relationships.

The GEM Report (2009: 72) also concurred with this finding, citing that the South African population had "low skills levels and education." The Global Gender Gap report (2008)

explored gaps in education, and found that in most developing countries the gender gap in education had closed many years ago, compared to South Africa. The report also found “strong linkages between education and business activities” and found that this aspect inhibited entrepreneurial activity in South African women compared to other developing countries (GEM 2009: 68-69).

Dlodlo (2008: 41) in her research found that most women, because they have to take care of their children found it hard to attend additional training even if they wanted to. Girls, because of the responsibilities taken over from their parents were unable to capitalise on these opportunities. As indicated, a lack of education noted in the women in this study indicated a lack of any type of formal or further educational training. Dlodlo’s study encouraged the use of ICTs to enable entrepreneurship and women empowerment through education and training (Dlodlo 2008: 1).

As indicated in the Pearson’s chi square tests performed on the data there was a link that existed between “education and women using ICTs to optimise their entrepreneurial spirit and skills.” Acs, Braunerhjelm, Audretsch and Carlsson (2008: 18) indicated that women who have attended tertiary education will generate new business ideas and engage in entrepreneurial activity. The knowledge that women gained from formal education will also increase their confidence and spur entrepreneurial growth. The GEM report (2009: 41) found that women needed “skills in financial management, research and technology.” None of the respondents had indicated some sort of formal training, which indicated that there exists an urgent need for women to receive training and skills in ICTs to enhance their business acumen.

5.2.5. Business Sector

As is evident from the data presented, half the women surveyed were operating in the services industry. There were a slightly greater number of women operating in the personal services such as laundromats, carpet cleaning and hairdressing businesses. The business services also included women in graphics and sign printing. The GEM report (2006) as cited in the GEM report (2009: 41) found that women, owing to their educational inhibitions tended to engage in industries that “do not require high levels of expertise.”

As stated by Taylor and Newcomer (2005: 17), Birley (2006: 35) and Maas and Herrington

(2006: 39), most women operated in the services sectors because of family obligations and the general environment. A large number of women operated in the hospitality industry. The data revealed that some of the women in the hospitality industry worked from home while others had small takeaways and restaurants. What is of concern is that only one respondent operated in the manufacturing sector, none in technology and trade and education. This may either be reflective of the small sample or of male dominance in these industries.

The low barriers to entry into the retail, wholesale and hospitality industries also attracts many women into these sectors (Taylor and Newcomer, 2005: 17; Birley, 2006: 35). The SAWEN report (2007: 5) reflects that most women operate their businesses informally; in rural areas they operate in agriculture and retail. Services and technology, as well as financial and transport businesses are usually found in the urban areas. The report also found that youth mainly operated in the ICT arena. None of the women in this study indicated that they operated in this field. Perhaps this explains why this section (namely the youth) is not reflected. Women have very limited financial and technology skills, therefore most women do not operate in the ICT sector (GEM 2009: 41). The GEM report (2009: 43) also found that most women operated in the hotel and restaurant industries. This is consistent with the findings of this study.

5.2.6. Work Premises

In total, 62.5 per cent indicated that they operated their businesses from business premises. This is not consistent with the findings of the SAWEN report (2007: 5) where most of the respondents stated that they operated their businesses from home. As per the SAWEN report (2007: 5), this could be because the business sector of operations will determine the location of the business. A quarter indicated that they operated from home. Some of the respondents also stated that their family homes are situated in rural areas and they have relocated from these areas to urban areas in order to engage in the business sector. Many found that there were more opportunities available in the urban rather than the rural areas.

5.2.7. Children

The question of children is pertinent to this study as many women indicated that they had children. In addition to marriage, many women have social responsibilities that include family and extended families (McDade and Spring 2005: 25; Pretorius and Villiers 2009:

182). Hafkin and Taggard (2001: 24) concur when they add that, because of their numerous roles and responsibilities, many women have limited time for business activities. This means that women need to “balance their time.” This factor limits women in growing their businesses, their goals being just so to make an income (GEM 2009: 41). According to Dlodlo (2008: 9) this inhibits the learning capabilities associated with ICTs. Aleke (2011: 75) added that women within many countries are subjected to a biased division of labour: patriarchal social systems exist, which means that women are not free to engage in business matters.

5.3. The Role of ICTs in Women-Led SMMEs

5.3.1. Technology Tools Used

“Information and communication technology today is a powerful tool for empowerment and income generation in developing countries like South Africa (Mutula 2008: 478).” It promotes productivity and enhances innovation and growth (Kroes 2009:14).

Chew, Levy and Ilaravasan (2010: 1) recognise the wide range of support for ICTs as “positive change agents in developing countries.” This they attribute more especially to ICT tools and resources such as “mobile phones, landline communication, computers and Internet cafes” as empowerment tools.

METI (2001) also showed that, with the use of the various ICT tools in their businesses, SMMEs can maintain effective communication in their internal dealings with their clients. One of these tools is the popular personal computer (PC) which serves as a medium for daily operational use in many businesses. As indicated in the literature all of the respondents including the ones that operated from home had a personal computer that they used as a business tool. A personal computer which comprises of a “desktop, laptop or notebook computer” – is an essential tool for information technology software applications (UNCTAD: 2011: 24).

However, as indicated in the SAWEN report (2007: 5), although telephone connections in South Africa are strong, online computer facilities are weak. Dlodlo (2008: 10) mentioned that the lack of energy in rural areas led to restrictions in accessing ICTs for women in business. However, this study was conducted mainly in the urban parts of the province, which indicates women’s use of PCs for their businesses.

The GEM report (2009: 107) also found that most businesses in rural South Africa did not make use of a PC, and were unable to access the Internet. This is detrimental for business growth and survival, as the advantages of the Internet for business use are enormous. This is also indicated in the literature and in many texts and research conducted globally and in Africa. As indicated in the literature, the impact of a lack of information and networking presents obstacles to women's entrepreneurial successes in new markets (Jain 2008:2). Yitamben and Tchinda (2009: 140) also stated that learning through the Internet enhances many women's dynamic competence which enables them to acquire knowledge for themselves and their enterprises.

