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University of Cape Town



Department of Information Systems

The impact of ICT use on livelihoods of microenterprises: Case of South Africa.

A thesis submitted in fulfilment of the requirements for the degree of

Master of Commerce in Information Systems

By

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Supervised by Professor Wallace Chigona.

March, 2011.

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Abbreviations and Acronyms

AsgiSA	Accelerated and Shared Growth In South Africa
BBBEE	Broad Based Black Economic Empowerment
CBO	Community Based Organisations
CRM	Customer Relationship Management
DFID	Department of International Development
DTI	Department of Trade and Industry
ERP	Enterprise Resource Planning
EU	European Union
GDP	Gross Domestic Product
GEAR	Growth, Employment and Redistribution
ICT	Information and Communication Technology
ICT4D	Information and Communication Technology for Development
ILO	International Labour Organisation
IS	Information Systems
IT	Information Technology
ITU	International Telecommunication Union
MDGs	Millennium Development Goals
NGO	Non Governmental Organisations
SEDA	Small Enterprise Development Agency
SLA	Sustainable Livelihood Approach
SMEs	Small and Medium Enterprises
SMMEs	Small Medium and Micro Enterprises
UCT	University of Cape Town
UN	United Nations
UNDP	United Nations Development Programme

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The impact of ICT use on livelihoods of microenterprises: Case of South Africa.

Abstract

This thesis aims to contribute to the understanding of impact of using Information and Communications Technology (ICT) on the livelihoods of microenterprises in the developing countries context. The life-span of microenterprises is curtailed by a myriad of challenges such as limited resources, capacity, support and many others. ICTs are a potential antidote to the problems. However, there are challenges in using ICTs to sort out the challenges. The problems for microenterprises go beyond access to ICT and include social, political and economic factors such as lack of access to credit for start-up, lack of recognition within communities and the impact of HIV/AIDS. As a result, microenterprises in some cases are unsustainable. ICTs are perceived to be an enabler which can increase the survival chances of microenterprises. In this study, ICT is considered as an innovation and a tool which supports creation, processing, communication and sharing of information and knowledge. In the same light, ICT as an innovation has potential consequences which take different forms which could be intended and unintended; direct or indirect; and anticipated or unanticipated. Consequently, ICT use in microenterprises has potential impact on their livelihoods.

The research focused on the case of South Africa and was conducted on an intervention for supporting Small, Medium and Micro Enterprises (SMMEs) called The RED Door at the Municipality of Cape Town in Western Cape Province. The study employed qualitative method using case study research approach. Data was collected through interviews, observations and documentary review. The respondents included stakeholders, beneficiary organisations and microenterprises that did not participate in the program as control group. Multiple cases of microenterprises were analyzed to compare the results from the different cases in an attempt to establish an in-depth understanding of the wider aspects of livelihoods of microenterprises. The Sustainable Livelihood Approach was used as a theoretical lens to assess impact of using ICT.

The study confirms the proposition that ICT has the potential for positive impact on the livelihood of microenterprises. The positive outcomes for ICT use in interaction with institutions and organisations and use of assets were mainly more income and improved well-being. However, use of ICT in microenterprises was not straight forward. Microenterprises faced challenges which led to non-use of ICT despite owning or having access to ICTs. Chief among the problems is lack of awareness on how to employ ICTs in business activities. Other challenges were lack of resources in form of financial capital, physical capital and human capital which limit their capabilities to obtain or access support from institutions and organisations on how to run their businesses and knowledge on how they can use ICTs for business purposes. The study suggests the need for institutions and organisations to identify the needs for microenterprises in relation to the local context and existing local knowledge. Furthermore, it is essential to promote awareness of the services targeted towards microenterprises using the existing local community networks for microenterprises especially those operating in the informal sector.

Chapter 1

Introduction

This chapter presents the statement of purpose for the study; research problem; aims and objectives; and justification of the central question. Also presented in this chapter are theoretical background to the study, justification for the selected research methodology, the context of the research and assumptions made by the researcher, followed by research propositions based on literature review.

1.1 Background

Small, Medium and Micro Enterprises (SMMEs) in developing countries play a vital role in socio-economic development (Qureshi, 2005; Ritchie & Blindley, 2005; Ndawalana & Tusubira, 2006) especially in areas of employment creation, acting as source of income for low-income households, skills development and empowerment resulting in improved livelihoods (Duncombe & Heeks, 2005; Chacko & Harris, 2006). Microenterprises are described as businesses with less than five employees (Donner, 2006) and are characterized by being survivalist, low income generated from business activities and short-life span (Esselaar, Stork, Ndawalana & Deen-Swarray, 2007).

There is increasing evidence that microenterprises use Information and Communication Technologies (ICT) to stay competitive and increase their survival (Alam & Noor, 2009; Kamal & Qureshi, 2009). The potential benefits of using ICT in microenterprises are increased labour productivity, better access to information, better communication and reduced operation costs (Wolf, 2001; Moyi, 2003; Kamal & Qureshi, 2009). However, due to limited resources and capacity, microenterprises usage of ICT includes simple technologies such as PCs, laptops, radios, telephones, internet, fax machines, photocopiers, manuals and newspapers (Duncombe, 2006).

There are potential positive impacts of using ICT in microenterprises (Brynjolfsson & Hitt 2000; Southwood, 2004). Examples of positive impacts are improved access to information, market value, productivity, empowerment and reduction of poverty (Gurstein, 2007; Qureshi, 2005; Kamal & Qureshi, 2009). However, using ICT as an innovation may have various forms of consequences which could be intentional, unintentional, direct and indirect (Rogers, 2003). Livelihoods described as a means of gaining a living through capabilities, tangible assets and intangible assets (Chambers & Conway, 1991), may be related to consequences of using ICTs in the context of microenterprises. It is argued that due to diversity of livelihoods of microenterprises, impact of ICT use can be effectively assessed by using the Sustainable Livelihood Approach (SLA) (Carney, 1999; Duncombe, 2006). SLA can be used to assess impact of ICT use in microenterprises as it considers wider scope of social issues beyond technology and income poverty (Parkinson & Ramirez, 2006).

Microenterprises face many challenges resulting in being unsustainable and limited chances of survival (Kamal & Qureshi, 2009). Some of the challenges are limited resources, capacity and access to support. The challenges exacerbate to lack of awareness of potential benefits of using ICT, limited financial resources to acquire and support ICT, lack of operational support and cultural factors (Ngcobo & Herselman, 2007; Wolcott, Kamal & Qureshi, 2008). One way of addressing these problems is by provision of ICT public facilities to support microenterprises (Heeks, 2002; Fourie & McNamara, 2008). Nevertheless, physical provision of ICT does not guarantee usage as argued by Warschauer (2003). Challenges for microenterprises are complex, multidimensional and beyond technology access. Microenterprises may possess ICTs or have access to ICTs through public facilities but there are many influencing factors on the capacity and motivation to use ICTs (Chew, Ilavarasan & Levy, 2010). These may be influenced by cultural, social, technological, political and psychological factors (van Dijk, 2006; Fuchs, 2009). In this view, there is need to take

a holistic perspective in understanding the consequences of using ICTs and not focusing on technology alone. Kamal and Qureshi (2009b) suggest ICT impact to be understood in consideration of economic, social and human perspectives of development.

This study focused on South Africa which has a unique economy due to political and social context (Berry et al., 2002). The economy is divided into three segments namely first, second and third economies (Ligthelm, 2006). The first economy is productive, uses technology extensively and is integrated to the global supply chain. The second economy is mainly composed of informal and survivalist organisations and is not fully developed. The third economy is composed of forbidden activities such as production and distribution of illegal goods and services (Ligthelm, 2006). Majority of microenterprises operate in second economy (Esselaar et al., 2007). There are attempts to bridge the first and second economies by the government and other development agents. One example of such interventions is the RED Door program by the Provincial Government of the Western Cape which provides SMMEs support services including access to the Internet.

There is a paucity of Information Systems (IS) research on microenterprises; majority of studies in this area have focused on Small and Medium Enterprises (SMEs) (Donner, 2006; Donner & Escobar, 2009; Kamal & Qureshi, 2009). Studies that have been conducted in South Africa on impact of ICT use have shed light on productivity (Wolf, 2001; Ngassam, Kandi, Nkaelang & Modiba, 2009), performance (Esselaar et al., 2007), the interplay between social factors and technology (Rhodes, 2009), technology usage (Chen & Rensleigh, 2009). The existing literature offers limited insights on the consequences of using ICTs in consideration of livelihoods. As a result, the actual outcomes of ICT use on livelihoods of microenterprises are based on anecdotes. Lack of robust evidence on the impact of ICT may lead to limited knowledge and understanding of challenges for microenterprises.

The study was aiming at making a contribution to the body of knowledge on the understanding of the outcomes of ICT use on the livelihoods of microenterprises. Firstly, the study validates the SLA (Duncombe, 2006) which is ideal for assessing the dimensions of poverty (Parkinson & Ramirez, 2006). Microenterprises are linked to poverty alleviation and it was interesting to assess how ICT use impacted their livelihood using the SLA. Secondly, it was believed that the study would provide practical contribution on understanding of challenges faced by development agencies supporting microenterprises by the Provincial Government in Western Cape Province. Again, it was interesting to understand the outcomes of the provision of ICT access imbedded in the services for promotion of growth of microenterprises.

1.2 Problem statement and research question

Microenterprises are important in job creation, skills development, income generation and sustaining livelihoods of communities (Heeks, 2005; Qureshi, 2005; Kamal & Qureshi, 2009, Chew et al., 2010). At the same time they also face many challenges such as limited resources, lack of skills, limited access to credit facilities, lack of awareness of potential benefits of using ICTs, lack of support among many (O'Neill & Viljoen, 2001; Wolcott et al., 2008; Rogerson, 2008). Due to these challenges, microenterprises may be unsustainable and there is growing evidence of high rates of failure of microenterprises (Kasper, 2001; Ludzani & van Vuuren, 2002; Rogerson, 2005; Mitrovic & Bytheway, 2010). ICT has the potential to mitigate some of the challenges faced by microenterprises and increase their survival chances (Qiang, Clarke & Halewood, 2006; Kamal & Qureshi, 2009; Good & Qureshi, 2009). The benefits of using ICTs are well documented and these are increased access to markets, improved productivity, improved communications and poverty alleviation (Southwood, 2004; Qureshi, 2005; Duncombe, 2006). However, the impact of ICT use in microenterprise is not clear as the majority of studies have focused on SMEs resulting in less literature on ICTs and microenterprises (Donner, 2006; Alam & Noor, 2009; Qureshi, Kamal & Qureshi, 2009). Furthermore, the consequences of using ICT use in terms of social factors are not well documented (Adam & Wood, 2005).

Although a number of studies have been conducted in South African microenterprises (Wolf, 2001; Esselaar et al., 2007; Ngassam et al., 2009; Rhodes, 2009; Chen & Rensleigh, 2009), unfortunately little attention has been given on the impact of ICT use in terms of livelihoods of microenterprises. In attempt to address this paucity of studies, the research question for the study was as follows: How does the use of ICT affect the livelihoods of microenterprises?

1.3 Research aims and objectives

The main aim of the research was to assess the impact of ICT use on the livelihood of microenterprises focusing on use assets and structures; and the effect on outcomes. The SLA has elements that may be used to understand issues surrounding the context of microenterprises. The elements include vulnerabilities, assets, organisations and institutions, strategies, structures and outcomes (DFID, 1999; Carney, 1999; Duncombe, 2006). Based on the elements of SLA and the context of developing country, in this case South Africa, the following sub-objectives were proposed for the study:

- i. To analyze how microenterprises utilise assets and structures using ICT and the effect on outcomes.
- ii. To assess how microenterprises can use ICT in identifying, preventing and dealing with vulnerabilities.
- iii. To analyze how microenterprises use ICT to enhance utilisation of assets.
- iv. To analyze how ICT facilitated interaction between microenterprises and other institutions and organisations.
- v. To assess the extent of ICT use in microenterprises.

A summary of how research question and SLA conceptual framework informed the research objectives is attached in the appendices (Appendix J).

1.4 Research propositions

Propositions were considered to ensure that the study was conducted within feasible limits and the scope of microenterprises (Baxter & Jack, 2008). The expected results based on literature review were as follows:

- *Microenterprises can use ICTs to effectively utilise assets and structures to achieve livelihood outcomes.*
ICT use in microenterprises can strengthen the way strategies and processes can be carried out and affect the achievement of livelihood outcomes. Microenterprises can achieve successful outcomes such as improved wellbeing, increased income, reduced vulnerabilities when strategies are implemented effectively (Arun, Heeks & Morgan, 2004). ICT can be used in implementation of short-term and long-term strategies. Information and knowledge can be mediated through formal and informal means resulting in effective strategies and effective use of assets (Chapman & Slaymaker, 2002).
- *Microenterprises can use ICT to identify, prevent and deal with vulnerabilities.*
One of the dimensions of poverty in livelihoods is vulnerabilities which include factors such as commodity price fluctuations, health, natural disasters (e.g. drought, floods), war and decrease in employment opportunities (Parkinson & Ramirez, 2006). ICT may be used in accessing information which can be used in decision-making by the microenterprises livelihood in identifying problems and how to mitigate them (Chapman & Slaymaker, 2002). ICT can support different actors in understanding their livelihood needs and in assessing opportunities in development context beyond the perception that ICT can improve efficiency in different information systems (Parkinson & Ramirez, 2006). ICT may help microenterprises in accessing and sharing information in identifying vulnerabilities by gaining more capabilities and mitigate the livelihood vulnerabilities (Soriano, 2007).

- *Microenterprises can use ICT to create and utilise livelihood assets effectively.*
ICT have the potential to strengthen how people in a livelihood use their assets (Duncombe, 2006). ICT can be used in accessing information which can play the analytical role for example how information can be used to enhance utilisation of assets (human, social, physical, natural and financial). The capabilities in utilisation of assets for microenterprises depends much on social assets such as social relations which supplies information that can be used in coordinating activities of microenterprises (Duncombe, 2006)
- *Microenterprises can use ICT to interact with institutions and organisations effectively.*
Processes affect the livelihood of the poor in areas such as markets, legislations, trade agreements and government policies etc. (Duncombe, 2006). Using ICT, information that initiates processes to be carried out can be communicated from the microenterprises to the structures (organisations and institutions supporting livelihood interventions). Information about markets, government policies and laws can be communicated effectively using ICTs (Morawczynski, 2009).
- *Microenterprises can use ICT to enhance successful livelihood outcomes.*
Microenterprises may use ICT to manage assets and maintain relationships with organisations and institutions supporting livelihood (Kamal & Qureshi, 2009). The institutions and organisations can also help to identify vulnerabilities that microenterprises face and facilitate successful implementation of strategies or interventions that can result in successful outcomes. Microenterprises can also use ICT in sharing knowledge and information used for making decisions on livelihoods (Duncombe, 2006). The extent of use of ICT use may be different depending on the skills and knowledge of ICT and nature of business.

1.5 Summary of research approach

There is an increase in concerns for impact of technologies on livelihoods by policy makers and other development agents (Arun et al., 2004). SLA emerged as a tool for understanding issues surrounding livelihoods especially for the poor (Ellis, 2000). SLA can be used as a lens to assess the impact of using ICT in development interventions. Poverty in this context is beyond low income and encompasses lack of opportunities, capabilities, security and empowerment as argued by Sen (1999). SLA focuses on people by looking at their resources to come up with solutions that are feasible (Carney, 1999). There is also active participation of all stakeholders and actors in assessment of needs, priorities and establishment of outcomes (DIFD, 1999). SLA can be used to monitor and evaluate livelihood interventions in consideration of broader issues on ICT use in microenterprises (Arun et al., 2004). Consequently, SLA was considered as an appropriate theoretical lens for assessing impact of ICT use in microenterprises beyond technology access and financial benefits (Heeks, 2010).

The study employed a qualitative research methodology using case study approach. Case study research strategy was considered appropriate because the aim was to investigate real life phenomena and the boundary of the context was not clear as majority of microenterprises operate in the informal sector (Yin, 2009). Purposeful sampling and snowballing sampling were used to come up with respondents for study that would provide necessary data and access to microenterprises (Senkaran, 2003).

The case study was conducted on RED door, an initiative by the Provincial Government of the Western Cape Province in South Africa. RED Door provides personalised business development support services to SMMEs. The services include facilitating business start-ups, access to finance, capacity building and internet access (The RED Door Business Plan, 2004). The respondents included RED Door staff and beneficiary organisations. Microenterprises that did not use the services of RED Door were also included as control sample to get diversified opinions on services for RED Door. The purpose of the study was to describe problems surrounding the consequences of using ICT in microenterprises (Fisher & Ziviani, 2004). To establish in-depth understanding of challenges relating outcomes of using ICT in microenterprises, the researcher's perceptions towards reality was interpretive. Reality was viewed as socially constructed and can be expressed

through language, consciousness and shared meaning (Cresswell, 1994; Myers, 2009). The study took into account of principles for interpretive research suggested by Klein and Myers (1999).

Three data collection techniques were used namely documentary review, interviews and observations. Historical data was used to establish and interpret the demographic and geographic characteristics of the area in which microenterprises operate. Documents were sourced from RED Door and Department of Statistics South Africa. They included annual reports, business statistics and general household surveys reports. Semi-structured interviews were conducted to gather in-depth details of the interventions for microenterprises and beneficiary organisations on the impact of using ICT. Observations were also used to verify the data gathered during the interviews and supplement data missed during the interviews or details which respondents were not able to freely talk (Yin, 2009). The collected data was analysed using Thematic Analysis (Braun & Clarke, 2006).

Steps for conducting the study were documented and the researcher ensured that all the procedures were followed all the time. The data collection procedure for interviews and observations are attached in the appendices (Section 1.5 & 1.6). The researcher recognized the changes occurring in the environments for microenterprises therefore followed the procedure with consistency.

1.6 Summary of findings

The findings from the study confirmed that ICT use has positive impact on the livelihoods of microenterprises. This was evident in the improved well-being and more income as outcomes for microenterprises that used ICT in their business activities and used the support services provided by institutions and organisations. However, microenterprises still face challenges in using ICTs in business activities to utilise assets and to interact with institutions and organisations providing support for microenterprises. As a result, there were limited positive outcomes and in some cases no impact of ICT use on the livelihoods of microenterprises. Some of the challenges were business operational issues, lack of skills and knowledge to apply ICT in business activities. Chief among these was lack of awareness of support services for microenterprises. Consequently, majority of the microenterprises that did not use support services perceived organisations and institutions not helpful and not accessible. Therefore, the impact of ICT use in microenterprises is not straight forward as it involves diverse areas within the livelihoods of microenterprises.

1.7 Context and assumptions

The study was based on the following assumptions:

- The philosophical assumption for the study was interpretive where reality is perceived to be subjective and expressed through different meanings (Myers, 2009). Attention was given to understand the intentions, actions, context and processes of microenterprises and how the outcomes of these actions can be explained. In order to avoid bias or influencing the behaviour of respondents the seven principles for interpretive research (Details in Chapter 3, section 3.2) were followed by the researcher (Klein & Myers, 1999). At the end of each interview the researcher summarized the key points for the interviews and discussed with the respondents as one way of confirming the data. Facts gathered during the interviews were also verified through observations.
- The context of the study was South Africa where there are differences in operating environments of microenterprises, e.g. microenterprises may operate in urban and affluent areas and others operate in rural and disadvantaged areas (Ligthelm, 2006; Esselaar et al., 2007; Rogerson, 2009). Therefore, access and use of ICT would be different depending on these factors. The assumption was that ICT use involved less sophisticated technologies such as internet, mobile phones, telephones, computers, laptops, fax etc. and in some cases public ICT access facilities were used such as telecentres, multi-purpose community centres, libraries and business advice centres (van Belle & Trusler, 2005).

- Microenterprises are short-term business organisations and are often founded in response to lack of employment opportunities (Donner, 2006). Once employment is found microenterprises may be disbanded or continue to operate in order to supplement earnings for the households (ILO, 2002; Esselaar et al., 2007). Therefore, impact for ICT use was considered for both short-term and long-term.
- The research approach for the study was qualitative and data was gathered using documentary review, interviews and observations. The assumption was that documentary review will provide details on the context of microenterprises (the principle of context). Reports on demographic profile, household surveys and economic sector of the Western Cape Province were used. Interviews and observations were used so that richer insights from the phenomenon would emerge from the interaction between the researcher and the subject (principle of interaction between researcher and subjects) (Klein & Myers, 1999). Qualitative data was gathered in this process. In line with the research approach, case study was considered appropriate because the study involved a real life situation and data that emerged from the cases provided description and explanation of the livelihood outcomes of ICT use in microenterprises (Lee & Baskerville, 2003). Therefore the focus was not on the size of the sample but development of concepts to explain the context of microenterprises (Schofield, 2000; Yin, 2009).
- The assumption on the sample size and its representation was that sampling of multiple cases was based on information oriented selection where the aim is to get more in-depth information from small samples and single cases; and based on expected information content (Flyvbjerg, 2006). In the perspective of positivistic approach this may pose a limitation to study. However, the study used qualitative paradigm and the aim was to develop concepts from the insights from the respondents that could explain a phenomena (Lee & Baskerville, 2006). Therefore, to obtain more diverse opinions it was assumed that such type of information would be obtained from a diverse range of microenterprises and considered multiple case studies. This involved microenterprises who used the RED Door services and also those who did not and why did not use the services.

1.8 Overview of chapters

This section outlines the chapters of the dissertation. A brief explanation of contents of each chapter is elaborated in relation to the way the study was designed and executed.

Chapter 1 outlines the statement of purpose for the study, the research problem, aims and objectives. Justification of the central question is also presented to substantiate value of research question, theoretical framework and research methodology. Description of context of the study and assumptions are also highlighted.

Chapter 2 explores literature in an attempt to address questions related to the research topic and related issues. The review of literature also looks at challenges faced by microenterprises in using ICT. Previous studies on assessing the impact of using ICT microenterprises are also analysed. Propositions are presented based on previous empirical studies.

Chapter 3 looks at theoretical background to the study focusing on SLA which underpinned the research. Justification for selection of the theoretical framework is also discussed. A conceptual model is presented and lessons learnt from previous studies that employed SLA are identified. Finally, a summary of knowledge gaps identified are postulated.

Chapter 4 describe the research methodology and justification for selection of research method. Data collection techniques and procedures; research instruments; description of the case and the rationale for using them are fully described. Data analysis techniques employed in the study; ethical factors and time frame are also presented in this chapter.

Chapter 5 summarises key findings and attempts to answer the research question and the research objectives. Key themes that have emerged from the data are summarized and new concepts are noted.

Chapter 6 discusses the findings to answer the research questions and objectives and implication for the literature that was reviewed for the study. A reflection on the theoretical framework employed in this study is presented. The discussion also reflects on the impact of research methodology and data collection techniques and how they affected the findings.

Chapter 7 is the conclusion and summarises the answers obtained in the study for the research question and objectives and the extent to which the results have achieved the theoretical and methodical aims. The chapter also discusses the challenges, limitations and value of the study. Recommendations for practice, policy and direction for further research from this study are also presented.

University of Cape Town

Chapter 2

Literature review

This chapter presents a critical review of literature addressing questions related to the research topic and related issues. The review summarise the context of microenterprises in South Africa in terms of their use of ICT and impact on their livelihoods. The discussion also looks at some interventions that are aimed at supporting microenterprises. The challenges faced by microenterprises are also discussed in this chapter.

2.1 Introduction to literature review

Literature on studies for Information Systems (IS) and other related disciplines presents microenterprises as a sub-category within the SMEs (Esselaar et al., 2007). In developing countries context, SMMEs are identified into two types namely livelihood enterprises and growth enterprises (Heeks, 2005). Livelihood enterprises may be located in rural and urban areas and carryout business activities from livelihood assets with intention for survival. Livelihood enterprises focus is to meet daily basic needs and not growing business. Growth enterprises are SMMEs that focus on expanding business activities. This discussion focuses on livelihood enterprises with the assumption that SMEs are regarded as formal, stable and productive (Donner, 2006).

2.1.1 Definition of microenterprises

There are divergent views over the definition of microenterprises. As a result, there is no universal agreed definition of microenterprise. Definitions of microenterprises vary according to country, region and context. The researcher highlights some of the definitions in literature as follows:

“Microenterprises are businesses with five or fewer employees, supports the livelihood of households in developing nations around the world and are vital in the economic development” (Liedholm & Mead, 1999). Likewise, Good and Qureshi (2009) define microenterprises as *“Businesses with low revenues and composed of 1 to 5 employees”*.

The two definitions suggest that microenterprises can be defined based on number of employees and the nature of activities they engage in. Microenterprises are also described as a sub-category within the SMEs (ILO, 2002; EU, 2005; Esselaar et al., 2007). Other definitions are based on volume of sales over a period of time and value of assets. In the South African context, microenterprises are defined as enterprises with less than ten employees, with a turnover of less than R0.2 million and net asset value of R0.1 million (Esselaar et al., 2007). Legally, the South Africa National Small Business Act of 2003 defines SMMEs as:

“A separate and distinct entity including cooperative enterprise and non-governmental organisations managed by the owner or more which include its branches and subsidiaries, in any sector or sub sector of the economy” (National Small Business Amendment Bill Gazette, 2003).

The Act further categorizes SMMEs into medium, small, very small and micro, this categorisation is based on sectors. Microenterprises are the major part of SMMEs sector and they operate across many sectors of the economy (Berry et al., 2002). The definition encompasses sectors and sub-sectors and therefore highlights the operating context of microenterprises. The sectors are agriculture, mining and quarrying; manufacturing, electricity, gas and water; construction; retail and motor trade and repair services; catering, accommodation and other trades (National Small Business Amendment Bill Gazette, 2003). The discussion will use this definition as it further qualitatively describes the criteria for each of the category, based on the number of employees, turnover and value of the assets.

2.1.2 Characteristics of microenterprises

One way of understanding the composition of microenterprises is to analyze their characteristics. Characteristics of microenterprises can be based on formation, objectives, nature of business activities, number of employees, turnover, legal status and management style (EU, 2005; Heeks, 2008; Abor & Quartey, 2010). Microenterprises have less than five employees (Mead, 1994; Donner, 2006) and in some cases members of the family are involved in the running of the business. Income generated from the enterprises is usually low as the business activities are done at small scale (Duncombe, 2006; Esselaar et al., 2007). In microenterprises there is less separation between personal and business finances. In terms of legal status, majority of the microenterprises are not registered to any authority and operate in the informal sector. As a result, they usually do not maintain financial records for the business. Majority of microenterprises engage in business activities due to lack of employment opportunities and they close the business once permanent employment is found (Mead, 1994; ILO, 2002; Esselaar et al. 2007; Duncombe, 2006). That is partly the reason why microenterprises have a short-life span and survivalist in nature (Liedholm & Mead 1999; Rolfe, Woodward, Ligthelm & Guimaraes, 2010). Table 2.1 summarises the characteristics of microenterprises.

Types	Characteristics (not hard rules!)
Informal Operator/ Survivalist	<ul style="list-style-type: none"> • no employees • no distinction between business and personal finances • does not keep records • does not pay taxes • is not registered with any authority • engages in business activities to pay for daily expenses
Informal Operator/ Macro or Small Business	<ul style="list-style-type: none"> • less than 10 employees • do not distinct between business and personal finances • may not keep records • may not pay taxes • may not be registered with any authority • has physical address and contact details
Formal Micro or Small Business	<ul style="list-style-type: none"> • between 10 and 49 employees • keeps records • has separate bank account • pay taxes • is registered with all required authorities • has physical address and contact details

Table 2.1: SMMEs characteristics (Esselaar et al., 2007)

2.1.3 Importance of microenterprises to socio-economic development

The role of microenterprises in South Africa is not well documented as there is less clarity regarding the extent to which they contribute to poverty alleviation and economic growth of the country. Lack of data to provide statistical evidence on the contribution of microenterprises to the economy is one of the problems. Since majority of the microenterprises are not registered to authorities, the population of microenterprises is not known (Berry et al., 2002). That withstanding, there is growing evidence in literature of the role of microenterprise in economic development (Heeks, 2002; Chacko & Harris, 2006; Duncombe & Heeks, 2006; Donner, 2006; Esselaar et al., 2007). They include source of employment, source of income, providing opportunities for development of skills, self empowerment and sustainability.

Microenterprises are the main source of employment in developing countries as they require fewer resources for start-up (Duncombe 2006; Kamal & Qureshi, 2009). People with limited skills that do not meet the labour needs of formalised industries engage in business activities as microenterprises and develop entrepreneurial skills. In terms of economic production, labour is an important factor that can be combined with capital to produce a service or product. Achievement of

higher productivity in relation to labour is influenced by skills levels and affects the delivery of products or services. In South Africa there is abundance of low skilled labour as a result of social and political factors. Therefore, microenterprises provide opportunities for self-employment as they require less resources such as capital and simple technologies for start up (Berry et al., 2002; Duncombe, 2006). A part from providing employment, microenterprises also provide opportunities for small businesses to develop into medium scale businesses (Chacko & Harris, 2006).

