

UNIVERSITY OF CAPE TOWN



How telecentres contribute to women empowerment in rural communities: Case of Western Cape, South Africa.

A thesis submitted in requirements for the

Degree of Doctor of Philosophy (PhD) in Information Systems

Faculty of Commerce.

by

Abiodun Alao

Supervisor: Professor Wallace Chigona

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DECLARATION

I hereby declare that this thesis

“Contributions of telecentres for women empowerment in rural communities: Case of Western Cape, South Africa”

is my own work, and all sources have been acknowledged through referencing.

Signed by candidate

Abiodun Alao

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RESEARCH PUBLICATIONS REVELANT TO THIS THESIS

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ABSTRACT

Background – This study investigates how telecentres contribute to the empowerment of women in the rural communities of selected regions of the Western Cape, South Africa. Women face the problem of ICT access due to a host of socio-economic factors. Rural women lack computer skills, and there is a need for more women to be computer literate to eliminate poverty challenges and improve their economic standards. Telecentres are ICT initiatives established in disadvantaged communities for people to have access to the digital world. The aim of telecentres is to enhance information access, promote the use of ICTs for community development, provide information services to communities and provide computer skills training of individuals in communities. However, most telecentres do not focus on how women specifically can benefit from using their services provided at the telecentre. Women who have access to information gain knowledge through ICTs and may share their knowledge, concerns, best practices and experiences, gain a greater understanding of their current situation and solve issues that were previously beyond their capability and enhance their livelihood.

Purpose of the research – Telecentres are ICT community development initiatives with no focus on gender aspects. Hence, the purpose of this study was to investigate how telecentres contribute to the empowerment of women in rural communities, and to provide adequate information for improving women's livelihood.

Problem statement – The scenario of men leaving their wives behind and migrating to urban centres to seek employment explains why the number of female-headed rural households varies between 50% and 80%. These women are left behind are known to be the least likely to reap the gains of ICTs in sub-Saharan Africa, due to the limited access to telecentres in the rural areas. Furthermore, there is limited literature on how the use of telecentres is linked to women empowerment, or the impact of ICTs on rural women's economic well-being. An attempt at addressing these problems is made here. This study has analysed the contribution of telecentres to the empowerment of women and development in the identified problems/knowledge gaps.

Design/methodology/approach – The research study intends to address the question: How telecentres contribute to women empowerment in the rural communities. To address this question the research adopted a qualitative method to present the view of women respondents of the telecentre which was utilised for the data collection. The study used the following data collection techniques: Semi-structured in-depth interviews, participatory observation, and focus group discussions. The study is explanatory, and the research philosophy of the study is interpretative; this is to understand the phenomenon in a given context. The study used three theories such as the Domestication Theory, Individual Difference Theory, and Dimensions of Empowerment Theory as a theoretical lens. The case study method is used to conduct an in-depth investigation of the research.

Findings – The key findings of this study signify that few women incorporated the telecentre use in their daily lives. However, socio-cultural and contextual factors hindered women from effectively using telecentres. The use of the telecentre affected the process of empowerment in women through the computer skills training offered at the telecentre which facilitated the use of the technology artefact.

Originality/contributions – The study makes practical contributions for the government and Non-government organisations to use telecentres for enhancing other socio-economic development programmes, as well as a theoretical contribution through the creation of a conceptual model. Furthermore, the telecentre was consciously explained in this study to accommodate programmes that may contribute to women's capabilities and digital gap.

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LIST OF ACRONYMS

| | |
|---------------|----------------------------------------------------------|
| APC | All Progressive Congress |
| ATC | Accredited Test Centre |
| BWA | Business Women Associations |
| CAC | Computer Access Centre |
| CLC | Computer Learning Centre |
| CMC | Computer Multimedia Centre |
| CTC | Computer Technology Centre |
| CV | Curriculum Vitae |
| DHA | Department of Home Affairs |
| GDP | Gross Domestic Product |
| GNP | Gross National Product |
| GSA | Government of South Africa |
| ICDL | International Computer Driving Licence |
| ICT4D | Information and Communication Technology for Development |
| ICT(s) | Information and Communication Technology(ies) |
| IDRC | International Development Research Centre |
| IFAD | International Fund for Agricultural Department |
| IFIP | International Federation for Information Processing |
| IT | Information Technology |
| ITU | International Telecommunication Union |
| MDGs | Millennium Development Goals |
| MMC | Multi-Media Centre |
| MPCC | Multi-Purpose Community Centre |

| | |
|----------------|---------------------------------------------------------------------|
| NGOs | Non-Government Organisations |
| NRF | National Research Fund |
| PAC | Public Access Computing |
| PAP | Public Access Point |
| PIAP | Public International Access Centre |
| PPP | Public Private Partnership |
| RSA | Republic of South Africa |
| SASSA | South African Social Security Agency |
| SCOT | Social Construction of Technology |
| SDG | Sustainable Development Goals |
| SST | Social Shaping of Technology |
| TAM | Technology Acceptance Model |
| TPB | Theory of Planned Behaviour |
| WCG | Western Cape Government |
| WNSP | Women Networking Support Program |
| UAE | United Arab Emirates |
| UNCSTD: | United Nations Commission on Science and Technology for Development |
| UGIT | Uses of gratification theory |
| UN | United Nations |
| UNDP | United Nations Development Programme |
| UNESCO | United Nations Educational, Scientific and Cultural Organisation |
| USAASA | Universal Service and Access Agency of South Africa |

CHAPTER 1: BACKGROUND TO STUDY

1.0 Introduction

The diffusion of technology in telecentres into rural communities by the South African government is aimed at tackling digital literacy, facilitating the use of computers and eradicating poverty in disadvantage communities. Certain factors like a person's socio-economic background, environment, education and social behaviour could influence the ability to use the telecentre. Rural women, who are the focus of this study are marginalised, face hindrances including cultural barriers, low educational levels, lack of computer skills and sociocultural factors that obstruct them from realising the usefulness of the telecentre. This study investigates how telecentres contribute to the empowerment of women in the rural communities of the Western Cape Province of South Africa.

1.1. Context of the study

The study focused on three main concepts namely: telecentres, women and the conceptualisation of empowerment. The provision of telecentres into rural communities does not only provide access to ICT facilities but provide free services. Telecentres are expected to have internet access, more services including printing, access to computers, business registration, information and list of government grants and contracts, job adverts and other ICT benefits that can be used to empower communities and assist in developing their socio-economic potential (Kenny, 2001; Sey and Fellow, 2009). The whole operation is sponsored by either the government, private organisation or Non-Governmental Organisation (NGOs).

- **What is a telecentre:** Telecentres serve as a public centre that consists of computers that are connected to the Internet, with a variety of technologies such as telephones, radio, fax, copiers, scanners, laminations and printers in communities where domestic ownership of such equipment is not affordable (Kenny, 2001; Gomez, 2012). Other free telecentre services provided include ICT skills development, support with job seeking and other assistance such as typing of CVs and application letters, free personal email address, access to job database and advertisements were posted at the telecentre information board, printing services and computer skills training courses. The telecentre is equipped with trained staff such as telecentre managers and development managers that assist users to access information relating to employment, education, healthcare, agriculture, and enterprise opportunities for improving their well-

being (Harris, 2004). Women adopting the use of the telecentre can access vital information on how to empower themselves to address their personal needs (David and Surmaya, 2005). However, most telecentres do not specifically focus on how women can benefit from their use (Hilbert, 2011). Hence, rural women are known as the least likely to reap the gains of ICTs in sub-Saharan Africa.

- **Women:** Women living in the rural communities are the focus in this study because women are known to be marginalised, unempowered and unable to improve their economic standards. Unlike men in the rural areas who benefit from using ICT tools for overcoming their daily challenges such as unemployment, poverty and other personal needs. Rural women have limited access to the use of ICTs because they are mostly responsible for the management of their homes.
- **Conceptualisation of empowerment:** The services and the computer skills training programme offered at the telecentre can be used as an empowerment tool for women in rural communities. Therefore, there is a need for the diffusing of technologies to historically disadvantaged areas, particularly targeted at promoting women's use of technology through the access to telecentres for empowerment (Rogers, 1995; Nath, 2001; Terry and Gomez, 2010).

1.1.1. Overview of study

The overview of the study explains the purpose, aim of the study and highlighted the problem statement. The study used prior related studies in the literature review to answer the research questions and to support the findings, explaining the main concepts of the study. Three theories were used to guide the study and were combined to develop a conceptual model which was used to explain the process of empowerment. An in-depth description of five communities from the Western Cape Province was given as the research site. The overall objective of the study was conducted using an interpretative approach using different research methodology to create the research design. The study used different techniques such as semi-structured in-depth interviews, participant observation and focus group discussions for the data collection process to derive results that were analysed resulting to the findings. Interpretation of results with respect to literature review was elaborated which resulted to the general conclusions, assessing contributions, possible future research and the recommendations for the study. In general, emphasis on the discussions on how telecentres contributed to the empowerment of women in the rural communities was explained. It was realised that only few women used the telecentre daily for their personal development and were empowered. Highlights and insights on the factors hindering women from using telecentres were explained and answers to how the telecentre impacts and hinders women

empowerment were further discussed. Insights on the possible factors hindering women from improving their circumstances using the telecentre were elaborated in the study propositions (see section 8.1). Figure 1.1 presents the overview of the study.