5.3.1.1. Mobile phones

The use of the mobile phone seemed to be a crucial communication device for the respondents in their businesses as 100 per cent recorded using it. This was indicated in the literature, which states that this is the fastest growing technology in developing countries (Bhavnani 2008: 17).

According to Blanke (2007) the use of mobile phones had escalated. However, as noted in the literature, many of the phones are used for personal rather than for business use. This indicated that the respondents were unaware of the potential of ICTs for their business growth and as a tool that could aid them in their businesses. The many opportunities that mobile technology presents were also evident in the literature. Mobile phones serve as communication tools that allow people to converse over long distances (Jones 2010: 424). Information transfer and communication is easily facilitated by the use of this technology (Esselaar et al 2007: 92). Many of the respondents indicated that their mobile phones were being used to access mails as well as to make calls.

However, despite all the women having cellphones, many of them did not use the internet for business purposes. This could be because they either were unaware of its benefits, or they lack the expertise to use its applications optimally. The GEM report (2009: 106-107) suggested support for email and website setup for women entrepreneurs. According to (Maier and Nair-Reichert 2007: 49) internet sites are being developed exclusively for women as support networks. Barba-Sánchez, Martínez-Ruiz and Jiménez-Zarco (2007: 110) mentioned how businesses could use ICTs for internal business support as well as a

support tool to gain business acumen in the global field, by streamlining processes such as customer and competitor knowledge that can assist in making informed market related choices. Also, the use of social media could enhance their access to information.

5.3.1.2. Use of the Internet for Business

The majority of the respondents in this study stated that they had never used the internet in their businesses. The GEM report (2009: 107) stated that access to the internet is a problem in rural areas of South Africa and is more easily accessible in the urban areas. The use of the internet in rural areas was for research purposes, whereas in the urban areas it was used more for business purposes. However, this study found that this was not the case. It was noted that internet usage was overall low. This suggests that many women are not using ICTs optimally in their businesses, and therefore are not taking full advantage of its potential.

The use of the internet for business purposes was very limited, with only 14 of the respondents indicating this use. The internet served merely to send and receive mail and documents. What is also quite alarming is that the trading of goods via the internet was minimal. This suggested that many of the respondents had not yet embraced the power offered by the internet, and many did not even realise its huge potential for business use (Chew et al 2011: 11). The many opportunities created by this diverse technology tools will enable trade of goods and services in virtual fields. Improvements in ICTs have offered safe zones that can serve to make women's lives easier and empower their businesses. Banking and mobile money is safe and fast, and can facilitate transfer of cash at a speedy rate. This can save money and time (Singh 2012: 38).

The value of the internet to update industry trends was also utilised very minimally; many of the respondents have never used it for research purposes, indicating that these women are unaware of the benefits that the internet could offer them in their business environment. This was consistent with the literature that stated that few women are using the internet for business research (Juma 2003: 22).

Only one of the respondents participated in conferences online. This suggested that the others were not aware of this service over the internet. More awareness must be created by

media and advertising agencies to highlight this to women entrepreneurs. As indicated by SAWEN (2007: 9), their organisation could help women to set up email and web facilities as well as provide training in e-commerce and the internet.

5.3.1.3. Company Website

All the respondents indicated that they did not have a company website set up for their businesses. They cited a lack of finance as an inhibiting factor. As indicated by Pandey (2007:11) in the literature, a lack of capital renders SMMEs incapable of acquiring the pricey technology tools needed to enhance their businesses. This limited growth and development as well as access to new markets internationally and nationally, for many women in business.

The GEM report (2009: 106-107) suggested that women needed help in setting up email and web facilities for their small businesses. Maier and Nair-Reichert (2007: 45) reflected on “training in the use and design of computer applications, such as e-mail, word-processing and design applications, to build marketable skills.” Websites could assist women in marketing of their products online, as well as creating more awareness of their products and services. Websites could also assist women in selling goods online.

5.4. Barriers to the Implementation of ICT in Women-Led SMMEs

5.4.1. Finance

The most seriously inhibiting factor for using ICTs was finance, with 62.5 per cent rating this as the greatest barrier. This was consistent with the literature findings, and reiterated by many scholars in their reviews. One of the key problems identified in the GEM report (2009: 90) indicated access to finance as a “barrier to entrepreneurship” in South Africa and the rest of the developing and developed world. The findings revealed that many entrepreneurs approached their families and used their own capital to start up their businesses, rather than approaching formal institutions. The report further revealed that, owing to this factor, many businesses owned by women faced difficulties in starting up.

Women tended to be treated harshly with respect to the processes that were in place to secure funding. It had been noted that, even though financial institutions did not use gender as a determinant to offer a loan, the collateral requirements for women were too high (Greene, Brush and Saporito 2006: 68).

The Gem report (2009: 1) added that women faced difficulty in accessing finance from financial institutions in South Africa owing to lack of business skills and knowledge. The SAWEN report (2007: 3) cited finance as a problem for women SMME start-ups. Arendt (2007: 89) in his research found that “SMEs owner-managers perceived lack of financial resources as the most important barrier to the implementation of ICT” with lack of skills and knowledge as equally important.

The survey indicated that women participated in sectors that have low barriers to entry. This was also indicated by the literature. Studies have shown that financial institutions are more inclined to offer support to manufacturing businesses than those that are operating in the services and trade industries. (Juma 2003: 26).

5.4.2. Time constraints

With 43.75% of the respondents indicating time as a constraint, it was evident that the respondents were extremely busy individuals. Many of them were uncertain about their professional opportunities once they were married. In addition, juggling household responsibilities and work responsibilities can be very challenging and may result in women opting out of the ICT-driven developmental efforts (Hafkin and Huyer 2006).