Further, people living in marginalized communities are able to develop knowledge about products and services as microentrepreneurs (Rhodes, 2009). The skills and knowledge help them to gain competitive advantage and earn more revenue in their business activities. This results in stable microenterprises that support livelihoods e.g. women entrepreneurs help increase gender equality, empowerment and generate income to support their livelihoods (Kotelnikov, 2007).

Microenterprise activities empower marginalized members of the community such as women. They provide an environment where people are able to participate in economic activities at a small scale and later become large organisations (Wolcott et al., 2008). In South Africa, women are marginalized in skills development that meets the labour markets due to their role for child care (Rogerson, 1996). Through microenterprises, they are empowered to participate in household economic activities leading to sustainable livelihood. The next section discusses the economic structure of South Africa and the role of microenterprises in the economy.

2.2 Microenterprises in context of South Africa

2.2.1 South African economy structure

As illustrated in figure 2.1, the South African economy is divided into three tiers due to the legacy of apartheid. The categories are first economy, second economy and third economy (OECD, 2002; Ligthelm, 2006) which are described as follows.

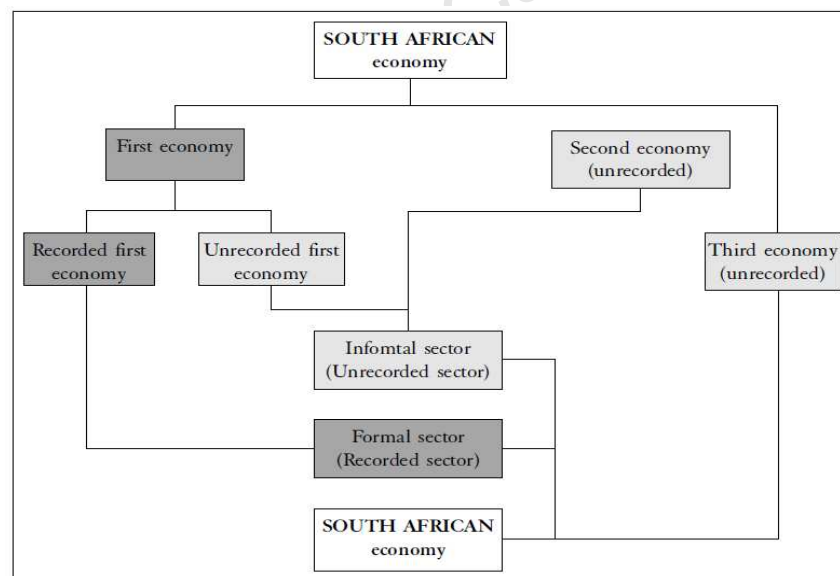


Figure 2.1: Structure of South Africa Economy (Ligthelm, 2006)

- *The first economy* is composed of large corporate organisations and SMEs that are integrated to the global supply chain, they are able to compete at international markets and operate using advanced technologies.
- *The second economy* comprises of survivalist, micro and small enterprises disconnected from the first economy and the global markets.
- *The third economy* is composed of all forbidden activities which include activities such as production and distribution of illegal goods (weapons, counterfeit products and illegal drugs), sex services (prostitution), smuggling, re-sale of stolen goods, bribery and money laundering.

The first economy is further subdivided into recorded and unrecorded economies. The informal sector therefore comprise of the unrecorded first economy and the second economy. The formal sector organisations are legally registered to authorities, they pay tax and offer contracts to their permanent employees while the organisations operating in the informal sector are not registered, they do not pay tax and do not keep financial records (Ligthelm, 2003; Esselaar et al., 2007).

Majority of the microenterprises in South Africa operate in the informal sector in the second economy (Ligthelm, 2004). Activities for microenterprises in this category are kerb-side traders, traders in pedestrian malls, small manufacturers, art and crafts, shabeens, spazas, hawkers etc. Though the role of microenterprises cannot be statistically demonstrated, their role in the second economy is through employment creation leading to sustainable livelihoods for low income households and marginalized communities (Berry et al., 2002).

In terms of ICT use, the first economy use services provided by knowledge rich ICTs and has many similar characteristics of using ICT as developed economies (Baskaran, Muchie & Muharajh, 2006; Brown & Brown, 2009). The Second Economy depends on communal facilities, social networks and mobile telephone services for their information needs. The third economy also uses ICTs, however less is known in literature on the details and extent of use.

2.2.2 SMMEs in Western Cape Province

Western Cape Province covers 129, 370 square kilometers with a population of 5,233, 990 people. As illustrated in Figure 2.2, the province is the fifth largest populated province in South Africa which has a total population of 49 Million (Stats SA, 2010). The ethnic composition of the province is as follows: Coloureds 46.85%, Black Africans 38.1%, Whites 14.74% and Asians 0.40%.

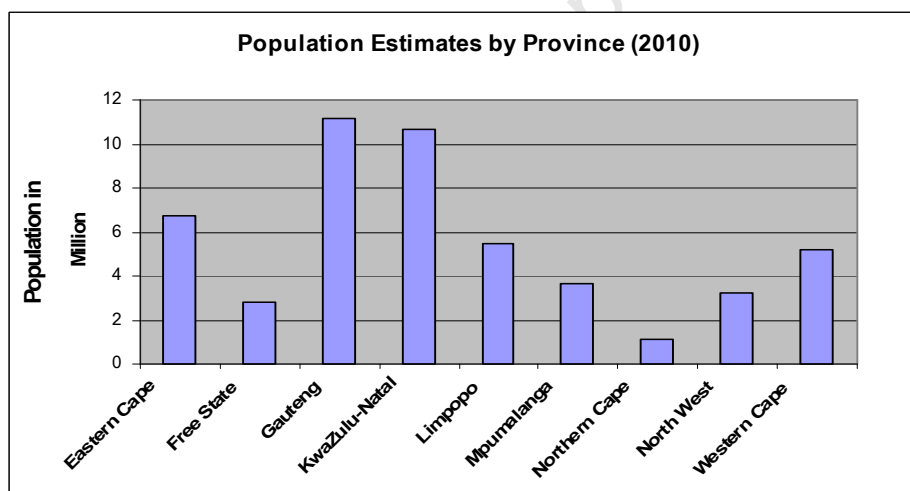


Figure 2.2: South Africa's population estimates by province as of 2010 (Stats SA, 2010)

The population distribution within the provinces is affected by internal migration where people move from one region to another mainly in search for employment opportunities. The key economic sectors of the Western Cape Province are agriculture; forestry and mining; finance and business services; mining and manufacturing; electricity and water services; construction; wholesale, retails and catering; transport and communications; community and social services; and general government services. Majority of the microenterprises operate in the wholesale and retail sectors (Cape Town Socio-Economic Report, 2005).

The province is characterized by segregation of economic structure namely; first and second economies. Consequently, affluent segment of the population has skills meeting the needs of the first economy and the other segment is linked to the second economy characterized by under development and poverty. The working age population is between 15 to 64 years. Since 2001 the province has been experiencing decline in employment opportunities in the formal sector resulting in unemployment. Some of reasons for unemployment are internal migration and a mismatch

between skills supply and demand. Changes in internal migration laws resulted in people moving in the province especially blacks who have limited skills meeting the labour requirements of the first economy (Wright, 2010).

Due to lack of formalisation of SMMEs and baseline data, the exact number of microenterprises in Western Cape Province is not known. The estimated total number of SMMEs operating in the formal sector country wide as of March 2007 was 512,518. The Western Cape Province presented 19% of the estimated total. The provincial distribution of SMMEs in South Africa differs substantially due to variances in economic activities for each province (DTI Report, 2008). Table 2.2 summarises estimates of population of across the provinces and comparison between formal and informal sectors.

Province	Formal Sector (March, 2007)	Informal Sector (September, 2005)
Eastern Cape	5.3%	13.4%
Free State	3.2%	6.6%
Gauteng	48.3%	24.6%
KwaZulu-Natal	13.0%	18.8%
Limpopo	2.9%	14.3%
Mpumalanga	4.1%	7.7%
North West	3.2%	8.0%
Northern Cape	1.2%	0.7%
Western Cape	19.0%	5.9%
Total	100% (512,518)	100% (1,747,578)

Table 2.2: Estimated Provincial distribution of SMMEs in South Africa (DTI Report, 2008)

2.2.3 Challenges facing microenterprises in South Africa

In South Africa, microenterprises encounter many challenges which may affect their operations, adoption and use of ICTs. As a result, microenterprises often fail to grow and there are high rates of failures (Ludzani & van Vuuren, 2002; Rogerson, 2005). The problems include lack of access to credit for capital or expansion, low literacy levels, lack of business skills, lack of knowledge on business support, lack of recognition within communities, lack of access to markets, poor working conditions etc. (Visagie, 1997; Chandra et al., 2001; Luiz, 2002; Lewis, 2002; Swanepoel, Strydom & Nieuwenhuizen, 2010). The challenges can be categorised into resources, capacity, regulation, support and health issues. These are discussed in the subsequent paragraphs.

Resources challenges relate to limitation in access to credit. Majority of microenterprises operate at a small scale, mostly locally and generate low income from business activities (Esselaar et al., 2007). As a result, microenterprises are not able to secure credit due to lack of collateral required by most financial institutions. Financing for capital is usually through savings, funds from close relatives, informal credit institutions and stockvel (Visagie, 1997; O'Neill & Viljoen, 2001; Rogerson, 2008).

Due to low literacy levels for most owners of the microenterprises, there is lack of business skills and lack of managerial skills (Rogerson, 2008). Consequently, microenterprises do not grow and the revenue generated from business activities is not sufficient enough to offer better wages to employees. These problems may lead to poor working conditions (Chandra et al., 2001; Luiz, 2002; Borat & Hinks, 2005).

Microenterprises are also affected by regulations and laws in such a way that the operating certain types of businesses attracts some form of formalisation. For example, sale of food and liquor requires registration to local authorities. There is empirical evidence that registration has positive effect on the performance of microenterprises (Masakure, Henson & Cranfield, 2009). Enterprises gain recognition once they are registered and reap the benefits for licensing, taxation incentives and access to support (Sleuwaegen & Goedhuys, 2002). As majority of microenterprises operate in the informal sector, regulation in some cases limits the activities that they may engage in (Rogerson, 2009). Registration remains a challenge for microenterprises especially when the cost

of registration is high (Liedholm & Mead, 1999). Kyobe (2009) suggest that compliance to regulation in small business in South Africa is problematic due to high cost of compliance, lack of awareness, lack of education especially for entrepreneurs in rural areas among others. This demonstrates that compliance is a complex issue involving many factors such as limited business and industry support for SMMEs, economic factors, technological problems and psychological factors i.e. perceptions of entrepreneurs to compliance is that it does not affect their businesses (Kyobe, 2009).

Examples of the legislations affecting SMMEs are Preferential Procurement Policy Framework Act of 2000, Municipal Systems Act of 2000, Broad-Based Black Economic Empowerment Act of 2003 and Small Business Amendment Bill of 2004 (Ponte, Roberts & van Sittert, 2007; SA Yearbook, 2009). Table 2.3 summarises some of the legislations that affect SMMEs.

Legislation	Potential impact on SMMEs
Preferential Procurement Policy Framework Act of 2000	Promote of procurement processes enable participation of SMMEs and utilisation of their products and services.
Municipal Systems Act of 2000	Implementation of Bylaws by Municipalities for regulating the activities for SMMEs and promotion of advancement of social and economies of communities.
Broad-Based Black Economic Empowerment Act of 2003	Promotion of black owned SMMEs to participate in the South African economy.
Small Business Amendment Bill, 2004	Promoting the expansion of SMMEs and creating environment that facilitate economic growth.
Business Act of 1991	Regulation of informal trading through monitoring and implementation of Bylaws e.g. Issue of license to trade for SMMEs.

Table 2.3: South African legislations affecting SMMEs

There is growing evidence that microenterprises have limited awareness of business support programs being implemented by government and other development organisations (Luiz, 2002; Brown & Brown, 2009; Mitrovic & Bytheway, 2009). One of the reasons may be that small business support services are not available in some areas especially rural areas. Mitrovic and Bytheway (2009) further suggest that lack of engagement of all the parties involved in small business support programs result in skepticism on the benefits from the beneficiaries. Another problem is the need for formalisation where microenterprises are required to register their business before they can receive support (Esselaar et al., 2007).

Yet another problem for microenterprises is the HIV/AIDS pandemic which is affecting labour leading to low productivity, loss of production and failure to meet datelines (Fraser et al., 2005). South Africa has one of the highest rates of the spread of HIV/AIDS in the world. Microenterprises are affected in terms of workforce. Microenterprises may face problems in rising expenditure related to workforce such as health care costs, benefits claims, burial fees, training and recruitment (Fraser et al., 2005). In case of single-person businesses, poor health as result of HIV/AIDs may lead to decline or closure of the business (Chao et al., 2007). Table 2.4 summarises the challenges for microenterprises in South Africa.

Category	Examples of challenges	Citation
Resources	Less income, lack of collateral, lack of infrastructure and premises and poor working conditions for employees.	Visagie, 1997; O'Neill & Viljoen, 2001; Rogerson, 2008
Capacity	Low literacy levels, lack of business skills, lack of managerial skills and lack training opportunities.	Chandra et al., 2001; Luiz, 2002
Regulation	Compliance to regulatory and legislative conditions and formalisation requirements.	Esselaar et al., 2007; Kyobe, 2009.
Support	Awareness of support services, lack of access to advice and lack of acceptance in the communities	Luiz, 2002; Mitrovic & Bytheway, 2009
Health	Effects HIV/AIDS pandemic, care costs, benefits claims and burial fees.	Fraser et al., 2005; Chao et al., 2007

Table 2.4: Summary of Challenges for ICT microenterprises in South Africa

2.2.4 South African Government Initiatives

The Government of South Africa recognizes the role of SMMEs in social and economic development. This is evident in the speech made by the Minister of Finance, Honourable Pravin Gordhan in the 2011 Budget speech:

“Small businesses are an important source of jobs. Businesses that employ fewer than 50 workers account for 68 per cent of private sector employment. We need to get our small business sector growing” SA Budget Speech (2011).

In striving to make the economic ecosystem more productive, the government has introduced and implemented a number of initiatives in areas of policy, legislations and regulations. To this end, government departments, private sector organisations and NGOs have developed products and services aimed at supporting the growth of SMMEs and achieve sustainable production (Ngassam, Kandiem, Nkaelang & Modiba, 2009).

At policy level, Growth, Employment and Redistribution (GEAR) and Accelerated and Shared Growth Initiative for South Africa (AsgiSA) were introduced as government policies for promoting and supporting economic growth of SMMEs in 1996. The main objective of GEAR is to support creation of employment and generation of income at household level through SMMEs. The main objective of AsgiSA on the other hand, is to address the business start-up problems for small businesses due to capital constraints by providing funding through financial support programs. Ntsika Enterprise Promotional Agency established in 2004, was merged with Small Enterprise Development Agency (SEDA) and provides services to SMMEs. The services consist of provision of information and business advice, training and funding. SEDA collaborate with other institutions to provide support to SMMEs. Examples of institutions collaborating with SEDA are South Africa Micro-Finance Apex Fund (SAMAF) and Khula which support micro-finance of SMMEs in disadvantaged communities.

At provincial level, municipalities provide services to promote the development of SMMEs. In Western Cape Province, the Department of Enterprise Unit introduced Real Enterprise Development (RED) Door program in 2005. The project aims at increasing the formation of small businesses in disadvantaged communities, increasing entrepreneurial skills development to reduce unemployment, increase graduation of microenterprises to SMEs, increasing survival rate of microenterprises and provide quality support services to small business (RED Door Business Plan, 2004). Table 2.5 summarizes examples of the South African Government initiatives for promoting growth for SMMEs.

Initiative	Focus	Main objective(s)
Accelerated and Shared Growth Initiative for South Africa (AsgiSA)	National	Support SMMEs business start-up through Capital financing.
Growth, Employment And Redistribution (GEAR)	National	Create Employment and generate household income through SMMEs support.
Ntsika Enterprise Promotional Agency	National	Support SMMEs businesses through non-financial services.
Small Enterprise Development Agency (SEDA)	National	Promote and support SMMEs through training, funding and business advice.
South Africa Micro-Finance Apex Fund (SAMAF)	National	Provide support for access to finance for Microenterprises
Khula	National	Support SMMEs in accessing finance services.
Real Enterprise Development (RED) Door Programme	Municipal	Small business formation support through funding and training.

Table 2.5: South African Government SMMEs promotion Initiatives

Other institutions that facilitate regulation in the SMME sector are the South African Chamber of Business (SACOB) and National Small Business Advisory Council (NSBAC). SACOB represents the interests of Small businesses, regulate activities of small businesses and reviews various legislations that affect operations of small businesses. NSBAC provides advice of matters impacting upon small businesses (SA Yearbook, 2009).

2.3 ICT and microenterprises

2.3.1 Definition of Information and Communication Technology (ICT)

To appreciate the role of ICTs in microenterprises, it is necessary to clarify the definition of Information and Communication Technology (ICT). ICT has been used synonymously with Information Technology (IT) and are defined based on context (Qureshi, 2005). The following definitions demonstrate the different definitions of ICT based on context.

“ICT are technologies for capturing, processing, storage and disseminating information” (Duncombe & Heeks, 1999).

“ICT are technologies that connect electronic devices such as PC or laptop with communication facilities such as telephone and other networks” (Michiels & van Crowder, 2001).

“ICT are range of technologies with new arrangements that are flexible, easily adaptable and enable organisations to redefine their social relations and over a long time bring together new technologies and conversational media” (Chapman & Slaymaker, 2002).

“ICT refers to the wide range of computerised information and communication technologies. These technologies include products and services such as desktop computers, laptops, handheld devices, wired or wireless intranets, business productivity software such as text editors and spreadsheet, enterprise software, data storage and security, network security and others” (Ashrafi & Murtaza, 2008).

The discussion joins the debate of ICT on Information Society. ICT as a technology can be viewed from many perspectives as suggested by Orlikowski and Iacono (2001). The different views are as follows:

- *Nominal view*: conceptualise technology to be absent;
- *Tool view*: conceptualise technology as labour substitution tool, productivity tool, information processing tool and a social relation tool;

- *Computational view*: conceptualize technology as an algorithm and model.
- *Proxy view*: conceptualise technology as a perception, diffusion and capital;
- *Ensemble view*: conceptualize technology as a development project, production network, embedded systems and structure.

Singh, Molla, Karanasios and Sargent (2008) provide further insight on perceptions of ICT highlighting theories on technologies such as Instrumentation theory (Feenberg, 1991) which argues that technology is a tool without inherent value; Substantive theory (Feenberg, 1991) notes that technology is not neutral and has positive and negative impact; and Critical theory of technology (Warschauer, 2003) proposes that technology provides an environment of struggle and use of technology is influenced by the context power relations.

This study focused on the conceptualisation of ICT as technology related to labour substitution, productivity, information processing and social relations. The usage of ICT in microenterprises includes use of less sophisticated technologies such as computers, laptops, radio, mobile phones, fax machines, photocopiers, written words in form of manuals, books and newspaper (Duncombe & Heeks, 1999; Duncombe, 2006). In context of microenterprises, ICT is viewed as tools facilitating the flow of information in communication. Communication as a social process provides useful information to people and can be used to create new opportunities for microenterprises (Moyi, 2003). However, for information to be useful it must address the needs of the users (Chapman & Slaymaker, 2002). The details on the information needs for microenterprises are discussed in the next sub-section.

2.3.2 Information needs of microenterprises

Information needs can be described as the requirement for ideas, data, facts and information for certain purposes (Said, 2003). Information is a basic requisite for enterprise creation, growth and survival (Duncombe & Heeks, 2005). Information and knowledge are important for decision making (Mutula & van Brakel, 2006). Moyi (2003) noted that micro and small enterprises face challenges in fragmented and incomplete information. There has been an attempt to address this problem through intermediaries such as telecentres, internet café, public telephones and Multi-purpose Community Centre (MPCC) which use ICT in closing the information gap (van Belle & Truser, 2005; Duncombe, 2006; Fourie & McNamara, 2008). However, successful use of information depends on establishing the needs of the microenterprises by the intermediaries. Consideration should be given to the sources on information, for example agents, suppliers and the microenterprises themselves through social networks. Moyi (2003) further suggests that intermediaries should take into account the existing indigenous knowledge and information and establish the information needs for empowerment via ICT in order to mitigate the problems of failure. Further discussion can arise on effective use of public facilities by microenterprises in promotion of their businesses.

According to Heeks and Duncombe (2002) localized and informal social networks provides business information for microenterprises although the quality of the information may be poor and untimely. Information which can be shared within the social networks for microenterprises which includes information about markets, suppliers and customers. There are three areas where information and knowledge can be significant in contributing towards the livelihoods of microenterprises and reduce poverty (Heeks & Duncombe, 2002; Gunansekera, 2008). The areas are as follows:

- Market support for livelihoods of entrepreneurs: Information about markets linking buyers and sellers and information on product promotion.
- Financing: Information on financial resources such as details on financial schemes, electronic banking or telephone banking.
- Networking: Information on business and social contacts i.e. suppliers' links to community and providers of information and services.

Microenterprises may also need information to fill knowledge gaps or to deal with different situations (Case, 2002). Information needs for microenterprises can be influenced by information behavior. Information behavior is described as follows:

“The totality of human behavior in relation to the sources of information including both active and passive information seeking and information use. Thus it includes face-to-face communication with others, as well as passive reception of information of as in, for example watching TV advertisement, without any intention to act on the information give” (Wilson, 2000).

From this description it can be observed that information can be obtained in both active and passive mode. In active mode users of information are actively involved in searching for information while in passive mode users of information obtain information without actively seek the information. Wilson (2000) suggests information seeking behaviors which should be considered by intermediaries and may be application to interventions for supporting microenterprises:

- Information seeking behavior: seeking information to satisfy a desired goal e.g. information about suppliers and products for resale by microenterprises.
- Information searching behavior: seeking information involving mental activities such as deciding the importance of information.
- Information use behavior: consist of intellectual and physical action in combining with what a person know already.

Information Needs Assessment Model (INAM) can be used to identify the information needs of people living in rural communities. The model can help practitioners to develop ICT solutions that address the information needs of stakeholders (Dhingra & Misra, 2004). The model is based on a number of models summarised as follows:

- Thematic analysis: aimed at understanding the problem to be addressed;
- Profile analysis: analyses the strengths, weaknesses, opportunities and threats to identify areas that require further action to be taken.
- Existing community information systems analysis: analyses what is already working within the community and understand the areas with similar profile and;
- Prioritisation of information needs: help to guide areas that require attention and require developing human capabilities.

Literature also highlights other models of information needs for microenterprises for example Information Need Analysis (INA) (Duncombe & Heeks, 2002). INA suggests potential information needs for microenterprises among others information on finance, technical infrastructure, premises, materials and social infrastructure. Information needs for microenterprises may cover a wide range of issues to include issues surrounding livelihoods because of less separation between business and personal situations (Esselaar et al., 2007). Figure 2.3 summarizes potential information needs for rural communities which also apply to microenterprises. The information needs in context of microenterprises can be summarized as follows:

- Basic needs: information on means for living and services that affect human needs.
- Access to justice: information on rights to operate and engage in business activities.
- Classifieds and entertainment: information on business opportunities and deals related to business activities.
- Government Information: information on regulations, schemes supporting small businesses.
- Daily information: information influencing daily business decisions such as market prices, inventory and weather reports.
- Announcements: information from different sources affecting microenterprises such as self help projects, meetings and other activities.
- Self employment: information on success stories, networking that may support microenterprises.

- Environmental awareness: information on environmental protection guideline is the business activities have an impact on the environment.
- Area profile: information on the potential areas of opportunities for the area.

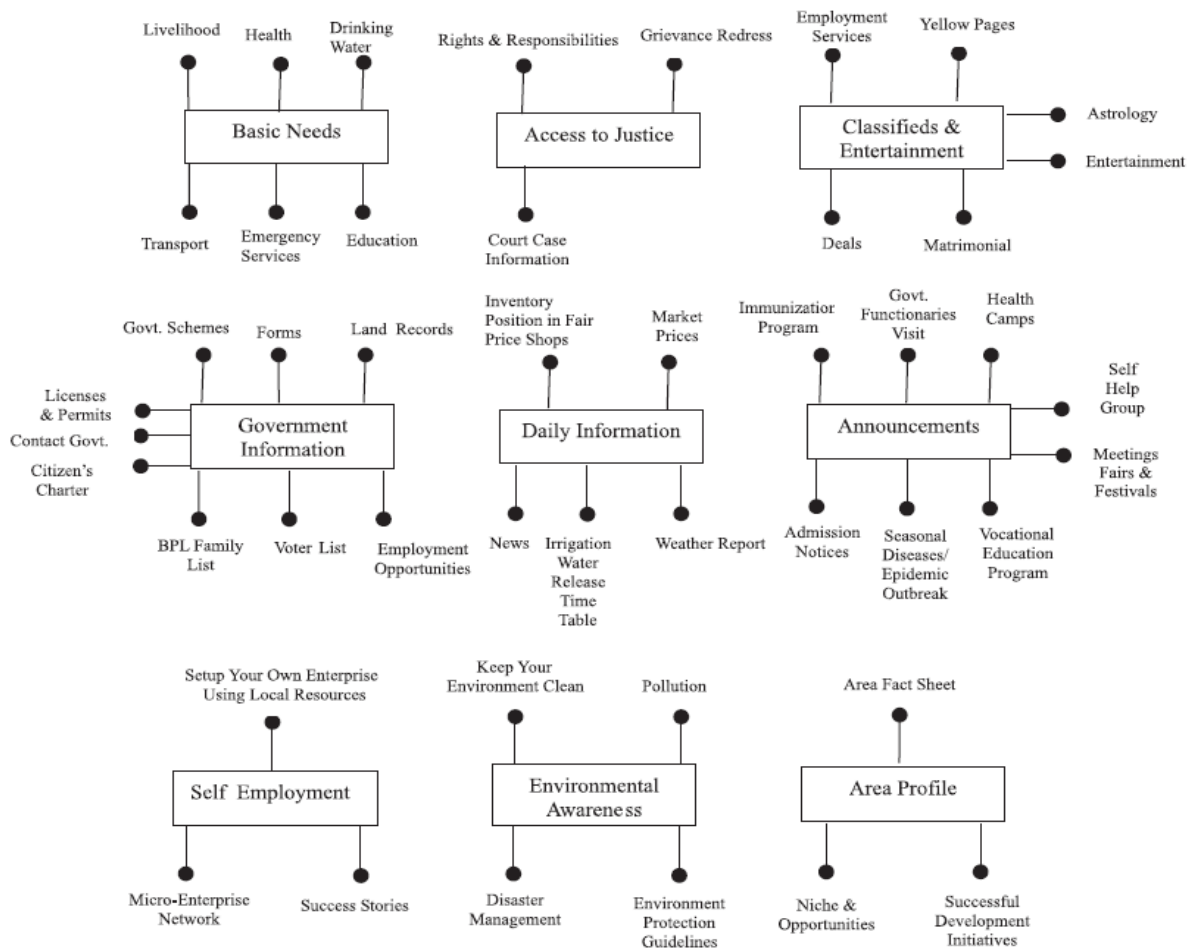


Figure 2.3: Information Needs for rural communities (Dhingra & Misra, 2004)

2.3.3 ICT use in microenterprises

Microenterprises differ in many ways in terms of use of ICT to support their business activities (Duncombe & Heeks, 2005). Their use of ICT are email, internet, fax, telephones, mobile phones and packages such as accounting packages as opposed to more complex applications such as Customer Relationship Management Systems (CRMs) and Enterprise Resources Planning Systems (ERPs) (Bharati & Chaudhury (2006). In developing countries use of ICTs in microenterprises is still limited because microenterprises have limited resources to expand on acquisition and maintenance of ICTs. Those who use ICTs often depend on intermediaries who provide access to ICT facilities (Duncombe & Heeks, 2002). These include local Radio stations, Television, Public pay phones, Information centre services, Government information centres and Non-Governmental Organisation (NGOs) and Community Based Organisations (CBOs). The services provided by intermediaries include e-mail, internet, telephones, fax, computer training, business support and website design (van Belle & Truser, 2005; Parkinson, 2006).

There are a number of factors that may affect use of ICTs for example literacy levels and culture (Duncombe & Heeks, 1999). Literacy levels of owners of survivalist businesses are low and limit the use of ICTs. In a study conducted in Botswana (Duncombe & Heeks, 1999), it was found that majority of the owners of microenterprises (88%) had only primary school education or no

education and 1% had tertiary education. As a result, many microenterprises face problems in using ICTs to access, assess and apply information in their activities.