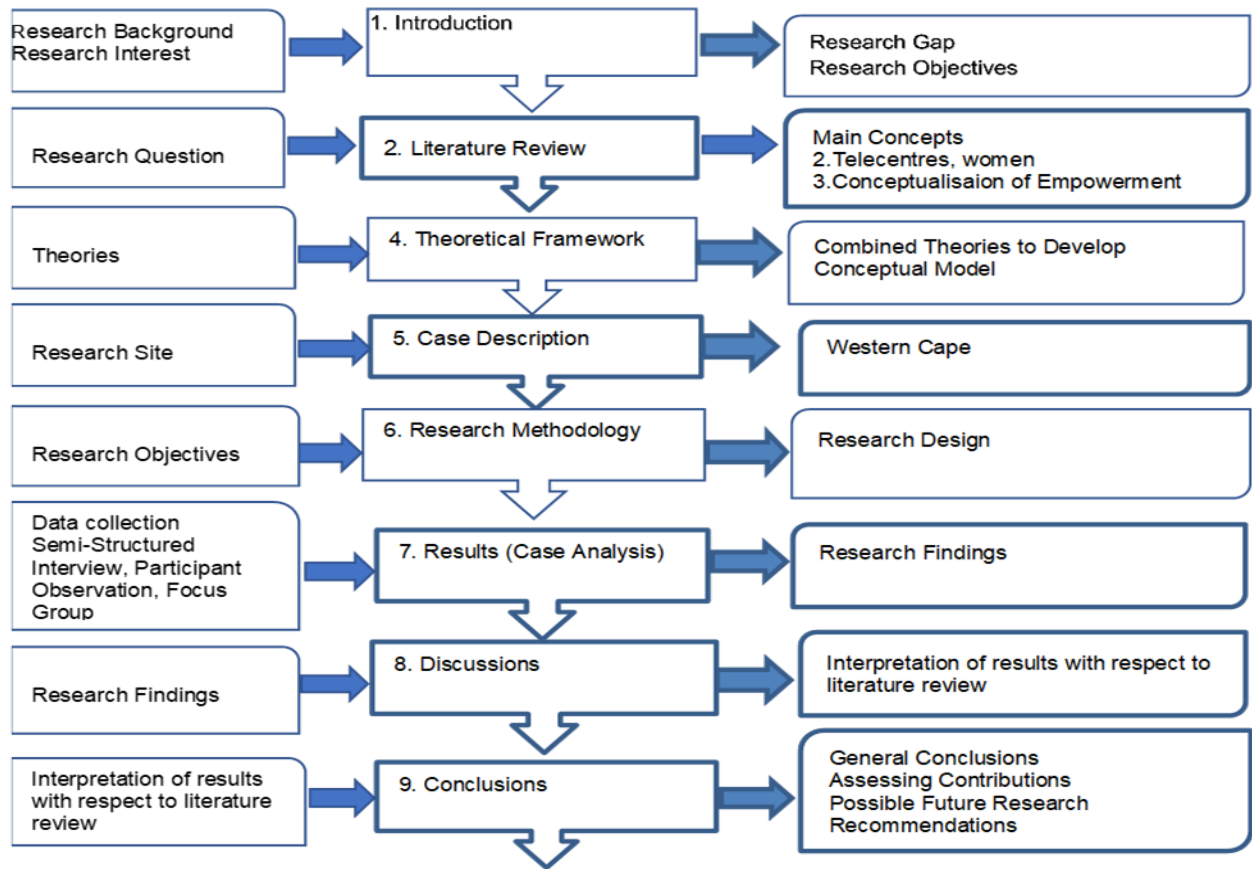


Figure 1.1: Overview of study

Previous studies focused on the personal characteristics of respondents in rural areas, and how it affects the diffusion and adoption of telecentres (Mbatha, 2015); others investigated the challenges women encounter when using the telecentre (Chigona et al., 2016). However, there are limited studies focusing on telecentres and the empowerment of rural women. The closest to this scope are studies that investigated the effects of the telecentre use for the well-being of communities in the context of South Africa (Attwood et al., 2013; Mbatha, 2015). Gender digital divide is one of the most significant inequalities amplified by the digital revolution (Antonio and Tuffley, 2014). Sadly, the focus of bridging the digital divide in gender aspects are often not addressed as a vital aspect in community development projects such as telecentres implemented in the rural communities (Huyer and Sikoska, 2003). Women in rural areas mainly do not have the ability to use computers even though telecentres are situated

in their environments. These women do not have the opportunity to boost and contribute to the economic activities of their countries. Thus, women who do not have computer skills or the ability to access information are usually economically and socially disadvantaged (Antonio and Tuffley, 2014). As a result, the women indirectly add to the struggles and the underdevelopment of their economies.

1.1.2. ICTs and Internet penetration in rural and urban community of South Africa

The penetration of the use of ICTs in rural and urban communities of South Africa differs in perspective. Households in urban communities are presumed to have better access and use of ICTs than rural locations. One of the main vehicles for introducing ICTs in rural areas, especially in South Africa, has been the community telecentre. Telecentres mainly have a social purpose and are committed to building local capacity for ICT use in development (Gomez, 2012). Access to ICT continues to be unequally distributed and, in most cases, segregated along lines of income, education, age, gender and geographical location (Hilbert, 2011). Although South Africa has made substantial efforts to make ICT infrastructures available in rural areas by providing access to the Internet and other ICT facilities through telecentres, the problem of Internet access persists (Hilbert, 2011). Studies have shown that access to ICTs in South Africa is largely limited to urban areas with race, age, income, gender and education being the crucial factors at play (Langa et al., 2006; Odendaal, 2008).

penetration in a country makes a significant contribution to the economic growth and social development of the communities within that country (Attwood et al., 2013). The investment of ICTs in rural communities provides a desired economic and social development in communities (Attwood et al., 2013). South Africa status as a middle-income country that has a substantial percentage of its population categorized as individual 'Internet users', increased from 5.4% in 2000 to 18.0% in 2010 (Attwood et al., 2013). The South African government adopted measures to overcome the digital divide and low percentages of internet penetration, especially in rural areas through the establishment of telecentres. Table 1.1 presents

households' access to ICTs and the Internet by place of access, geotype and province in South Africa (Statistics SA, 2013).

| Place Internet Accessed | Geotype | WC | EC | NC | FS | KZN | NW | GP | MP | LP | RSA |
|---------------------------------------------|---------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| At home | Metro | 24,3 | 10,2 | NA | NA | 9,5 | NA | 16,3 | 11,1 | NA | 16,4 |
| | Urban | 14,8 | 7,7 | 8,0 | 7,4 | 7,0 | 7,6 | 11,0 | 11,1 | 9,8 | 9,2 |
| | Rural | 10,6 | 1,2 | 1,8 | 4,3 | 1,0 | 1,7 | 7,7 | 3,3 | 1,7 | 2,0 |
| | Total | 21,0 | 4,8 | 6,6 | 6,9 | 5,7 | 4,4 | 15,6 | 6,8 | 3,0 | 10,0 |
| At work | Metro | 27,6 | 16,4 | NA | NA | 16,9 | NA | 29,5 | NA | NA | 26,5 |
| | Urban | 18,5 | 18,4 | 12,5 | 11,6 | 16,8 | 14,1 | 13,8 | 13,5 | 18,6 | 15,1 |
| | Rural | 14,6 | 1,6 | 2,0 | 4,5 | 2,9 | 3,8 | 9,4 | 4,5 | 2,2 | 3,2 |
| | Total | 24,4 | 9,5 | 10,2 | 10,4 | 11,5 | 8,6 | 27,5 | 8,5 | 4,9 | 16,1 |
| Using mobile devices | Metro | 41,3 | 42,3 | NA | NA | 28,7 | NA | 37,9 | NA | NA | 37,2 |
| | Urban | 25,6 | 29,9 | 37,2 | 37,7 | 32,9 | 38,0 | 42,1 | 42,5 | 27,7 | 35,3 |
| | Rural | 11,5 | 14,7 | 15,9 | 17,7 | 17,4 | 24,8 | 29,1 | 23,5 | 14,3 | 17,9 |
| | Total | 35,4 | 24,4 | 32,5 | 34,3 | 25,3 | 30,9 | 38,3 | 31,9 | 16,5 | 30,8 |
| At Internet cafes or educational facilities | Metro | 20,1 | 11,0 | NA | NA | 8,8 | NA | 16,1 | NA | NA | 15,4 |
| | Urban | 18,9 | 7,5 | 3,8 | 11,6 | 10,8 | 8,8 | 8,5 | 6,5 | 5,2 | 8,8 |
| | Rural | 3,5 | 1,6 | 0,6 | 2,3 | 3,2 | 5,6 | 3,4 | 3,5 | 0,9 | 2,6 |
| | Total | 16,7 | 5,1 | 3,1 | 10,0 | 7,1 | 7,1 | 15,1 | 4,8 | 1,6 | 9,6 |

Table 1.1: Household's access to ICTs and the Internet by place of access, geotype and province, 2013 adapted by Statistics SA (2013)

1.1.3. Poverty and unemployment in rural South Africa

A rural area is a geographic location, which is outside towns and cities with a generally sparse population (Munyua, 2000; Maumbe and Okello, 2013). Rural areas are often characterized as information poor, and its provision has always been a principal component of rural development initiatives (Kahn, 2000; IFAD, 2001). Most rural areas are disadvantaged communities and the people are unable to afford or own modern gadgets and benefit from ICTs (Richardson, 1996). Therefore, these areas are known to experience high rates of employment and poverty; whereas, urban areas have access to ICTs and more employment opportunities than people living in the rural areas (Underwood et al., 2002).

Rural community people usually lack infrastructures and amenities unlike the people living in the urban areas. Women living in the rural communities are deprived of access to information that could assist them to improve their circumstances. These women usually lack education, computer skills and are unemployed, which contributes to the bridging of the urban-rural digital divide. More men than women living in the rural areas are likely to be exposed to ICTs, which are often limited or unavailable in rural areas (Ngumbuke, 2010; Almajali and Maqableh, 2015). For example, rural women cannot afford to own personal computers and other ICTs because they are expected to manage their homes, unlike men in the rural community that

can seek employment opportunities (Ngumbuke, 2010; Hilbert, 2012; Almajali and Maqableh, 2015).

The study focused on a typical rural area of the Western Cape of South Africa. The rural population in South Africa rates at 34.7% and the population is 19,403,170 in 2016 (Statistics SA, 2016). Rural areas of South Africa lack adequate fixed network infrastructure, bad road networks, low income-earning opportunities and poor Internet connectivity (Mamba, 2015). These problems continue to affect the delivery of public access computing services in the country (Warschauer and Matuchniak, 2010). The women in rural areas of South Africa have a high rate of unemployment compared to the global statistics of employment that shows that women continue to participate in labour markets on an unequal basis with men. In 2013, the male employment-to-population ratio stood at 72.2 %, while the ratio for females was 47.1% (ILO,2014).