Hafkin and Taggard (2001: 24) added that a women’s time is limited, owing to the many roles that she had to play. They added that when systems to improve their lives are introduced, this must not be perceived by them as being an additional burden. Researchers such as Pretorius and de Villiers (2009: 182), and Winn (2004: 148) contend that the patriarchal systems are the main cause of the gender-related roles that exist. These roles left women with more household responsibilities and limited time to spend on businesses. The gender division of labour has left women with the primary duty of taking care of their home and children (McDade & Spring 2005: 25; Pretorius & Villiers 2009: 182; Turner et al. 2000: 68; Webb 2000: 59). When they find a job, this adds to the domestic commitments that they already have.

Corporate institutions have been seen to be preventing women from being absorbed into the labour force because they do not have policies that allow women to maintain a work and family life balance. (MDG 2008: 8). The need for balance was also apparent in the

entrepreneurial world. Women have to fit family obligations into their business schedules. If there is no support from their husbands or significant others, the guilt that comes with neglecting family responsibilities pushes women out of business (Winn 2004: 148). In addition, their family structure has an effect on the commitment they have to their businesses. They either have to postpone their maternal and marriage plans or give up on business entirely to focus on household commitments. Household commitments, therefore, place women at a disadvantage because there are some duties that they cannot expect their domestic workers to do (Hassanin 2009: 59).

Time for training in ICT use was also cited as a problem for the respondents. As indicated in the literature women due to family responsibilities were not able to devote any time to economically empower themselves or their businesses (Hafkin & Huyer 2007: 28).

Many of the respondents, 37.5 per cent indicated that they lacked knowledge in the field of ICTs. What must be remembered is that the pace of technology is changing daily and most ICTs are rapidly improving. This would require constant updating in skills and training for women in the use of ICTs for their businesses. With constant change in information technologies, knowledge learned even a few years ago is frequently out of date and insufficient for today's world (Huyer and Hafkin 2007: 1). Anita and Sundaravadivel (2012: 145) stated that knowledge improved "the quality of life of people in developing countries" and empowers women. According to Jain (2008: 2), ICTs can empower women to share experiences, concerns and knowledge for further enrichment of their businesses.

(Juma 2003: 22) also indicated as per the literature that women in business need educational skills to engage successfully in business. They need constantly to upgrade their business skills and acquire the necessary business acumen required to compete successfully. Furthermore, the majority of women do not possess a tertiary qualification, owing to existing sociocultural norms, demographic issues, socio-economic conditions and infrastructural problems (Dewar 2005: 12; Maas & Herrington 2006: 41, 44; Taylor & Newcomer 2005: 20; Velkoff 1998: 4). These qualifications may be acquired through technology.

5.4.3. Governments

While gender issues were not as important for the respondents' use of ICTs, respondents

were unhappy and dissatisfied by government and other role players in the business sphere. The SAWEN report (2007: 6) clearly indicated that women need support from government so that they may adequately engage in entrepreneurial activities. According to UNCTAD (2009a), governments can assist in improving infrastructure for ICT use and access. They can help develop women's skills and training as well as provide access to new markets.

The GEM report (2009: 116) added that governments can assist in enhancing the skills of women using ICTs, as well as providing for "seed funds for business start-ups for women entrepreneurs." According to Dlodlo (2008: 9) citing Huyer (2005), "governments can assist in putting strategies in place that are accessible to women."

The (UN Report, 2010: 11) also suggested that "strong linkages between various stakeholders in business as well as good infrastructural support" can lead to increased participation of women in the SMME sector. Government support is therefore of utmost importance.

A small number of respondents also indicated a problem with males being better at using ICTs. This indicated that gender bias was not a problem and gender parity was not a threat to the respondents surveyed. Although a lack of government support featured as an inhibiting factor, only 5 respondents felt that their male counterparts were better at using ICTs which disadvantaged their businesses. This contradicts what (Huyer and Hafkin 2007: 1) reflected in the literature. They stated that in many aspects of business, especially financial aspects, women are subjected to gender stereotyping and bias. Perhaps this change was due to the recent shifts in society trends which have seen many women rise to the upper echelons of society through success in business. Women globally are becoming more empowered and are gaining a sense of independence.

5.5. Perceptions of ICT

This part of the study reviewed the data analysis conducted on the perceptions that the respondents had of ICT use. The results are presented as follows:

5.5.1. Business Issues Facing Respondents – Factor analysis and Correlations

A correlation of the factors pointed out that the cost of infrastructure limited the respondents in gaining expertise in their fields. This indicated that the use of technology

was necessary to build their skills and influence the operations of their businesses.

Accessing new markets by using technology which linked to growth was also important. The GEM report (2009: 41) stated that women in South Africa were not interested in growth because they wanted rather to balance their family and work lives. Women focused on creating additional income for their families. However, the results of this study have shown that women wished to reach new markets by use of technology. This factor would therefore ensure that ICTs can enable women's business growth if they can access and use technology in their businesses.

A correlation of the factors also reflected that in order for women to access new markets women would have to build on their entrepreneurial skills and use initiatives. Equal opportunities would be a factor in limiting women from accessing new markets and building on their skills. The factor analysis indicated above reflects that, when women increased their entrepreneurial skills, consistently exceeding performance and using their initiatives, they were able to access new markets. This leads to women growing their businesses nationally and globally as well as increasing their financial rewards. Business start-ups and survival is also dependent on accessing finance. However, as indicated by the respondents, this was a significant barrier to entry and had resulted in a decline in the overall level of competitiveness perceived by SMMEs (SME Survey 2006: 85).

In order for SMMEs to sustain their businesses, the continued use of ICTs is essential. Through ICTs they can easily compete and provide up-to-date products and services. (DTI 2008: 37). What is evident from a correlation of the factors is that the respondents will be able to deal with competition if they can optimise their entrepreneurial skills in ICT use. This will ensure greater financial profits.

Arendt (2008: 83) argued that the digital divide of access to information for SMMEs can only be overcome if the owners and managers of these SMMEs gain the proper knowledge, education and skills. Actions to ensure that this is accomplished must be urgently considered. Arendt (2008: 96) added that skills and knowledge will enable women to access further resources such as finance and infrastructures needed for running their businesses. They can also gain critical business information. Without access to information, women will not know about financial institutions and government bodies that

can assist them with funds to start up and sustain their businesses. This is not a surprise, because women often do not know the procedures that they have to follow when they have to deal with government. It is therefore necessary for information hubs and campaigns to be introduced. (GEM 2009: 1; SAWEN 2005: 10).