ICT use in rural communities in developing countries to an extent is also impacted by culture (Parkinson & Ramirez, 2006). Culture affects the way people within communities communicate, collaborate and share knowledge. This may impact on use of ICTs. Majority of African communities are oral-based cultures as opposed to written literature (Rozendal, 2002; Zheng & Walsham, 2008). The communication flow among people follows the oral patterns. However, there has been a rapid growth in use of mobile phones in Africa (Donner, 2006). The use of mobile phones has extended to rural communities where other communication facilities are not readily available. One of the reasons that have led to the growth of mobile telephony is the reduction of cost in using mobile phone as compared to fixed land lines which are not present in most of the rural areas. Oral culture has also influenced the adoption of mobile phone (Brady & Asela, 2008). This has resulted in mobile phones being the most used ICT in developing countries (Esselaar et al., 2007; Molony, 2007; Donner, 2006; Jagun, Heeks & Whalley, 2008). Mobile phones are used for both personal and business purposes. Therefore there is less distinction in terms of separation between business and personal use and utilisation of ICTs by microenterprises (Bertolini, 2002; Donner, 2006). Other challenges faced by microenterprises in using ICTs are discussed in the next section

2.3.4 Challenges in adoption and use of ICT for microenterprises

Microenterprises in developing countries face many challenges in acquisition and use of ICT. Acquiring ICT alone is not sufficient to address the challenges faced by microenterprises. Implementation of ICT requires a combination of a numbers of factors such training, technology and resources to be available for the microenterprises. For the ICT solutions to be sustainable there is need to also consider economic, social and human factors (Qureshi, 2005). Walcott et al. (2008) grouped the challenges faced by microenterprises into the following six categories: capabilities, resources, access, operational and attitude (see Figure 2.4).

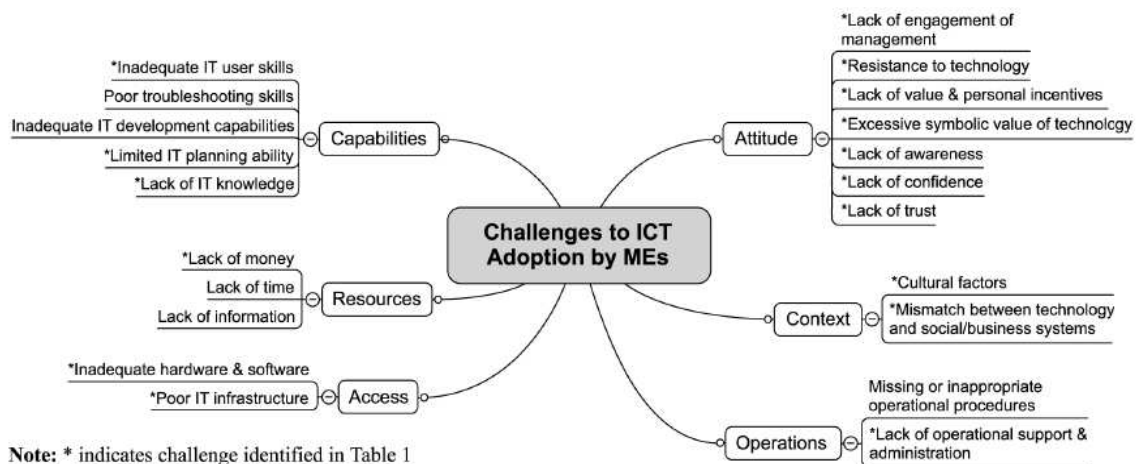


Figure 2.4: Challenges for microenterprises in ICT adoption (Walcott et al., 2008).

Capability challenges include lack of skills to use ICT, limited IT skills for planning, lack of knowledge on appropriate selection of ICTs and in adequate IT development capability. Harindranathan, Dyerson and Bannes (2008) concur with the view that owners of microenterprises have limited awareness of the benefits derived from using ICTs in their activities. Duncombe and Heeks (2002) noted that owners of microenterprises rely more on social contacts in their locality and to some extent, used institutional networks and business networks. To overcome this challenge, it is imperative that the microenterprises be made aware about the potential benefits of ICT usage. Intermediaries may play a significant role in ensuring that microenterprises are aware of the benefits of using ICT (Heeks, 2002).

Resources challenges are lack of resources in terms of time, information and financial resources. Although government and funding agencies might implement initiatives to support SMMEs e.g. business support information, ICT skills training, information on microfinance etc. majority of microenterprises are not aware of the services (Moyi, 2003; Brown & Brown, 2009). Consequently, majority of the SMMEs do not invest in ICTs and are not able to reap the benefits provided by ICTs.

Attitude challenges deal with resistant to technology, lack of engagement of management, lack of confidence to use ICTs. Due to fear of technology, microentrepreneurs perceive that ICT use would cause a knock-on effect on their business and prefer to opt out in adoption of ICTs. Context challenges include cultural factors and mismatch between technology and social systems. Culture influences the perceptions of the benefits of using technology in business activities (Walcott et al., 2008).

Operational challenges are lack of adequate support to implement and maintain ICTs. Microenterprises are often characterised by low revenue and this makes it difficult for them to acquire ICTs that require considerable financial investment (Donner, 2006). Due the limitations of financial resources, majority of the microenterprises cannot afford to employ IT specialists or services of IT specialists (Johnston, Kabanda, Adams & Davids, 2008). This partly contributes to the reasons for not adopting ICTs. Intermediaries may play an important role in providing necessary skills to use ICTs through training and operational support.

Table 2.6 summarizes the challenges to ICT adoption and suggestions on how to overcome them. The solutions are focused on the intermediaries who provide support to microenterprises and ensure that capabilities and competencies of ICTs are realized.

Challenge for ICT adoption	Proposed solutions
Capabilities	Intermediaries to provide skills necessary for effective use of ICT (Harindranath et al., 2008)
Resources	Identify the information needs for microenterprises using Information Needs Assessment Model (Dhingra & Misra, 2004)
Attitude	Awareness of benefits of adopting ICTs through promotions and training (Kamal et al., 2009)
Operational	Intermediaries to provide support during implementation (Heeks, 2002).

Table 2.6: Summary of Challenges for ICT adoption and proposed solutions

2.4 South Africa ICT context

In recognition of the role of ICT as an enabler to socio-economic development, the Government of South Africa through the Department of Trade and Industry (DTI) and development agencies has developed the National ICT Strategy. The main objective of the strategy is to promote adoption and diffusion of ICT in promotion of social and economic development. A number of government departments and agencies are involved in the implementation of the strategies. Such departments include State Information Technology (SITA) and Government Communication and Information Systems (GCIS) (Bridges.org, 2002). The National ICT strategy is being implemented by SITA with support from the Canadian International Development Agency (CIDA) (SAIT, 2002).

The Government has passed legislations to promote and support the development and use ICT in areas of Education, Health and SMMEs. The legislations include Electronic Communication and Transactions Bill of 2002, Telecommunications Act of 2001, Promotion of Access to Information

Act of 2001 among others. The main objectives of the legislations in relation to support for ICT use are as follows:

- *Electronic Communication and Transactions Bill* (2002) aims at creating a robust and sustainable ICT sector increase in use of ICT to achieve social-economic development, supporting the creation of ICT workforce and creating a best ICT innovation system. As a result of this legislation, initiatives by government and private sector have been introduced in under privileged communities to support microenterprises in achieving growth through capacity building in effective use of ICTs.
- *Telecommunications Act* (2001) aims at regulating the telecommunications sector and licensing of telecommunications providers to ensure fair competition, growth, development of infrastructure to low teledensity areas and ensuring improved access of telecommunication facilities at reasonable prices for consumers.
- *Promotion of Access to Information Act* (2001) gives the right to access information held by public or private organisation. The act aims at promotion of accountability and transparency which are vital in achieving sustainable development (Bridges.org, 2002; Baskaran, Muchie & Maharahj, 2006).
- *Regulation of Interception of Communication and Provision of Communication-Related Information Act* (2009) makes a provision for law enforcement agencies to have the rights for inception of communications in cases involving serious crimes. In this regard all telecommunication services providers are required to record and store information of all SIM cards and Cellular phones within the 12 months of commencement of the services. All cell phone users are required to register their cell phones and SIM cards.

The Government of South Africa has also implemented initiatives to support the growth of SMMEs. The initiatives also involve the private sector, Provincial Governments and NGOs. Table 2.7 summarizes examples of ICT initiatives supporting SMMEs development.

ICT Initiative	Description
National ICT awareness	Department of Communication (DoC) conducts awareness campaign requesting for telecommunication services to be provided in marginalised communities.
Gateway Project	Through SITA the government aims to provide its services to the public through online services. Implemented in Gauteng and Western Cape provinces.
Telecoms Business Unit	Liberalisation of the Telecommunication Sector led to the establishment of the Telecoms Business Unit under DoC to oversee formulation of policies, laws and licensing of SMMEs in the ICT sector.
The GODISA Programme	In collaboration with the EU (European Union) and DTI, GODISA offer support to SMMEs in areas of technology innovation. Its main aims are to increase economic growth and promote creation of employment.
Technology for Women In Business (TWIB)	Aims at promoting ICT and IT entrepreneur skills for women small owned businesses through capacity building and technology transfer.
SEDA Technology Program	Aims at developing supporting growth and reducing failure of SMMEs through promotion of ICT innovations and increased access to ICTs.

Table 2.7: South African Government ICT Initiatives (Baskaran et al., 2006).

Interventions in promoting growth of the telecommunications sector have also been implemented. The Government through the Department of Communications (DoC) has facilitated liberalisation of the Telecommunications sector and promote fair competition within the sector. The liberalisation has resulted in new entrants into the market. This has the potential of bringing down the prices. This has resulted in a number of providers competing and offering services at reasonable prices and they include Telkom, Vodacom, MTN, Virgin, Neotel and Cell C. This has also led to development of infrastructure (composed of digital, microwave and optical fibre networks) and cost of calls for local and international being reduced. As result, there is a positive impact on access to ICT to low income households in disadvantaged communities and the economy as a whole (Baskaran et al., 2006).

2.5 Benefits of ICT use in microenterprises

There are potentially advantages of using ICTs for microenterprises (Brynjolfson & Hitt, 2000; Qureshi, 2005; Esselaar et al., 2007; Ashrafi & Murtaza, 2008). The benefits include improved access to markets, administrative efficiency, labour productivity, profitability, reduction to poverty, market value, market share, improved access to information among others.

Microenterprises may use ICT to access global markets and other resources such as information on awareness of trade issues, participate in bargaining and publish information (Gurstein, 2007). At local level, microenterprises have the opportunity to reach many customers at low cost, for example, using a website, social networking, telephones and mobile phones thereby utilizing their social capital (Moyi, 2003; Good & Qureshi, 2009).

ICTs may also facilitate better access to information for microenterprises to make more informed decisions (Mutala & van Brakel, 2006). Information has become paramount for the success of microenterprises. Knowledge on how to effectively use resources for production of goods and services is acquired and shared using ICTs. Microenterprises can plan, organise, control their activities to achieve their goals in the information society environment in a more productive way (Mutala & van Brakel, 2006; Ramsey et al, 2003).

A study by Wolf (2001) confirms that use of ICT improved labour productivity of workers as opposed to the tasks being done manually. Using ICTs provides microenterprises an opportunity to develop new skills which can enable them to stay competitive. This results in increase of output and quality of products or services (Brynjolfson & Hitt, 2000). Microenterprises are able to perform their business activities more effectively when using ICT as compared to using manual systems. Activities that can be supported by using ICT include preparation of finance records or business plans used in obtaining loans, communicating with customers, suppliers or other organisations using e-mail, fax, telephone or mobile phone rather than going in person and sourcing business information using the internet (Kamal & Qureshi, 2009).

ICT use in microenterprises may affect their expected outcomes as a result of engaging in business activities. ICT use promotes economic growth and enhances attainment of sustainable livelihoods by enabling microenterprises to explore more opportunities. Appropriate application of ICT use in microenterprises in this context can help to reduce poverty (Duncombe & Heeks, 2002; Krishna & Walsham, 2005). Furthermore, Kamal and Qureshi (2009) suggest that appropriate use of ICTs in microenterprises may lead to enhanced competitiveness and increase their chances of survival. Determining impact for ICT use in context of microenterprises is discussed in the next sub-section.

2.6 Assessing impact of ICT use

In context of microenterprises, ICT as a technology can be conceptualized as a tool and has potential consequences (Orlikowski & Iacono, 2001). As an innovation, technology has potential consequences which take many forms and affects both change agents and adopters (Sveiby et al., 2009). The consequences could be desirable or undesirable, direct or indirect and anticipated or unanticipated (Rogers, 2003; Sveiby et al., 2009). In the same light, implementation of ICT can result in the desired outcome as the aftermath of purposeful action or change which is undesired

for example social exclusion, digital divide, challenge of authority, power relations etc. hence the need to assess the impact of ICT.

Grunfield (2007) noted that in attempts to establish impact on projects different terms have been used in literature such as appraise, evaluate, assess, measure and monitor. The corresponding terms such as result, outcomes, cost-benefits and goals achievement are also used interchangeably. To clarify the confusion on these terms, reference is made to the value chain (Heeks & Molla, 2008). The chain value is based on input-process-output model and highlights the main areas that can be used for assessments such as readiness (precursors and inputs), availability (deliverables), uptake and impact (in form of outputs, outcomes and development impact). Figure 2.5 illustrates the interaction between the elements in the value chain model.

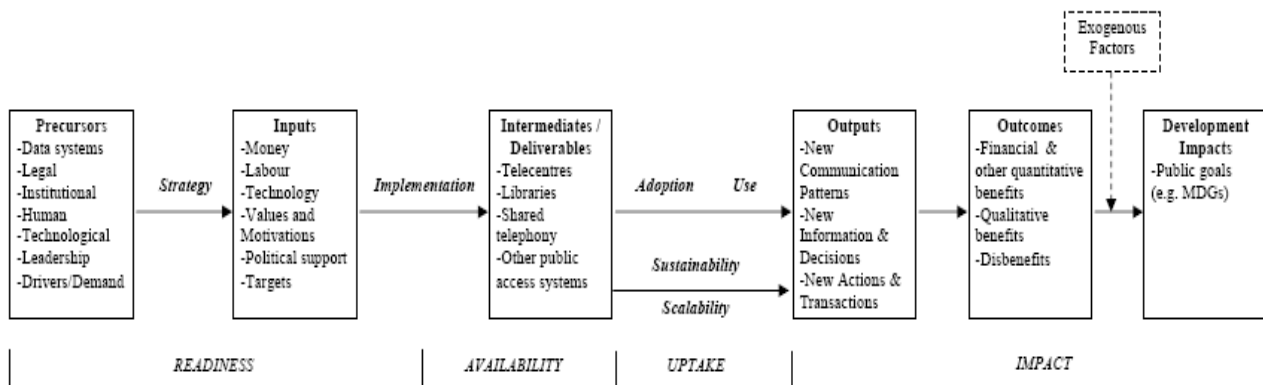


Figure 2.5: Value chain (Heeks & Molla, 2008)

In context of ICT, impact is defined as “*the change in the ability of people to satisfy their needs brought about by use of technology*” (Menou, 1998). Understanding impact is challenging as argued by Perkinson and Ramirez (2006), because of limitations in causal direct link between intervention and the benefits, especially when indicator or basis of outcomes is not clearly defined. Perkinson and Ramirez (2006) further argue that the current landscape of literature on impact of ICT is characterized by positive aspects, quantitative measures (statistical indicators and econometric approaches) and without deeper understanding of realities on the ground. Consequently, there is need to understand impact at different levels of the society such as meta level (global), macro level (national), meso (sectoral), micro (organisational) and individual levels (Heeks, 2006). Comprehensive assessment of impact is also desired with methodical approaches to ensure that all dimensions of consequences of ICT use are noted (Heeks, 2002). Adam and Wood (1999) suggest examining interpretations of users of ICT based on their knowledge structures and social interactions. On a similar note, Stoll and Menou (2002) noted that narratives on use of technology provide rich insights and allow relevant information to emerge. Therefore, impact of ICT use in microenterprises can be assessed in consideration of the different dimensions of consequences of technology as an innovation.

2.7 Summary

Microenterprises are important in the economy of developing countries. In South Africa, the success of microenterprises may improve socio-economic development and bridge the tiers in the economy. ICT use in microenterprises may increase their chances of survival and growth. However, ICT use in microenterprises is not straight forward. Microenterprises face many challenges. Impact of using ICT in microenterprises needs to be understood so that problems faced by microenterprises can be minimized.

Chapter 3

Theoretical framework

This chapter looks at theoretical background to the study focusing on SLA. Justification for selection of the theoretical framework is also discussed. A conceptual model is presented and lessons learnt from previous studies that have employed SLA. Finally, a summary of knowledge gaps identified from literature are presented.

3.1 Theoretical frameworks considered for the study

A theoretical framework is a set of empirical theories or quasi-theories of social process which exists at different levels and can be used to understand a phenomenon (Anfara & Mertz, 2006). The building blocks of a theory are a set of inter-related concepts, definitions and propositions that presents a phenomenon. A theory also contains empirical parts of data and together forms a conceptual framework which can be applied in different contexts (Cohen, Manion & Morrison, 2000). In qualitative studies, theory can be used to explain phenomena under investigation, guide the researcher on problems to be investigated and the way the study will be conducted (Cresswell, 2003; Anfara & Mertz, 2006).

In an attempt to understand problems related to ICT use and its impact beyond technological issues, three theoretical frameworks were considered namely ICT diffusion index (United Nations, 2005), Input-Output-Outcomes (ITU, 2006) and Sustainable Livelihood Approach (SLA) (Duncombe, 2006). ICT diffusion index is designed to evaluate ICT diffusion in relation to development based on diffusion indicators. The two ICT diffusion indicators are connectivity and access. Connectivity measures ICT infrastructure in terms of per capita for example, number of internet hosts per capita, personal computers per capita, number of telephones per capital and number of subscribers per capita. Access measure the opportunity of being connected to ICT infrastructure by looking at number of internet users, adult literacy rate, cost of local calls and GDP (United Nations, 2005).

Input-Output-Outcome model (ITU, 2006) aims to measure impact of ICT on social development based on the Millennium Development Goals (MGDs). The key elements of the model are inputs, outputs and outcomes. Inputs are financial and others resources spent on ICT. Outputs are the direct results of inputs that produce new activities or products and services. Outcomes are the measure of use of ICT and the impact made. These elements are compared with components of the MDGs such as eradication of hunger, universal primary education, gender equality, reduction of mortality rate etc. The model can be used by countries and organisations.

In order to understand the impact of interventions concerning livelihoods, the SLA is used as theoretical tool for evaluation, monitoring and analyzing policies for interventions that affect livelihoods of disadvantaged communities (Chambers & Conway 1991; Ellis, 2000). It applies outcomes such as more income, improved well-being, less vulnerability as indicators for assessing a combination of various factors affecting livelihoods such as assets and capabilities, support from institutions and organisation and strategies taken to prevent and deal with conditions that may lead to hardships (DFID, 1999). Details for the SLA are discussed in the next sub-section. Table 3.1 compares indicators from the three models that have been discussed which can be used to assess impact.

Model or Framework	Focus	Indicators	Comments
ICT diffusion Index (United Nations, 2005)	Macro	National Indicators <ul style="list-style-type: none"> • Connectivity • Access • Policy 	Focuses on macro level outcomes for on ICT infrastructure and access.
Input-Output-Outcome (ITU, 2006)	Macro	Millennium Development Goals <ul style="list-style-type: none"> • Eradicate poverty and hunger • Universal primary education • Promote gender equality • Reduced mortality rate • Improve maternal health • Combat HIV/AIDs • Environmental sustainability • Develop global partnership 	Attention is on macro level goals based on Millennium Development Goals.
Sustainable Livelihoods Approach (Duncombe, 2006)	Micro / Macro	Outcomes <ul style="list-style-type: none"> • More income • Improved well-being • Reduced vulnerabilities 	Depending on context of evaluation, SLA can be applied at macro level as well as micro level.

Table 3.1: Summary of potential models/frameworks for ICT impact assessment

3.2 Sustainable Livelihood Approach (SLA)

SLA emerged from the development discipline during the policy debate on Brundtland Commission Report of 1987. Many authors have provided the definition of sustainable livelihood (e.g. Chambers & Coonway 1991; Carney, 1998). Definition for Sustainable Livelihood depends on context. In the context of microenterprises Sustainable Livelihood is defined as follows:

“A livelihood is a means of gaining a living including livelihood capabilities, tangible assets and intangible assets” (Chambers & Conway, 1991).

“A livelihood comprises of assets (natural, physical, human, financial and social) activities, access to these (mediated by institutions and social relations) that together determine the living gained by the individual or household” (Ellis, 2000).

From these definitions it can be noted that a livelihood is considered as a means to living. A livelihood is considered sustainable if it can recover from vulnerabilities by being able to continue supporting capabilities and use of assets (Chambers & Conway 1991; Ellis, 2000). The framework consists of the following elements: vulnerabilities, assets and capabilities, structures and processes, strategies and outcomes (Chambers & Conway, 1991; Chapman & Slaymaker, 2002). The elements are used to holistically analyse the link between strategies and activities with the livelihood.

Vulnerabilities are external factors that can affect people leading to hardships and examples are conflicts, social exclusion, lack of employment, natural disasters and seasonal changes (DFID, 1999). There are three forms of factors that may lead to households or communities being vulnerable and they include the following:

- *Trends*: long term factors affecting livelihoods of households at a large scale i.e. changes in national economy, population and technologies.
- *Shock*: may be predictable or unpredictable factors i.e. epidemics, natural disasters and conflicts.
- *Seasonality*: the change in seasons which may result in variations in prices of commodities, food availability, health and employment opportunities.

Assets are the resources that are used by households or communities to produce services and products in order to sustain their lives. Assets are *inter alia* human capital, social capital, financial capital, natural capital and physical capital (DFID, 1999, Chapman & Slaymaker, 2002). These are described as follows:

- *Human capital*: skills and knowledge that people have and use to achieve their livelihoods;
- *Social capital*: the social relations that people have and influence their actions i.e. membership to organisations;
- *Financial capital*: items of value which people use to establish livelihood activities i.e. savings, cash and access to loans;
- *Natural capital*: natural resources used by households to achieve livelihood goals i.e. land, water, wildlife and biodiversity;
- *Physical capital*: resources created through economic production process i.e. infrastructure such as roads, power lines and telecommunications.

Increase in access to capital can lead to more sustainable livelihood (Ellis, 2000). Structures comprise of organisations and institutions that provide support for attainment of sustainable livelihood for households or communities. Institutions support rules, norms and values that shape livelihoods and are formed as a result of political and policy debates. Their aim is to provide support to livelihoods of households and communities in areas of legislation, governance and regulation. Organisations support implementation of livelihoods interventions. For example, implementation of plans, services and activities in collaboration of institutions at policy level and communities at grass root level (DFID, 1999). Examples of organisations and institutions are government departments, NGOs and CBOs (DFID, 1999). Strategies are the activities that are carried out by households or institutions in response to factors affecting a livelihood (Ellis, 2000). Using assets and applying strategies households or communities may achieve outcomes. Examples of outcomes are improved well-being, increased income, access to resources, restored human dignity and reduced vulnerability (Duncombe, 2006). Figure 3.1 illustrates the relationships of the elements of the model.

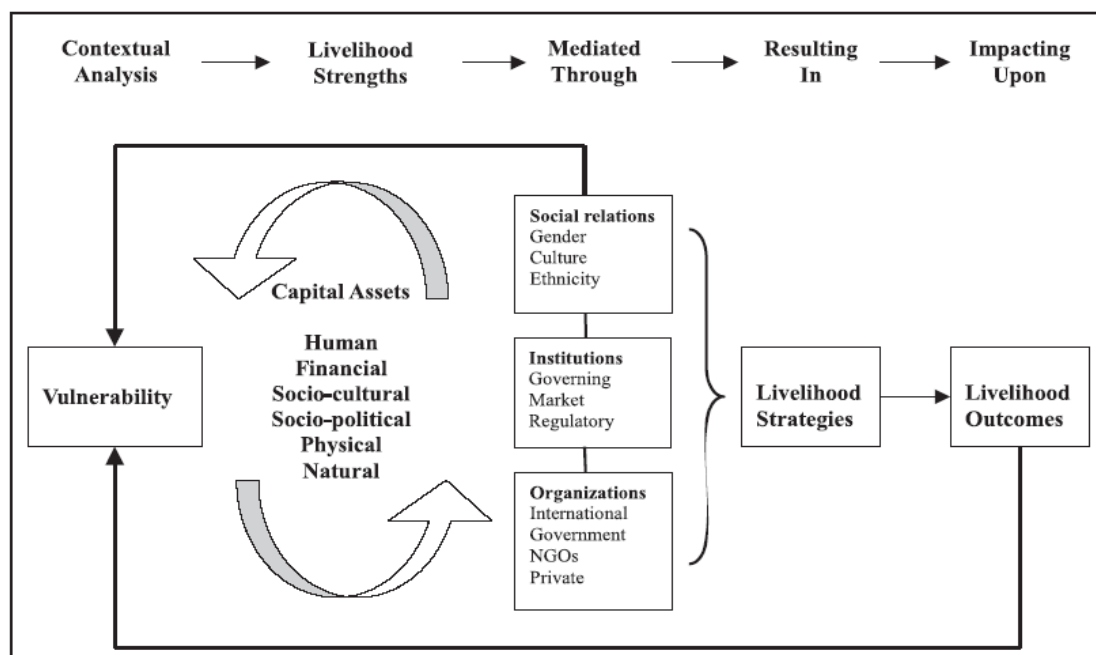


Figure 3.1: Sustainable Livelihood Approach model (Duncombe, 2006)

Since its introduction in the late 1980s, the SLA has been used by practitioners and researchers in different disciplines including Government Departments and NGOs such as United Kingdom Department of International Development (DFID), Oxfam, CARE and United Nations Development Program (UNDP). The early framework emphasized on development in the importance of citizen participation, self-reliance and sustainability and ecological constraints among the disadvantaged communities. Later the approach considered other concepts such as capability (Sen, 1999), equity and sustainability (Chambers & Conway, 1991).

Capability approach is used to evaluate standard of living focusing on analyzing social arrangements, inequality, poverty, justice and well-being (Comim, 2001). This is achieved by looking at key components that relate to human development which are functionings, capabilities and freedom. The elements are summarised as follows (Sen, 1999; Alampay, 2003; Grunfield, 2007; Heeks & Molla, 2008; Zheng & Walsham, 2008; Zheng, 2009):

- *Functionings*: are the achievements of person and they relate to their living conditions. Functioning reflect a numbers of variables for an individual in terms of what they are able to do or not.
- *Capabilities*: is what a person is free and able to do in terms of agency and well-being. Agency is the freedom to follow personal goals and interest's e.g. religious freedom and political participation. Well-being include good health access to education and respect, among others;
- *Freedom*: are the decisions and opportunities that people have to take action in a given personal and social situation. Persons freedom comprise of having capabilities as well as the opportunities and make choices about their living;
- *Commodities*: are the means through which people exercise their well-being and agency in form of goods and services.

The SLA deals with some of the areas of capabilities that are important in addressing human development i.e. economic, political social, information and security. One of the changes to SLA is consideration of the role of information and ICT (Duncombe, 2006). ICT is regarded as a commodity that helps people on what they are able to do and shaping their characteristics into capabilities. ICT-based capabilities such as social infrastructure, health, education, relations of social capital and power can also lead to functionings that will influence individuals choices e.g. preferences and social norms (Heeks & Molla, 2008). By considering the social and environmental dimension, the SLA addresses issues of technology and empowerment (Duncombe, 2006).

Part of understanding the context of livelihoods may include awareness of problems faced by households and communities. Carney (1999) suggests the need for awareness of centrality of vulnerability both internal and external to the livelihood. Consequently, problems in this case may be regarded as internal to the livelihoods of household and communities. The role of ICT is significant in assessing the vulnerabilities and problems in accessing information that may lead to decisions for taking action (Duncombe, 2006).

One of the important variables of the SLA is the consideration of people as actors and stakeholders (Chambers & Conway, 1991). The approach promotes involvement of people at grassroot level as stakeholders. People are considered within the SLA, for example, in terms of vulnerabilities that households are subjected to; the resources households' posses; the social ties that households have within their community; the support they get from authorities and the results of using assets and interventions by authorities as outcomes. Institutions and organisations implementing policies or initiatives involve should the beneficiaries and other stakeholders. The beneficiaries should be engaged in data collection and analysis to ensure that there is a clear understanding of their livelihood needs.

3.3 Role of Information and ICT in the approach

ICT and information play an important role in sustainable livelihood. ICT support communication, acquisition of information and sharing of knowledge. Information can be used for making short-term and long-term decisions for livelihoods (Chapman & Slaymaker, 2002). Information supports two

roles namely analytical and functional (Duncombe, 2006, Parkinson & Ramirez, 2006). The analytical role centres on how information is accessed, analyzed and used to develop livelihood strategies. The functional role focuses on information use to ensure outcomes are successfully achieved. Within the SLA these roles can be applied in the vulnerability contextual analysis, livelihood strengths (capital assets and strengths) which are mediated through social relations, institutions and organisations (Duncombe, 2006).