South Africa is known to be a middle-income country with enormous mineral and agriculture with a very high unemployment rate. Ten million households (10,193, 203) in South Africa earn R7,167 (\$536) per month, while a small elite population earns more than R196,668 (\$14,692) per month (Statistics SA, 2012). These affect the minority populace of the country, leading to extreme wealth inequality and remains extremely divided, conspicuously between the haves and have-nots (The RSA Presidency, 2011). Poverty and inequality are the major challenges facing South Africa. Although there has been a slight decline in poverty over time, inequality remains high (The RSA Presidency, 2011). There have been huge income inequalities with 68.1% of income accumulating to the richest 20% with the poorest 10% getting less than 0.57%. It is estimated that 62.3% households fall within the poorest income bracket and below R86,000 (\$6,424) per annum comprise a combined 26.4% of South African households (Statistics SA, 2011). Over the period of 1994 to 2009, the country's richest 10% population became significantly richer; however, their percentage of total income has reduced (Statistics SA, 2011).

Hence, the poorest 10% households are better off in absolute terms, but relatively worst off in income (The RSA Presidency, 2011). Globally there are 1.4 billion people living on less than US\$1.25 a day, and at least 70% live under the international poverty line (World Health Organization, 2015). Hence, the 82.2% South African poor mainly live in rural areas, while 14.7% are unemployed (Atugba, 2011; Statistics SA, 2011). This is because many South Africans live in poverty (Carter and May 2009). Statistics show that 52% of the South African population are women and 47% of women live in the rural areas (Bobo, 2011; Chigona et al., 2016).

In addition, many women residing in rural areas in South Africa are unemployed, while in the urban settings, black and Coloured women mainly faced stereotypes rooted in their historical employment by working as maids in the homes of white employers (Jewkes et al., 2015). Approximately 60% of unskilled and unemployed women living in poor communities are taking care of their family due to not having the ability to improve their circumstances (Charmes, 2012). Table 1.2 shows the percentage distribution of unemployment, employment, work seekers and non-economic status for the male and female population groups in South Africa.

| | BLACK AFRICAN | | COLOURED | | INDIAN/ASIAN | | WHITE | |
|---------------------------|---------------|--------|----------|--------|--------------|--------|-------|--------|
| SEX | MALE | FEMALE | MALE | FEMALE | MALE | FEMALE | MALE | FEMALE |
| Employed | 42,8 | 30,8 | 54,7 | 43,2 | 64,1 | 40,2 | 72,6 | 56,1 |
| Unemployed | 15,0 | 14,8 | 15,8 | 12,8 | 7,1 | 5,1 | 3,9 | 4,0 |
| Discouraged Work Seekers | 7,6 | 0,9 | 2,9 | 3,2 | 2,0 | 1,0 | 0,6 | 1,2 |
| Not Economic Active (NEA) | 34,6 | 45,5 | 26,6 | 40,8 | 26,8 | 53,6 | 23,0 | 38,7 |

Table 1.2: Population group by work status in South Africa (Statistics SA, 2011)

1.1.4. Gender divide of telecentre establishment

Telecentres are not specifically established to tackle gender aspect. Consideration should be given to the importance of women empowerment during the planning, designing and implementation phase of telecentres in the South Africa and other developing countries (Huyer and Sikoka, 2003; Celik and Ipcioglu, 2007; Kurga, 2014; Onwuagboke et al., 2014). The failure to address the digital divide of women in poor communities in these projects exacerbates the barriers women continue to face using the technology. Considering women in the context of knowledge societies entails building up their abilities and skills to gain insight into the issues affecting them, eradicating computer illiteracy, building up their capacity to voice their concerns and enhancing their informational capabilities to achieve individual empowerment (Kleine, 2010; Gigler, 2014).

The recognition of gender equality and the women empowerment are important goals and are vital to poverty elimination and achievement of all the Millennium Development Goals (Heeks,

2010). Likewise, the recognition of gender equality and the empowerment of women are important goals vital to poverty elimination and achievement of the Sustainable Development Goals (SDGs), otherwise known as the “Global Goals”: a universal call to action to end poverty, protect the planet and ensure that all people enjoy peace and prosperity (Sachs, 2015).

The diffusion of the technology in telecentres into rural communities by the South African government is aimed at tackling digital literacy, facilitating the use of computers and eradicating poverty in disadvantage communities (Attwood et al., 2013). Certain factors such as a person’s socioeconomic background, environment, education and social behaviour could influence the ability to use the telecentre (Charmes, 2011). Rural women are marginalized and hindered by cultural barriers, low educational levels, lack of computer skills and sociocultural factors that obstruct them from realizing the usefulness of the telecentre (Hilbert, 2011).

The provision and diffusion of telecentres to rural communities may enable the class of women excluded to have access to free ICT services, information and avenues to share knowledge more effectively. Consequently, such an opportunity could reduce poverty and enhance the economic standards of rural women in the context of a perceived “knowledge divide”. Therefore, by encouraging rural women to use the free computer skills training and services offered at the telecentres in their communities, means progress towards promoting computer literacy, eliminating poverty challenges and improving their economic standards, all of which eventually assists in bridging gender digital divide and encourages gender equality.

1.1.5. Telecentre establishment in South Africa

The South African government committed itself to achieving universal ICT access, particularly for the low-income status households in under-serviced areas (Parkinson, 2005). As at 2010, South Africa was recorded as having 18.0% of its population as Internet users (Attwood et al., 2013). This has made access to information from other parts of the country to the world a challenge. To address these problems, private organisations, government and civil society have attempted to come up with various solutions. The South African government adopted measures to overcome the digital divide and low percentages of Internet penetration, especially in rural areas, through the establishment of telecentres (Attwood et al., 2013). This makes South Africa an interesting country with a high penetration of ICT and Internet access compared to other developing countries (Attwood et al., 2013). The investment of ICTs in rural communities provides a desired economic and social development (Attwood et al., 2013).

1.1.6. Significance of telecentres for rural development

The significance of telecentres in development of rural communities is to provide people with access to accurate and up-to-date information and equip them with new skills to empower and improve their lives (David and Surmaya, 2005). Telecentres are information centres that potentially provide rural women access to information that may be used for social development and empowerment towards improving their livelihood. The ICT tools and Internet access available in telecentres are recorded to have dramatically increased people's abilities to gather, process, and share information (Mukeriji, 2013). More than 90% of developing countries explicitly consider ICTs in their national development plans and more than 40% of developing countries accord them a prominent role in their poverty reduction strategies (Basu, 2004).

The implementation of telecentres in rural communities by government and non-government organisations has assisted in bridging digital literacy and enhanced access to the use of ICTs (Attwood et al., 2013). However, it is crucial to increase the awareness that telecentres can directly and indirectly provide information to its users through various avenues. For instance, job advertisements and posters pasted within the technology artefact and other vital online

information sources are made available to meet the various needs of the community. Pamphlets could be printed and distributed to the community people to provide awareness of the services provided at the telecentre. Also, online social media platforms such as Facebook, Twitter and Instagram can be used to create awareness about the free computer skills training programmes and other ICT facilities available at telecentres.

1.1.7. Advent of mobile phones in telecentre

Mobile phones have developed explosively in Africa, with South Africa having one of the highest mobile phone penetrations in Sub-Saharan Africa. For instance, less than 3% of the population have access to a telephone in 2001, but by 2010 the number of mobile subscribers has grown to approximately 500 million (Rao, 2011). This tremendous growth has spawned growing literature on the significance of mobile phones in Africa. However, most of this literature is embedded within the modernization and 'leapfrogging' paradigm that equates the use of technology with the economic growth and development of countries (Williams, 2006).

In telecommunications, an important distinction needs to be made between access to phone and ownership of phones. Access is available when a citizen can use a public telephone facility like public payphones, intermediated payphones and telecentres, telephone services provided

within retail outlets, and the use of privately-owned facilities within a reasonably convenient distance and at an affordable price in comparison with the real and opportunity cost of alternatives such as transport and postal services. The access to mobile phones enhances family, social, economic and knowledge purposes. The economic as well as social benefits from such access can, in theory the mobile telephone allows people to be elevated from poverty and improve their economic standards thereby contributing more widely to the development of their countries.

Telecentres located in the rural communities tend to provide access to public services due to the lack of access to most of the necessary public service facilities. Community people can access free or affordable and scope of services offered at public access points such as telecentres that offer the best opportunity to evaluate the utilization of internet services that users can access at relatively low cost (Stravrou et al., 2000). Mobile phones are sometimes available in the telecentre and it can be used to substitute the telecentre because users can access the internet using their smartphones. Mobile phone can be of essence to people because it can be used to access information which can be used for self-development.

Access to public services are available in the more affluent urban areas and are most recently made available to the rural areas through the government sponsorship and ICTs based distant-education solutions. For the public access points such as telecentres to be effective in rural communities there needs to be internet access and multimedia service such as telecommunication, voice data and video capability are required from the ICT solutions implemented in the facility (Hudson, 2004).

Unwin and de Bastion (2008) claims not everyone can afford to own a mobile phone, especially the internet enabled smart phones and the high intensity users are the high-status individuals (in the highest income and educational groups) who own mobile phones use it more than once a day. However, studies show that low-income groups of any country spend a higher proportion of their income to buy mobile phones than the high-income groups. This category of people tends to spend the little of what they have on buying a mobile phone for personal use and unlikely for more important issue such as emergencies and personal development. Although there are claims that mobile phones can have a negative financial value it can still provide a positive influence if used appropriately.

1.1.8. Cape Access initiative in the Western Cape

The Western Cape Province of South Africa is situated in the south-western part of the country and consists of six districts, namely: Cape Town, Cape Winelands, Central Karoo, Eden,

Overberg and the West Coast (Statistics SA, 2011). Local government in the province takes the form of one metropolitan municipality, the City of Cape Town, and six districts municipalities subdivided into 24 local municipalities (Statistics SA, 2011).

As part of the measures to overcome the digital divide and low percentages of Internet penetration, especially in rural areas, the Western Cape government deployed more than 52 telecentres called e-Centres to marginalised communities for disadvantaged people to have access to the digital world (Gomez et al., 2012). The aim of establishing these e-Centres was to enhance information access and aid the reduction of poverty and digital literacy and to offer services towards community empowerment and development among rural and marginalized communities (Proenza, 2002). This initiative has contributed positively to the economic growth and social development of marginalised rural communities (Sey and Fellow, 2009; Bailey, 2009). These e-Centres offer numerous services such as e-mail and Internet services, avenues for effective communication with government, computer skills training programmes and various online services.