According to Esselaar and Gillward (2007:4), as per the literature, women will only know about relevant government bodies when they are well informed with regard to where and how to access them. If women have access to government bodies, they can easily contact them and seek assistance with their businesses. This will enable them to gain information on where to go if they need financial assistance or any other support for their businesses. However, this may be difficult if women do not have business and communication skills. The latter is the most important. If they do not have communication skills, it will be difficult for them to negotiate loans and/or secure deals with sponsors or customers (Modiba 2010: 15). Many of the respondents indicated that they only use traditional media for information as opposed to utilising online technology for research purposes.

It is relevant to note that, as reflected by the respondents, they lack business skills. The literature indicates that women have very limited business skills and acumen. Their marketing, personal and training skills in business are very limited; many are not as articulate as males (Nieman, et al. 2003 cited in Maas & Herrington 2006: 40). This is something which negatively affects their participation in business (Modiba 2010: 16).

Research also indicates that men network, whereas women do not know how to network (Bizassist 2008b: 1). Although women's business start-up rates are high, until they learn to network successfully, they will not do well in business, (Modiba 2010: 15). Many of the women were not aware of any business support organisations in which they could network in (GEM 2009: 1; SAWEN 2005: 10). They may not even be aware of female colleagues with whom they can form partnerships, in order to share best practices. According to the SAWEN report (2007: 7) women, especially in KZN, indicated that they were not aware of the external support organisations. Although women's business start-up rates are high, until they learn to network successfully they will not do well in business (Modiba 2010: 15). According to Juma (2003: 26), if they adopt ICTs they will increase their levels of networking and interacting, both locally and internationally, without having to travel.

5.5.2. Critical Success Factors

Most of the respondents wished to grow their businesses and develop their business skills with the use of ICTs. The desire to strive is evident, as many of the respondents did not indicate equal opportunities as important for their business and in their use of ICTs. In keeping with the literature, a hypothesis test revealed that entrepreneurial skills of the respondents are increased by the level of education they possess. Acs et al. (2008: 17) have an interesting way of explaining the origins of an entrepreneur. According to them, entrepreneurs originate from institutions of learning, for example, tertiary institutions (Acs et al. 2008: 18). These institutions provided students with knowledge that will be used post-tertiary, either as employees or in creating their own enterprises.

Graduates, through the knowledge that they have accumulated during their studies, are likely to be influenced to commercialise their ideas by starting businesses (Acs et al. 2008: 18, 20). The knowledge that they have obtained assists them in identifying business opportunities. The knowledge spill-over theory used by Acs et al. (2008: 17) stated that entrepreneurial activities will be greater in contexts where new knowledge is relatively high, implying that individuals respond to opportunities created by new knowledge by starting an enterprise. They stated that entrepreneurship is an endogenous response to the need to invest in knowledge gained.

Small, medium and micro enterprise markets tended to be opportunistic in that their business activities are influenced by products and services needed in their communities. They are in most cases embedded in the local culture, which works to their advantage when larger enterprises are invading their markets. Knowledge of local markets helped them to compete better with LEs because they understand the market and have local networks (CDE 2007: 7).

This is consistent with the literature stating that the majority of women do not possess a tertiary qualification owing to existing socio-cultural norms, demographic issues, socio-economic conditions and infrastructural problems (Dewar 2005: 12; Maas & Herrington 2006: 41, 44; Taylor & Newcomer 2005: 20; Velkoff 1998: 4). In India, a lack of access to schools was amongst the reasons for girls not going to school. Another reason is that they had to spend long hours travelling to fetch water and this prevented them from attending school (Seneviratne 2007: 1). According to Velkoff (1998: 4), lack of finances to cover

educational costs also affected girls' education as boys rather than girls were sent to school. It was not necessary for girls to be educated, because they were going to be married and would then look after their husbands.

A further data analysis using Pearson's chi square testing revealed that the respondents who were married needed to have time on their hands so that they could engage in business and ICTs for their empowerment. As is evident from the demographics, most of the respondents were married. As per the literature, this means that they are subjected to triple social roles that place them in a disadvantageous position. Researchers such as Pretorius and de Villiers (2009: 182), and Winn (2004: 148) contend that patriarchal systems are the main cause of the gender-related roles that exist. These roles left women with more household responsibilities and limited time to spend on businesses.

The gender division of labour had left women with the primary duty of taking care of their homes and children (McDade & Spring 2005: 25; Pretorius & Villiers 2009: 182; Turner et al. 2000: 68; Webb 2000: 59). When they find a job, this added to the domestic commitments they already have. Women's needed to balance family and work is also prevalent in the entrepreneurial world. Women have to fit family obligations into their business schedules. If there is no support from their husbands or significant others, the guilt that comes of neglecting family responsibilities pushes women out of business (Winn 2004: 148). In addition, their family structure has an effect on the commitment they have to their businesses. They either have to postpone their maternal and marriage plans or give up on business entirely to focus on household commitments. Household commitments therefore place women at a disadvantage, as there are some duties that they cannot expect their domestic workers to do (Hassanin 2009: 59).

A further correlation of the data was used to prove hypothesis 1 and revealed, according to the literature, that women felt that, in order to become more efficient in their jobs, they will have to "gain access to technology." The correlation value was +0.364 which suggested that the more access to technology becomes available, the greater the ability consistently to exceed performance expectations. This was evident throughout the literature, where it was revealed that as women access and use ICT for their business purposes, their businesses will grow.

If SMMEs expected to maximise their profits, they must consider tapping into ICT solutions to reach the markets (Sahlfeld 2007: 22). Through ICTs, SMMEs can market their services and products as well as identify new opportunities using websites and electronic mails (Mpofu; Milner and Watkins-Mathys 2009: 5). Sales can be performed online through electronic commerce with local and international clients. However, if SMMEs do not have access to sophisticated technologies, this could put them at a disadvantage, because international competitors will use such technologies to invade their local markets (Kew and Herrington 2009: 14).