Information for long-term decision is usually provided through formal means by institutions and organisations for example Government departments, NGOs and CBO through education, support and training. Information for short-term decisions is usually mediated through informal means such as social networks and personal contacts to support decision making for immediate needs (Heeks, 2002). To achieve the desired outcomes, information must be communicated at all levels of livelihood intervention. Information generated as a result of interactions and feedback should support learning for stakeholders involved in the livelihood (Pasteur, 2001). The dual role of information (analytical and functional) is summarized in Table 3.2.

Element	Information role	Description of role
Contextual Analysis	Analytical	Data collection and analysis to identify vulnerabilities affecting individuals or households.
	Functional	Providing information to individuals or households to take action on vulnerabilities.
Livelihood strengths	Analytical	Measuring the strength of households in terms of their resources or assets (social, physical, financial, human and natural).
	Functional	Providing information to households on how they can strengthen their livelihood through assets.
Mediated through	Analytical	Mediates information about livelihoods.
	Functional	Information is required for livelihood processes to be executed and structures to function.
Strategies and Outcomes	Time frame	Information support short-term and long-term decisions for livelihoods.
	Content	Information for livelihoods can be mediated through formal and informal means.

Table 3.2: Summary of Information role in Sustainable Livelihood Approach (Duncombe, 2006)

3.4 Justification for choice of framework

SLA is ideal for assessing impact of ICT use in microenterprises. SLA holds the view that livelihoods involve more complex systems beyond technology. For example, the role in supporting livelihoods of microenterprises is not limited to access to use ICT but involves non-technology aspects such empowerment and social exclusion (Parkinson & Ramirez, 2006). SLA key features supports understanding of context in terms of context of livelihoods, people's capabilities and resources, actions taken by the people and institutions and organisations. ICTs and information are also significant in the process hence the need to understand the impact of using ICT.

Microenterprises are perceived to be an option for alleviating poverty especially in marginalised communities leading to social and economic development (Kamal & Qureshi, 2009b). SLA deals with the understanding of poverty and encompasses capabilities and empowerment (Chambers & Conway, 1991; Cahn, 2002). Capabilities may include resources that people have while

empowerment are the choices that people are able to make and may be transformed into desired action (Sen, 1999). The other models that haven't looked at focus more on bridging the gap on digital divide for example, focus on quantitative measures on number of people having access to ICTs which might not reflect impact on the lives of people in terms of empowerment.

The core principles of SLA support interactions and diversity of livelihoods involving individuals, households, communities with socio-economic, political and cultural (Carney, 1999). The principles are people-centred approach, support for holistic analysis, dynamics consideration, micro-macro linkages and support for sustainability described as follows:

- *People-centered approach*: SLA promotes participation of people or households by the looking at their needs, opportunities and priorities to come up with feasible responses. In using ICTs, people are able to access and use information that addresses their needs in an effective and efficient way. Institutions and organisations that are involved in livelihoods also use ICT to collect and disseminate information to the people. In this way there is an effective flow of information and also an active participation of all stakeholders (DFID, 1999; FAO, 2002).
- *Holistic Analysis*: To assess the results of the livelihood interventions in a more successful manner, SLA provide options to link the perspectives of lower level actions and higher level policies and processes. There is recognition of multiple influences of livelihoods of households and their impact. Therefore, the approach supports integration of stakeholders or actors, strategies and outcomes. People affected by the strategies have the opportunity to negotiate about the outcomes themselves (FAO, 2002).
- *Dynamics consideration*: In response to changes within the livelihood, the approach takes into consideration change and learns from the processes to help minimize the negative outcomes. The role of institutions and organisations as external parties is to understand the dynamic nature of livelihood strategies of the people. Therefore, there is flexibility and consideration in response to the people's challenges and commitment to long term support (McNamara & Gunasekera, 2008).
- *Micro-macro linkages*: The approach aims at closing the gap between policy context and peoples experiences through micro-macro linkages using a bottom-up approach. Institutions supporting livelihood policies work hand in hand with individuals and communities affected by the livelihood strategies. This arrangement fosters successful implementation of livelihood projects. This is critical since the majority of ICT4D projects in developing countries fail because of lack of consideration of the role of participants (Heeks, 2002).
- *Sustainability*: The approach fosters innovation partnership between all stakeholders and ensures that the livelihood are sustainable to face shock and stress by maintaining long term productivity of resources (Arun et al., 2004). Therefore consideration is taken on the initiatives to address the on-going needs of people and without compromising future needs (UNDP, 2005).

Critics of Sustainable Livelihood Approach argue that the approach has limited link to information and ICT because of multiplicity of potential independent, dependent and intervening variables when analyzing the relationships among the elements in the framework. However, there are more benefits of using the framework than realised (DFID, 1999; FAO, 2002; Duncombe, 2006; Singh, Molla & Sargent, 2008). The SLA variables allow wider perspective of analysis for livelihood of a context under study (Krantz, 2001; Arun, Heeks & Morgan, 2006).

3.5 Application of Sustainable Livelihood Approach in research

3.5.1 Previous IS research that applied SLA

There are a number of empirical studies that have been conducted using the SLA to assess the impact of using ICT on the livelihoods of microenterprises and disadvantaged communities. This is evident in the growing number of studies in ICT for development (ICT4D). This sub-section discusses the studies that have employed SLA and lessons learnt.

Perkinson and Ramirez (2006) conducted an impact assessment of ICT impact on telecenter users. The study used two case studies in Canada and Columbia and employed SLA as the impact assessment tool. They found that ICT usage was indirectly related to people's livelihood. For example, the people who were unemployed did not use the internet to find work and regard the use for this purpose as not appropriate. Telecentres were linked to secondary economic strategies e.g. learning new skills that could be used to find formal employment and contacts with relatives. The study did not consider all the elements of the SLA e.g. outcomes.

Using SLA Duncombe (2006) noted that gender of the owner and operating location are examples of vulnerabilities that can impact microenterprises. The study analyzed the impact of ICT application for poverty reduction in microenterprises using the SLA. The results indicated that ICTs can strengthen delivery of strategies among the poor for their livelihoods.

Molla and Al-Joghoub (2007) conducted impact assessment of three government-supported telecentres in Jordan. The study focused on livelihoods of individuals and development outcomes. The study assessed the impact of access to Government funds and social links. The findings indicated that ICT was used in the following areas: education and empowerment of women; access to government funding supporting entrepreneurs; and skills development for women.

Soriano (2007) used SLA to assess the impact of ICT use focusing on the role of telecentres in enhancing livelihood strategies for communities. The case studies were carried out in China. The findings indicated that Telecentres played an important role in reduction of poverty through enhancement of rural livelihoods by providing access to information and knowledge using ICTs. Use of the telecentres by the community required leadership commitment and motivating the people to overcome fear of technology.

ICT initiatives can contribute to human development if aligned with development programs. This is demonstrated in a study conducted in three communities in Kwazulu Natal, South Africa aimed at identifying the problems for increasing information and structural equality in accessing ICT for development (Ngcobo & Herselman, 2007). Technology Achievement Index (TAI) concept was used in the evaluation of provision of ICTs in rural communities. The focus of the analysis was based on the components of TAI namely creation of technology; diffusion of recent innovations; diffusion of old technologies and human skills (UNDP, 2001). The study recommended that information resources utilisation problems should be addressed in three dimensions namely technology, institutional and policy.

Other studies that have looked at the impact of ICT on livelihood include (Grunfield, 2007; Forie & McNamara, 2008; McNamara & Gunasekera, 2008; Singh, Molla & Sargent, 2008). Table 3.3 summarizes examples of studies that have used the SLA as a theoretical lens for assessing the impact of using ICT and other similar studies.

Study	Domain	Key findings
Duncombe (2006)	Microenterprises	<ul style="list-style-type: none"> • Vulnerabilities such as gender and operating location can affect microenterprises in achieving sustainable livelihood. • ICT initiatives should support information and communication needs of the microenterprises.
Perkinson & Ramirez (2006)	Telecenter	<ul style="list-style-type: none"> • Telecenter users did not fully utilise the facilities for business purposes. • ICTs were used in secondary economic activities for their livelihood.
Soriano (2007)	Telecenter	<ul style="list-style-type: none"> • Telecenter helped to improve livelihood of people living in rural communities. • Fear of technologies could be reduced by capacity building initiatives by the intermediaries.
Ngcobo & Herselman (2007)	Rural Communities	<ul style="list-style-type: none"> • Impediments to utilisation of ICT in rural communities include lack of resources, skills and knowledge and lack of local language content. • The identified problems can be resolved in consideration of technological, institutional and policy strands.
Fourie & McNamara (2008).	Rural Communities	<ul style="list-style-type: none"> • ICTs in rural communities should be provided in consideration of needs of the stakeholders. • Participatory approach, appropriate technologies, capacity building, skills training and support should be considered to achieve sustainable livelihood.
Sighn, Molla & Sargent (2008)	Rural Communities	<ul style="list-style-type: none"> • The outcomes of impact of ICT in e-learning and e-government are influenced by livelihood assets e.g. financial, physical and human capital.

Table 3.3: Summary of studies that have employed SLA

3.5.2 Lessons learnt from previous studies

Having looked at the existing literature on assessing the impact of ICT use in developing countries, a number of observations can be made. These include relations of findings in impact of ICT use, impact assessment, approaches used in impact assessment and variations in application of SLA framework variables discussed in the subsequent paragraphs.

(a) Relations of findings in ICT use impact

SLA has been applied in different context to assess the impact of ICT use. Referring to the studies that have been analyzed, the use of the framework ranges from studies involving microenterprises, telecentre and rural communities. The findings in these studies vary significantly. Impact assessment of telecentres (Parkinson & Ramirez, 2006) highlights less impact of ICT use in relation to economic benefits. The positive impact of ICT use is on secondary economic strategies. Soriano (2007) indicates that ICT use impacts positively to the telecentre users in improving their livelihoods. The study by Duncombe (2006) also indicated positive impact of using ICT in

livelihoods of microenterprises. Other studies that have looked at microenterprises used different frameworks for example Cobb Douglas production function (Wolf, 2001), formality index (Esselaar et al., 2007) and Actor Network Theory (Rhodes, 2009), hence the need to conduct comparative studies using the SLA.

(b) Approach used in impact assessment

In the studies that have been analyzed, it was found that case study approach was commonly used in assessing the impact of ICT use in microenterprises, telecentres and rural communities. Case studies were deemed suitable because they relate to real-life situations and helped the researchers to understand the context (Woodside & Wilson, 2003). Multiple data collection techniques such as interviews, observations and use of questionnaires were applied. The approach supported in-depth understanding of the context and the problems that were being investigated (Baxter & Jack, 2008).

Both SLA model and case study approach support collaboration between researchers or practitioners and participants or respondents. In the perspective of the SLA, there is collaboration between the organisations supporting initiatives for livelihoods and the participants for the livelihood (Chapman & Slaymaker, 2002; Duncombe, 2006). In case study research approach there is also collaboration between researchers and respondents. The approach allows subjects to express their views and the researcher to understand behaviour and actions of respondents. Another advantage of using case study approach is the ability to discover and reveal the contextual factors. Case studies can be applicable in studies involving analysis event, a person, policy and organisation (Gable, 1994; Gix, 2004).

(c) Variations in application of the framework variables

There are variations of how variables within the SLA are applied in the different studies. The variables include vulnerability context, assets, structures, strategies, outcomes and information. Among these variables, outcomes are excluded in many studies (Duncombe, 2006; Molla & Al-Jaghoub, 2007; Parkison & Ramirez, 2006). Referring to the SLA elements, outcomes represent the result of application of strategies and resources and can be viewed as indicators for the results of interventions. The relation between inputs (strategies and resources) and outputs (impacts and change) need further analysis and discussion (Rogers, 2003).

3.6 Identified knowledge gaps in literature

3.6.1 Summary of identified knowledge gaps

The following are the gaps identified in literature in assessing the impact of ICT use in microenterprises in developing countries. The study attempted to fill the following gaps:

- i. *IS research on microenterprises*: Microenterprises are significant in development of developing countries in areas of employment creation and acting as source of income among people living in disadvantaged communities. However, microenterprises have received little focus by IS researchers (Donner, 2006; Kamal & Qureshi, 2009).
- ii. *Generalisation of IS theories for microenterprises studies*: Majority of studies in IS research focus on SMEs in general. Microenterprises are classified as a sub- category within the SMEs. Consequently it makes it difficult to generalize about IS theories and frameworks for microenterprises (Myers, 2000; Lee & Baskerville, 2003).
- iii. *Understanding impact on ICT use*: Empirical studies on assessing the impact of ICT use focus on the processes rather than the results (outputs and outcomes). There is little focus on understanding the consequences and the link between output and impact as a result of using ICT (OECD/DCA, 2000; Rogers, 2003).
- iv. *Focus on strengths and opportunities*: Studies on assessment of ICT use mainly focus on what people do not have rather than focusing on their strengths and how they can use them to explore more opportunities (Carney, 1999; Chapman & Slaymaker, 2002).

- v. *Time frame for impact assessment studies:* Understanding of consequences of innovations requires a long period of time. Unfortunately majority of the studies that are have been conducted to assess the impact of ICT use in microenterprises and SMMEs in general are carried out in relatively short period of time. Consequently, there is a potential lack of in-depth understanding of the consequences of using ICTs (Rogers, 2003; Madon, 2004; Heeks, 2010).
- vi. *Micro-level impact assessment:* As a result of narrow focus on studying microenterprises in IS discipline, there is less literature on impact of ICT use at micro level. Majority of studies focus impacts assessment of ICT use at macro level e.g. Studies on SMEs focus on businesses as opposed to the livelihoods of individuals in terms of their social factors (Heeks & Molla, 2008; Heeks, 2010).

3.6.2 Conceptual framework

The study adopted the revised SLA (Duncombe, 2006) as a theoretical lens that can be used to assess impact of ICT use of microenterprises. The focus was on the livelihoods outcomes of using ICT rather than the process of using ICT in microenterprises. Apart from looking at factors affecting the livelihood of microenterprises and how ICT use affect their motivation to utilise assets and strategies, the focus also included the role played by structures (Social relations, Institutions and Organisations) in enhancing livelihood outcomes. The conceptual framework is illustrated in Table 3.4. The arrows represent the flow of information within the framework.

Vulnerability Context	Livelihood Assets	Structures	Livelihood Strategies	Livelihood Outcomes
<ul style="list-style-type: none"> Shock Stress 	<ul style="list-style-type: none"> Human Capital Financial Capital Social Capital Physical Capital Natural Capital 	<ul style="list-style-type: none"> Social relations Institutions Organisations 		<ul style="list-style-type: none"> More income Increased well-being Reduced vulnerability Sustainable use of capital.
Contextual Analysis →	Livelihood strengths →	Mediated through →	Resulting in →	Impacting on

Table 3.4: Proposed conceptual model for Sustainable Livelihood Approach

Contextual analysis involves use of information to establish livelihood vulnerabilities which can be short-term and with a large scale impact on households or communities. Livelihood assets are considered as strengths and information is used to establish what households or communities have in terms of resources to achieve their livelihood goals. Structures as organisations and institutions mediate information to stakeholders when implementing livelihood strategies. Households and communities can also obtain information through structures. Information is used to come up with strategies that can lead to attainment of outcomes which impact individuals or communities (Duncombe, 2006).

3.7 Summary

Assessing impact of ICT use on the livelihoods of microenterprises requires understanding of many factors. These may be technological and human factors. SLA is appropriate for the assessment of impact of ICT use because it takes into consideration of wider scope of the context of microenterprises.

Chapter 4

Research design

This chapter presents the research methodology and justification for applying qualitative method using the case study approach. Data collection techniques, description of the case, research instruments, data collection procedures and the rationale for using their application are presented in this chapter. Data analysis techniques employed in the study is also discussed followed by a summary of consideration of research ethical and the timeframe for the study.

4.1 Research methodology

A research methodology depicts how the researcher will carry out activities of the study (Babbie & Mouton, 2001). The research methodology describes in detail the techniques for collecting, measuring and analyzing data and necessary steps to be considered when conducting the research (Cresswell & Clark, 2007). Research design should ensure that all the necessary data and information related to the problem is considered (Kothari, 2004). The research design should also fit for the purpose of the study and the methodology. In consideration of these facts, the employed case study research design with qualitative data collection techniques.

4.1.1 Research paradigm

A research paradigm is a set of beliefs that govern the research (Guba & Lincoln, 1994). Research paradigms influences how the world is viewed, researcher's behavior, practices and the way of thinking about reality (Gray, 2009). There are three philosophical assumptions in qualitative research namely positivistic, interpretive and critical (Myers, 2009). In interpretive paradigm, the researcher's assumption about reality is that people's experiences are different. Reality can be constructed by the people involved in the researched phenomena. The study took an interpretive stand as it was aimed at exploring in-depth of the impact of using ICT in microenterprises which can be expressed through social constructions such as language, consciousness and shared meaning (Creswell, 1994; Myers, 2009). The study was conducted in consideration of the seven principles for interpretive research as suggested by Klein and Myers (1999). The principles are as follows:

- *The fundamental principle of the hermeneutic cycle:* Understanding of in humans is attained by iterations between interdependent parts and as a whole. Meanings in a research can derive from part of the data or the whole data. The researcher considered both users of ICT and business support services and non-users of ICT and business support with the assumption that understanding of the phenomenon would emerge from data gathered from these parts.
- *The principle of contextualisation:* The need for understanding of the background of social and historical settings and result in highlighting the meaning of the basis for the current situation under investigation. The researcher analysed secondary data to establish the historical context of microenterprises and the areas in which they were operating. Furthermore, data collection was conducted at the premises of the microenterprises.
- *The principle of interaction between the researcher and subjects:* The interaction between the researcher and subjects should be considered and reflect on how data is socially constructed. The assumptions by the researcher should be clarified during the data collection process. The researcher interacted with the subjects during data collection and also observed the actions of the subjects during and after the interviews. The researcher also explained to the potential respondents on the purpose of the research so that they were able to make informed decisions on whether to participate or not in the study.

- *The principle of abstraction and generalisation:* Data interpretations should be done in consideration of interpretations between interdependent parts and context to theory or concepts. In this way understanding and social action can be described. The researcher considered multiple cases, data triangulation, literature on SLA to establish to establish base for different interpretation from the participants.
- *The principle of dialogical reasoning:* The researcher should be cautious of possible contrast between theory guiding the research and the actual findings emerging from the data. Revisions are recommended for example iterations in the data analysis process. The researcher was cautious of possible differences in the data being collected from the narratives of the respondents, therefore re-read literature on the theories guiding the study to avoid preconceptions during data analysis.
- *The principle of multiple interpretations:* The researcher should recognize that there can be multiple interpretations to events expressed through narratives and stories. This is common if multiple sources of data are explored during the research. The researcher considered multiple interpretations of certain concepts in the study from the stories of the respondents for example conceptualisation of ICTs, livelihood vulnerabilities and outcomes. The researcher also anticipated multiple interpretations from the data due to differences in literacy levels of subjects on ICT (Esselaar et al., 2007).
- *The principle of suspicions:* The researcher should be cautious to possible bias and distortion towards the narrative collected from the subjects. The researcher followed the data analysis procedure outline in the research design with consistency.

4.1.2 Research strategy

The study employed case study research approach. A case study is an empirical enquiry that investigates a contemporary phenomenon within its real life context, especially when the boundaries between phenomenon and context are not clearly evident (Yin, 2009). A case study can be used to study a phenomenon by analyzing a person, a group or an event (Gix, 2009). In case studies multiple sources of evidence are used and the researcher conducts an in depth enquiry on the subjects. Case studies are suitable for answering how and why questions. The advantages of conducting case study research are the ability to employ different data collection techniques to a single case and case studies are suitable when boundaries of a case is not known (Yin, 2009). Table 4.1 summarizes the advantages of using case study as a research approach.

Advantages of using case study	Reference
Provide the opportunity for extensive analysis of many specific details as compared to other research methods.	(Kumar, 1996)
The ability to learn more on poorly understood situation.	(Bryman, 2004)
The ability to apply single case or multiple cases for better generalisation of results.	(Yin, 2009)
Case studies support the use of existing theories and provide the opportunities for generating new theories.	(Willig, 2001)
The ability to test theory in terms of deviant or extreme cases.	(Willig, 2001)

Table 4.1: Summary of advantages for using case study research approach

Yin (1994) suggests three types of case studies namely descriptive, explorative and explanatory which are described as follows:

- *Descriptive:* aims at describing an intervention and they involve description of a theory. The case is then carried out to validate theory or generate a new theory.

- *Explanatory*: seek to explain casual relationships and they are suitable where there is need to investigate a particular issue and evidence is gathered related to that specific issue.
- *Exploratory*: investigate situations where there is likelihood of more than one outcome (Yin, 1994; Fisher & Ziviani, 2004).

The study was descriptive aimed at understanding issues surrounding the consequences of using ICTs in microenterprises and offer a better explanation of the outcomes for using ICTs. Using the case study research approach, I was able to gather in-depth information which could not be obtained using other research approaches. A case study research can employ a single case or multiple case studies (Yin, 1994). In this study, multiple cases were employed and allowed the researcher to explore the differences in the livelihoods of microenterprises and the results from the different cases were compared (Baxter & Jack, 2008).

4.1.3 Sampling technique

The aim of sampling is to understand properties or characteristics of the subset of the population so that it is possible to generalize the properties of the population elements. Sampling methods can be probability and non-probability. Probability sampling is a process of selecting a reasonable number of subjects that are representative of the target population to be used in the study (Gray, 2009). In non-probability sampling only a specific group representing the population is selected. Examples of non-probability sampling techniques include of purposeful sampling, convenience sampling, snowballing sampling and self select sampling (Sekaran, 2003). The study applied two non-probability sampling techniques, purposeful and snowball sampling. Purposeful sampling is a sampling technique applied to select people who can provide the information and conforms to the criteria set by the researcher (Sekaran, 2003). Snowball sampling is a sampling technique applied to select new respondents following the recommendations of people who have participated in the research and the number grows like a snowball (Reeves & Harper, 1981).

Purposeful sampling was used as the exact number of microenterprises from the population was not known. Selection of the targeted microenterprises was based on recommendations by the business advice service provider identified in the study, hence snowballing sampling was deemed suitable in the study. To come up with the identified case, a selection criterion adopted from Gomez and Hunt (1999) was used. The criterion is based on three components namely location, service and period of operations. Table 4.2 summarizes the criteria that was used in selecting the organisation provides services to the microenterprises.

Criteria	Details
Location	The program or intervention should be operating in the South Africa, within the Western Cape Province and in Cape Town.
Service	The program of intervention should involve SMMEs as its target market or beneficiaries and part of the services should include supporting the use of ICT.
Period of operations	The program or intervention should be operational more than a year.

Table 4.2: Summary of criteria for selection of microenterprises intervention

A number of projects were analyzed based on the set criterion for example: AsgiSA; GEAR; Ntsika Enterprise Promotional Agency; RED Door Program; Business Support Voucher program; Smart City strategy program; Micro Enterprise Network for NGOs; Small Enterprise Development Agency; Cape Craft and Design Institute; Business partners and Matie Gemeens Kapdiens Community Service. However, it was found that the RED Door Program matched with the set criteria. The organisation was located in Western Cape Province, the services were aimed at SMMEs, included ICT access services and had been operational more a year. Details of the RED door are presented in the next sub-section.

4.1.4 Identified sample

The RED Door program started in 2005 under the Western Cape department of Economic Development and Tourism. The main aim of the intervention is to provide quality and efficient business support and advice to SMMEs. Adopting the concept of RED Door from highly successful examples in Brazil, Northern Ireland and Israel, the RED Door in Western Cape provide the following services to SMMEs in rural hinterland and the city metro:

- Facilitation of business start-ups for SMMEs;
- Providing access to non-financial resources and capacity;
- Providing training and capacity building on business skills;
- Providing internet access;
- Facilitating access to finance by service providers to small businesses and small entrepreneurs;
- Providing market access, procurement and market linkages for small businesses;
- Providing legal advice for SMMEs.

The approach in service delivery is one-to-one personalized service because the needs of microenterprises are different. Apart from operating dedicated Business Advice Centres across Western Cape, the project also operate outreach programs through the mobile service. Projects are also coordinated with other organisations such as education institutions, farms, community centres and multipurpose centres. The target market for RED Door is any entrepreneurs who want to start or expand as small business. They include the youth, women, disabled individuals and other groups of entrepreneurs.

Currently RED Door operates Business Advice Centres in the following locations in Cape Town: Atlantis, Khayelitsha, Mitchells Plain, Retreat and Table View. The mobile services cover the following areas: Southern Suburb, Cape winelands, Overberg, West Coast, Lagunya and the Northern Suburb. The study was conducted at Retreat Business Advice Centre because it was within reach of the researcher. Nine cases involving microenterprises were used as unit of analysis. The microenterprises were selected with guidance from the RED Door Management. The criteria for the selected sectors of microenterprises were based on the sectors listed in the National Small Business Act of 2003. Examples of the sectors are summarized in Table 4.3.

Categories of sectors	Examples
Agriculture	Fruit and vegetable sellers
Manufacturing	Small scale manufacturing and tinsmith
Construction	Small construction contractors
Wholesale trade, commercial agents and allied services	High street traders, hawkers and spaza shops
Catering and accommodation services	Restaurants and guest houses
Community, social and personal services	Hair care, saloons and barbershops
Transport, storage and communications	Taxi, internet cafe

Table 4.3: Summary of categories for trading sectors for microenterprises (National Small Business Amendment Bill, 2003)

4.1.5 Time frame

The time frame for research can be conducted based on two perspectives namely cross-section and longitudinal. In longitudinal studies the study is conducted over a long period of time while in cross-section the study conducted over a short period of time and data is collected at one point in time (Gray, 2009). The study was cross-sectional due to constraints of time and resource. The execution plan is attached in the appendices (Appendix C).

4.2 Data collection techniques

Qualitative studies can use different data collections techniques to establish in-depth understanding the phenomena under investigation. The study employed three data collection techniques namely: documentary review, semi-structured interviews and observations.

4.2.1 Documentary review

Documentary review is one way of getting a bigger picture of a situation or particular matter (Myers, 2009). Documents can serve as historical records of events or actions and can be used in studies to understand culture. There are different types of documents such as written materials, pictures, photographs, videos, television programs, maps, interactive websites and software. These materials can be used to investigate, interpret and analyze a situation or phenomena (Myers, 2009; Yin, 2003). Documentary review involved sourcing documents containing secondary data from RED Door. Published statistics, annual reports and other related to SMMEs were reviewed to establish the context of microenterprises. Table 4.4 summarizes some of the documents that will be reviewed.

Document	Description	Source
List of Microenterprises	Compiled list of microenterprises that have used the services of provided by RED Door Project.	RED Door
Business Statics	Population of microenterprises and distribution of trade sectors where microenterprises participate.	Municipality of Cape Town
Annual Report for RED Door project.	Progress report of activities for RED Door project	RED Door
Labour force survey	Statistics on number of people who are employed and unemployed.	Department of Statistics, South Africa
General household survey	The population distribution in the Western Cape region.	Department of Statistics, South Africa

Table 4.4: Summary of reviewed documents

4.2.2 Semi-structured interviews

Interviews are considered as one way of understanding humans where there is face to face communication and provide the opportunity to gather information that cannot be collected through observations or use of questionnaires (Denzin & Lincoln, 2005). Interviews can be structured, semi-structured and unstructured (Myers, 2009). Structured interviews are used to collect qualitative data using pre-prepared questions and the interview is strictly regulated. In semi-structured interviews, leading questions are prepared and the order in which the information may be gathered is subject to change depending on the focus of issues arising during the interviews (Gray, 2009). Un-structured interviews use few pre-prepared question and often questions emerge during the interview (Myers, 2009). Semi-structured interviews were employed because they provided the opportunity for instant feedback and the ability to ask follow-up questions instantly. The responses were audio-recorded and documented in form of note-making during the interview sessions.

The researcher considered the potential problems for using interviews as suggested by Myers and Newman (2007). They pointed out issues such as lack of trust, lack of time, level of entry into the organisation, interviews may create a situation of time pressure on respondents, bias on information from key informants, inconsistencies in data being collected because of the interviewer being naïve. The following procedures were used to mitigate the problems:

- Proper planning of interviews so that respondents are willing to provide relevant information.
- Interview a variety of microenterprises to get diverse views (Rubin & Rubin, 2005).

- Use of interview guide to ensure that questions lead to detailed responses.
- Questions were framed so that respondents are encouraged to give details of experiences through narratives (de Marrais, 2004) use of what, how and why constructs.
- Mirroring of words that are key leading to construct for subsequent follow up questions (Myers & Newman, 2007)

A copy of the interview guide and the interview questions are attached in the appendices (Appendix D, E and F).