One such initiative is the Cape Access initiative, established in 2001 by the Provincial government of the Western Cape Province in South Africa with the aim of achieving computer literacy among people in marginalized communities of the Western Cape (Valentine, 2004). This ICT initiative has been in operation longer than most initiatives in South Africa and has distributed e-Centres in many rural areas in the six districts of the Western Cape. The Cape Access project is supported by different stakeholders, namely the Western Cape Municipality, Thusong Centre, Universal Service and Access Agency of South Africa (USAASA), that uphold this initiative as a community development project established to bring Internet networks and ICT access to rural areas of the Western Cape. The aim of the ICT project was to empower rural communities, to manage the challenges of poverty and tackle the issues of lack of computer skills through the provision of e-Centres (Valentine, 2004).

A single case study is defined as an explicit setting usually perceived as an ideal way of building an explanatory theory that matches the empirical facts as closely as possible. The single case study enables the development of detailed context-sensitive causal descriptions of a specific phenomenon (Yin, 2009). The choice of a case is driven by the way a case is situated along these dimensions within the population of interest (Seawright and Gerring, 2008). In the single case study, the use of a qualitative study approach allows for investigating how telecentres influence women empowerment in rural communities.

The Cape Access is regarded as a single case study for this research because the aim of the case selection was to select an e-Centre that spans different districts in the Western Cape. In

addition, this study is a single case with multiple units of analysis because of the different community e-Centres analysed in the study. The data collection process involved semi-structured in-depth interviews, focus group discussions and participant observation from rural women in the various communities. This serves as an ideal platform to evaluate how benefits derived from the use of the telecentres contributes towards development and women empowerment.

1.1.9. The importance of studying the contribution of telecentres in the Western Cape

It is important to study the contribution of telecentres in the Western Cape because the services and programmes provided by the telecentre are not focused on empowering only women in these rural areas but the whole community. This concern arises due to recent findings that 2.3% of the world’s illiterate are women living in rural areas (Rural Poverty, 2015). Women in the rural communities mostly lack access to technology, which hinders them from becoming empowered and are under-resourced for these reasons. Previous studies show that lack of education is the major factor contributing to the unemployment of women (Nussbaum, 2014). It has been stated that educated women acquire skills useful for more rapid economic growth, longer life expectancy, lower population growth and improved quality of life than uneducated and unskilled women (Stromquist, 2015). Table 1.3 presents the percentage distribution of women and men aged 25 years and above in South Africa for each population group by highest level of education for the year 2011.

| EDUCATION | BLACK AFRICAN | | COLOURED | | INDIAN/ASIAN | | WHITE | | TOTAL | |
|--------------------|---------------|------|----------|------|--------------|------|--------|------|--------|------|
| | FEMALE | MAL | FEMALE | MAL | FEMALE | MAL | FEMALE | MAL | FEMALE | MAL |
| More than Grade 12 | 8,9 | 8,3 | 7,6 | 7,7 | 21,9 | 22,9 | 36,3 | 39,5 | 12,3 | 12,6 |
| Grade 12 | 22,7 | 22,9 | 22,4 | 23,8 | 36,2 | 40,8 | 40,7 | 38,3 | 25,2 | 27,3 |
| Less than Grade 12 | 53,5 | 55,0 | 64,7 | 63,3 | 39,3 | 34,0 | 23,2 | 21,5 | 50,6 | 50,9 |
| No Schooling | 14,8 | 10,0 | 5,3 | 5,2 | 4,5 | 2,3 | 0,8 | 0,7 | 11,9 | 8,7 |

Table 1.3: Population group by highest level of education in South Africa (Statistics SA, 2011)

Women are unfortunately not only deprived of Internet access but also lack literacy, computer skills and income. Their male counterparts, on the other hand, have access to using the telecentre and, therefore, benefit from the free computer skills programme provided and end

up being empowered. The approach to universal services and ICT policies in general neglect gender issues. This may affect women's economic and social conditions when the policies are implemented (Jorge, 2006; Chigona and Makoza, 2013). Instances have been observed in some government-sponsored telecentres in South Africa, where gender issues are not considered (Hafkin, 2002).

Several studies have emphasized the effects of telecentre use on the well-being of communities in South Africa. Others have highlighted the opportunities and positive impact ICTs offer women for enhancing productivity (Buskens and Webb, 2009; Gill et al., 2010; Thompson and Walsham, 2010; Shirazi, 2012; Attwood et al., 2013; Masika, and Bailur, 2015; Mbatha, 2015; Ponge, 2016; Karubi and Ching, 2017). However, insights into the benefits derived from the telecentre and how they are expected to empower women are still lacking (Grunfeld, 2011; Uys and Pather, 2016). While, most telecentre research addresses the benefits women derive from using telecentres, gender implications for telecentre use are not being addressed (Thapa, 2011; Gigler, 2014). Furthermore, gender digital aspects are often not addressed as being a vital part of the developmental projects implemented in rural communities (Huyer and Sikoska, 2003; Mbatha, 2015; Chigona et al., 2016).

1.1.10. The role of the researcher

This study constitutes an aspect of a larger project funded by the South African National Research Fund (NRF), which mainly focused on ICT and gender empowerment. It was conducted with other researchers in the Information and Communication Technology for Development (ICT4D) research area and involved collecting data from designated telecentres in South Africa and Tanzania. This study falls under the South Africa-designated telecentres and a research team of Afrikaans and isiXhosa-speaking people played a vital role in the data collection from different rural communities of the Western Cape.

The researcher of this study focused on the contributions of telecentres for women empowerment in the Western Cape of South Africa. This led to using different theories to explore the various aspects of empowerment, culminating in the introduction of a distinct perspective on the understanding of the process of empowerment. The questions and theories applied in the larger projects differed from those applied by this study's researcher and the data collected at the research sites were analysed differently from that of the bigger project. The researcher played a vital role in investigating the factors that hinder women from using telecentres and the occurrences of empowerment resulting from telecentre use. The research knowledge and insights acquired in the study by the researcher includes gaining experience on how to conduct future research on ICT4D and incorporating sensitive research issues that

relate to gender and women empowerment, constructive decision-making on how to carry out research inquiry adequately and addressing outcomes derived from the study, understanding a situation and learning how to address being biased at a research site.

1.2. Empowerment

Empowerment is the ability of individuals to empower themselves to overcome unsatisfactory situations or circumstances. It entails enabling people to develop their full range of human capabilities (Gigler, 2004). Empowerment links individual strengths, competencies, proactivity to social policy, and social change (Rappaport, 1981, 1987). Empowerment theory, research, and intervention links individual well-being with the larger social and political environment (Perkins and Zimmerman, 1995). Sen (1999:18) emphasizes empowerment of the poor by saying “greater freedom enhances the ability of people to help themselves and to influence the world; and these matters are central to the process of development”.

Rural women are known to be the most under-developed and least likely beneficiaries of the use of ICT tools; this is because there are often limited resources available in the rural communities, and these women are saddled with responsibilities of managing their homes, while their husbands often leave home to explore job opportunities outside their communities (Venkatesh and Morris, 2000; Ngumbuke, 2010).

Barry and Clark (2001) suggest that women are likely to select actions approved by their families and friends as opposed to following rules or principles that are separate from their relationships. In this context, this means women may be sceptical of being introduced to technology or utilizing it in their everyday life. Moreover, the ICT skills training and Internet access provided in the telecentre are avenues that may address the needs of women and support self-development. Hence, there is a need to understand how the use of telecentres in rural communities can promote gender equality and non-exclusion of women (Asiedu, 2012). The summary of the concepts of the gender divide and women will further be discussed in literature review section.

1.2.1. Empowerment outcomes

Theories of empowerment suggest that empowerment processes and outcomes result from structured actions and activities (Swift and Levin, 1987; Zimmerman, 1995). Empowerment outcomes refer to the procedure that allows the study of the consequences of empowerment processes (Zimmerman, 2000). The study outcome shows how the telecentre impacted and

hindered women's use of the telecentre. The theories of empowerment entail both processes and outcome that suggest that actions, activities or structures may be empowering, and the outcome of such processes results in a level of being empowered (Swift and Levin, 1987). To explain the process of individual empowerment, the study combined three theories to develop a conceptual model that explained how women can achieve the process of individual empowerment.

1.2.2. Women empowerment

Women empowerment is the process through which women gain the capacity for exercising strategic forms of agency in relation to their own lives as well as the larger structures of constraint that positioned them as subordinate to men (Kabber, 1999; 2001). Similarly, women empowerment can be referred to as women's ability to benefit from resources and opportunities, exercise control over their own life, body and resources, have a say in public and decision-making, resulting in increasing or achieving autonomy and improving well-being (Huyer and Sikoska, 2003).

In the context of knowledge societies, women empowerment entails building up the abilities and skills of women to gain insight into the issues affecting them and building up their capacity to voice their concerns. The human development and capabilities approach, the Sustainable Development Goals (SDGs), and other credible approaches/goals point to empowerment and participation as an essential aspect in tackling obstacles relating to poverty and development (Fukuda-Parr, 2003).

1.3. Purpose of the research

The significance of ICTs for development connects people to accurate and up-to-date information and equips them with new skills to improve their lives (David and Surmaya, 2005). Institutional proponents of ICTs for development, for example, UNDP and the World Bank, suggest that easily accessible and abundant supply of information foster knowledge formation that can induce empowerment (World Bank, 2008b). Research on gender and IT has shown that the more important information is to a national economy, the more important it is to the empowerment of women using technology (Trauth, 1995; 2003).

Existing research on the informational needs of women, namely: framing telecentres: accounts of women in rural communities in South Africa and Tanzania; women user and non-user Internet experience, and challenges women face using the telecentre; perception, usage and

barriers to the utilization of the telecentre among rural women in Tanzania (Gcora et al ., 2015; Chigona et al., 2016; Lwoga and Wallace, 2016; Lwoga and Chigona, 2018).