On the other hand, the correlation value between “High cost of infrastructure (electricity, water, telephone, bandwidth)” and “Access to new markets (international or selling new products or to new customers)” is -0.427. This correlation was used to prove hypothesis 2. This was a negative correlation, implying that the relationship is inverse: that is, the greater the costs of infrastructure, the less likely would be the accessing of new markets. This was consistent with the literature where it was highlighted that one of the major barriers preventing access to ICT for women is the “high cost of infrastructure.” Isakova, Krasovska, Kavunenko and Lugovy (2006: 34) pointed out that women experienced challenges with regard to finance; this would hamper them from investing in ICT infrastructure, owing to its high costs, which in turn will limit their growth. This is reiterated in the literature by SAWEN (2005: 10) that ICT tools are costly for SMMEs who would need them to access new markets. Esselaar and Gillward concurred when they stated that in South Africa the cost of accessing ICTs for SMMEs to grow, is high (Esselaar and Gillward 2007: 4).

5.5.3. ICT expectations

As was indicated from the responses, many of the respondents were not using ICTs optimally although many of them were aware of their importance in their businesses. This was evident from the results which showed that many of them did not use the internet or websites effectively. The respondents expected many benefits from the use of technologies for their businesses however; implementation for its use was minimal.

The highest rated fields were that ICT enabled sharing of information (59.4%) and enhanced growth (56.3%). Communication, better management and personal and career development were rated highly. A further correlation of the data was used to prove

hypothesis 3 and revealed according to the literature that women felt that in order to grow they needed to enhance their careers and personal development, the value of the correlations being +0.458. Most of the women felt that the factors indicated were important, with a high number citing specific factors. These attributes that women wished to achieve, indicated a desire to increase their business strengths and capabilities so as to enhance their business performance and therefore to grow. This was evident throughout the literature where it was revealed that as women access and use ICTs for their business purposes, their businesses will grow.

An analysis using the SAWEN report (2007: 10) found that this organisation recognised the need for women to be trained in “financial as well as marketing skills, which included SMME support, business advice and tendering skills. Communication channels that could be used to reach these three types of markets were television, newspapers and magazines (SAWEN 2007: 10).” However, as addressed earlier, finances and a lack of training and skills were some of the most pertinent barriers highlighted.

5.5.4. Business Goals

The main driver of the respondents was to have financial stability. Hence, the majority of respondents indicated that they would strive to increase their household income. Growth and new markets were also important, as this would provide substantial financial gains for women and their businesses. None of the respondents was considering closing down.

As indicated in the literature, access and use of ICTs can provide this situation. Various authors in the literature have reported on the significance of ICTs in terms of how they can transform the business activities of SMMEs and facilitate their growth (Esselaar and Gillwald 2007: 8; Meena and Rusimbi 2009: 198; Motjoloane and Warden 2007: 3).

5.6. Advice to Other Women-Owned SMMEs

The 100 per cent response from the respondents indicated that ICTs are crucial for the empowerment of women in business. However, as seen in the literature, the barriers and challenges that these women face must be dealt with so that they may improve their ICT uptake. According to Goldstuck (2006: 27), developed countries have seen the benefits of ICTs. By contrast, even though there has been a considerable increase of ICT usage in developing countries, a huge gap still exists. This calls for increased efforts from

governments as well as other role players.

5.7. Interpretation of Open-Ended Responses

From an analysis conducted after the interviews, the researcher noted that many of the respondents had similar challenges in using ICTs in their businesses. The majority of relevant issues that emerged were concluded from the quantitative analysis, namely lack of and access to finances, business knowledge and support in the use of ICT, restrictions in terms of time and access and use of ICTs.

5.7.1. Finance

As mentioned in chapter 4 many of the respondents were not using the appropriate ICTs because they could not afford the costs thereof. Radebe (2009: 2) maintained that SMMEs are still facing significant challenges in accessing business finance and non-financial support services. He indicated that, although state agencies in South Africa such as Khula financial services, have been established to offer support services, they were also failing in that they do not have direct contact with these SMMEs. As a result, access cannot be guaranteed, because the acquisition of funds is determined by these third party agents. One example was the legislation with regard to the National Credit Act, which also limited women in meeting lending criteria required and was an added disadvantage. Support from governments and reforms of policies and regulations for women could ease some of these disadvantages.

5.7.2. Support

As already pointed out, many of the respondents reiterated the need for support. Many are unaware of the support structures available to them. Although in South Africa, government efforts are evident, the Department of Trade and Industry DTI (2007: 1) has, however, acknowledged that the “progress is insufficient as the majority of women are still located on the lower echelons of the economy”. In their commitment to assisting women-owned SMMEs, they have vowed to provide support by ensuring “that women in business are actively supported through incentives, information sharing, trade missions, improved access to finance and business support (DTI 2007: 1).” Although in South Africa government efforts are evident, the Department of Trade and Industry DTI (2006: 1) has, however, acknowledged that women are still being left behind in the business world as well as in their uptake of ICTs (DTI 2006: 1).

5.7.3. Time

The aspect of time was critical for women in business. Their many roles as mother, wife and caregiver impede their abilities to “shine”. Trauth and Queensberry (2006: 1760 and 1767) allude to this when they state that sociocultural factors, such as domestic responsibilities and the gendered nature of the Information Technology (IT)-related domain have a negative effect on the way in which women use technology in their businesses.

5.7.4. Training

Gaining personal and business skills was important for women. Some of the respondents were extremely interested in training in ICT use in order to enhance their businesses. Becoming computer literate was hailed as an added benefit for business performance and growth. The respondents felt that ICTs could help streamline some of their processes and also assist administratively. They mentioned ICT aids such as Microsoft QuickBooks and Pastel Accounting systems. Many felt that these could empower them in their businesses and empower their use of ICTs. The United Nations Development Program (UNDP) (2002: 18) maintains that ICT policies should be innovative so that developing countries can ensure that ICTs will be adopted and accessed. Lessons learnt from this study indicate that not all policies will be sensitive to the issue of gender. Policies cannot be mainstreamed. They need to be tailored in such a way that all access will be equal irrespective of gender.