4.2.3 Observations

Observations are a systematic viewing of people's actions which can be recorded and analyzed to interpret their behaviour (Gray, 2009). Observations can be considered as a tool for gaining insight of situations by looking at people's actions and behaviours in their natural setting (Robson, 2002). Case studies can involve people in their natural setting and observations provide the opportunity to the researcher to gather data that could be missed during interviews and details that respondents might not freely talk about during the interviews (Yin, 2009). Observations can be used in different cases, for example to support data that is collected through other methods and to explore further details of a given situation.

Social activity comprises of three primary elements namely place, actor and activities (Spradley, 1980). A place is the location where activities of interest take place. Actors are the people involved in the activities and activities are recognizable patterns of behaviour for the actors. Observations can be used as part of instruments in a case study. The study adopted the concept of field work (Spradley, 1980) to establish the criteria for observations. Other elements that can be considered in a social situation are goals, feelings, objects, event, time and space. Table 4.5 summarizes the elements of the social situation and how were applied in the situation for microenterprises. These dimensions in a given situation can be applied to support other data collection methods in a case study.

Element	Description	Application
Space	Physical location or place	Operating location for microenterprises.
Actor	People involved	People involved in the business activities.
Activity	Set of related acts by actors	Activities for livelihood of microenterprises.
Objects	Physical thing present	Assets used in microenterprises.
Act	Single action by actors	Activity in microenterprises.
Event	A set of related acts	Set of activities for microenterprises.
Time	Sequencing taking place over time	Activities taking place over a time.
Goal	Things actors inspire to accomplish	Set of objectives related to livelihoods.
Feelings	Emotions felt and expressed	Expressed emotions over a goal or event.

Table 4.5: Observable dimensions to a social situation (Spradley, 1980).

The study considered the disadvantages for using observations as a method for gathering data such as time consuming, difficulties in broad coverage of a situation and changing of subject's behaviour if they recognize that they are being observed (Yin, 2009). Observations were employed to support interviews and documentary review as a data collection methods and one way of validating facts gathered using the other techniques. The guide for conducting observation is attached in the appendices (Appendix G and H).

4.2.4 Pre-testing of research instruments

Pilot or pre-testing in case studies involves conducting the study at a small scale using the research instruments. Conducting pilots enable researchers to identify problems and refine the

data collection strategies (Yin, 2009). Pilots also assist in the development of instruments so that right questions are asked that will result in collection of relevant information from the respondents (Gray, 2009). The research instruments for this study were pre-tested during the pilot study involving eight microenterprises to ensure that data and data collection procedure would yield relevant data to achieve the research aims and objectives. The pilot study results were recorded and analyzed to identify problems. At the end of the pilot, necessary changes were made to the instruments.

The research was broken down into three main steps namely: preliminary stage, field stage and conclusion (Noor, 2008). Preliminary stage involved literature review and selection of the framework or theory to guide the assessment of impact ICT use. Four cases were conducted and they included a control sample (microenterprises that were not beneficiaries for business support program). The problems and short-fall in the instruments identified and corrected. In the field stage further cases were conducted followed by the conclusion stage where data analysis, writing of cases, cross-case analysis was conducted and draw conclusions of the study. Figure 4.1 summarises the sequence in which the study was conducted.

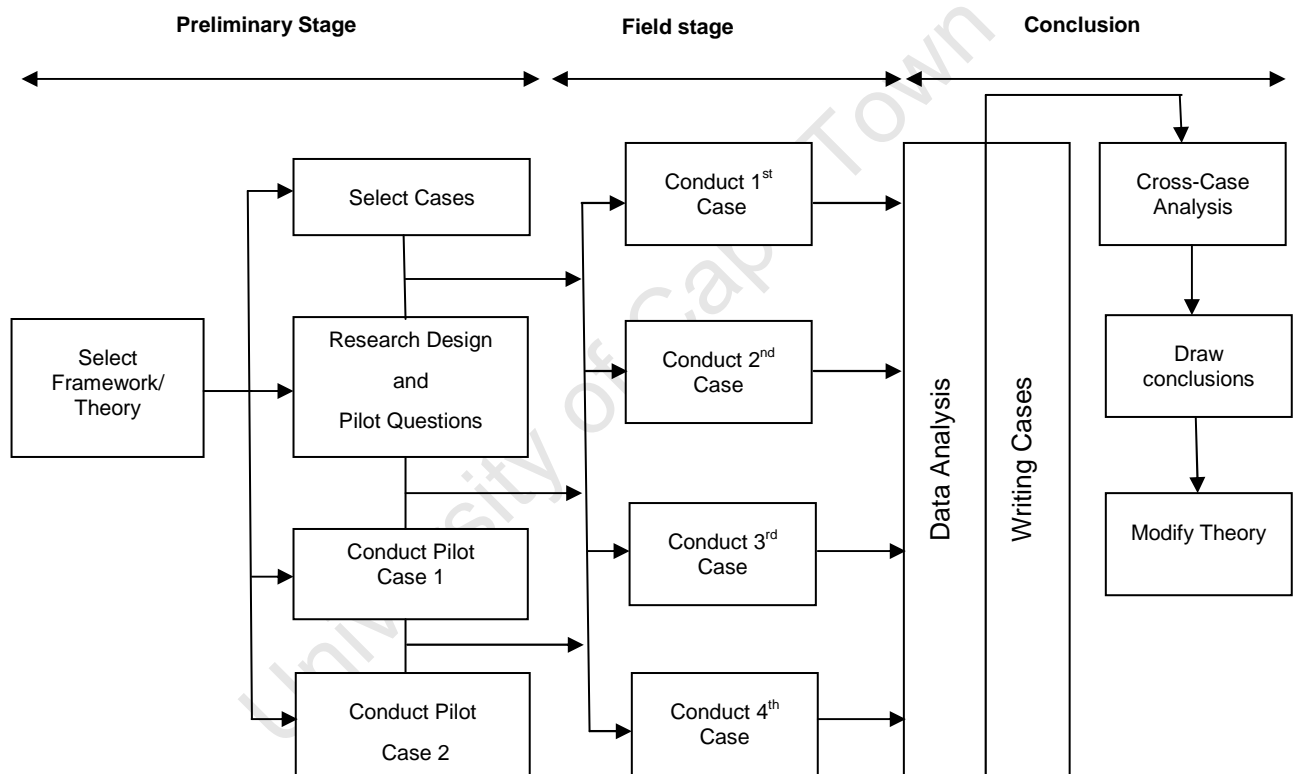


Figure 4.1: Strategy for conducting the case study (Noor, 2008).

4.3 Data Analysis

Data analysis in qualitative studies involves a rigorous and logical process to establish meaning from the data. Operations are performed on the collected data so that results answer the research questions and objectives (Gray, 2009). Different approaches to data analysis can be applied to qualitative data such as grounded theory, discourse analysis, thematic analysis, phenomenology and narrative analysis (Thomas 2003; Braun & Clarke, 2006; Myers, 2009). Choice of analysis in qualitative studies is determined by epistemological stance of the study and theory being applied. There are two approaches that can be used to analyze qualitative data in relation to theory. The two approaches are inductive and deductive. In deductive approach analysis is determined by theory or framework underpinning the study while in inductive approach research objectives determine the analysis and lead to the development of theory (Thomas, 2003).

Qualitative data analysis involves breaking data into small units to establish their characteristics and structure. In this way connections are made between concepts and generate new meaning (Dey, 1993). One example of such analysis is thematic analysis which can be used as a coding process. Thematic analysis (Braun & Clarke, 2006) involves six steps in analysis of qualitative data described as follows:

- *Familiarisation with data*: transcribing the data, reading and re-reading to familiar with data and noting down the ideas.
- *Generating initial codes*: interesting features in the data are noted and collating data relevant to each code.
- *Searching for themes*: collating codes into potential themes and generating all data relevant to each theme.
- *Reviewing themes*: checking if themes work with coded extracts and entire data and generate a thematic map.
- *Defining and naming themes*: ongoing analysis to refine specifics of each theme.
- *Producing report*: final analysis, selecting valid and compelling extracts relating back to research question and literature and produce a report.

Data Analysis process started with analysis of secondary data to establish the context of microenterprises in South Africa. The focus was on the context of microenterprises operating in Western Cape for example their demographic characteristics, the sectors in which microenterprises operate and unemployment rates. The secondary data provided an overview of the formation microenterprises and rates of graduation to SMEs. The next step involved use of observations data and interview notes to supplement missing data when transcribing the interviews. Facts presented in the interviews were verified using the data collected through observations to ensure that all interview transcripts were complete and accurate. Thematic analysis was employed to analyze the interview transcripts of cases. The analysis strategy was deductive where by the SLA guided the analysis as theoretical framework. Figure 4.2 illustrate the iterative process for data analysis.

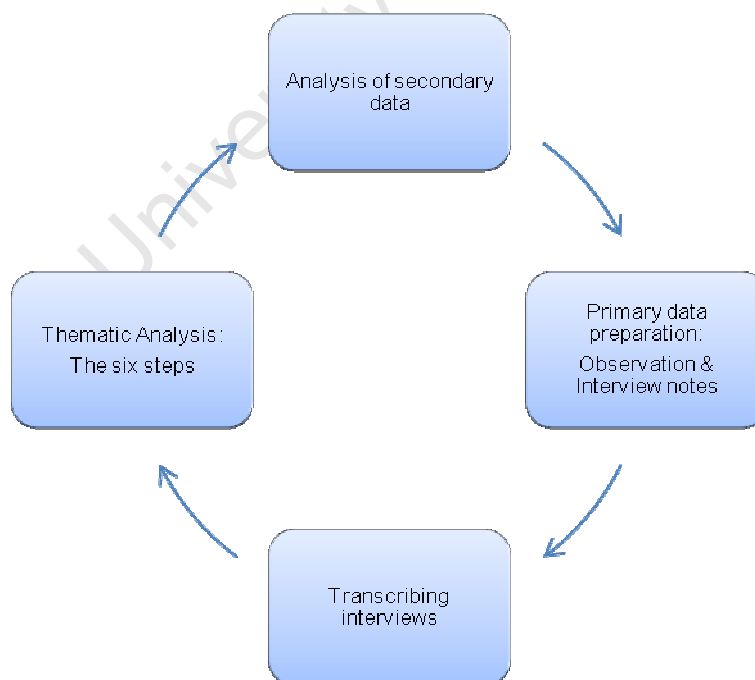


Figure 4.2: Strategy for data analysis

Thematic analysis was deemed suitable because of the following reasons as suggested by Thomas (2006):

- It is relatively easy, quick to learn and accessible to researchers with little experience in qualitative research.
- It is useful method in participatory research such as case studies.
- It can be used to summarize key features of a large corpus and thick description of data set.
- It can be used to generate unanticipated insights of phenomenon.
- It can be useful for producing qualitative analysis to inform policy development.

4.4 Research validity and reliability

Validity and reliability are commonly associated with quantitative studies as they normally involve experimental methods and rooted in positivistic paradigm. The main goal in this perspective is to ensure that research instruments should provide similar results if applied at different times and data for the study to be accurate and credible (Gray, 2009). In qualitative studies, the goal is to seek understanding of a phenomenon in a given context or a real world setting and researchers interest is understanding and extrapolation to similar situations, hence the focus on credibility of results. Therefore validity and reliability should be considered in qualitative studies when designing, analyzing and ensure quality (Patton, 2002).

4.4.1 Validity

Validity in context of qualitative studies is described as the degree in which data for a study is accurate and credible (Patton, 2002). There are two perspectives for designing for validity in qualitative studies (Gray, 2009) and they are internal and external validity. In internal validity focus is on researchers constructions in the study to ensure that repetitive checks for interpretation are maintained. This involves checking the accuracy of data and bias in interpretation of data during analysis (Whittemore, Chase & Mandle, 2001). The research was conducted in consideration of the following:

- (a) Self-conscious research design was employed for effective stance so that the researcher does influence the research outcomes;
- (a) Sampling decisions to be adequate so that generalisations were possible;
- (b) Employing triangulation where data was obtained using multiple sources;
- (c) Articulated the data collection decision;
- (d) Demonstrated prolonged engagement in the field for data collection;
- (e) Demonstrated persistent in observations.

External validity in context of qualitative research focuses on the extent of the study to establish generalisations from a case study or data. Validity in qualitative studies is different from quantitative studies (Patton, 2002). In qualitative studies, validity relates to trustworthiness as opposed to generalisation of findings to a wider group. Therefore, validity conceptualized trustworthiness, rigor, quality and application of triangulation (Golafshani, 2003).

4.4.2 Reliability

Reliability is described as the stability of research findings (Denzin, 1989). Reliability considers the method of gathering data for example collecting data from multiple sources or using multiple research instruments called triangulation (Golafshani, 2003). Robson (2002) defines triangulation as the application of multiple methods for collecting data to ensure that data is complete and ensure that data missed in one technique is offset by the other techniques. Triangulation strengthens the results of a study by combining different methods (Patton, 2002). There are four types of triangulations which can be applied in qualitative research namely:

- (a) *Data triangulation*: employing multiple data collection strategies.
- (b) *Investigator triangulation*: more than one researcher is involved in a case.
- (c) *Multiple triangulations*: employing multiple methods in a study such as data, theories and researchers.
- (d) *Methodological triangulation*: has got two forms and they are within methods and between methods. In within methods different data is collected using the same technique and in

between methods different data collection techniques are used for example a survey and observations.

The study used data triangulation and multiple triangulations of cases to strengthen the results. In data triangulation three data collection techniques were used namely documentary review, semi-structured interviews and observations. In multiple triangulations multiple cases of microenterprises were assessed. Triangulation enabled the researcher to predict similar results between cases (literal replication) or predicting contrast results between cases (theoretical replication) thereby achieving robust and reliable results (Yin, 2009).

Another aspect for ensuring that validity and reliability is verification which involves checking, confirming and being certain (Morse, Barrett, Mayan, Olson & Spiers, 2002). Therefore, the researcher worked back and forth referring to literature review and research design documents to ensure that data collection strategies, the research objectives and the collected data was relevant to the study. At the end of each interview the researcher summarised key points and confirmed with the respondents as one way for confirming the facts in the elicited data. Observations also provided the opportunity to confirm facts from the interviews.

4.4.3 Generalisation

Generalisation are assertions of enduring value that are context free and suggest that generalisations can be non-thematic based on positivistic research paradigm and rationalistic; and naturalistic based in intuition, personal and direct experiences (Guba & Lincoln, 1994). Generalisation can be viewed from two research philosophical stand points' namely positivistic paradigm and interpretive paradigm (Lee & Baskerville, 2003). These two perspectives view generalisation differently. Positivistic paradigm is rooted in statistical sampling and generalisations are based on the size of the sample. The view in this context is that increase in sample size improves the generalisations. Positivistic paradigm aims towards searching for universal or general laws. Therefore, reality is perceived to be objective and can be measured based on data rather than on opinions and speculations (Myers, 2009). On the other hand, interpretive paradigm base generalisation not on universal laws. The view of reality is that it is not present in subject matter as studied in natural sciences. People as part of the subject matter use their subjective understanding of themselves, their environment and their history (Lee & Baskerville, 2003). Generalisation in interpretive paradigm aims at producing a coherent and illuminating description of a phenomenon (Schofield, 2000). Schofield (2000) further argues that in qualitative studies the aim is not replication of findings in the sense of conceptualisation. However, results from qualitative studies can stimulate further research and provide information on replication. Therefore, in qualitative studies generalisation is based on the fit between situations being studied and others in relation to application of concepts and conclusions in a study. Myers (2000) also suggests that qualitative studies are difficult to replicate because comparative studies may not have the same respondents. The main aim is to produce research results that can be informative and enhance understanding of the readers.

In consideration of these points, the proposed study employed RED Door as a single case with six diverse microenterprises as units of analysis. Additionally, non beneficiary organisations were also involved to gather diverse views from microenterprises. In terms of generalisations, the study adopted the interpretive stand. Narratives or stories were used to gather in-depth opinions, experiences and issues related to impact of ICT use in microenterprises. The aim was to come up with concepts in form of descriptions and explanations in relation to concepts of SLA which were sufficient to grasp the situation of microenterprises (Yin, 1994).

4.5 Research ethics

Research ethics is the application of moral principles in planning, conducting and reporting results of a study (Myers, 2009). Ethical considerations present a moral stance for the researcher to achieve high level of competence and also consideration of the respondents. Moral stance is respect and protection of people actively consenting in a research. There are four ethical principles that can be applied when conducting a research (McNabb, 2002). They are truthfulness,

thoroughness, objectivity and relevance. Truthfulness promotes integrity and professionalism for the researcher for example to avoid employing any form of fraud in the study. In thoroughness the research should be methodical in all the processes carried out in the study. Objectivity is concerned with the researcher not to allow their values or bias to influence the study. Relevance ensures that the research should not be done for wasteful or irrelevant purposes.

The study was conducted in consideration research ethics (truthfulness, thoroughness, objectivity and relevance) and legal factors such as Data protection. Due to the nature of the study, issues such as vulnerability, informed consent, privacy and confidentiality were also considered (Blandford, Cox & Cairns, 2008). The study ensured that vulnerable members of the community such as low income households were considered so that respondents did not feel threatened or intimidated by the study. Participation in the research was voluntary and the respondents were informed of the purpose of the study and the use of the data being collected to ensure their privacy and confidentiality. The researcher followed the code of conduct set by the University of Cape Town Ethics Committee.

4.6 Impact of research methodology and data collection techniques

Qualitative data was gathered through in-depth interviews. The interview questions were formulated based on the research objectives and guided by the SLA framework. This resulted in more details on the variables being obtained and led to emerging of new themes which are not described in the SLA framework. Example of the emerging themes were trust issues and safety issues in using ICT, business aspiration being a motivating factor in achieving sustainable livelihood outcomes and dormant business where livelihood outcomes are not attained.

Data triangulation also impacted the data collection where data that was missing during the interviews was supplemented by the sourced documents and observations. Observation also acted as a verification mechanism where facts gathered during the interviews were verified. Data triangulation led to data that was complete and was used in the analysis. Data triangulation also supported the accuracy of gathered data because in some cases the respondents were not fluent speakers of English.

Research strategy for this study was case study. Multiple cases were employed from diverse businesses types involving beneficiary organisations and those who did not benefit from the business support organisations. Results from the two groups of microenterprises were compared to establish a greater understanding on the impact of ICT use on the livelihoods of microenterprises.

4.7 Summary

Qualitative research methodology is appropriate to obtain in-depth details on the outcomes of using ICT on the livelihoods of microenterprises. The research strategy employed in this study, case study approach, supported multiple data collection techniques to come up with data that led to exploration of interpretations of livelihoods of microenterprises and the impact of using ICT.

Chapter 5

Research findings

This chapter presents findings and attempts to answer the research question and address the research objectives. Key themes that emerged from the data analysis are summarized and new concepts are noted.

5.1 Introduction to research findings

As outlined in the research design (Chapter 4), data was collected using interviews, observations and documentary review. A total of eleven in-depth interviews were conducted which included five beneficiary organisations (these are organisations that used the services provided by RED Door), four organisations that did not use RED Door services and two interviews with RED Door managers. A follow-up interview was also conducted with the manager of the business advice centre. Observations were conducted during and after each interview to verify facts and supplement missing or incomplete data. A list of respondents and their profiles is attached in the appendices (Appendix I). Section 5.2 presents results of analysis of context of SMMEs and documentary review on use of RED Door services. Section 5.3 to 5.7 summarises the results of deductive data analysis of responses from microenterprises guided by SLA model. The audio data was transcribed into documents and spreadsheets which were manually analysed. The elements of SLA that were used in the analysis are outcomes, vulnerabilities, assets and institutions and organisations.

5.2 Context of SMMEs in Western Cape Province

5.2.1 Reasons for engaging in microenterprises activities

To understand how the microenterprises perceived their context, respondents were asked to describe how they started their business and factors that influenced their commitment in business activities. From the analysis four categories on context of microenterprises emerged and they were microenterprises start-up, microentrepreneurial skills, microenterprises sustaining factors and business status.

Majority of the respondents indicated that the main reason for starting business was due to limited employment opportunities. Microenterprises were the main source of income and provided the means for a living. It was also noted that microenterprises provided more income than working especially for low-income jobs. This meant that some of the microentrepreneurs perceived that running their own business they would generate more income for their households than wages that could be obtained from low-income jobs.

The results demonstrated that one of the reasons for starting small business was the opportunity to develop microentrepreneurial skills. Microentrepreneurial skills were conceptualised as the abilities and knowledge to carryout business activities. Respondents indicated that they developed their skills through learning from other microentrepreneurs within their trade and developed self-confidence to operate a business on their own. One respondent stated that:

“... but also the way you learn from someone because I learn from my brother in Maitland. He is a professional shoemaker... I have been operating for nine months on my own from learning. I moved here and pulling my own stuff and buying my own materials because I have the knowledge”.

This statement indicates that there can be transfer of knowledge and skills among employees in microenterprises. Once the skills and knowledge have been acquired there are possibilities for establishment of new microenterprises. The microenterprises perceived well established and

skilled microentrepreneurs as role models for success and inspiration. As a result, microenterprises were motivated to establish in their own businesses.

A number of factors contributed towards the sustainability and survival ability of some of the microenterprises. Almost all the respondents indicated that further capitalisation as a resource for business start-up was through self-financing and use of personal savings. One respondent stated that: *“I started my business with almost R270.00 (US\$33.75)”*. This demonstrates that capital for small business start-up might be small. Microenterprises may invest in their business activities smaller amounts, operate at a small scale and overtime expand their business activities. Personal savings were also used to meet operating costs until the businesses were financially stable. In the cases of beneficiary organisations, it was noted that financial support from support institutions and organisations was used for start-up and in some cases expansion of business activities.

Unique business models were noted as one of the factors that might give microenterprises competitive advantage. One respondent indicated application of unique way of doing business to gain competitive advantage in the following statement:

“... you know, Cape Town people ... don't do it like this (selling refreshments on a bench made of crates and a large umbrella), my idea came to do it like this”.

This statement might indicate that the respondent is able to trade along the streets when there is a harsh weather condition i.e. when it rains there by taking better position than competitors. This shows that microenterprises may be motivated to provide services or products different from competitors and offer flexible options for customers to address specific demands in their market. Another business sustaining factor was through establishing a wide customer base where microenterprises offered their services to different groups of customers and generated more income.

Microenterprises, like other business organisations, go through the three phases of creation, growth and death (Heeks, 2008). Business status indicated the state of business in the three phases. It emerged from the analysis that owners of the microenterprises were interested in growing their business. Business growth in this context was increasing of business activities and employing new members of staff to support the activities aimed at increasing income. In some cases microenterprises sought support from institutions and organisations on how to effectively achieve business growth. This was evident in beneficiary organisations where services such as business loans, development of business and marketing plans were used.

Business life-span in the context of microenterprises was the period from start-up to existence where microenterprises may increase number of employees or turnover. It was noted that the life-span for businesses of the majority of respondents was short. Only a few cases the indicated that they had been operating for a long period of time. For example, one respondents he has been operating his business for three years. Likewise another respondent indicated that he has been operating for one year. Overall, the businesses for the respondent's existence ranged from two months to four years. Therefore life-span for microenterprises may vary from one microenterprise to another depending on the aspirations of owner of the business. Part of the reasons for short life-span could be the survivalist nature of microenterprises where businesses may be disbanded once permanent employment is found as noted by several authors (Esselaar et al., 2007; Mead, 1994; Duncombe, 2006, ILO, 2002). Table 5.1 summarises the themes on the context of microenterprises with sample of responses from the respondents.

Key category	Themes	Sample of responses
Microenterprises start-up	Limited work opportunities	<i>"You know it is tough to get work" "Because in life sometimes you don't have work"</i>
	Income generating	<i>"The only choice to make money is business"</i>
	More earnings than working	<i>"I can get more than work"</i>
	Means for living	<i>"The idea of business is because you don't have anything to support"</i>
Microentrepreneurial skills	Skills development / Role model for success	<i>"But also the way you learn from someone because I learnt from my brother, he is a professional shoe maker"</i>
	Self-confidence / Self-esteem	<i>"From learning I moved here and pulling my own stuff, I buy my own materials because I have the knowledge"</i>
Microenterprises sustaining factors	Self capitalisation	<i>"I started my business with almost R270 (US\$33.75)" "We just started about, how to have a little money"</i>
	Small scale activities	<i>"Business start, you start with a small thing, may be selling things in your house and end up with something big"</i>
	Unique business model	<i>"People they don't do it like this, my idea came to do it like this"</i>
	Wide customer base	<i>"We provide services to households, individuals, students and cooperate organisations"</i>
Business status	Business growth	<i>"You do like this and then the business grow"</i>
	Business ideas	<i>"Other people give him ideas" "... also give the direction what I can do with the business"</i>
Microenterprises life-span	Short-term	<i>"I have been operating for nine months on my own"</i>
		<i>"Which business? Two months"</i>
		<i>"The business started four months now"</i>
		<i>"My business started may be six months now"</i>
		<i>"I start here in February this year" "we started in 2007"</i>

Table 5.1: Summary of themes of microenterprises context

5.2.2 SMMEs use of RED Door Services

RED Door program offers many services to SMMEs which are promoted through adverts in local press, radio and television. RED Door also operates mobile services which visit areas where there are no business advice centres. Interviews with RED Door management confirmed on the services being offered to clients highlighted in the policy document (RED Door Business Plan, 2004). Others among many, the services indicated by management were voucher programs (business voucher, enfranchise vouchers, takeover vouchers and training vouchers), tender information and free internet access. The support provided to SMMEs is on-going where beneficiaries are supported throughout the process of acquiring the service and after the service or product has been delivered.

It was noted that performance indicators are used to assess the use of services. One key indicator used to assess performance of programs is the number of clients or beneficiaries who have used the services i.e. business information advice, access to internet in the business centres, support for company registration and taxation registration with South Africa Revenue Services (SARS). Access to services during the period 2009 and 2010 was analysed. Table 5.2 summarises the headcount for access to services for the period between 2009 and 2010.

Services by RED Door in Western Cape Province	Number of clients
Advice and Information	27, 312
Access to Information via Internet	8, 281
Company registration	930
SARS registration	557

Table 5.2: RED Door services utilisation by SMMEs (CASIDRA Annual Report, 2010).

As illustrated in table 5.2, advice and information had the highest number of clients who used the services. Secondly, access to internet and information has 8,281 clients. Interestingly, the findings showed that the number of RED Door clients who used the services leading to enterprise formalisation was low. This is in line with findings in the study by Esselaar et al. (2007) that one of the characteristics of microenterprises is fear of formalisation where microenterprises do not register to any authority and they do not pay tax. Majority of microenterprises operate in the informal sector where registration may not be required. The findings revealed that some of the reasons for the unwillingness of formalisation were the burden arising from the obligations of formalisation such as paying tax, keeping financial records, offering contract to permanent employees which most of the respondents had no capacity to implement.

Apart from monitoring performance on financial and formalisation services, RED Door also monitors performance for non-financial services such as feasibility studies for establishing business, product or service branding, business planning and mentorship. Other performance measures are non quantitative measures such as perceived value by beneficiaries, established partnerships with communities and sustainability of businesses for beneficiaries. Table 5.3 summarises performance on non-financial services for the period 2009 and 2010.

Non-financial services by RED Door	Number of vouchers issued
Feasibility studies	135
Business plan	675
Health check	124
Mentorship	1, 586
Branding	295

Table 5.3: RED Door non-financial services performance data (CASIDRA Annual Report, 2010).

Management was also asked about the challenges they face when dealing with microenterprises. It emerged that problems related to lack of infrastructure and capacity in microenterprises affects the effort to support microenterprises. This is evident in the following statement made by the manager during the follow-up interview:

“Microenterprises do not have infrastructure and capacity in maintaining records, standard costing and procurement, permanent address, even email address, they use yahoo or Gmail accounts for business”.

From this statement it is noted that for support for microenterprises to be effective, infrastructure and capacity for basic business operation are important. The findings are in-line with previous studies on challenges faced by microenterprises (Heeks & Duncombe, 2002; Esselaar et al., 2007; Wolcott et al., 2009) which suggest that due to limited resources in form of financial and human resources microenterprises may not have all the facilities for running a business. This may limit their ability to use support services.

5.3 Outcomes of use of ICTs, assets and structures

The use of ICT was different depending on the nature of business activities of the microenterprises. It was noted that ICTs were used in activities that facilitated better use of assets and access of institutions and organisations. The outcomes as a result of these activities were

improved well-being and more income which had positive impact on the livelihoods of the owners of the microenterprises. In some cases, successful outcomes were results of using assets and ICTs without support from organisations and institutions.

Additionally, the analysis revealed that owners of the microenterprises were inspired to achieve successful outcomes in their business activities. Aspirations in this context meant motivation and commitment to achieve more from the business which involves investment of time, effort and other resources. Examples of aspirations that emerged from the data analysis were willingness to access business support, business development and increasing profitability.