Implementation of ICT in deprived communities is receiving attention due to its enormous potential for improving quality of life of underprivileged societies (Kanungo, 2004). There is extensive literature on the positive impact of ICTs on women (Buskens and Webb, 2009; Choudhury, 2009; Shirazi, 2012). In addition, several studies have emphasized the opportunities ICTs offer women for enhancing productivity (Karubi and Ching, 2017; Masika and Bailur, 2015; Gill et al., 2010; Thompson and Walsham, 2010).

This study supports the notion of women empowerment and addresses concerns of gender inequality in rural communities in South Africa. Findings from this study provide policy recommendations to South African government authorities in charge of ICT developments, with a view of assisting them in developing and implementing appropriate ICT policies and strategies. The study suggests that to increase the access, usage and full benefits of telecentres in rural communities, the formulated ICT policy frameworks by the government of developing countries should ensure favourable conditions exist.

The contribution of this study to theory involves combining three theoretical frameworks, namely; the Domestication Theory (Silverstone, 1994; 2005), Dimensions of Empowerment Theory (Gigler, 2014), and the Individual Difference Theory (Trauth et al., 2004). These theories explain the stages of domestication, the distinct types of empowerment and the concepts that affect the use of the telecentre in the rural communities respectively. The research methods used for this study include semi-structured in-depth interviews, participant observation and focus group discussions. These techniques were used to validate the results derived from the data collection.

1.4. The aim of the study

This study aims to understand how telecentres contribute to the empowerment of women in rural communities. The core argument of this study presents telecentres as an information tool that could be used by rural women for socio-economic development. It is argued that existing telecentres in rural communities do not consider gender aspects during their planning, designing and implementation phases (Huyer and Sikoska, 2003). However, failure to address the specific ICT needs of women in rural communities exacerbate the barriers women face in accessing telecentres. Hence, the aim of this study are as follows:

- To understand how telecentres, contribute to women empowerment in rural communities
- To examine how the telecentre affects the process of empowerment of rural women
- To investigate how rural women, incorporate telecentre use into their daily lives
- To examine how the telecentre impacts the different dimensions of empowerment
- To investigate factors affecting women's use of the telecentres

1.5. Problem statement

Leedy and Ormrod (2005:49) state that "a research problem is the axis around which the whole research effort is determined". "A careful statement of the research problem goes a long way towards its solution" (Hicks and Turner, 1999:3). The scope of this study is a compelling area of interest to investigate because there is limited literature relating to women empowerment and telecentres.

The scenario in South African rural communities is that the men leave their wives behind to seek employment in urban areas; this explains why the number of female-headed rural households varies between 50% and 80% (Muller, 2009; Keifer-Boyd, 2011). Despite the available telecentres in their communities, these rural women have limited use of available ICT tools due to a host of socioeconomic factors (Hilbert, 2011). Literacy is key to knowledge, without literacy, there can be no empowerment, particularly for women and girls (Sen, 1999; Dighe and Reddi 2006). There are pending issues on how to share information with people who have little knowledge on how to access and use ICT facilities due to low levels of literacy, inadequate time or money, highly contextualized knowledge and language requirements.

Telecentres comprise ICT infrastructures such as a computer, printers, scanners, telephone and the Internet. These amenities are made available for assessing information and can be used to achieve self-empowerment, one of the needs of women living in the rural areas (Rao, 2008). Nevertheless, the design phase of the telecentres does not consider gender aspect as being an important part of the planning, designing and implementation phases (Huyer and Sikoska, 2003; Hallberg et al., 2011). Therefore, most telecentres did not focus on gender and how women can be empowered using the telecentre.

1.6. Research questions

The research questions addressed in this study are:

- How do telecentres contribute to women empowerment in rural communities?

Sub-Questions

- How does the telecentre affect the process of empowerment in women?
- How can women incorporate telecentre use into their daily lives?
- How does the telecentre impact the dimensions of empowerment?
- What factors affect women's use of the telecentre?

1.7. Rationale for the topic

In recent years, the international development region has focused on the need to share knowledge more effectively in support of poverty reduction efforts. Hence, in the context of a perceived "knowledge divide", it is crucial to address the challenge of how to respond to the knowledge needs of rural communities in developing countries (David and Surmaya, 2005). Although ICTs alone cannot contribute towards socio-economic development or create gender equality, they can be "tools for social action and positive social change" (Davidson, 2012). Moreover, equality in the access to ICTs can boost socioeconomic growth in a community and country at large (Koutroumpis, 2009).

Furthermore, World Bank (2008b) states that "every 10% increase in access to broadband results in 1.38% growth in Gross Domestic Product (GDP) for developing countries". It is estimated that by increasing internet access to 600 million additional women and girls can improve global GDP by up to US\$13-18 billion (Antonio and Tuffley, 2014). Likewise, an increased access to the telecentre and a better understanding of the importance of telecentre use will encourage women to learn computer skills, empower themselves and counter the challenges that occur in their daily life.

1.8. Research approach

The study is a deductive enquiry informed and guided by existing theories. The research approach adopted in this study followed the interpretivist paradigm. The Cape Access e-Centres located in the Western Cape of South Africa were used as the case study. Research data was collected from 39 respondents (categorized as telecentre users and non-users) through in-depth semi-structured interviews. Data collection from the two categories of respondents occurred simultaneously during the study and observations were taken while organized computer skills training sessions (delivered in local dialects) were held at the

telecentre by highly trained staff of the Cape Access called telecentre managers. This was used to verify and/or disprove assumptions on the use the telecentre facilities and services.

The lenses of this study involved a combination of three theoretical frameworks, namely the Domestication Theory (Silverstone, 2005), the Dimensions of Empowerment Theory (Gigler, 2014) and the Individual Differences Theory (Trauth et al., 2004). This approach is further explained in detail below:

- I. The Dimensions of Empowerment Theory (Gigler, 2014) were used to analyse the diverse types of empowerment relating to women's use of the telecentre such as the economic, informational, social, political and cultural. The rationale for using these dimensions of empowerment was to describe the output indicators that may occur in individual empowerment.
- II. The Individual Difference Theory (Trauth et al., 2004) was used to analyse the different concepts affecting woman's use of the telecentre such as the personal data, shaping and influencing factors and environmental context.
 - Personal data, including demographic data (age, race and ethnicity), lifestyle data (socio-economic class and parenting status), and the workplace data (job title and technical level).
 - Shaping and influencing factors, including personal characteristics (educational background, personality traits, and abilities).
 - Personal influences (mentors, role models, experiences with computing and other significant life experiences).
 - Environmental context includes cultural attitudes and values (attitudes), geographic data (about the location of work) economic and policy data (about the region in which an individual earns an income).
- III. The Domestication Theory (Silverstone, 2005) was used to analyse the different adoption stages of technology. This theory examines the adoption of technology, the interaction between users, the technology and the systems running on it (Silverstone, 2005). It consists of four main aspects that was used to analyse the

process of how technologies can become part of the everyday life of women through appropriation, objectification, incorporation, and conversion.

1.9. Summary of findings

The findings of this study show women's use of the telecentre as a promising model for supporting universal access in rural communities. It was observed that with efficient operation and connectivity, telecentres assist in improving the economic standard of rural women. This expected result presents telecentres as a possible tool for promoting women empowerment. Inferences drawn from this study are summarized as follows:

- Telecentres provide accessible information and communication services to rural women
- Telecentres make practical contributions for the socio-economic development of developing countries.
- Although telecentres are a form of development initiative that contributes to community development, it is not challenged to empower women in the rural communities. Therefore, the failure to address the specific ICT needs of women in rural communities contributes to the barrier's women face in accessing ICTs.

These findings and inferences drawn from this study, therefore, provide ICT policymakers with a platform to play a significant role in investing in telecentres. It informs national policymakers on the contribution of telecentres as ICT initiatives for women empowerment, improving rural livelihoods and poverty reduction.

Lastly, this research makes a significant and valuable contribution to existing knowledge in the Information System field. The research is of interest to the government, ICT policymakers, promoters and managers of telecentres, NGOs and other ICT project managers implementing projects in rural communities.

1.10. Assumptions of the study

This study assumes that there is limited digital literacy in rural communities of developing countries. Multiple divisions exist between individuals and regions with significant level of ICT access and societies that are without such technology. This is revealed as the growing disparity in the access to telecentres, and apparent gender inequality existing within poor communities of developing nations.

It is assumed that a telecentre is an empowering tool used to overcome gender divide and encourages the process of social inclusion. Social inclusion is the process of improving the terms for individuals and groups to participate in society. It can also be defined as the process of improving the ability, opportunity, and dignity of disadvantaged people (who are discriminated against, based on their identity) to take part in the society (Chen and Ravallion, 2013).

Institutional proponents of ICTs for development, UNDP and the World Bank, suggest that easily accessible and abundant supply of information foster knowledge formation that can induce empowerment. Induced empowerment can be facilitated through the proper utilization of telecentres as an empowerment tool in rural communities.

The assumption is that the information derived from telecentres can contribute towards women self-development and improve their economic standards (Hallberg et al., 2011). Furthermore, it is argued that valuable information derived from telecentre use meets the needs of women and in turn promotes the empowerment of women.

1.11. Structure of thesis

This thesis is structured into nine chapters, detailed below:

Chapter 1 gives the background to the study. Also, presented in this chapter are the purpose and aim of the study, the research problem, approach, questions and the assumptions of the study.

Chapters 2 and 3 lays the foundation for the study by giving a literature survey covering important components and subjects of the study. Chapter 2 presents the role of the telecentre in the community and the general overview of women. This includes the rurality, economic

contributions of women, women in the society, the perception of ICTs use of women, ICTs and gender divide.

Chapter 3 explains in detail the definition of empowerment, the process of empowerment, the different dimensions of empowerment, levels of empowerment and the stages of empowerment.

Chapter 4 presents the theories used in the study and their suitability. Here, alternative theories that could have been suitable for the study were explored. A conceptual framework was developed by summarizing the mental image of themes and patterns that emerged from the data collection using a deductive approach in qualitative research. The study used an abductive approach to merge deductive and inductive approach to link data extracts to the frameworks used to explain the process of empowerment (Doz, 2011).