5.7.5. Access to and Awareness of ICT Services

Many of the respondents were very positive about the effects of ICTs on their businesses; however, many respondents felt that, even though ICTs could assist them, they were not currently in any position to use them optimally. Many could not afford them or were unable to access ICTs beyond simple tools such as the mobile phone and PC. The ability to use ICTs in the SMME sector depends on access, be it physical access to or usability of available ICTs. It should be mentioned that in order for ICTs to be adopted, issues to consider when incorporating technology into the SMME sector include information, procurement and financing of technology upgrades (Pandey 2007: 11). ICT implementation assisted entrepreneurs to cater for their needs. Many of the respondents indicated that they had never used telecentres because of their location and lack of

accessibility. The respondents that did use these centres stated that this was occasionally to send and receive documents. Many were not in any financial position to upgrade infrastructure in their businesses, owing to financial burdens.

5.8. Chapter Summary

The major part of this section added to the research that has been conducted in the field. Many of the roles, challenges and barriers and perceptions of ICT use that are faced by women in developing countries, and in some of the developed countries, are generic, and some needed further increased efforts from all of society as well as other role players in the economy. Recommendations that will assist in this regard will be discussed in the following chapter, which will also conclude the study.

CHAPTER 6

RECOMMENDATIONS AND CONCLUSIONS

6.1. Introduction

This chapter will present the overall recommendations and conclusions of the study. These recommendations will be discussed, based on the literature review as well as the data findings from chapters 4 and 5.

6.2. Findings from the Literature Review

6.2.1. The Role of ICTs in Women-Led SMMEs

The literature review, and the research data gathered and analysed, provided a firm grounding on which to understand the research problem. Significant advantages for women's use of ICT for business were highlighted, as well as the many barriers and challenges encountered. Most of the available research in this field points to a set of generic factors, challenges and barriers to women's use of ICTs for their businesses. The advantages were also similar as many authors have alluded to this. This study points out and confirmed many of the findings of grounded research in the field.

6.3. Findings from Primary Research

6.3.1. The Role of ICTs in Women-Led SMMEs

The researcher in this research found that many women in KwaZulu-Natal did not make maximum use of ICTs for their businesses. All of them knew the strategic advantages; however, the many barriers and challenges that they were faced with prevented them from using ICTs optimally.

The majority of women used basic and simple tools to access and use ICTs, while the potential offered by the internet and websites was not being utilised. The barriers presented by finance and knowledge and skills inhibited their application of the relevant ICT tools for business use. From the responses received, it was also concluded that the use of ICTs can assist women in gaining financial rewards, success and growth. This they confirmed by their 100 per cent response to the question of referring ICTs to others.

6.3.2. Barriers to the Implementation of ICTs in Women-Led SMMEs

The literature identified a number of very pertinent challenges and barriers that were tested

by the researcher. These proved to be generic challenges that are being experienced by women throughout the world, more especially in South Africa. These barriers and challenges were also relevant to the respondents surveyed in KZN. The issues of finance, knowledge and skills, as well as media and government support were mentioned.

6.4. Conclusions

6.4.1. Research Objective 1

To explore the role of ICT in women-owned SMMEs in KwaZulu-Natal

This research, together with the grounded research, provided a sound basis from which to answer the above research objective. The opportunities and strategic benefits offered by ICTs, including the use of tools for development and growth were discussed, and findings from the literature review were tested; some were confirmed, while others were refuted.

6.4.2. Research Objective 2

To understand the barriers to the implementation of ICTs in women-owned SMMEs in KwaZulu-Natal.

This research objective was answered by reviewing the available literature, as well as testing the barriers and challenges that women experience in ICT use. Some of the major barriers and challenges related to finance and cost of infrastructure and skills. This when tested was confirmed by the respondents.

6.4.3. Overall Conclusion

Many of the barriers and challenges that women faced in the use of ICTs in their businesses can be improved with enormous efforts from significant role players in the industry. The strategic roles that ICTs can present to women can only be achieved with increased efforts and awareness. Women in the KZN business environment can benefit enormously in this regard, in overcoming the many challenges that they have highlighted.

6.5. Recommendations

There were several recommendations that were aimed at addressing the limitations of this study, as well as issues that it uncovered. These will be discussed below.

6.5.1. More Inclusive Study

The study had many limitations that included the small sample size as well as time

constraints of the women surveyed. The small sample size was not representative of the population and could not be used to generalise the findings to the population.

Because this study was conducted mostly in the urban areas of KZN, this also limits its potential to be totally inclusive of the population. A general lack of reliable statistics on women led SMMEs also placed limitations on the study. Recommendations are therefore made to conduct follow-up studies that would be more representative of both the urban and rural population of women-led SMMEs. Governments and The DTI must make concerted efforts to ensure that a database is compiled and kept for purposes of further research.

6.5.2. Elimination of Bias

Some of the barriers and challenges that the respondents surveyed faced may present elements of bias. The gender of the researcher posed this challenge when the interviews were being conducted. In qualitative studies an element of bias is possible in that the interviews are personal and the questions are open ended. This could have to some degree changed some of the major findings of this study, however, the researcher was able to minimise such bias by conducting a quantitative analysis as well. A more in-depth analysis would eliminate this bias. A further recommendation would include more studies of this nature being conducted by male researchers.

6.5.3. Financial Support

Throughout this study, the aspect of finance was certainly the biggest barrier. Increased efforts by governments, business support organisations and financial providers in South Africa and the rest of the world can help to minimise this growing hurdle. Programs that are designed must be gender sensitive and less restrictive to women. The Grameen initiative should be tested further, and a similar model replicated for the empowerment of women. Specially designed initiatives for accessing finance for ICT applications can be initiated to help women overcome this barrier. The financial costs associated with ICT implementation for small businesses should be reviewed, to allow for women within these sectors to implement ICTs in their businesses. Business sponsors and corporate social responsibility channels should engage with government to provide financial support for business start-ups and incentives for women in the ICT arena.