The respondents indicated that they were willing to obtain support to improve their business at the same time they were not aware of where such support could be obtained. This demonstrates a mismatch in communication patterns between business support organisations and microenterprises especially those that did not use the services of the RED Door. Part of the mismatch could be differences in communication channels used by microenterprises and business support organisations. The findings revealed that RED Door services were promoted through adverts in local newspapers, on radio, TV and mobile services. Literature suggests that microenterprises rely more on informal social networks for their information needs despite the information being of poor quality (Duncombe & Heeks, 2002; Moyi, 2003). Therefore, it can be concluded that part of lack of awareness of support services may be the result of mismatch in communication patterns between microenterprises and business support organisations.

Microenterprises also perceived that expanding their business activities will lead to more financial independence and increased profitability. In some cases, respondents indicated that they did not achieve successful outcomes as results for engaging in business activities as noted in the following statement by one of the respondents:

“... you mean profit? Within six months my business is supposed to grow but it is still like this. Nothing done”.

Despite the business being dormant the respondent was optimistic that the business will grow. This demonstrates that achievement of successful outcomes may require a considerable period of time to notice the change as a result of business activities. Table 5.4 summarises outcomes and sample of responses from the respondents.

Categories	Themes	Sample of responses
Outcomes	Well-being	<i>“the advantage has been whatever you get more but you have success to get food on the table”</i> <i>“Many things are coming than before”</i>
	More income	<i>“It help me a lot, pay my rent, eat well, keep money, yah helped me in my life ”</i>
Aspirations	More business support	<i>“what is killing us is that we don’t have support”</i>
	Business development / Business expansion	<i>“something like the business growing up, yah I know if the business is going to grow up I will make money, so the people can come”</i> <i>“My future plans, everything I want is to run a business, just to help people, to help myself and other people outside”</i> <i>“To make my business so big”</i>
	Profitable business / Financial independence	<i>“like any other business I want to be financial independent”</i> <i>“I want the business to grow and more customers”</i> <i>“when the business grow I will make more money”</i>
dormant	Limited-success	<i>“ There is no business here, ever since I came here, I can spend the whole day here, nothing, I sell but sometimes I don’t sell”.</i> <i>“You mean profit? Within six months my business is supposed to grow but it is still like this. Nothing done”</i>

Table 5.4: Summary of themes for outcomes

5.4 ICT use and vulnerabilities for microenterprises

Vulnerabilities may negatively affect livelihoods of microenterprise in achieving sustainability. Information on vulnerabilities can be accessed or communicated using ICTs (Chapman & Slaymaker, 2002). Respondents were asked how they identify, prevent and deal with vulnerabilities using ICTs. The majority of the respondents were facing limited employment opportunities as a vulnerability. As result of limited employment opportunities, microenterprises were engaged in business activities to sustain their livelihoods. It also emerged that microenterprises were subjected to the effects of commodities price changes as vulnerability. Prices changes affected the business in terms of costing of services or products. With regards to how the microenterprises identify their vulnerabilities, it was noted that in some cases external parties were involved. In one of the cases, the respondents indicated that identification of vulnerabilities involved communicating with suppliers who provided information on price changes. This was done in face to face when purchasing materials for his business. There was no evidence of ICT use in this process. Similarly, there was also no evidence of ICT use in identifying and preventing unemployment as a vulnerability.

The analysis revealed that microenterprises were beset with challenges. Literature on SLA suggest two type of vulnerabilities namely shock (long-term conditions leading to hardships) and stress (short-term conditions leading to hardships) (DFID, 1999; Carney, 1999; Cambers & Conway, 1991). Examples of vulnerabilities are commodity price changes, limited employment opportunities, natural disasters and poor governance. These are external to the livelihood (DFID, 1999). However, the challenges identified in the analysis were more or less internal to the businesses for the microenterprises (Carney, 1999). These challenges were categorised as problems for microenterprises. The themes under this category were operating challenges, lack of managerial skills, business performance issues and business competitiveness.

Operating challenges were conditions that affected routine business activities. Respondents indicated that supply of services was critical for their day to day business activities. For example, a laundry business depended on the supply of electricity and water. A disruption to the severely affected their business and these problems were beyond the control of the business. Compliance to regulations by local authorities was another problem affecting microenterprises. The respondents indicated that high monthly operating affected the microenterprises' net income. A consequence for non-payment of operating fees was their goods being confiscated. One respondent alluded to the high operating fees in the following statement:

"... there is no any challenge, most of the time is quiet, we are supposed to pay R35 for the month but we are supposed to pay R15 or R20 because the place is not very busy".

The respondent perceived that the operating fees were high in relation to the income generated from the business because there were few customers in the area. The respondent had no alternative and paid the high fees in order to operate the business. Income and savings were used to meet the operating fees.

Security was another problem under operating issues where respondents indicated that they experienced stock loss due to theft. When asked how they deal with the situation, one of the respondents indicated that he did not report the problem to any authority or institution for support and he was cautious not to get in trouble as he needed to operate the business to earn a living as indicated in the following statement:

"I try to get my stuff back, so I don't need so many corruption (problems) because I know I need the business, I don't need any troubles to come with".

From this statement it can be noted that microenterprises are able to identify problems and are willing to deal with the problems on their own. Support in dealing with the problems is usually when there are no options to deal with the problems and when they are aware where they can obtain such support.

Managerial skills problems were related to the necessary abilities to perform certain tasks in the business. The respondents were having competency problems which could be related to managerial skills. This affected microenterprises owners' self-confidence, problem solving, situation management and quality of work. Lack of managerial skills to solve problems and control situations resulted in other problems such as poor quality work. This is evident in the statement by one of the respondents:

"the first time you start your own business you must be strong because you are the master of your work, you are like a teacher and control everything".

This may mean that self-confidence and the abilities to manage situations in certain types of microenterprises were critical to maintain effective operations. In this regard training and skills are important in microenterprises (Rogerson, 2005). Microenterprises may develop practical skills from fellow microentrepreneurs operating similar businesses (Foster & Heeks, 2010). They may also use support services of business support organisations mainly for personal skills, technical skills, business operations skills and managerial skills (Smith & Perks, 2006).

Business performance challenges emerged as one of the problems experienced by the microenterprises. The challenges were less demand for products or services and less income generated from business activities which resulted in limited business growth. This was evident from the responses of respondents as indicated in the following statement:

"... its quiet, there is no business like this business we are doing, but there is no business, there is no money, just to get money to survive".

The respondents may mean that there less income is generated from business activities due to less demand for the products or services. As a result of low income and less demand, microenterprises were experiencing limited business growth. It was also noted that despite limited growth in business the respondents were willing to continue trading hoping that the situation will improve. In some cases respondents were willing to seek support to address the challenges.

With regards to business competitiveness, microenterprises indicated they were experiencing challenges in their abilities to perform better than other microenterprises providing similar services or products in the areas they were operating. From the analysis, themes that emerged under business competitiveness were business competition, customer retention and meeting customer's expectations. Among many responses on competition, one respondent indicated experiencing competition in the following statement:

"... its competition, if I put big prices here and someone is putting low prices I am not going to get anything, I will run loss ...".

Due to competition among the microenterprises, the respondent was prepared to offer low prices to stay competitive and retain customers. Other respondents suggested that they were prepared to be flexible in meeting customer's expectations and in some cases resulted in decline of revenue as indicated in the following statement: *"...I am doing this to help people, that small profit of R20, I think is enough ..."*. This meant that part of the business activities for the microenterprise was to serve the needs of the people while earning for a living.

Respondents were also asked how the deal with the vulnerabilities and problems when running their businesses. Interestingly, some of the respondents dealt with the problems on their own and did not seek help from authorities or institutions supporting small businesses. It was find out that respondents managed to deal or mitigate problems in the following areas: business operating issues, competency issues and business competitiveness. Table 5.5 summarises categories for vulnerabilities and how the respondents dealt with the vulnerabilities and problems.

Themes		Sample of responses	Preventive measure
Category: Vulnerabilities			
Price changes		<i>"Price changes for material affect our business" "I use to check the prices for the stuff, sometimes when I go there the prices are up"</i>	Buying in large quantities
Unemployment		<i>"You know is tough to get work" "the job is closed, we have no job and we don't have the support"</i>	-
Category: Problems			
Operating issues	Problem of supply services	<i>"We are affected by supply and availability of services"</i>	-
	High operating fees	<i>"Most of the time is quiet, we are supposed to pay R35 for the month but we are supposed to pay R20 or R15 because the place is not busy"</i>	Use of savings
	Regulation compliance	<i>"Not people, the people from the city council, but you must pay and have a permit to do your business"</i>	-
	Security / Stock loss	<i>"sometime the people would like to come and steal that is the problem, not customer"</i>	Being vigilant
Managerial skills challenges	Self confidence	<i>"The first time you start business you must be strong because you are the master of your work"</i>	-
	Situation management	<i>"you are like a teacher and control everything, everybody around you, you are the one who is controlling the situation"</i>	Good customer relations
	Poor quality work	<i>"sometimes when work is not done properly, customers bring back the shoes"</i>	-
Business performance	Limited business growth	<i>"there is no business" "sometimes business grow slow by slow"</i>	Seeking business support
	Less demand	<i>"If I put big prices and someone is putting low prices, I am not going to get anything"</i>	-
	Less income	<i>"I go there and buy a bag R100, I come and sell it R110 or R120, I get like R20. I am doing this to help peoples, that small profit I think is enough"</i>	-
Business competitiveness	Business competition	<i>"If a person comes here and see the bag is R150 and go there and find the bag is R100 he is going to say this bag is expensive here we buy it R100 and I can go down if my bag is expensive. Its competition"</i>	Price comparison
	Customer retention	<i>"so you must do more so that they must not go anywhere else, they must be your customer"</i>	Good will
	Meeting customer expectations	<i>"Customers need change properly and price from you for everyday and always"</i>	-

Table 5.5: Summary of vulnerabilities and problems

5.5 ICT use in creating and utilizing assets

One of the objectives of the study was to analyse how microenterprises use ICTs to improve use of assets. Five forms of capital were analysed and these were human capital, social capital, financial capital, physical capital and natural capital. The analysis also looked at how ICTs were used to access these assets. The findings are discussed in subsequent sub-sections.

5.5.1 Human capital

With regard to human capital as a resource for microenterprises, respondents were asked if they had acquired skills before operating their businesses. Business knowledge and skills and their acquisition were main categories under human capital.

(a) Business knowledge and skills

It was noted that in some cases respondents had prior knowledge and skills on operating business. Majority of respondents from the sampled cases indicated that they had no training on how to operate a business. Knowledge and skills were being developed while operating the business. It was also observed that prior knowledge and business skills were gained from different types of businesses. This is evident in the statement made by one respondent:

"I know house-keeping very well... I worked in Johannesburg as assistant manager for five years, so that's my knowledge for business, it's like it is in my blood".

The respondent had experience in other business sectors and now operates his business using some of the knowledge and skills developed while working in other business sector.

(b) Acquiring business knowledge and skills

Respondents were asked to describe the methods that were used to acquire skills and knowledge on how to operate the business. It was noted in some cases knowledge and skills for operating the business were developed through trial and error where microenterprises tested different ways of operating the business and selected methods that were suitable for their business context. Other cases reported that they learnt from peers running similar or different types of businesses. None of the organisations that did not use RED Door services indicated attending formal training on how to run their businesses. As a result, majority of these organisations perceived that there was no impact of knowledge and skills on their businesses. However one case reported that skills and knowledge were important in coming up with the right prices for services as noted in the following statement: *"knowledge and skills are important in costing for the services"*. In beneficiary organisations respondents also indicated that prior to the start of their business when they had not received support they had no training on how to run the business but later when they obtained financial support they had training on managing the business as one of the requirements for obtaining support. Table 5.6 summarises the themes under human capital.

Categories	Themes	Sample of responses
Business knowledge and skills	No prior knowledge and skills	<i>"no only standard 7"</i> <i>"no, this is my first time to do business like this"</i>
	Prior knowledge and skills	<i>"Actually I was studying house-keeping, I was in cape town college and I know house-keeping very well"</i> <i>"This is not my first time to do business like this"</i> <i>"I learnt about meat-products in my previous business"</i>
Methods of acquiring knowledge and skills	Trial and error	<i>"it is just trial and error, knowledge and skills are developed"</i>
	No training	<i>"You mean the skills to run the business, its natural other people can't have the idea to run the business like this"</i> <i>"no training was involved"</i>
	Peer-learning	<i>"I like people telling me and I don't like to do myself"</i> <i>"I can follow that, that person is helping me because you can't do everything yourself"</i>
	Training	<i>"Training is offered before you get the financial support"</i> <i>"I graduated from design school"</i> <i>"I was trained by RED Door through the Business voucher program"</i> <i>"I participated in training by RED Door"</i>

Table 5.6: Summary of themes for Human capital

On the overall, in relation to human capital, there was no evidence to indicate that ICTs were used in the process of acquiring knowledge and skills on how to operate business in microenterprises that did not use RED Door services but were used in beneficiary organisations.

5.5.2 Financial capital

Capital for start-up or business expansion is a one of the major challenges for microenterprises (Esselaar et al., 2007). Respondents were asked about the financial services which the use for their business. Under financial capital four themes emerged and these were self-financing, savings, re-investment of returns and access to financial services. Table 5.7 summarises the themes for financial capital.

Themes	Sample of responses
Self-financing	<i>"I use personal finances" "I use my own money"</i>
Savings	<i>"we are trying on our own effort, you keep money, you do security job to get some money to start your business"</i>
Reinvesting of returns	<i>"I use my own money, I use the money I get. if I see things getting down I go and buy"</i>
Access to services	<i>"Like account, bank, no I don't use any" "Like loan from bank? No financial services are used"</i>

Table 5.7: Summary of themes for financial capital

(a) Self-financing and Savings

Majority of the respondents used their personal finances for capital of the business due to limitations for access to formal loans. This meant that the owners of the microenterprises engaged in other forms of businesses or income generating activities and saved their earnings. Savings were used for start-up of the business as noted by one of the respondents in the following statement:

"Actually we are trying our own effort, you keep money, you do security job to get some money to start your business".

From the sampled cases other forms of business financing for start-up or business expansion such as informal sources of capital, stockvel etc. were not used. Some respondents indicated that they were aware of informal sources of finance but were not interested to use them. Some of the reasons could be issues of trust, the terms of conditions for the loans and fear of business failure (Rogerson, 2005).

(b) Reinvesting of returns

Another form of financing the business was through re-investing of returns to expand the business activities. This means that proceeds from trading activities are directly used to meet day to day operating expenses such as procuring more stock to increase business activities. This is evident in the following statement made by one of the respondent:

"I use my own money, I use the money I get. If I see things getting down I go and buy".

This meant that expanding of business activities depended much on the individuals' effort to improve the business capacity and would therefore be stagnated. This could be possible where the business is profitable and the income is sufficient to cover operating expenses.

(c) Access to financial services

Access to financial services may have a positive effect on the operations of microenterprises (Rogerson, 2005). Beneficiary organisations indicated using financial services for example the Business voucher program by RED Door which provides business loans to SMMEs. It was also noted that opening of bank account was part of the process for obtaining the business loan. On the other hand, majority of the organisations that did not use RED Door services indicated that they did

not use financial services except those that had acknowledged having a bank account. They also did not access other financial services such as loans despite acknowledging the need for financial support due to lack of collateral for obtaining financial support. Consequently, the respondents perceived that financial services did not affect their business activities.

5.5.3 Social capital

Social capital may provide opportunities for microenterprises to share information and knowledge which can be used for business activities (Moyi, 2003). Respondents were asked if they used social capital to improve their business and how they communicate with social or business groups. The following categories emerged from the analysis forms of social groups, informal social support and means of communication. Table 5.8 summarises the themes for social capital and responses of respondents. The themes are summarized in the subsequent paragraphs.

Categories	Themes	Sample of responses
Social groups	Formal social groups	<i>"yes there is a business association here in Athlone and sometimes we go to the meeting"</i>
	Informal social groups	<i>"no we don't have an association but I have friends" "the assistance is only when a person is dead, we help or if there is a political issue people will always sit and speak about it"</i>
Business social support	Family members support	<i>"I have my brother but he is not here" "It's me and my boyfriend" "My wife is also involved in running of the business"</i>
	Members of staff support	<i>"me (business owner) and staff" "I appoint someone to report for the day how the business was going"</i>
Means of communication	Face to face / Discussions	<i>"We go there and chat and they ask me how is your business going?"</i>
	Telephones and cell phones	<i>"I use telephone" "yes i use (pulls out a cell phone from pocket)" "i have a mobile phone" "we use phone, others will come and tell me face to face not using the phone"</i>

Table 5.8: Summary of themes for social capital

(a) Social groups

Most of the respondents did not belong to any formal social or business groups and were not aware of any social groups that existed in their operating environments. Only one respondent acknowledged belonging to a local business association. However, as evident in the following statement, members of the group were not communicating very often:

"I did not communicate with the people, because from the time I came to start business, they did not call any meeting or they call a meeting but I was not here because from that six months I was just opening four months".

Similarly, some respondents stated that they had met in informal social groups such as meeting with friends who were operating different business and discusses ideas on improving their businesses. Interestingly, majority of owners of the beneficiary organisations did not belong to any social groups.

(b) Social support for microenterprises

Respondents were asked if family members were involved in day to day running of the business activities. The respondents indicated that members of the family were involved in day to day running of the business and in some cases members of staff were given the responsibility of running the business and reported to the owners of the business on dairy basis.

(c) Means of communication

Respondents were asked how they communicate with other members of the informal social or business groups. The analysis indicated that means of communication with the social groups were face to face, discussions and through the use of telephones and cell phones. The following statement by the respondent highlights the means of communication:

"... yes, talking about the business, how the business is going, also give the direction what I do with the business, like that. I use the telephone".

Similarly, another respondent indicated the means of communication in the following statement:

"I use to go there, they have businesses different from us, others they are selling food, others things for hair, others have saloons. We go there and chat".

This may mean that microenterprises may use different means of communication to interact with social groups and may discuss issues related to business at the same time personal issues. Preference for face to face communication may be due to low cost in face to face interaction as compared to using other forms of communication for example cost of air time for cell phones.

5.5.4 Physical capital

Apart from physical infrastructure to operate a business, microenterprises also need information to enable them make business decision and take action (Moyi, 2003; Mutula & van Brakel, 2006). Respondents were asked about the physical resources that they need mostly for their business. Two categories emerged from the analysis of the responses and these were information needs and business promotion methods. Table 5.9 summarises themes for physical capital and summary of responses.

Categories	Themes	Sample of responses
Information needs	Marketing information	<i>"I need information about marketing"</i> <i>"Information on how to promote my business"</i> <i>"but also I need to go out more to promote myself"</i>
	Local prices/competitors prices	<i>"if the shoe cost R150 I will charge him R130, check that customer belong to me"</i>
	Loan / Financing information	<i>"information like loan, if I have a loan to make my business more and is going to be better"</i>
	Area information	<i>"information about the area for example"</i>
	Business advice	<i>"I need help, like now the business I am doing is giving me nothing"</i>
	Suppliers information	<i>"I need information about where to buy materials"</i> <i>"Information about government tenders, catering materials and car-hire services"</i>
Business promotion	Word of mouth	<i>"we use word of mouth and leaflets"</i> <i>"I do advertise but most of my customers I through recommendations"</i>
	Reputation	<i>"I explain to them I have open a place, I will charge good price and do the job"</i> <i>"My method is to be lovely to everybody , I am open to everybody"</i>
	Advertising	<i>"we make paper (leaflets) and give to people"</i> <i>"I use advertising boards which I have put at my house"</i>

Table 5.9: Summary of themes for physical capital

(a) Information needs

It emerged that respondents required information to operate their businesses effectively. Information and knowledge on marketing and local prices were significant for their business activities. Local prices information was used determining the prices for products and services. Respondents also indicated the need for information where they could obtain loans to increase the capacity of their business activities. One of the respondents indicated the need for information on suppliers as evident in the following statement: *"I need information about marketing, where I can buy materials"*. The analysis also revealed that the microenterprises especially those that did not use services for RED Door required information on business advice i.e. on how to run the business successfully. The information needs for beneficiary organisations mainly focused on business growth.

(a) Business promotion

Respondents were asked how they promoted their businesses. The results indicated three forms of promoting business services and products as follows:

- *Word of mouth*: customers sharing information about the products or service.
- *Reputation*: good customer relations resulting in recommendations to other customers.
- *Leaflets*: were used distributed to prospective customers about the products and services.

It was also noted that for some of the beneficiary's success stories were published in local newspapers which also acted as a means for promoting their businesses at the same time promoting the services for RED Door. Respondents also indicated that computers were used to produce leaflets and in some cases production of leaflets was done at other organisations where they had to pay for the service.

5.5.5 Natural capital

Majority of the respondents did not use natural resources in their businesses. It was found that they engaged in retail trade activities where materials were bought from suppliers. Two themes under challenges for acquiring materials emerged and these were sourcing of materials and differences in prices for materials. Respondents stated that they sourced materials from different places. Other respondents indicated that materials were delivered from the suppliers. However, there were different opinions on prices for obtaining materials. In some cases respondents indicated that prices were the same from different suppliers in different locations while others indicated that if suppliers delivered the material prices were high and they preferred to buy themselves. It also noted that ICTs were used in some cases to find out availability of materials for example use of cell phone to interact with suppliers. Table 5.10 summarises themes for resources challenges for natural capital and sample of responses from respondents.

Themes	Sample of responses
Sourcing materials	<p><i>"I get the materials at a different place, the prices are the same"</i></p> <p><i>"If I get R3000 or R4000 I can buy more materials"</i></p> <p><i>"yes the challenge are big factories because we follow big factories, we are small just to put less money to the customer"</i></p> <p><i>"I go and buy the materials in Cape Town (city center) and other places like Woodstock, Wynberg and Claremont"</i></p> <p><i>"I normally call suppliers to find out the prices if materials are available and buy"</i></p>
Prices for materials	<p><i>"we go to Chinatown and Audrain and buy ourselves and its cheaper than someone coming to sell us in the shop"</i></p> <p><i>"my challenge sometimes when people (suppliers) bring the items and other things, people can bring you other things but if you don't like the things you can't take it"</i></p> <p><i>"Not much, prices always change every year, so I know that each year the prices will go up"</i></p>

Table 5.10: Themes for natural capital

5.6 Microenterprises interaction with structures

Respondents were asked if they interact with institutions and organisations which provide support for SMMEs on a number of issues including regulations and laws. The majority of microenterprises who did not use the services for RED Door did not interact with institutions and organisations supporting SMMEs. They indicated that they were not aware of the laws and regulations affecting their business apart from the local council where they paid the business operating fees. One respondent only came to know the laws when buying equipment for the business. Most of the respondents were not even aware of the existence of the institutions and organisations. Therefore, they considered organisations and institutions not accessible and not helpful.

Beneficiary organisations indicated that they interacted with business support organisations using telephones and cell phones. This may be the result of their awareness of services provided by institutions and organisations and part of use of the services required constant communication. Respondents from institutions and organisations also indicated that they used telephones and cell phones to contact prospective, current and old beneficiary organisations on issues such as follow-ups.

Themes for the interaction between microenterprises and institutions and organisations were effect of business regulations and effect of organisations on business. Table 5.11 summarises themes for interaction between microenterprises and institutions and organisations and sample of responses from respondents.

Themes	Sample of responses
Effect of business regulations	<p><i>"laws and regulations for small business"</i></p> <p><i>"when buying equipment, I read materials on laws"</i></p> <p><i>"Any regulation affecting my business, no, you know some other people come to take my stuff, but its only the city council, everything is fine"</i></p> <p><i>"for catering business you have to be registered, the business was registered in 2007"</i></p>
Effect of organisations on business	<p><i>"no, I just need to pay every month and do my business"</i></p> <p><i>"no, not yet"</i></p> <p><i>"no I don't seek help"</i></p> <p><i>"I was able to get the loan for start-up, training on doing a business plan and I want to go there again for support on marketing."</i></p>

Table 5.11: Summary of these for structures

5.7 Extent of ICT use in microenterprises

Another objective of the study was to analyse the extent of ICT use in microenterprises. Respondents were asked about the ICTs that they use or which they have access to. Three categories emerged from the analysis and these were use of ICTs, effect of using ICT use of business and issues in use of ICTs.

5.7.1 Use of ICT in microenterprises

The findings from the analysis confirm that cell phones were the mostly used ICT. Cell phones were used for both personal and business purposes. The findings that in line with prior studies on ICT use in microenterprises which indicated that cell phones were more accessible and affordable (Donner, 2006; Esselaar et al., 2007). Other ICTs that were also used for supporting business activities were telephones, computers, internet and email. The main uses of ICT were communication and information gathering for example, searching information on prices for materials and business opportunities; and communicating with customers. Interestingly, in some cases despite owning ICT facilities and having access to public ICT facilities, the business owners did not utilise the facilities and preferred to use manual systems. It was observed that lack of

knowledge on the potential benefits of using ICTs was one of the factors contributing towards non-use of ICTs for business activities. Table 5.12 summarises the ICTs used in based on the responses from respondents and observations. Extent of use is rated on a scale of three variables namely low, moderate and extensive.

ICT	Actual use	Extent of use
Computers	Preparation of documents i.e. business plans, leaflets and recording business transactions.	Moderate
Cell phones	Communicating with customers, suppliers and members of staff. Also used to communicate with family members.	Extensive
Telephones	Communication with customers and friends operating microenterprises.	Moderate
Internet and email	Information on tenders and communicating with customers.	Moderate
Public ICT facility	Checking government tenders on internet and communication with customers.	Moderate
TV	Entertaining customers and source of information. Testing DVDs before they are sold.	Extensive
Radio	Entertainment while conducting business and source of information for local news.	Extensive

Table 5.12: Summary of use ICTs in microenterprises

It is noted that respondents used public ICT facilities for example internet services at the business advice centres. One of the reasons for using ICT public facilities was lack of resources as indicated in the following statement by the business center manager:

"We have two terminals where clients come to use internet. They use the service for two reasons, firstly because they do not have computers. Secondly though they may have computers but they do not have internet access".

In a follow-up question to find out the actual use of internet, the respondent indicated that the main use of was to check e-mail and government tenders as indicated in the following statement:

"Majority come here to use internet, to check their emails for Gmail or Yahoo accounts and to check tenders on the city council websites. Other websites like facebook and u-tube are blocked. They use internet for thirty minutes and mainly to check government tenders"

5.7.2 Effect of ICT use on business

It also noted that the effect of using ICT were easy communication, time saving and non-business communication. Respondents indicated that they were able to communicate with customers using telephones or cell phones and resulted in time saving. ICTs were also being used non-business purposes. For example, one respondent indicated use of cell phone to communicate with a relative in the following statement: *"no, I don't talk about the business, I talk about other things because it's a different business"*. This shows that communication is important part of humans and using technology to communicate saves time and improves the business activities as microenterprises are able to deal with personal issues that may indirectly affect the businesses.

5.7.3 Issues in use of ICT in microenterprises

Trust and safety issues in use of technology emerged as challenges in using of ICT such as cell phones. Respondents indicated that they used their contact details to gain trust from customers as stated in the following statement:

“... most customers they want evidence, guarantee, you must give them your cell phone number and write a little slip. He must have the confidence that my stuff is secure”.

This statement demonstrates that people are able to trust one another and built relationship based on trust through the use of technology in this case it was contact details for a cell phone. Microenterprises as users of technology also felt that it was safe to share their contact details. The respondents were confident in using cell phones to share their contact details and felt safe because majority of cell phone users were registered as a measure to prevent misuse of cell phone in criminal activities. This demonstrates that microenterprises are also affected by telecommunications legislations for example Regulation of Interception of Communication and Provision of Communication-Related Information Act which compels all user of cell phone to register with mobile operators. A summary of the act is presented in Chapter 2 section 2.4. Table 5.13 summarises themes for extent of ICT use in the sample cases and sample of responses from respondents.