Chapter 5 describes the case study: The Western Cape Province and the different rural communities selected for the study emphasized. The main aim of this chapter is to bring more meaning and understanding to the enquiry of the research.

Chapter 6 describes the methodology adopted for the study. The different techniques such as in-depth semi-structured interviews, participant observation, focus group discussions and photographs of the research site taken during the fieldwork.

Chapter 7 describes the case analysis and the demographics of the respondents used for the interviews. It unpacks the collected data and analysed results and provides answers to the main research question.

Chapter 8 shows the findings from the analysis and gives an in-depth discussion of the findings realized in the study.

Chapter 9 is the concluding chapter. It states the study's outcomes, contributions and recommendation for probably future work. Figure 1.2 presents the diagram of the thesis structure.

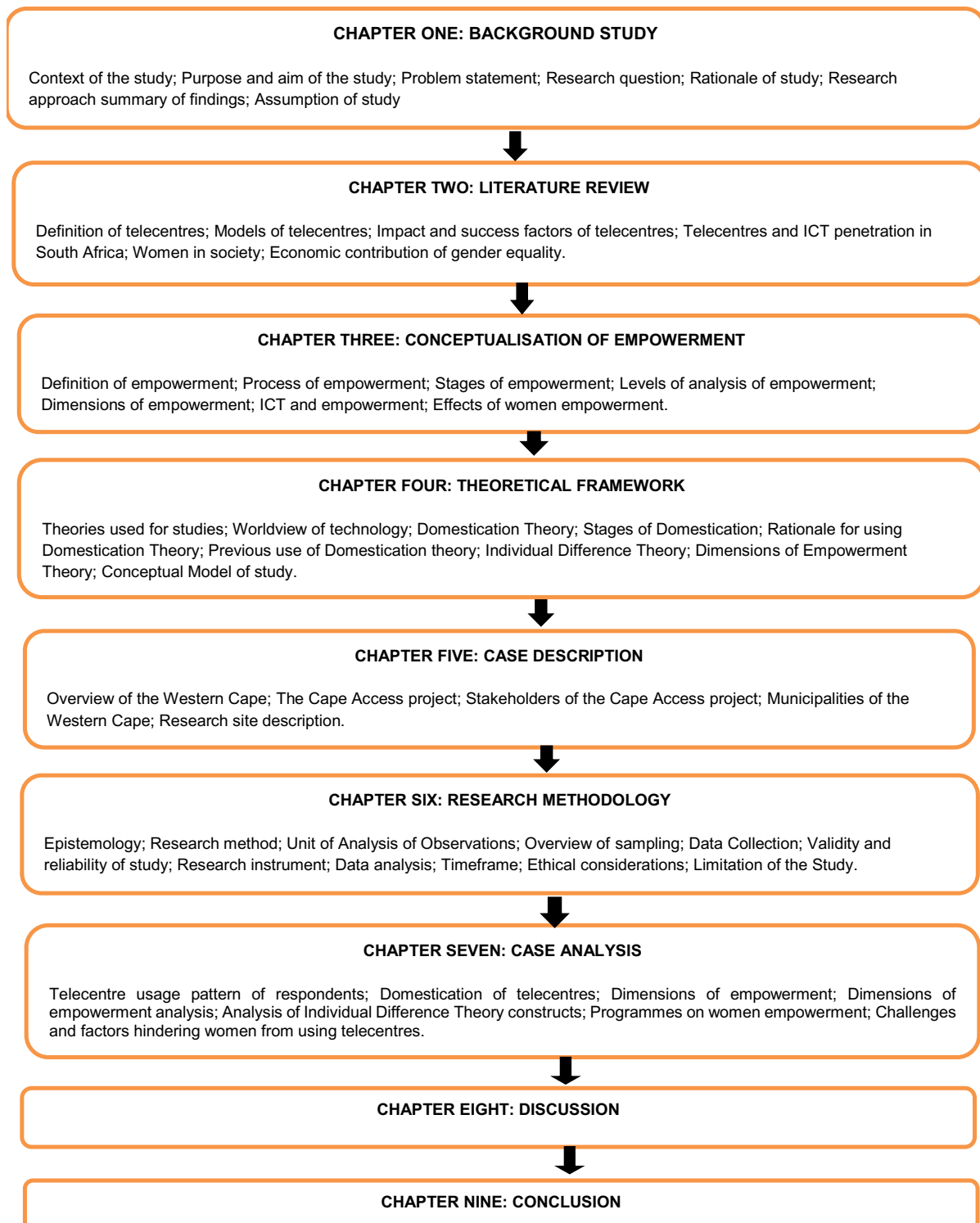


Figure 1.2: Structure of thesis

1.12. Summary of chapter

This chapter summarises the motivation and the rationale of the study and discussed the contributions of telecentres on women empowerment in the rural communities of South Africa. Furthermore, the assumption and practical contributions of this study were addressed. An outline of the methodology used in data collection was described as semi-structured in-depth interviews, participant observation and focus group discussions.

CHAPTER 2: Literature Review

2.0. Introduction

This chapter discusses the significance and contribution of telecentres for women empowerment in the rural communities. A substantial explanation of women used for the study was explained in the chapter. The factors that hinder the proper running of a telecentre and the different success factors that contribute to the successful operation of a telecentre was discussed and the various models of telecentres that can be found in rural areas were highlighted.

To address the research questions on how the telecentre contributes to women empowerment in the rural communities, and write-ups of past scholars on ICT for development were used to identify the research gap in this study. This chapter further describes how the government, social development agencies, regulatory authorities and researchers have focused on developing appropriate business, policy and technological solutions for providing information and communication services through the establishment of the telecentres to poor rural communities at an affordable cost.

2.1. Telecentre

In previous years, telecentres have existed in almost every country. Telecentres have been named in diverse ways such as: e-Centre; Public Access Point; Telecottage; Info-centre Digital Clubhouse; Community Technology Centre (CTC); Community Access Centre; Multipurpose Community Centre (MPCC); Community Learning Centre (CLC); Electronic Village Hall; Tele-Village; Cybercafé; Computer Centre; Kiosk; e-Chopper; Information Centre; Public Internet Access Centre (PIAP), (Proenza et al., 2001; Harris et al., 2007; Phillip and Foote, 2007). Telecentres are sometimes non-profit centres that offer access to computers and the Internet, frequently coupled with training and other social services, with the intent of contributing to people's social and economic development (Gomez, 2012).

Telecentres have many structural components (human, political and technical) which need to support each other to create a functional telecentre (Benjamin, 2001a; Heeks, 2002; Proenza et al., 2001). The failure of one or more of these components, as detailed by Roman and Colle

(2001). Hulbert and Snyman (2007) and Parkinson (2005) can make telecentres non-functional.

2.1.1. Thusong service Centre operation

The Thusong service centre formerly known as Multi-Purpose Community Centres-MPCCs programme is a one-stop integrated community development centre with community participation and services relevant to people's needs established by the Western Cape government. The telecentre services are sometimes part of the government services located at the Thusong service centre in some communities of the Western Cape. The government service was initiated in 1999 as one of the primary vehicles for the implementation of development communication and information. Hence, to integrate government services into primarily rural and marginalised communities (Burton and Nel, 2012).

The programme is driven by government and are ideal platforms for which businesses and non-governmental organisations (NGOs) can offer their services and reach a wide sector of the market. The aim of the Thusong Service Centre is to empower the poor and disadvantaged through access to information, services and resources from government, non-governmental organisations (NGOs), parastatals and businesses, enabling them to engage in government programmes for the improvement of their lives.

The Thusong centre is sometimes situated in the community hall, and the centre was created to provide South African citizens with access to information and services within their place of residence and in each local municipality by 2014 with the purpose of improving the quality of their lives through integrated service delivery. The Thusong service centre provides government services such as the e-Centre, Home Affairs, Public Community Libraries, South African Social Security Agency (SASSA), Social Development, GCIS and the Department of Health, Telecentre known as e-Centre, Post Office, Agricultural Extension Offices, Labour and Municipal Services, Community Development Workers, the South African Police Service, NGOs and community-based organisations. These various departments offer services through the centres to different communities in the Western Cape Province (Burton and Nel, 2012). Furthermore, this service was offered to address historical, social and economic factors that limit access to information, services and participation by South African citizens, to solve the issue of people travelling a long distance to access these services (Burton and Nel, 2012).

2.1.2. Models of telecentres

Telecentre have different models such as private enterprise, government supported, and public-private partnership (Gomez, 2012). Privately owned telecentres are mainly for profit are

more financially sustainable because of their commercial orientation. Public libraries are usually government-owned and sometimes are connected to the Internet offering free services for public consumption and are government supported public space (Bell, 2006; Oestmann, 2001). Table 2.1 summarizes the different telecentre models.

| MODEL | DESCRIPTION | EXAMPLES |
|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Private enterprise | Mainly for-profit aim and are more financially sustainable because of their commercial orientation. | Cybercafés, TARAhaat. |
| Government supported | These centres are non-profit oriented established by the government in rural communities and towns providing access to government information and activities. | Public libraries, e-Centres, Multimedia Centres, Computer Centres, Multi-purpose Community Centres (MPCCs), e-Choupal, Kiosk, Community Technology Centre (CTC), Community Access Centre. |
| Public-private partnership | These model offers access to ICT training on various programmes, faxing, scanning and photocopying services. The CMC network of UNESCO set up the centre. | Community Multimedia Centre (CMC), Public Internet Access Centre (PIAP), Public Access Centre (PAC). |

Table 2.1: *Different telecentre models*

2.1.2.1. Private enterprise

Telecentre model sometimes offer services for products and information through the Internet to the unserved rural market in some developing countries, such as India (Gomez et al., 2012; Chatterjee, 2004). Private enterprises are mainly in towns and few in rural areas because most privately-owned telecentre belief they can maximize their profit margins in town and cities (Gomez et al., 2012; Rega and Poglia, 2010; Proenza et al., 2001).

2.1.2.2. Government supported

The government supported telecentres can be found in rural areas and in towns. They are established to provide digital access to rural people who cannot afford to purchase an ICT device and to provide free computer skills training services to rural community people. Telecentres provide access to computers, the Internet and computer training and other social services, with the intention of contributing to people’s social and economic development (Bell, 2006; Oestmann, 2001; Gomez, 2012; Chigona, 2007; Mphahlele and Maepa, 2003).