6.5.4. Education and Training

Skills training and development efforts in short courses and formal business training skills

will help women to empower themselves as well as to improve their skills and use of ICT for their businesses. This aspect was proved by statistical tests which revealed that a woman's entrepreneurial skills depended on levels of education. A further testing using correlations tested hypothesis 3 and indicated the positive relationship that exists between the growth of a women's business and the enhancing of her knowledge and skills. Provisions for courses and skills training in the business fields are noted as extremely important for women to succeed in the business arena.

It is recommended that funded programs from universities and further training and education centres give assistance to women, enabling them to become more technologically advanced. Networks should collaborate with the many role models and men in business to provide support and to mentor women in business. Bigger businesses should be encouraged to adopt smaller women-owned businesses, sharing ideas and promoting technological collaborations.

6.5.5. Government and Business Support

Government and business support was crucial to women in business and their uptake of ICTs for their businesses. Financial support should include regulatory and legislative changes such as reduced fees and lower taxes for ICT implementation for small businesses. Lowering the costs factors related to ICT infrastructures for business support should be prioritised by governments; incentives for small business use of ICTs should be encouraged. In offering reduced rates in the cost of ICTs for women, SMMEs can provide a platform for implementation of business growth.

Governments should be able to provide support for projects such as the Grameen initiative in Bangladesh. Communities should be encouraged to provide support for each other as presented by the Grameen initiative in Bangladesh. Women should be encouraged to create their own networks in rural communities and urban areas. These support networks should engage in more efforts to be recognised by the larger population of women, and raise more media awareness of their initiatives. These women networks must ensure that they network on a large scale with the many male-dominated networks so that women are recognised and the necessary support is extended to them.

6.5.6. Promotion of Access and Awareness of ICT Services

The role of the media, including television, radio and cellphone must never be downplayed in providing the necessary awareness and the strategic benefits that ICTs can provide to women-owned businesses. A campaign to increase the awareness of and access to ICT services may be beneficial for women-led SMMEs. Social media can also enable greater awareness. The mobile phone usage in women's businesses is huge. The reliance on traditional media could be utilised to create awareness and therefore increased uptake of ICT initiatives.

6.6. Summary and Closure

The objectives of this study were to test the understanding of the role that ICTs play in women-owned SMMEs. Firstly, it was necessary to understand the opportunities that ICTs present, as well as to identify the barriers and challenges that these women have in their use of ICTs. Based on the study and other previous research done in this field, the researcher was able successfully to address the objectives of this research and make recommendations for future efforts. It is with this in mind that the researcher concludes this study. By conducting this study it is hoped that this research will form the basis of further research into this field, in order to ensure that women become equal players in the global environment in striving to expand their business ventures.

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APPENDIX 1

I am an MBA student conducting research on “Opportunities presented by Information and Communications Technology” (ICTs), under the supervision of Prof. Manoj Maharaj, towards the partial fulfillment of a master’s degree. Please participate in my research by clicking on the link below. You will be directed to the questionnaire, where you are required to respond to questions by simply inserting a tick in the relevant box. You may also post comments if you wish to provide any suggestions. Please feel free to pass this on, or post it as your status. I will sincerely appreciate your support.

SECTION A: DEMOGRAPHICS

Please complete the following questions by putting a tick in the relevant box

1. Age of owner:

Under 20 years	
20 to 29 years	
30 to 39 years	
40 to 49 years	
50 years plus	

2. Race:

African	
Indian	
White	
Coloured	
Other (specify)	

3. Marital status

Married	
Single	

Other	
-------	--

4. Educational Level:

Primary education	
Secondary education	
Tertiary education (university or college)	
Post graduate (MBA, PHD...)	
Formal training (please specify)	

5. Business Sector:

Manufacturing(e.g. food, clothing, crafts)	
Hospitality	
Travel/Tourism	
Agriculture	
Wholesale/retail trade	
Business services	
Personal services	
Technology/ICT	
Education	
Medical	
Other (specify	

6. Which of the following best describes your work? (tick box)

I work at office/company premises	
I work at client premises	
I work at home	
Other (specify)	

7. Do you have children? (optional)

Yes	
No	

Section B: Barriers, Opportunities and Strategies for using ICTs

1. Which of the following technology tools do you use in your business?

A personal computer	
A multi line telephone system	
Cellular phones	
Fax machine	
Computers linked together in a local network	
No answer	

2. Which of the following ways do you use the Internet for your business? (you may tick more than one)

Electronic mail and other communication	
Researching business opportunities	
Exchanging documents with customers,	

suppliers and others	
Buying goods or services online	
Selling goods or services online	
Keeping up-to-date with industry trends regionally or internationally	
Participating in web-based conferences, seminars or meetings	
Hosting web-based conferences, seminars or meetings	
Staying up-to-date with industry trends regionally or internationally	
We have never used the Internet	
No answer	

3. Does your company have a Website?

Yes	
No	
No answer	

4. What are the main obstacles you face in using ICTs? (You may tick more than one answer).

No obstacles	
Access to ICTs	

Lack of information and advice in using ICTs	
No support	
No time to use	
Gender discrimination/exclusion from ICT networks	
No training	
Males receiving more support in using ICTs	
I do not know how it adds to the value of my business	
Lack of knowledge in using ICTs	
No role models in the industry	
No time for training and upgrading my ICT skills	
Lack of finance to access ICTs	
No infrastructure to use ICTs	
No self-confidence in using ICTs	
I feel that males are better at using ICTs	

5. How important are each of the following issues for you in your business at the present time? (Tick one answer for each issue)

	<u>IMPORTANT</u>	<u>NOT IMPORTANT</u>
Low efficiency and productivity		
Access to new markets(international or selling new products or to new customers		
Competition		
High cost of infrastructure (electricity, water,		

telephone ,bandwidth)		
Gaining access to technology		
High cost of labour		

6. How important are the following success factors for women in getting ahead by using ICTs?

	<u>IMPORTANT</u>	<u>NOT IMPORTANT</u>
Optimise own and business performance		
Consistently exceed performance expectations		
Encourage growth of business		
Successfully managing others		
Gaining expertise in my field		
Optimising my entrepreneurial spirit and skills		
Gaining equal opportunities		