Categories	Themes	Sample of responses
Use of ICT	Mobile technology	<i>“yes I use a mobile phone ” “telephone and mobile phones”</i>
	Manual systems	<i>“I don’t understand. They write a report on paper”</i>
	Information gathering	<i>“I use to check the prices for the stuff, sometimes when I go there the prices are up, so I have to go somewhere else where it’s cheap mostly to get some low prices” “It is easy to look for information on tenders for government”</i>
Effect on business	Easy communication	<i>“when his shoe is finished two or three days you must take his number and call, because some customers forget also” “It’s easy to communicate with farmers and I can plan for collections”</i>
	Time saving	<i>“the benefit is sometimes when the shoes of the customer is finished it is necessary to use the cell phone”</i>
	Non-business communication	<i>“no I don’t talk about the business, I talk about other things because it’s a different business”</i>
Issues in ICT use	Trust and safety in use in use of mobile technology	<i>“Cell phone, since RICA is taken over the registered number, I don’t see the problem. Everybody knows if I am going to do something wrong is an open channel” “most customers they want evidence, guarantee, you must give them your cell phone number and write a little slip”</i>

Table 5.13: Summary of themes for extents of ICT use

5.8 Summary of data analysis

The data analysis has revealed that microenterprises were important in creating employment and providing a means for living. Like many other businesses, microenterprises faced problems and challenges such as changes in prices for materials, operational issues, business performance issues and business competitiveness. Their use of ICTs was relatively low in utilisation of livelihood assets and ICTs were mainly used for communication and information gathering. In some cases, despite owning and accessing ICTs, microenterprises did not use ICTs for business purposes. Furthermore, majority of microenterprises especially in the informal sector did not use ICTs to interact with organisations and institutions providing support for SMMEs. Part of the reasons inhibiting use of ICTs was lack of knowledge on application of ICTs in their businesses and lack of awareness of business support services. Consequently, some cases of microenterprises perceived organisations and institutions not helpful and inaccessible. Overall, ICT use had positive impact on livelihoods of microenterprises mainly in more income and well-being. Microenterprises were

motivated by aspiration to achieve positive outcomes. In some cases there were no positive outcomes such as dormant business activities. Table 5.14 summarises results of the data analysis.

Objective	Categories	Summary of Data analysis
Context	Microenterprises start-up	Some of the reasons for microenterprises to engage in business activities were limited work opportunities, income generating, to earn more than being employed in a low-income job and means for living.
	Business skills	Microenterprises provided opportunities for skills development, emulating role models for success, self confidence and self esteem.
	Microenterprises sustaining factors	Microenterprises were relatively easy to start through self capitalisation, small scale activities, unique business models and wide customer base.
	Business status	Once established, the aim was to grow business and ideas for business were generated through discussion with other microenterprises.
	Microenterprises life-span	Despite the willingness to grow business the microenterprises had a short life span.
Vulnerabilities	Price changes	Price changes affected the business activities for microenterprises.
	Problems	Beyond vulnerabilities microenterprises faced problems in areas of: operations, competency problems, business performance challenges and business competitiveness problems.
Assets	Human Capital	Microenterprises used prior business knowledge and skills; and methods of acquiring skills were also through trial and error and peer-learning.
	Financial Capital	Resources for business start-up were through self-financing using savings and business expansion was through reinvesting of returns due to limited access to financial services.
	Social Capital	Microenterprises used social capital i.e. formal social groups and informal social groups. The support covered many areas including business social support by provided by family members and members of staff.
	Physical Capital	Microenterprises required information for operating their businesses. Information needs were marketing information, local prices, loan information, area information, business advice and supplier's information.
	Natural Capital	Majority of the respondents did not use natural resources and they were mainly involved in retail trading activities and faced challenges in sourcing materials and information on prices for materials.
ICT use	Extent of ICT use	The extent of ICT use was limited to communication and information gathering for business activities. Other respondents preferred to use manual systems despite owning ICTs. Effects of ICT use on business were easy communication, time saving and non-business communication. Issues of trust in use of ICT emerged. Public ICT facilities were also used.
Structures	Institutions	Regulations affected microenterprises in operations i.e. operations fees.
	Organisations	Majority of informal microenterprises did not use business support organisation's services due lack of awareness.
Outcomes	Livelihood outcomes	Most noticeable livelihood outcome was improved well-being, more income and in some cases impact was difficult to determine due to short-life span.
	Business Aspirations	Motivation to achieve positive outcomes was influenced by aspirations i.e. more business support and business development.
	Dormant business	In some cases microenterprises experienced limited growth with no impact on the livelihoods of the owners.

Table 5.14: Summary of data analysis

5.9 Summary of research findings

From the analysis of data gathered during the field visits and documentary review, the summary of findings in reference to the set research objectives are as follows:

- Effective use ICT in utilisation of assets and structures led to positive outcomes on the livelihoods of microenterprises. From the sampled cases, the beneficiary organisations that used ICT had positive outcomes mainly in improved well-being and more income. Microenterprises that did not receive support from business advice centres that used ICTs had also positive impact on their livelihoods. In some cases, there was no impact on the livelihood

of microenterprises despite owning and accessing ICT. The microenterprises were dormant (their business did not grow and had no positive outcomes).

- Majority of the sampled cases of microenterprises did not use ICT in identifying, preventing and dealing with vulnerabilities. It emerged that lack of employment opportunities and commodity price changes were the main vulnerabilities affecting microenterprises. Price changes affected the activities of microenterprises as vulnerability. Furthermore, microenterprises experienced problems as situations that were difficult to deal with. The problems were business operation problems, lack of managerial skills, business performance issues and business competitiveness challenges. In the cases where ICT were used, microenterprises used ICT in accessing information that was used in decisions to deal with the vulnerabilities. For example, accessing information used in costing for products and services.
- ICTs were mainly used in utilisation of social capital as an asset in communication and sharing knowledge on business. They were not directly used to acquire or utilise assets for business but used in accessing information that was used in decisions for use of assets for example identifying information needs that influenced decisions on different forms of assets (human capital, physical capital, financial capital and natural capital). The information was also used in coordinating the activities for microenterprises.
- Apart from beneficiary organisations, the majority of the cases of the microenterprises did not use ICT to interact with institutions and organisations that were providing support SMMEs. The main reason was lack of awareness of the organisations providing support for microenterprises. As a result, microenterprises perceived institutions and organisations not helpful and not accessible.
- Majority of the sampled cases used simple ICT for their business activities. Cell phones were used in almost all the cases. However, usage of ICTs was on both business and personal purposes. In some cases microenterprises did not use ICT for business despite owning and having access to ICT. Some of the limiting factors that led to non use of ICTs for business activities were lack of capabilities on IT skills and knowledge on how to apply ICTs in the business activities.

5.10 Summary

The results from the data analysis show that there is positive impact of ICT use on the livelihoods of microenterprises. The findings are in-line with similar results with earlier studies on impact of ICT use for microenterprises (Duncombe, 2006; Donner, 2007). However, it emerged that for information needs for microenterprises influenced the how livelihoods assets were used. ICTs to some extent played an important role in information sharing and communication to address part of the information gap. Furthermore, aspirations motivated the microenterprises to engage in business activities that led to positive livelihood outcomes.

Chapter 6

Discussion on findings

This chapter discusses the research findings to answer the research question, objectives and implications of literature that was reviewed for the study. A reflection on the theoretical framework on its effect on the findings is presented. The discussion also reflects on emerging concepts from the research findings.

6.1 Summary of research objectives

The main objective of the study was to assess the impact of ICT use on the livelihoods of microenterprises. The context of the study was South Africa. Literature indicated that ICT have the potential to improve the survival chances of microenterprises and that there are potential positive outcomes from using ICT in the activities for microenterprises leading to sustainable livelihoods (Duncombe, 2007; Donner, 2006; Kamal & Qureshi, 2008). Research objectives and propositions are summarized as follows:

1. *To analyse how microenterprises utilise assets and structures using ICT and the effect on outcomes.* It was proposed that microenterprises can utilise assets and structures effectively using ICT and can affect livelihood outcomes. Arun et al. (2004) suggested that ICT use may strengthen the achievement of sustainable livelihoods for microenterprises. This is achieved through long-term and short-term strategies through effective use of information and knowledge (Chapman & Slaymaker, 2002).
2. *To assess how microenterprises can use ICT in identifying, preventing and dealing with vulnerabilities.* Here the proposition was that microenterprises can use ICT to identify, present and deal with livelihood vulnerabilities. There is a potential for using ICT in identify vulnerabilities faced by microenterprises such as changes in commodity prices, decrease in employment opportunities drought and floods. ICT may be used to support access, sharing and communication of information which may lead to more capabilities in dealing and mitigating vulnerabilities (Carney, 1999; Chapman & Slaymaker, 2002; Parkinson & Ramirez, 2006).
3. *To examine in detail how microenterprises use ICT to enhance use of assets.* Based on literature, it was proposed that microenterprises can use ICT to utilise livelihood assets effectively. The dual role of information (analytical and functional) through the use of ICT strengthens the use of assets which can be in form of human, social, financial, natural and physical capital. Microenterprises may coordinate their activities using ICTs (Duncombe, 2006).
4. *To analyse how microenterprises interact with institutions and organisation using ICT.* The proposition for the objective was that microenterprises can use ICT to interact with institutions and organisations effectively. Livelihoods for microenterprises are affected by processes and information that initiates processes to be carried out (Duncombe, 2006). ICT can be used to enhance communication between microenterprises and institutions and organisations that provide livelihoods support (Morawczynski, 2009).
5. *To assess the extent of ICT use in microenterprises.* There are differences in adoption and use of ICT in microenterprises (Duncombe & Heeks, 2005). Microenterprises use simple technologies due to literacy levels, low income, limited support etc (Bharati & Chawdhury, 2006; Duncombe & Heeks, 2008). Cultural factors may also influence use of ICT in communities (Parkinson & Ramirez, 2006). Wolcott et al. (2009) further categorises challenges in adopting and using ICT for microenterprises into capabilities, resources, access, attitude,

context and operations. This demonstrates that usage of ICT in microenterprises is challenging.

Having looked at the research objectives of the study and findings, the discussion now focuses on the reflection of the results of findings and the literature.

6.2 Context of SMMEs in Western Cape Province

The findings indicated that the Western Cape Province face challenges despite having ICT infrastructure and different support programs for SMMEs. One of the major challenges the province faced was a high rate of unemployment among the able-bodied population (Wright, 2010). Microenterprises were providing work opportunities for the working population which could not find employment due to lack of skills required by the economic sectors in the province and downsizing of large organisations. The findings are consistent with the findings of previous studies that microenterprises are a main source of employment in developing countries (Duncombe, 2006; Kamal & Qureshi, 2009).

Some of the reasons for engaging in microenterprises were income generating for households and opportunity for skills development. Furthermore, microenterprises were perceived to provide more income than working in low-income jobs. It was noted that microenterprises has a short-life span and this could be because microenterprises are mainly survivalist where business activities are abandoned when employment opportunities are found (Liedholm & Mead, 1999; Rolfe et al., 2010). Nevertheless, owners of the microenterprises were willing to grow their businesses.

Capitalisation for the businesses start-up was mainly from personal savings since it is impossible to raise capital from the banks mainly due to lack of collateral. Despite limitations in access to financing, microenterprises were able to establish themselves by operating at small scale and in some cases developed unique business models that served a wide customer base. Consequently, microenterprises succeed with difficulties to establish themselves. Rogerson (2008) pointed out that microenterprises may also use credit from close relatives and informal credit organisations to mitigate the problem of lack of finance from banks. It was noted that microenterprises reinvested their income to expand their business activities as one way of dealing with the problem for lack of access to credit.

6.3 Impact of ICT use on livelihoods of microenterprises

The findings indicated that, to some extent, ICT use resulted in positive impact on the livelihoods of microenterprises. The outcomes were increased income and improved well-being of the owners of microenterprises. The results are in line with the findings in similar study on the impact of ICT use on livelihoods of microenterprises (Duncombe, 2006). The study has also shown that microenterprises benefited from using simple technologies mainly cell phones and telephones to obtain and share information. The information and knowledge were used to come up with strategies that led to effective use of assets leading to sustainable livelihoods as suggested by Chapman and Slymaker (2002).

Although ICTs are perceived as an enabler that could increase survival chances of microenterprises (Good & Qureshi, 2009; Kamal & Qureshi, 2009), other factors were noted as essential for ICTs to be adopted and used in microenterprises. The factors were information needs and aspirations which may influence achievement of positive outcomes for livelihoods of microenterprises. Information needs were important so that appropriate action could be take (the functional role of information) as suggested by Duncombe (2006). For example, information needs related to use of assets were supplier's information and loan information. Microenterprises required information on where to buy materials and where to access loans to finance their businesses for start-up or expansion activities. With regard to aspirations, microenterprises were motivated to make strategies that would lead to positive outcomes. This was in line with the results of a study by Soriano (2007) which indicated that households or communities as actors use resources (in form of information, technologies) that are available to them. Motivation may influence the actions of microenterprises that may result in enhanced livelihood outcomes. Figure 6.1 illustrates the

relations between the variables for SLA and how information needs and aspirations may influence attainment of livelihoods.

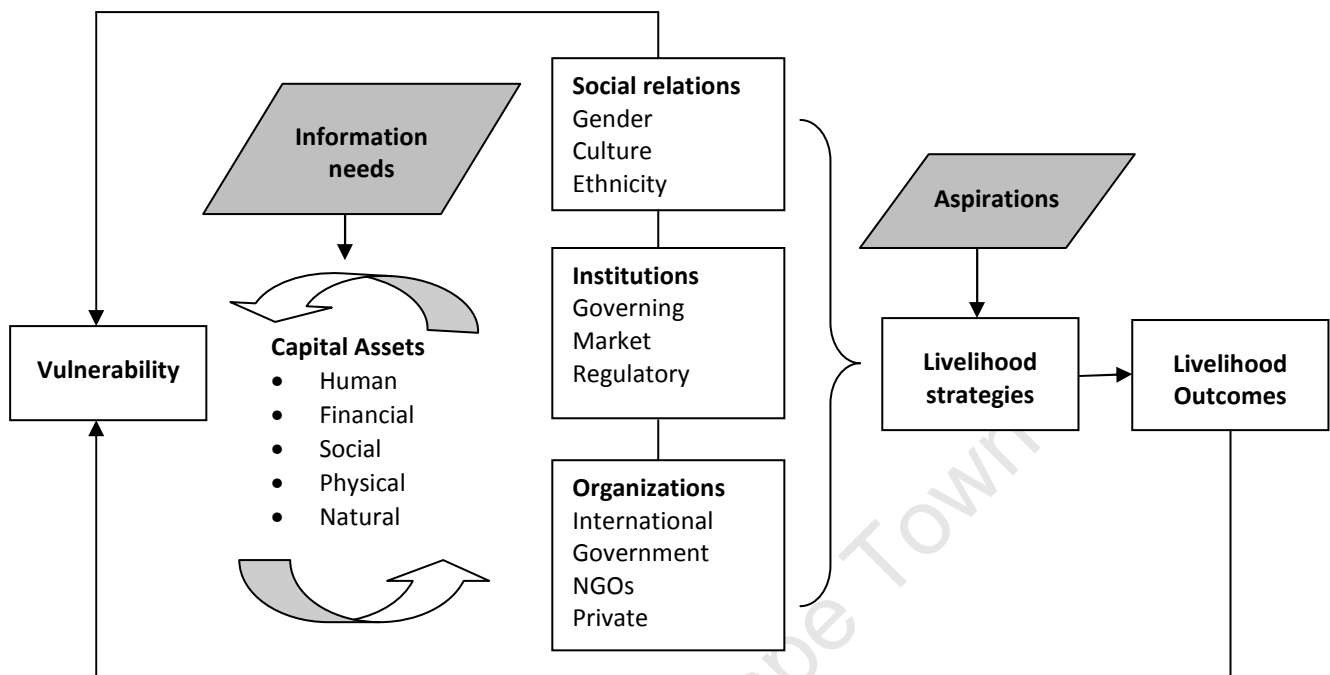


Figure 6.1: SLA model (Duncombe, 2006) with new variables.

Microenterprises may use the different forms of assets for their livelihoods (Duncombe, 2006). However, use of assets may be influenced by their information needs (Moyi, 2003). Information is important in this process because it is used to determine action to be taken (Mutula & van Brakel, 2006). The results from this study indicated that microenterprises required information to address information gaps related to use of assets. Information supported the decision making processes as suggested by Mutula and van Brakel (2006). With regard to aspirations, microenterprises may also use assets, support from institutions and organisations to come up with livelihood strategies (Duncombe, 2006). Aspirations in context of microenterprises were conceptualised as the motivation that influences the business outcomes (Soriano, 2007). The aspirations may be personal and business goals and involves the owner of the business to secure resources, capabilities and commitment to achieve growth (Wiklund & Shepherd, 2003). The findings indicated that microenterprises were motivated to achieve growth in their businesses and obtain support from institutions and organisations supporting SMMEs. Respondents also indicated instances of stagnation where there was limited growth in their businesses. This demonstrates that aspirations can affect business outcomes in microenterprises and successful outcomes depend on a range of factors such as market conditions, access to resources and business skills and knowledge (Covin & Slevin, 1997).

6.3.1 Identifying, preventing and dealing with vulnerabilities

The findings revealed that price changes and unemployment were the main vulnerabilities affecting the sampled cases. Microenterprises were also facing challenges. The challenges including the following:

- (a) Operation-related problems
- (b) Business performance
- (c) Competency issues
- (d) Business competitiveness

The highlighted problems are not indicated in the SLA model (DFID, 1999; Duncombe, 2006). Literature on SLA framework suggests examples of vulnerabilities such as conflicts, social

exclusion, lack of employment, natural disasters, changes in prices of commodities and seasonal changes (DFID, 1999). Interestingly, the results indicated that microenterprises themselves were taking action in preventing and dealing with the vulnerabilities and problems. For instance, in dealing with business competitiveness problems, microenterprises were comparing prices for materials used in the business and ICTs were used in sourcing information. With regard to high operating fees, the respondents indicated that they were using their savings and income from the business to meet the costs. It was also noted that respondents were being vigilant when conducting business activities as preventive measure for stock loss through theft (recall Table 5.5). Duncombe (2006) suggest the functional role of information and ICTs in microenterprises in identifying vulnerabilities and communication between with organisations and institutions for appropriate action to be taken. The findings indicated no evidence in communication between respondents who did not use services for RED Door and organisations and institutions regarding vulnerabilities. Part of the reasons may be lack of knowledge of where to obtain the support (Brown & Brown, 2009; Mitrovic & Bytheway, 2009).

6.3.2 ICT use in utilisation of assets

Increased access to resources may lead to sustainable livelihoods for households (Ellis, 2000). The different forms of resources for livelihoods are human capital, social capital, financial capital, physical capital and natural capital (DFID, 1999). Application of appropriate strategies to utilise assets is essential for the microenterprises to achieve positive outcomes. ICT use may strengthen use of assets in microenterprises (Duncombe, 2006; Sighn et al., 2008). The findings show that microenterprises used ICT in assessing and utilizing different assets in their businesses. There were variations in the way ICT were used to utilise the different forms of assets. The findings confirmed the information needs for microenterprises suggested in similar studies for microenterprises and local communities (Duncombe & Heeks, 2002; Dhingra & Misra, 2004). Table 6.1 summarises the information needs for microenterprises that emerged in this study with comparison to other studies.

Information needs for microenterprises		
Findings in current study	Duncombe & Heeks (2002)	Dhingra & Misra (2004)
<ul style="list-style-type: none"> • Marketing information • Local prices • Area information • Business advice • Loan information • Suppliers information 	<ul style="list-style-type: none"> • Access to markets • Assistance and advice • Skills development information • Regulatory information • Credit facilities • Raw materials • Transport information 	<ul style="list-style-type: none"> • Market prices • Area profile • Licenses and permits • Government schemes • Inventory in fair price shops

Table 6.1: Summary of information needs for microenterprises

Use of ICT was different from one form of asset to another. For example, there were differences in the way financial, natural and human capital were utilised using ICTs. However, to some degree ICTs may be used without the users setting the goal to use ICTs. According to the theory of information seeking behavior, individuals seek information to satisfy a knowledge gap or a desired goal and information can be obtained in active or passive mode (Wilson 2000; Case, 2002). This was evident in the information needs that were identified under physical capital such as information on marketing, local prices, areas information, business advice, loan information and suppliers' information. Although there was no evidence in the way ICTs were used to obtain this information, it might be possible that ICTs were used in passive mode. Passive mode of ICT use in this context means that there was less attention to the intention to use ICT by the microenterprises, similar to the description of information behavior suggested by Wilson (2000).

6.3.3 ICT use in interaction with structures

There is growing evidence that microenterprises may interact with institutions and structures more effectively using ICTs (Duncombe & Heeks, 2005; Duncombe, 2006). The institutions may provide support and information on regulations and laws such interactions are vital since the institutions may provide business support services to microenterprises. In regard to interaction for beneficiary organisations, there was constant interaction with the institutions and organisations because organisations were interested in knowing the status of progress for the support services provided to microenterprises.

The findings indicated that majority of non-beneficiary organisations were not aware of the institutions and organisations providing support to SMMEs. The non-beneficiary organisations interacted with regulatory institutions such as local council officials when paying operation fees and most of the times communication was face-to-face. One of the reasons for the limited interaction between organisations and microenterprises was lack of awareness of the support services. A study by Heeks and Duncombe (2005) confirms that lack of awareness of support was one of the problems for microenterprise. They further suggest that microenterprises rely more on social networks and informal communication channels despite the quality of information being poor. This could be part of the reasons why microenterprises are not aware of the support services provided by institutions and organisations. Another reason could be that there is lack of alignment between the way institutions communicate and communication of microenterprises. The problem of awareness of support services for microenterprises is persistent in IS literature as noted in a number of studies (Moyi, 2003; Brown & Brown, 2009). Specific to South Africa, there are a number of studies that demonstrates the issue of lack of awareness of support services by microenterprises (Luiz, 2002; Mitrovic et al., 2009). One way of promoting awareness of the support services for microenterprises could be utilizing the existing community structures especially local and social network where microenterprises participate.

6.3.4 Extent of ICT use in microenterprises

The findings in the present study revealed that the extent of ICT use in the sampled cases of the microenterprises was limited. ICTs were mainly used in information gathering and communication activities. It was observed that the majority of the respondents had cell phones. This confirms prior studies on use of ICT in microenterprises (Esselaar et al., 2007; Donner, 2006; Molony, 2007; Jagun et al., 2008). Mobile phones are now accessible meaning they are available, affordable and require minimal capabilities to use as noted by Gerster and Zimmerman (2003). Microenterprises also used cell phones for non-business related communications. Similar findings were noted by Perkinson and Ramirez (2006) on the use of ICT on secondary economic activities which did not affect the livelihoods of telecentre users. However, issues of trust and safety were noted in this study where microenterprises perceived being safe in using mobile phones due to laws on Telecommunications compelling registration of cell phones. As a result, microenterprises used their contact details to gain trust from customers.

The findings also indicate that microenterprises used simple ICT applications in their business activities. These included use of mobile phones, computers, internet, TV and radio (summarised in section 5.2.5). Complex computer systems which require special skills were not used for business activities such as accounting systems, payroll systems etc. Non-use of these type computer systems could be lack of financial and human resources (Wolcott et al., 2009). Public facilities were also used where microenterprises could not afford to acquire assets like computers to access internet. Internet was also used to access information on tenders.

It was also observed that in some cases microenterprises preferred to use manual systems despite owning and having access to ICTs such as computers or laptops. This is in line with the suggestions by Warschauer (2003) and Soriano (2007) that provision of ICT does not guarantee that the ICT facilities will be used. Part of the reasons inhibiting use of ICTs may be lack of capabilities on IT skills and knowledge where to apply the ICTs in business. Another reason that

could have contributed to the non-use of ICTs in microenterprises could be a mismatch between technology and business systems for microenterprises (Wolcott et al., 2008).

Further, ICTs were important in the supply chain of microenterprises. It was observed that the supply chain in the context of the microenterprises comprised of suppliers or wholesalers, microenterprises, customers and other microenterprises within their locations as well as over long distances. ICTs facilitated efficient communication and were being used to substitute travelling. For example, contacts with customers and suppliers using cell phones or telephones. The analysis indicated that communication patterns followed two directions patterns in line with suggestions by Forester and Heeks (2010). The authors suggest that communication in microenterprises may be vertical and horizontal. In vertical communication, microenterprises interacted with suppliers or wholesalers on the upward stream and customers on the downward stream. Use and generation of physical, social and financial capitals was the result of the vertical interactions. In horizontal communication microenterprises interacted with other microenterprises. In horizontal communication use of social capital was significant for the microenterprises because it provided the means for learning and sharing of knowledge. Microenterprises with strong local ties are more likely to be successful than those without ties (Vargas, 2000). The findings were in line with this concept.

6.4 Emerging concepts

The analysis was deductive as proposed in the research design (Chapter 4 section 4.4). It was guided by the SLA framework where themes were identified to confirm the variables for the framework. However, the following emerged as concepts from the data analysis.

(a) Problems under vulnerabilities

It emerged that in some of the cases microenterprises experienced problems apart from vulnerabilities. The centrality of vulnerabilities could be internal and external to a livelihood (Carney, 1999). In this context problems were conceptualised as internal to a livelihood and may be described as difficult conditions that are difficult to deal with and affect the livelihoods of microenterprises. Themes under problems were issues in business operations and competencies.

(b) Business aspirations

It was noted that aspirations were motivating factors that led microenterprises to take action towards achievement of outcomes. Motivation may influence strategies on how to use livelihood resources and information and enhance livelihoods outcomes (Soriano, 2007). Examples of aspirations of microenterprises were willingness to access business support and business growth. Empirical evidence indicated that owners of small organisations perception to grow business are greater than those of large organisations (Tominc & Rebernik, 2007). The authors also argue that not all small business are willing to grow due to fear of negative consequences which may in conflict with their personal goals. With support from institutions and organisations, microenterprises may obtain necessary capabilities to grow their businesses.

(c) Trust in using ICTs

The results revealed that ICTs facilitated an environment where microenterprises and their customers could trust each other. Contacts details were shared for example using cell phone numbers. Trust between microenterprises and customers were important for development of long-term relationship (Duncombe & Heeks, 2005; Molony, 2007). In operating environment for microenterprises, there are limited or no formal legal procedures when conducting business activities (Molony, 2009; Kyobe, 2009). It was noted in this study that business activities for microenterprises were based on trust between the owner of the microenterprise and the customer and that ICTs were facilitating the process for developing trust between the two parties.

6.5 Summary

ICT use in microenterprises and utilisation of assets and support from institutions and organisations is significant in achieving positive livelihood outcomes. On the overall, as demonstrated from the literature and findings from the assessed cases of microenterprises,

appropriate and relevant use of ICTs in microenterprises may result in positive livelihood outcomes and increase their survival chances. However, for microenterprises to reap the benefits of using ICTs in their livelihoods several other factors have to be taken into considerations such as information needs for microenterprises and their aspirations. Microenterprises also faces many challenges in adoption and using ICTs. Furthermore, vulnerabilities and problems affecting livelihoods of microenterprises should be recognized and understood so that appropriate support can be delivered.

University of Cape Town

Chapter 7

Conclusion

This chapter summarises the answers obtained in the study for the research question and objectives. The extent and to which the results have achieved the theoretical and methodical aims. Challenges and limitations of the study are also presented and the value of the study. Recommendations for practice and policy and direction for further research from this study are discussed in this chapter.

7.1 Introduction

Growth of microenterprises is an important subject for governments and developing agencies in developing countries (Heeks & Duncombe, 2002; Mitrovic & Bytheway, 2009). Consequently, governments and development agents continue to implement and support interventions that can enhance the growth of SMMEs. ICT are perceived as vital in supporting sustainable growth of microenterprises (Kamal & Qureshi, 2009). This study investigated the impact of using ICT on the livelihood of microenterprises. The study focused on the case of South Africa where SMMEs are important in bridging the gap between economic tiers and address the problems of poverty and inequality. Conclusions drawn from the study are presented in the subsequent sub-sections.

7.2. Summary of findings

The study contributes to knowledge of ICT use in microenterprises in relation to sustainable livelihoods especially those in developing countries which may face similar challenges. Specific to this study, conclusions are drawn from the case of South Africa. The following is a summary of the findings from the study:

Context of SMMEs in Western Cape Province:

Microenterprises were engaged in business activities due to limited employment especially for low skilled jobs, to generate more income rather than being employed in a low pay job and a means for living. The findings also indicated that microenterprises were relatively easy to start and personal resources were used for capital. However the life-span for microenterprises was short despite the intentions to grow business by the owners.

Impact of ICT on microenterprises livelihoods:

The findings confirm that ICT use have the potential for positive impact on the livelihoods of microenterprises. This was demonstrated in improved well-being and more income of owners of the sampled cases microenterprises. However, achieving positive outcomes is dependent of on a number of factors such as awareness, knowledge and skill to adopt and use ICT for business activities. The study showed that microenterprises were experiencing challenges and examples of these were lack of awareness of support services, lack of access to credit facilities of start-up or business expansion, lack of skills, and knowledge to use ICT for business activities. Business support services were instrumental in solving some of the problems for microenterprises. However, the major challenge was that microenterprises were not aware of the support services.

Livelihood outcomes for using ICTs and structures:

Use of ICTs in utilisation of assets and structures led to positive outcomes on the livelihoods of microenterprises. From the sampled cases, the beneficiary organisations that used ICT had positive outcomes mainly in improved well-being and more income. In some cases, microenterprises that did not use RED Door services and used ICTs were dormant (their business did not grow and had no positive outcomes).

Identifying, preventing and dealing with vulnerabilities:

Majority of the sampled cases of microenterprises did not use ICTs in identifying, preventing and dealing with vulnerabilities. Price changes affected the activities of microenterprises as vulnerability. Microenterprises were also facing challenges. The challenges were related to business operations, competency, business performance and business competitiveness. In the cases where ICTs were used, microenterprises used ICT in accessing information that was used in decisions to deal with the vulnerabilities. For example, information was used for decisions on costing of products and services.