2.1.2.3. Public-Private Partnership (PPP)

The Public-Private Partnership telecentre model offers services to the public, and it is publicly funded. The model is considered a rural telecentre and mainly offers services at a subsidiary rate, and it is usually sustained by non-government organizations (Gomez et al., 2012; Rega and Poglia, 2010; Proenza et al., 2001).

This study used the Cape Access telecentre model, which consists of 52 telecentres known as e-Centres in six districts of the Western Cape Province. The telecentres comprise ICT tools consisting of computers, printers, scanners, Internet, telephone and other ICT devices. The Cape Access e-Centres are found in rural areas. Trained telecentre managers and assistants employed by Cape Access are employed to operate the e-Centre that were established in the various communities of the Western Cape to provide access to the digital world, eradicate digital illiteracy and reduce poverty in the rural communities (Valentine, 2004).

2.2. Impact of telecentres on rural communities

Telecentres can contribute to implementing social development programmes, support the social and personal development of the individuals and communities they serve, and contribute to improving the quality of people's lives (Menou et al., 2004). Telecentres have the potential to be powerful tools that are used to achieve sustainable development in developing countries stated by Gómez and Ospina (2001:1). Emphasis on access to technology, though important, has shifted to far more prominent issues of the meaningful use and social appropriation of technology. Efforts to date have dedicated to offering public and community access to the Internet through telecentres and related activities. Telecentres can play a key role in improving rural community access to information rural communities (Gómez and Ospina, 2001).

Telecentres, when established in communities, can bring about socio-economic development by offering connectivity, removing isolation and remoteness of rural areas, and integrating communities (Oestmann and Dymond, 2001). They can enhance livelihood by generating information related to market, improved farming practices, and employment opportunities. Telecentres are equipped with ICT facilities that can play a key role in promoting community access to information for social activities, commercial/business growth, and research purposes using the Internet and availability of computers and telecommunications tools provided (Fontaine, 2002).

2.3. Critical perspective on the implementation of telecentres

Over the years, proponents of ICTs for development agenda claim technology creates opportunities for social and economic development of poor communities in developing nations (Mukerji, 2013). Information is critical to development, then ICTs, as a means of sharing information, are not simply a connection between people, but a link in the chain of the development process itself (Hudson, 1999). ICT tool such as telecentres are perceived to not reach the underprivileged but, rather, the privileged in the society, which widens the socioeconomic gap within developing countries (Heeks, 2010). According to Adeya (2014) ICTs enhance inequalities and potentially lead to social exclusion. Technological empowerment is achieved by supporting the individual use of technology for personal needs and goals (Aji, 2010). Brown (2010) claim “ICT for development” agenda examines the link between ICT and development, and empowerment of marginalised communities is under-researched, whilst the “ICT in developing countries” agenda, comprising of cultural implications and local adaptation is over-researched. Scholars such as Bailey and Ngwenyama (2010) also questioned the potential of telecentres in empowering individuals and communities.

Individuals that can be empowered using technology usually have the confidence; high self-esteem; feelings of self-efficacy; control over their life; increased critical awareness; and increased civic participation (Barry and Clark, 2001). According to Abu-Omar et al. (2011) technologies contribute to the multiplier effects across income levels and innovative capacity. Modern technologies can support the empowerment of individuals and contribute to community development. However, the lack of ICT skills in remote areas is one of the reasons telecentres are established in rural communities (Hettiarachchi, 2006). ICT skills development has been integrated as part of the services of telecentres to overcome the challenges of learning computer skills. Thus, the aim was to support the community to access ICT facilities and information via the Internet or computer skills training offered to community people at the telecentre to improve the livelihood and self-development of users (Aji, 2010). However, this has not been achieved despite the free services offered to users. Access to telecentres in themselves, cannot be a solution to poverty but can be adopted as a tool in poverty reduction initiatives.

The telecentre has been criticised to have poor ICT infrastructure (Mbangala and Samzugui, 2014). Studies have assessed the impact of telecentres on rural women’s capabilities to attain their development outcomes in Tanzania (Chilimo and Ngulube, 2011). Other challenges of the telecentre are the discrimination and gender inequalities (Idris, 2018). This because most

women in developing countries are disadvantaged in the access of the telecentre due to most findings that claim men being likely the main users of the telecentre than women in rural areas of developing countries (Chilimo and Ngulube, 2011; Mbangala and Samzugui, 2014; Alao et al., 2017). These scholars have criticised the telecentre as an initiative which often fail to meet the needs of the marginalised such as women in the local communities of developing countries.

2.4. Success factors of telecentres

The successful operation of telecentres is for “desirable development outcomes” (Harris, 2001) which have an influence on the communities and individuals (Bailur, 2007; Klein, 2009). The degree of community involvement in and commitment to telecentres is often assumed a success factor, and measures of user behaviour and perceptions are at the core of any evaluation of telecentres (Whyte, 1999). Table 2.2 summarizes the key factors that contribute to the successful operation of the telecentres in the rural communities.

| TELECENTRE SUCCESS FACTORS | DESCRIPTION | REFERENCES |
|----------------------------------------------------|----------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Community involvement in design and implementation | Community initiation and ownership | Gurstein (2003); Roman and Colle (2002b); Romm and Taylor (2001). |
| Local content | Availability of local content | Gurstein, 2001; Huerta and Sandoval-Almazan, 2007; Gnanih et al., 2004; Soriano, 2007. |
| Literacy | Basic and functional literacy | Rege and Nagarkar 2010; Ganguly and Pal, 2011; Etta and Parvyn-Wamahiu, 2003; Gamage and Halpin; 2007, Huerta and Sandoval-Almazan, 2007; Kintu et al., 2005; Middleton and Sorenson, 2006; Bailey and Ngwenyama, 2009; Songan et al., 2004. |
| Promoting equality | Assisting marginalized groups | Romm and Taylor, 2001; Gurstein, 1999; Kumar and Best, 2006; Kintu et al., 2006; Holmes, 2001; Bailur, 2007; Bailey and Ngwenyama, 2013; Morawczynski and Ngwenyama, 2007. |
| Partnerships | Involvement, alignment and networking among stakeholders | Madon, 2005; Roode et al., 2004; Bailey 2009; |

| | | |
|----------------------------|----------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|
| Management and marketing | Characteristics of the telecentre staff, management style and promotion of the telecentre services | Bailur, 2007; Mphahlele and Maepa, 2002; Fuchs, 1998; Kintu et al., 2005; Roman and Colle, 2002b. |
| Monitoring and evaluation | Assessing the impact of the telecentre | O'Neil, 2002; Reilly and Gomez, 2001; Gigler, 2004; Bailur, 2007. |
| Technology characteristics | Type and features of the technology | Harris, 2001; Romm and Taylor, 2000. |
| User training | Training of telecentre users | Gomez, 2000; Holmes, 2001. |
| Usage and participation | Usage and participation of target groups and user groups | Clark, 2001; Hudson, 2001; Roman and Colle, 2002; Gurstein 2003. |

Table 2.2: Summary of the key factors to telecentre success

2.5. Public access points in the Western Cape Province.

Public Access point venues offer marginalized and disadvantaged populations opportunities to use computers and the Internet to meet their information needs (Gomez et al., 2012). Digital divide occurs in poor communities, in countries across different demographics; differentiating factors, namely gender divide and lack of education, contribute to digital divide (Czerniewicz and Brown, 2005). Due to economic realities in most developing countries, the common way of offering access to the disadvantaged masses is through shared access schemes such as telecentres which may come in different variations (Roman, 2003; Roman and Colle, 2005; Bailur, 2006; Toyama and Kuriyan, 2007; Sey, 2008; Sey, 2009).

South Africa has many public access projects that were commissioned by the Universal Service and Access Agency of South Africa (USSAASA) (Lesame and Seti, 2014). These public accesses have experienced instability in sustainability and low adoption rate (Colle, 2005; Roman, 2003; Bailur, 2007; Lesame, 2014; Kapondera and Hart, 2016). The Western Cape has provided public access points to address the digital divide in rural communities. Currently, there are 114 such public access points in the Western Cape, 82% of which are in the Cape Town municipal area; the majority of these (71% of all public access points) are part of the Smart Cape access project, a City of Cape Town initiative offering free public access to the Internet at municipal libraries (Sooful et al., 2002). Part of the projects launched by the Western Cape Government (WCG) is the Cape Access project (Valentine, 2004). The aim of the Cape Access project was to provide the computer skills to poor communities of the

Western Cape. Figure 2.1 shows the public access points in the six districts of the Western Cape.

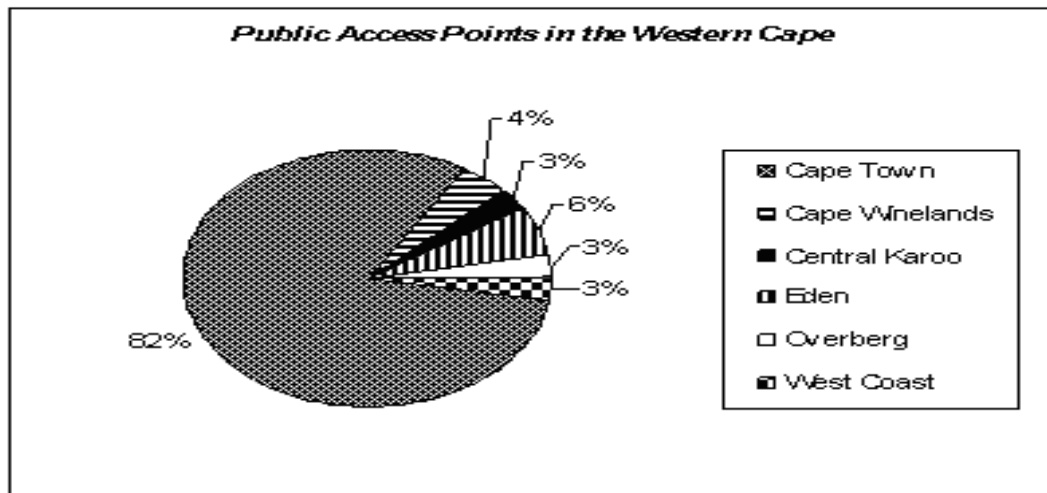


Figure 2.1: Public Access Points in the Western Cape

2.6. Telecentres in rural South Africa

The public access computing (PAC) ecosystem in South Africa consists of public libraries, telecentres, and cybercafés. Telecentres in public libraries have been established in South Africa and around the world as part of the strategy for digital inclusion (Parkinson, 2005; Van Belle and Trusler, 2005; Pather and Mitrovic, 2008).