7. Which of the following comes closest to describing your goal for your business over the next two years?

To maintain my business so as to supplement my household income	
To grow my business	
To maintain my business at its present size and level of activity	
To expand my business by expanding into new markets	
To sell or close my business	
No response	

8. How well are your expectations met by ICTs?

	<u>IMPORTANT</u>	<u>NOT IMPORTANT</u>
Allow me work life balance		
Increase financial rewards		
Promote communication		
Enhance my career/ personal development		
Allow me to use initiatives		
Promotes better management		
Promote equal opportunities		
Enhance growth		
Allow sharing of		

information		
Allow flexibility for where I work e.g.(can also work from home)		
Save me time		

9. If you were in a position to give advice to other women entrepreneurs in ICTs, what would be your recommendation:

Never think of using ICTs	
Absolute must for success	

10. Questions in this survey may not have afforded you the opportunity to make any explicit comments. Please make any additional comments regarding the opportunities that ICTs can present to you as a woman.

APPENDIX 2

Scheduled interview questions only done with 7 respondents

1. How do ICTs assist you in your business operations?
2. Do you have any specific problems when accessing ICTs?
3. Do you use the Internet widely in your business?
4. Are you experiencing any specific ICT problems?
5. How often do you use ICTs for business purposes?
6. Please explain which ICT you use, for a specific purpose, and for what reason?
7. What are the ICT infrastructures that you do not have in your business but feel that it is important for you to have?
8. How do you access ICTs?
9. What are the challenges that you face when accessing ICTs?
10. Which ICTs are you not comfortable to use and for what reason/s?
11. Do you think that your male competitors are more knowledgeable in ICT infrastructures than you?
12. If so, for what reason?
13. Do you network with other women in business?
14. Does the government support your enterprise?
15. Do you see your business growing?
16. Which government funding organisations do you know of?
17. How do you finance your business?
18. Are you happy with the service you are receiving from the FIs?
19. Would you consider using the bank or other funding institutions in future?
20. Do you know where to go if you need non-financial support?
21. How do you improve your business skills?
22. Do you receive any support in improving your business skills?
23. What are the other challenges that you are facing in business that are unique to you as a woman?
24. What are other challenges that you are facing in your business that have not been addressed in our discussion?

End: Thank you for taking time to answer this questionnaire

APPENDIX 3
CHI SQUARE
TESTS

	Age of owner	Race of owner	Marital status	Educational level	Business sector	Business premises	Children
Low efficiency and productivity	0.174	0.511	0.707	0.701	0.660	0.405	0.677
Access to new markets(international or selling new products or to new customers	0.850	0.577	0.819	0.772	0.717	0.090	0.419
Competition	0.543	0.340	0.334	0.719	0.288	0.198	0.540
High cost of infrastructure (electricity, water, telephone, bandwidth)	0.284	0.116	0.086	0.237	.000*	.007*	0.249
Gaining access to technology	0.074	0.687	0.298	0.745	0.657	0.137	0.504
High cost of labour	0.268	.029*	0.383	0.524	0.245	0.817	0.988
Optimise own and business performance	0.532	0.343	0.591	0.440	0.292	0.129	0.232
Consistently exceed performance expectations	0.200	0.924	0.675	0.117	0.122	0.286	0.711
Encourage growth of business	0.078	0.419	0.384	0.600	0.319	0.582	0.912
Successfully manage others	0.243	0.073	0.190	0.157	0.687	0.055	0.707

Gain expertise in my field	0.093	0.094	0.963	0.365	0.312	0.198	0.144
Optimise my Entrepreneurial spirit and skills	0.124	0.655	0.627	.011*	0.682	0.814	0.359
Getting equal opportunities	0.222	0.262	0.228	0.137	0.978	0.548	0.352
Allows me work life balance	0.651	0.317	0.170	0.209	0.261	0.309	0.642
Increases financial rewards	0.092	0.518	0.107	0.726	0.136	0.515	0.829
Promotes communication	0.070	0.204	0.899	0.403	0.878	0.156	0.055
Enhances my career/ personal development	0.473	0.352	0.947	0.213	0.431	0.911	0.533
Allows me to use initiatives	0.245	.000*	0.850	0.662	0.184	0.080	0.485
Promotes better management	0.495	0.343	0.914	0.665	0.346	0.936	0.779
Promotes equal opportunities	0.619	0.323	0.881	0.390	0.569	0.125	0.067
Enhances growth	.048*	0.084	0.577	0.255	0.056	0.217	0.118
Allows sharing of information	0.097	0.055	0.754	0.183	0.671	0.344	0.526
Allows flexibility for where I work e.g.(can also work from home)	0.436	0.238	0.728	0.495	.000*	0.721	0.289
Saves me time	.044*	0.517	.037*	0.227	0.238	.022*	0.102



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02 December 2011

Mrs S Subramoney (209521321)
Graduate School of Business

Dear Mrs Subramoney

PROTOCOL REFERENCE NUMBER: HSS/1233/011M
PROJECT TITLE: Opportunities presented by Information and Communication Technologies for women led SMMEs in KwaZulu-Natal

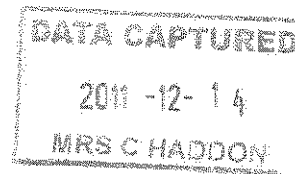
In response to your application dated 30 October 2011, the Humanities & Social Sciences Research Ethics Committee has considered the abovementioned application and the protocol has been granted **FULL APPROVAL**.

Any alteration/s to the approved research protocol i.e. Questionnaire/Interview Schedule, Informed Consent Form, Title of the Project, Location of the Study, Research Approach and Methods must be reviewed and approved through the amendment /modification prior to its implementation. In case you have further queries, please quote the above reference number. Please note: Research data should be securely stored in the school/department for a period of 5 years.

I take this opportunity of wishing you everything of the best with your study.

Yours faithfully

Professor Steven Collings (Chair)
Humanities & Social Science Research Ethics Committee



cc Supervisor – Prof Manoj Maharaaj
cc Ms W Clarke