Use of ICT in utilizing of assets:

ICT were mainly used in utilisation of social capital as an asset in communication and sharing knowledge on business. ICTs were not directly used to acquire or utilise assets for business but used in accessing information that was used in decisions for use of assets for example sourcing information that influenced decisions on different forms of assets (human capital, physical capital, financial capital and natural capital). The information was also used in coordinating the activities for microenterprises.

Use of ICT in interacting with organisations and institutions:

Apart from beneficiary organisations, the majority of the cases of the microenterprises did not use ICT to interact with institutions and organisations that were providing support SMMEs. The main reason was lack of awareness of the organisations providing support for microenterprises. As a result, microenterprises perceived institutions and organisations not helpful and not accessible.

Extent of ICT use in microenterprises:

Majority of the sampled cases used simple ICT for their business activities. For example, cell phones were used in almost all the cases. However, usage of ICT was for both business activities and non-business activities. Public ICT facilities operated by business support organisations were also used in cases where microenterprises had no computers and no access to internet. In some cases microenterprises did not use ICT for business purposes despite owning and having access to ICTs. Some of the factors that inhibited use of ICTs for business activities were lack of capabilities on IT skills and knowledge on where to apply ICTs in the business.

7.3 Reflections on the study

This sub-section presents the challenges and limitations of the study. The challenges encountered during the study were trust of respondents, voluntary participation, language barriers, time constraints and limitations for applying case study approach. The challenges are summarized as follows:

Trust: The researcher experienced challenges of trust with the respondents during the data collection process. Majority of microenterprises were not registered to any authority, they do not keep financial records and operate in the informal sector (Esselaar et al., 2007). Some microenterprises were not willing to disclose information relating to the outcomes of their business activities. It appeared that disclosing of outcomes was problematic and required respondents to recall events based on memory. The aims and objectives of the study were explained so that the respondents do not feel intimidated or threatened as one way of mitigating the lack of trust.

Voluntary participation: In consideration of research ethics, respondents were informed that participation to study was voluntary and were free to withdraw anytime from the study. The researcher experienced problems in finding participants who were willing to participate in the study despite applying snowballing technique. The researcher approached many potential participants and few were interested in participating in the study. Consequently, the sample for the study was skewed towards male respondents; as majority of the female entrepreneurs that were approached did not volunteer to participate.

Language barriers: Language was another challenge because the researcher had no competence in the dominant local languages of the Western Cape Province which are isiXhosa and Afrikaans. Majority of microenterprises in the areas have low literacy levels and prefers to speak vernacular

languages for business purposes. Therefore, only microenterprises owners who were able to understand and speak English were considered. Due to financial limitations, interpreters were not considered for the data collection and all interviews were conducted in English. Data triangulation was used to verify facts presented by respondents during the interviews.

Time constraints: Time constraint was another factor which was identified as a challenge. Case studies are time-consuming (Yin, 2009). I ensured that the interviews were properly planned so that there was minimal disruption of the activities of the microenterprises and respondents fully participate in the interviews. I also recognized the pitfall of using interviews as a technique for data collection. If questions were not properly structured there was a danger of collecting data that is not relevant to the study. Therefore, research instruments were pre-tested and observations were used to supplement data collected during the interviews.

Assessing impact: Microenterprises have short life-span and survivalist in nature (ILO, 2002; Esselaar et al., 2007). Some of the sampled cases especially those that were not beneficiary organisations that operated in the informal sector had been operating for a short time and it was difficult to establish the outcomes from their business activities. Therefore, the researcher analysed their stories and narratives to understand their context (Principal of contextualisation: section 4.2). Rogers (2003) argues that impact needs to be conducted over a period of time. In this study impact for microenterprises was considered on both short-term and long-term due to the nature of microenterprises. Therefore assessing impact differs from context to context and the purposes for assessing impact (Soriano, 2007; Ashraf, 2008).

Framework limitations: Critics of SLA argue that the frameworks has limited relations to ICT and Information because of multiplicity of potential independent, dependent and intervening variables when dealing with correlations (Parkinson & Ramirez, 2006). Application of the framework can be time consuming because of many variables (Heeks & Molla, 2008). To mitigate these problems, questions for the open-ended interviews were developed based on the variables of the framework.

7.4 Potential value of the study

Previous studies on impact of ICT use in South Africa largely focused on SMEs in areas of productivity, formalisation and technology (Wolf, 2001; Chowdhury & Wolf, 2003; Esselaar et al., 2007). Microenterprises have received little attention in IS research (Kamal & Qureshi, 2009). Consequently, the impact of ICT use in terms of livelihoods is not clear. The potential value of this study is to fill part of that gap and share the results with organisations implementing livelihood interventions for South African microenterprises and the research community. Part of this research has been presented at the International Development Informatics Association (IDIA) Conference held in November, 2010 in Cape Town. The research results will be shared with RED Door management. Drawing from the findings of the study, recommendations for practice and suggestions for further research are presented in the next sub-sections.

7.4.1 Recommendations for practice

The following are recommendations for the organisation where the case study was conducted:

- There is need for increased awareness of the support services for SMMEs especially those operating in the informal sectors. Majority of sampled cases for non-beneficiary organisations indicated that they were not aware of the support services offered by the RED Door. There is need to enhance the utilisation of the existing community networks to increase awareness of the services provided by the RED Door program. The findings in this study confirmed that microenterprises use informal communication channels more than formal means of communication to address their information needs.
- Introduction of needs assessment for microenterprises that would like to participate in capacity building activities and non-financing services such as mentorship programs. This will improve the existing programs to address specific needs for microenterprises and the perception among microentrepreneurs for only seeking financial support but also IT skills, business skills development and other related services.

- Majority of microenterprises are not aware of the benefits of using ICTs in their business activities. Part of the services for ICT access and skills development should include how ICT can be applied in business to address their business needs.

7.4.2 Suggestions for further research

The main objective of the study was to assess the impact of using ICT on the livelihoods of microenterprises. From the findings drawn from the cases future research is suggested focusing on assessing impact based on SLA with emphasis on the interaction of microenterprises, ICT use and organisations that provide support for microenterprises to understand the interplay between the process and outcomes.

The SLA supports analysis of livelihoods and implications for using ICT in microenterprises as discussed in section 3.2. The framework and other models discussed all contribute towards understanding of impact of ICT and can be applicable to different contexts. Nadvi and Barrientos (2004) also suggest that there is no single method that can be used to assess impact and the main aim of assessing impact is not to prove on the outcomes but to improve outcomes. In this regard, a conceptual model is proposed that can be validated as further research from this study.

The proposed model conceptualizes a combination of three elements that can lead to an understanding of impact of ICT use from process to outcomes. The three elements are microenterprises, Business support organisations and ICT based on the concepts of livelihoods. The elements are summarized as follows:

- *Microenterprises*: Identifying information need for microenterprises is important to ensure that interventions address the needs gap and desired goals for microenterprises (Duncombe & Heeks, 2002). Determining strategies for interventions for microenterprises should be based on the strengths of microenterprises for example assets (human capital, social capital, physical capital, financial capital and natural capital) (Carney, 1999; DIFD, 1999). There is also need to understand local context of microenterprises and use the existing knowledge of the microenterprises aimed at empowerment and to avoid failure (Heeks 2002; Moyi, 2003). Aspirations motivate microenterprises to engage in business activities and may influence strategies that can lead to positive outcomes. Strategies that may lead to motivation should be noted (Soriano, 2007).
- *Business support organisations*: Organisations that support microenterprises devise means of awareness of the support services. One way is to utilise social capital for microenterprises through the use of existing social structures and communities in which microenterprises participate. These may be formal and informal. Moyi (2003) suggest that microenterprises also depend on social capital. Heeks and Duncombe (2004) offer similar sentiments that microenterprises rely more on informal sources of information through social capital, although the quality of information is of poor quality. Therefore, existing social structures have the potential to be used in sharing information and knowledge about business support services. Business support organisations have also the role to support microenterprises on regulations and laws affecting microenterprises. This area is challenging because it may be perceived to be leading towards formalisation of microenterprises as majority of microenterprises are survivalist and operate in the informal sectors (Esselaar et al., 2007). However, awareness of regulation and laws may help microenterprises to enhance their capabilities to engage in stable business activities (Rogerson, 2009). One of the major challenges for microenterprises is access to finance (O'Neill & Viljoen, 2001; Rogerson, 2008). Organisation that provides business support may support microenterprises to access financial support though they do not have the capacity to offer credit facilities. This may be achieved through referrals to credit institutions. The support should be provided with capacity building to ensure that microenterprises have necessary skills to run their businesses successfully.
- *ICT use*: ICT can be conceptualized as a tool which has potential positive or negative impact (Freenberg, 1991; Orlikowski & Iacono, 2001; Soriano, 2007). ICTs can be aligned with policies

and capabilities in development interventions to improve access and use of information and sharing of knowledge which may lead to improved livelihoods. Within the context of livelihoods, ICT supports the functional and analytical role of information for achieving livelihood outcomes (Duncombe, 2006). However, for ICTs to be effective in microenterprises they need to address the three dimensions of affordability, accessibility and capabilities (Duncombe & Heeks, 2002; Gerster & Zimmerman, 2003). Microenterprise should be able to afford to acquire and maintain operational costs for adopting and using ICTs. The acquired ICTs should be accessible when needed to support business activities and microenterprises should have the necessary skills to use them. ICTs can also be perceived as composed of four inter-related parts namely technique (machine and equipment), knowledge (know-how and skill), organisation (systems, procedures, practices and support structures) and product (specification and design) (Scott, 2001; Duncombe & Heeks, 2004). Therefore considering the different concepts on ICT, four elements on ICT as selected for the conceptual model. These are affordable, accessible, capabilities and local context. Due low educational levels in some cases of microenterprises, ICTs should be suitable for local conditions (Heeks, 1999; Avgerou, 2008).

7.4.3 Conceptual framework for future research

As illustrated in figure 7.1, the conceptual framework for further research which shows the relationships between microenterprises, ICT and Business support organisations as elements for consideration of impact assessment of ICT use. Four forms of microenterprises are also identified using the conceptual model.

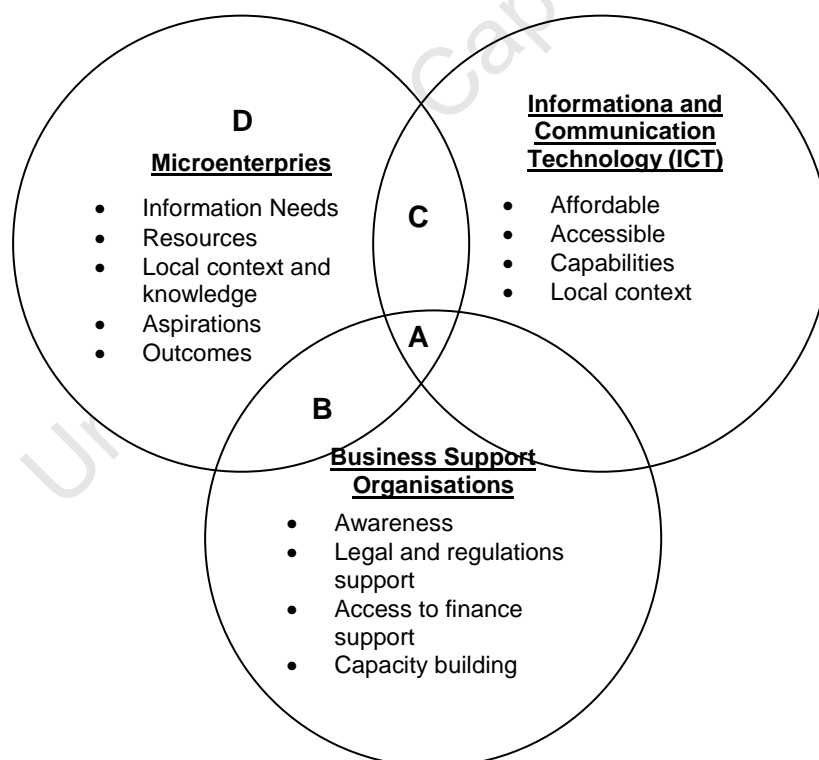


Figure 7.1: Conceptual framework for further research

The types of microenterprises are based on context, ICT use and interaction with institutions and organisations for business support. The types are summarized as follows:

- Type A are beneficiary organisations that use ICTs in their business activities. They are sustainable microenterprises that may reap the benefits of using ICTs and support from institutions and organisations. They are more likely to be sustainable and achieve growth (Duncombe, 2006;)

- Type B are beneficiary organisations that do not use ICTs in their business activities. Microenterprises under this category may access support from institutions and organisations but may not use ICTs. Part of the reasons could be that ICTs are not appropriate for their activities and are describes as non-IT users (Duncombe and Heeks, 1999; Heeks, 1999).
- Type C are microenterprises that use ICT but do not use the services for Business support organisations. Microenterprises in this category might not be aware of the support services or do not meet the requirements to obtain support from business organisations and institutions (Brown & Brown, 2009; Mitrovic & Bytheway, 2009; Ngassam et al., 2009).
- Type D are microenterprises that do not use ICT and business support services in their business. This category forms the large part of microenterprises especially survivalist who have limited resources and engage in business activities with no intention to grow business (Duncombe, 2006; Esselaar et al., 2007). They may also not access support services due to lack of awareness and low literacy levels (Rogerson, 2005). In terms of ICT use, Kontilov (2006) refer to these organisations non-adopters of ICTs.

7.5 Summary

This thesis has reported the assessment of impact of ICT use on the livelihood of microenterprises. The study focused on the case of South Africa where microenterprises play a significant role in income generation, skills development, employment and empowerment leading to sustainable livelihoods in marginalised communities. The study has demonstrated that in order for ICTs to be effective in microenterprises and support positive outcomes, it is essential that ICTs are implemented in consideration of human factors that are noted in the Sustainable Livelihood Approach.

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University of Cape Town

Appendices

Appendix A: Authorisation to conduct research



University of Cape Town,
Department of Information Systems,
Leslie Commerce Building,
Engineering Mall, Upper Campus,
Private Bag, Rondebosch 77001
Cape Town.
Tel: (021) 650-2261
Fax: (021) 650-2280

30 September, 2010.

The Director,
Department of Economic and Human Development
City of Cape Town
Cape Town

Dear Sir/Madam,

Request for permission to conduct research:

The impact of ICT use on the livelihood of microenterprises: Case of South Africa

My name is Frank Makoza, a Masters of Information Systems student at University of Cape Town. I would like to request for permission to conduct a research on the impact of ICT use on livelihoods of microenterprises in South Africa. The main objective of the study is to assess the impact of using ICT (Computers, Laptops, Internet, Mobile phones etc) on the livelihood of microenterprises in Western Cape using the Sustainable Livelihood Approach. The research will use a case study approach.

As part of the research, I will need to conduct interviews, observations and analyze documents. I have identified RED Door program as a potential organisation for the study. Data collection will also involve six diverse microenterprises to be selected with guidance from the RED Door personnel. Taking part in this study will be voluntary and the collected data will used for academic purposes only. The data collection will be conducted during the months of October, 2010 to February, 2011.

If you have further queries or would like to hear more about this research do not hesitate to contact my supervisor. The contact details are as follows:

Professor Wallace Chigona,
Department of Information Systems,
University of Cape Town,
Email: Wallace.Chigona@uct.ac.za
Telephone: +27 (0)21 650 4345

Thank you for your cooperation.

Yours sincerely,

Signed by candidate

Signature Removed

Frank Makoza
Email: Frank.Makoza@uct.ac.za
Mobile: 0726508399

Appendix B: Interview consent form



University of Cape Town,
Department of Information Systems,
Leslie Commerce Building,
Engineering Mall, Upper Campus,
Private Bag, Rondebosch 77001
Cape Town.
Tel: (021) 650-2261
Fax: (021) 650-2280

INTERVIEW CONSENT FORM

RESEARCH:

Assessing the impact of ICT use on livelihood of microenterprises: Case of South Africa.

RESEARCHER:

Frank Makoza, Department of information systems, University of Cape Town.

RESEARCH PURPOSE:

Assessing the impact of using ICT (computers, laptops, telephones, fax, mobile phones, TVs, radios etc.) in microenterprises in South Africa using sustainable livelihood approach. The objective of the study is to assess the outcomes of using ICT on the livelihood of microenterprises.

1. I confirm that I understand the purpose of the research.
2. I understand that participation in the research is voluntary and I am free to withdraw any time.
3. I agree to participate in the study.

Name

Signature

Date

Appendix C: Project Plan

No.	ACTIVITY DESCRIPTION	DURATION	DATES	MILESTONE
1	Research proposal	-	5 May, 2010	Research Proposal
2	Literature review	4 weeks	10 May, 2010 12 June, 2010	Literature review document
3	Research design	7 weeks	14 June, 2010 30 July, 2010	Research design draft
4	Revise research design	6 weeks	2 August, 2010 10 September, 2010	Research design document
5	Pre-testing of research instruments	2 weeks	4 October, 2010 11 October, 2010	Interview transcripts
6	Data collection	4 weeks	18 October, 2010 8 November, 2010	Interview transcripts and reports
7	Data Analysis	8 weeks	15 November, 2010 03 January, 2011	Analysis Report
8	Prepare Draft report	4 weeks	4 January, 2011 30 January, 2011	Draft report
9	Prepare Final report	8 weeks	1 February, 2011 30 March, 2011	Final report
10	Submit final report	-	30, March, 2011	Final report

Appendix D: Data collection procedure

INTERVIEWS PROCEDURE	
A	PREPARATIONS
	<ol style="list-style-type: none">1. Study the interview guide and consent form.2. Confirm date, time and venue for the interview.3. Check recording equipment and note making materials.4. Arrive early at the venue of the interview.
B	CONDUCTING THE INTERVIEWS
	<ol style="list-style-type: none">1. Greet the participants and introduce yourself in a friendly manner.2. Describe the interview process briefly.3. Obtain the informed consent from the participant.4. Switch on the recording equipment if permission to use the recorder is granted.5. Verify consent on recorder.6. Ask the questions according to the interview guide and ask follow up questions.7. At the end of the questions give the participant the opportunity to ask questions.8. Summarise key points and verify with participant.9. Thank the participant for their time and switch off the recorder.
C	AFTER THE INTERVIEW
	<ol style="list-style-type: none">1. Check if the interview is recorded, if not recorded expand the notes.2. Debrief the interview participants.3. Assemble all materials.4. Expand the notes within 24 hours.

Appendix E: Interview guide for business advice centre personnel

BUSINESS CENTRE PERSONNEL INTERVIEW QUESTIONS

1. Please tell me more about RED Door?
2. What services do you currently offer?
3. What are the main demographic and geographic characteristics of the areas covered by this program?
4. Who are the targeted beneficiaries for the services?
5. What criterion is used to select beneficiaries for the services?
6. What are the expected benefits from this program for microenterprises?
7. What are the challenges in supporting microenterprises?
8. What are the expected outcomes from this program?
9. Have the expectations been accomplished and how do you measure that?
10. What is the most noticeable change of microenterprises which have used the services?
11. Which methods of communication do you use to promote the services?
12. Which technologies if any, do you use to deliver the services?

Appendix F: Interview guide for microenterprises

MICROENTERPRISE INTERVIEW QUESTIONS	
Key	OQ = Opening question , OB = Objective, CQ= Closing question
OQ	Opening question
	Please tell me more about your business, how did it start and when
OB1	How do microenterprises use ICT in preventing vulnerabilities?
vulnerabilities	<ol style="list-style-type: none"> 1. What are major events or problems that affect your business and household? 2. How do you come to know about these problems or events? 3. How do you deal with the problems to overcome their effect? 4. Who do you normally approach for assistance when you have problems relating to the business?
OB2a	How do microenterprises use ICT to improve use of assets?
Human Capital	<ol style="list-style-type: none"> 1. What type of knowledge and skills did you acquire to operate your business? 2. How did you acquire the skills and knowledge to operate the business? 3. What is the impact of knowledge and skills on the way you operate the business? 4. What type of technology, if any did you use to acquire the skills and knowledge?
Financial Capital	<ol style="list-style-type: none"> 1. What type of financial services does your business depend on? 2. In what ways do the financial services affect your business? 3. How is information about financial services access or obtained? 4. What is the extent of availability of financial services?
Social Capital	<ol style="list-style-type: none"> 1. Do you belong to any social or business group and why? 2. How did you get to know about the social or business group? 3. How do you communicate with members of the social or business group? 4. Who else is involved or support the running of the business? 5. In what ways are members of the family or relatives involved in the business?
Physical Capital	<ol style="list-style-type: none"> 1. What information do you need mostly for your business? 2. Where do you get of information or advice for day to day running of the business? 3. What methods of communication do you often use to promote your business? 4. What resources do you use to access information for your business?
Natural Capital	<ol style="list-style-type: none"> 1. What sort of materials or resources do you use in your business? 2. How do you obtain information on resources used in the business? 3. In your opinion what are the challenges related to resources for your business?

OB2b	To what extent do microenterprises use ICT?
ICT use	<ol style="list-style-type: none"> 1. What technologies do you use to support your business activities? 2. How do you obtain information that affects or influence your business? 3. How do you communicate with social or business groups in sharing information? 4. What are the problems associated with using technology in your business? 5. What are the benefits of using technology in your household?
OB3	How do microenterprises interact with institutions and organisations?
Institutions	<ol style="list-style-type: none"> 1. Which laws or regulations affect your business? 2. How did you come to know about the laws and regulations? 3. What is the effect of institutions and organisations supporting businesses on your business? 4. How accessible and helpful are the organisations and institutions?
Strategies	<ol style="list-style-type: none"> 1. What other businesses are you engaged in? 2. Do you change the type of your business and why? 3. What is the impact of institutions and organisation supporting businesses on your business?
OB4	How does microenterprises use of assets and structures affect outcomes?
Outcomes	<ol style="list-style-type: none"> 1. What are the goals do you aspire to achieve from the business? 2. Which outcomes from the business do you consider important and why? 3. To what extent have you achieved your goals from the business?
CQ	Questions from the participant
	<p>Are there any questions you would like to ask?</p> <p>Thank you very for your time.</p>

Appendix G: Observation procedure

OBSERVATION PROCEDURE	
A	PREPARATIONS
<ol style="list-style-type: none">1. Study the research objectives (Data sources guide sheet).2. Study the observations checklist.3. Select time, date and duration of for the observations.	
B	CONDUCTING THE OBSERVATIONS
<ol style="list-style-type: none">1. Observations to be done in two phases as follows:2. During the interviews (Observing evidence during the interviews).3. After the interviews (within the operating are of microenterprise).4. Fill out the observations checklist.	
C	AFTER THE OBSERVATIONS
<p>Assemble all materials.</p> <p>Expand the notes within 24 hours.</p>	

Appendix H: Observation checklist form

OBSERVATION CHECKLIST FORM					
DESCRIPTION		YES/NO	PUBLIC	HOUSEHOLD	COMMENT
SPACE	Physical location or place: Business premises Home				
ACTORS	People involved: Individuals Groups Suppliers Customers Institution/Organisation				
ACTIVITY	Set of related acts by actors: Acquiring assets Income generating Information sharing Mitigating vulnerabilities				
OBJECTS	Physical thing present: Radio Tele Vision Landline phone Mobile phone Computer Laptop Internet Newspaper Telecenter Multipurpose-centre Information centre Business advice centre Local library				
TIME	Sequencing taking place over time Once More than once Recurring				
GOAL	Things actors inspire to accomplish: More income Reduced vulnerability Well-being Sustainable use of capital				

Appendix I: List of respondents

ORGANISATION AND RESPONDENT	GENDER	BUSINESS SECTOR	BUSINESS TYPE	AFFILIATION TO RED DOOR	SUMMARY OF BUSINESS ACTIVITIES AND USE OF ICTs.
Preliminary Stage					
RED Door (Manager)	Male	N/A	Business development support	N/A	The manager in-charge of the implementation of the RED Door program.
Microenterprise (Owner)	Male	Services	Shoe repair	Not affiliated to RED Door	The microentrepreneur repair shoes and operate outside train station. He has been operating his business for 9 months. He learnt how to repair shoes from his brother and now operates his own business. He has a wide range of customers, those that live around the train station and people who travel by train. He has previously worked in hospitality industry for five years. He uses mobile phone, telephone and radio for both business and personal purposes.
Microenterprise (Owner)	Male	Retail	High street vendor	Not affiliated to RED Door	The microentrepreneur sell refreshments along high street. He started his own business because he could not find work. He has been operating for six months. He used to do a similar business in Johannesburg and he lives in Cape Town. He targets high street pedestrians coming from the bus stop and others as his customers. He uses mobile phone to check stock from suppliers.
Microenterprise (Owner)	Female	Retail	Spaza shop	Not affiliated to RED Door	The microentrepreneur operates a shop selling kitchenware and bags. The shop is allocated along the high street. She has been operating for seven months. This is her first business which she operates with support from her husband. Her customers are mainly residents around the area. She uses cell phone and telephone to contact customers and suppliers.
Microenterprise (Owner)	Male	Retail	High street vendor	Not affiliated to RED Door	The microentrepreneur sale refreshments and bags along the high street. He has been operating for four months because he does have any support and the business is the main source of income. His customers are mainly pedestrian passing the high street. He uses mobile phone for personal purposes.

Field stage					
RED Door (Manager)	Male	N/A	Business support	N/A	Manager of Business Advice centre that supports SMMEs.
Microenterprise (Owner)	Male	Services	Laundry shop	Beneficiary organisation	The microentrepreneur operate a laundry shop and Travel agent business. He has been operating his business since 2007. He provides laundry services customers include corporate organisations, households and students. The business operates at a mini shopping center. He uses telephone and cell phone to contact customers and suppliers.
Microenterprise (Owner)	Male	Services	Saloon	Beneficiary organisation	The microentrepreneur operates saloon and other businesses. The saloon is located near the bus station and attracts customers living near the area. He has just started the saloon business and has appointed somebody who reports to him on daily basis on the status of the business. He uses radio, television, telephone and cell phone for both personal and business purposes.
Microenterprise (Owner)	Female		Fabric Designer	Beneficiary organisation	The microentrepreneur design fabrics and operate her shop. She graduated from a design school and is passionate about design. She started the business operating from home but later open a shop where she is currently operating. Her customers include schools for production of school uniforms and the general public. She has been operating since 2007. She uses radio and cell phone to contact customers and suppliers and get local information respectively.
Microenterprise (Owner)	Female	Services	Taxi service	Beneficiary organisation	The microentrepreneur operates car-hire services, produce training manuals and catering services. Her main customers include corporate organisations, tourists and locals who need transport services. She uses telephone, computers, internet to contact suppliers and check government website for tenders.
Microenterprise (Owner)	Male	Agriculture /Food	Meat seller	Beneficiary organisation	The microentrepreneur sells meat and operates from home. He orders the meat from the farmers and sells it to the customers around his home. He has been operating for three years. He uses telephone and mobile phones to contact farmers and arrange for collections.
RED Door (Manager)	Male	N/A	Business support	N/A	Manager of Business Advice centre that supports SMMEs.

Appendix J: Data sources guide sheet

	VULNERABILITY CONTEXT	LIVELIHOOD ASSETS	STRUCTURES & INSTITUTIONS	LIVELIHOOD STRATEGIES	LIVELIHOOD OUTCOMES
ELEMENTS	Shock Stress Seasonality	Human capital Financial capital Physical capital Social capital Natural capital	Institutions Organisations		More income Increased well-being Reduced vulnerability Sustainable use of capital
INFORMATION	Contextual analysis →	Livelihood strengths →	Mediated through →	Resulting →	Impact on
OBJECTIVES	<ul style="list-style-type: none"> To analyze how microenterprises use ICT in preventing vulnerabilities. 	<ul style="list-style-type: none"> To analyze the how microenterprises use ICT to enhance utilisation of assets. To assess the extent of ICT use in microenterprises. 	<ul style="list-style-type: none"> To analyze how microenterprises interact with structures (institutions and organisations) using ICT. 		Main objective: To analyze how microenterprises utilise assets and structures using ICT and the effect on livelihood outcomes.
KEY QUESTION	<ul style="list-style-type: none"> How do microenterprises use ICT in preventing vulnerabilities? 	<ul style="list-style-type: none"> How do microenterprises use ICT to improve use of assets? To what extent do microenterprises use ICT? 	<ul style="list-style-type: none"> How do microenterprises interact with institutions and organisation? 		How does microenterprises use of assets and structures affect livelihood outcomes?
DATA SOURCES	<ul style="list-style-type: none"> Semi-structured interviews Observations Documentary review 	<ul style="list-style-type: none"> Semi-structured interviews Observations 	<ul style="list-style-type: none"> Semi-structured interviews Observations Documentary review 		<ul style="list-style-type: none"> Semi-structured interviews Observations