The Cape Access project offers ICT free services and 45 minutes of Internet use are offered to community members who use the centre daily. Computer skills training sessions on the International Computer Driving Licence (ICDL) and basic computer skills training are offered to community members at no charge and certificates are issued to successful participants who complete the computer skills training programme (Valentine, 2004). Agencies such as USAASA programmes also focused on the establishment of non-profit community telecentres that offered access to computers and the Internet. Recently, the agency has shifted its focus, recognizing the sustainability of community ownership and of sound business models in the running of public access centres (USAASA, 2011).

Other ICT-facilitated projects include cybercafés which have changed people’s perception of the public access and the use of ICTs in South African townships. The contribution of cybercafés to community development can be of importance in South Africa (Gomez et al., 2012). Cybercafés are known also to have a spontaneous contribution to community

development because they can contribute indirectly to development, even though it might not have been an intended mission or purpose (Finquelievich and Prince, 2007).

2.6.1. Rural parts of South Africa

A rural community is defined as a geographic area that is located outside towns and cities, with a generally not large population (Munyua, 2000; Okon, 2015). Rural communities are often characterized as information poor, and the provision of amenities by the government has always been a principal component of rural development initiatives (IFAD, 2001; Pade et al., 2005; Chen and Ravallion, 2010). Rural people are unfortunately not only deprived of Internet access, but also lack literacy, computer skills and income and often lack ICT facilities and are under-resourced. Rural areas usually have bad roads, low teleconnectivity, underdeveloped market facilities, and low income-earning opportunities (Naude and Khumalo 2001). This has been the cause of very low investment which result in limited opportunities in the poor communities and economic alienation, which has led to the migration of rural dwellers to urban settlement in search of better living standards (Mamba and Isabirye, 2015).

A rural location is described as residents in settlements that are a distance from urban areas, and agriculture is presumed to be the principal activity of its populations (Tacoli, 1998). The South African poor live mainly in these rural areas (Carter and May, 1999). In South Africa there is racial segregation due to the apartheid era which was the cause of racial categorization and separation and the cause of poverty among the minorities. The South African population includes whites which are the Afrikaaners and the English, Africans, Asians, and Coloureds (Morse and Peele, 1974; Stone, 1995; Vandenbosch, 1979; Schutte, 2000; Hart and Padayachee, 2000; Martin, 2000; Thomas and Bendixen, 2000). The legacy of apartheid in the country caused poverty, racial division and the sharp contrast that characterizes contemporary South Africa (Carter and May, 1999).

Apartheid was a process of active deprivation of assets such as land and livestock from the majority and black majority in the South Africa economy. The apartheid era simultaneously denied the black majority race the opportunity to develop new assets by restricting access to markets, infrastructure and education. This resulted in poverty, and compressed social and economic class, especially in the rural locations where the majority of South African continues to reside (Carter and May 1999). The make-up of the rural communities of South Africa consists of blacks and Coloureds that live in settlements in diverse locations outside of the cities in different provinces of the country.

2.6.2. ICT projects in rural South Africa

ICT projects have become a priority of the government of developing countries like South Africa as most rural areas in developing countries often suffer under the digital divide because they lack Internet access. This is because rural communities in South Africa are unable to own modern gadgets and benefit from ICTs (Richardson, 1996). Rural communities are not only deprived of Internet access but also lack literacy, computer skills and income. Nevertheless, in recent times there have been diverse ways of eliminating the digital divide in rural communities. Intervening measures such as the use of satellite communications and power lines are offered to provide new possibilities for universal access to the Internet and lack of telephone lines. These will not limit access to rural communities and ways of providing low access prices are often required to bridge the ICT divide and given hope to the future of rural communities.

Rural communities in South Africa benefiting from ICTs include the Dwesa community which lacks basic amenities such as electricity and good roads, suffering instead low tele-connectivity, underdeveloped market facilities, low income-earning opportunities and a wide level of poverty, a high percentage of illiteracy and lack of basic services (Human Sciences Research Council, 2005; Mamba, and Isabirye, 2015). Other projects implemented by the South African government included the use of ICTs with the support of the University of Fort Hare and Rhodes University in the Eastern Cape Province (Dugmore, 2012). A project called Siyakhula was introduced to study the implementation of ICT-based solutions in rural communities in view of encouraging development in the region, setting up a computer laboratory in the community school. The establishment of this project expedited collaboration between Dwesa rural people and available resources among all the community members (Dugmore, 2012).

Another of the ICT projects implemented in the rural communities of South Africa is the Telkom Centre of Excellence. The Rhodes University has focused its research on distributed multimedia technologies, while the project at the University of Fort Hare has also focused their research on ICT for Development. These two Universities, through their “Centres of Excellence,” combined their focus areas to develop and field-test a prototype of a multi-functional distributed communication platform that is suitable for use in rural areas in South Africa (Ranga et al., 2010). The project was carried out in the Eastern Cape rural community and ICT solutions were informed by knowledge gained through the participation of community members (Dugmore, 2012).

The success of these ICT projects has contributed to the community development of the different rural communities in which these various projects were initiated, facilitating digital literacy, reducing poverty and empowering the people living in the rural communities. ICT can enhance holistic development; it enables rural dwellers to have an interest in participating in the ICT community development initiatives that have been introduced in their communities (Mamba and Isabirye, 2015). The aim of this initiative is to bridge the gap of digital literacy through the establishment of e-Centres in different marginalised communities in the province, in addition to providing information knowledge and ICTs to people that cannot afford to own computers or other ICT devices. Hence, computer skills training is offered to community people that lack computer skills at no charge at the telecentres located in their communities.

2.6.3. Measures of overcoming digital divide in South Africa

The South African government has put measures in place to overcome the digital divide and there has been commitment to achieving universal ICT access, particularly for the poor in disadvantaged areas (Parkinson, 2005). Rural access to ICT infrastructures such as e-Centres is provided in the Western Cape Province to transform these rural communities into intelligent and highly skilled environments, which can also work as potential sources of labour and innovation (Parkinson, 2005). It is estimated that 15.8% of South African households have a computer and 7.3% of these households have Internet access (Statistics SA, 2008).

Rural communities in South Africa mostly do not have adequate fixed network infrastructure in their communities and there is usually poor Internet connectivity (Moshapo and Hanrahan, 2004). Such failures continue to affect the delivery of public access computing (PAC) services in South Africa and elsewhere; and in the light of the growth of smartphones, it could be argued that telecentres are not always a meaningful mode through which Internet access can be delivered (Chigona et al., 2011; Gomez et al., 2012). These circumstances make access to information from other parts of the country and the world a great challenge. To address these problems privately, government and civil society have attempted to come up with solutions.

In addition, over time results of the data indicate that Internet penetration has increased to 13.8% of the population. ITU's ICT development index, South Africa's rank has consistently fallen, from 77th in 2002 to 91st in 2007 to 92nd in 2008 (ITU, 2009). The ITU report also characterizes the country as having "relatively low access and usage values" and further asserts that "little progress was made during the past five years, on ICT usage" (ITU, 2009:33). To address this compelling issue of ICT, projects were initiated by the South African government to address it.

2.6.4. Mobile access in communities

Telephony services remain the dominant communication service offered to rural communities. The success and effectiveness of this form of communication such as voice telephony services. The Rural-access network approaches offers clear economic benefits to rural communities in the form of travel cost savings because the cost of a phone call can expensive (Caspary and 'O' Connor, 2003).

The telecommunications network operator provides access network infrastructure such as wireless base stations, copper-pair line concentrators in the user's vicinity to implement the access interfaces (wireless or wired). The access network infrastructure and the rest of the operator's network would then connect to remote information resources for users (Hudson, 2004).

The access to ICTs can be expensive but the communal facilities removes the computer ownership barriers and ensure that accesses to ICT services are affordable by removing the barrier of owning a telephone or computer. The telecentre at times provides communal facilities providers that offers ICT service to a collected group of community members, via a terminal device provider, which serves as a modem (Benjamin, 2002). This model introduces a third-party ICT facilities provider such as the telecentre and phone shop that provides physical premises for shared usage of ICT terminal devices and aggregated access to services (Benjamin, 2002).

Another telecommunication access includes private service access model which is a dominant application of ICT in rural communities. This model is a voice telephony services (Daniel and Powell, 2002). Telecommunications network infrastructure currently implemented in rural communities provides telephony and internet services; which individual service subscribers can use the telephony services for various need such as social or business communications. This model provides internet services for information sharing purposes. The terminal device of the communal access providers has a direct relationship with the network operators who deploy the access network infrastructure and provide wholesale connection time (airtime). Retailed airtime is aimed at the public who use the providers ICT terminal devices such as telephones, fax machines and

2.7. ICT penetration in developing countries

The ICT penetration in developing countries is of essence as the African continent covers approximately 20% of the global land mass and is home to 15% of the world's population with approximately 1 billion people living in its 56 countries (Ponelis and Holmner, 2015). Many African countries are aspiring to become information societies and ultimately knowledge societies allowing them to take part as equal partners in the global information-based economy (Ponelis and Holmner, 2015). This has led to African countries initiating ICT projects that have addressed the lack of telecentres and other global communication networks (Kayisire and Wei, 2015).

This ICT penetration increased across the African continent in the late 2000s and early 2010s to facilitate development in different countries. However, the focus shifted to the uptake and impact of ICTs in transforming societies and economies since enhancing information flows alone is not enough to grasp the development opportunities (e-Transform Africa, 2012; World Bank, 2012). The International Telecommunication Union (ITU) estimates for 2013 were optimistic, as Africa is known to be leading the world in mobile money, and in some countries the penetration of mobile phones is above 100% (Ponelis and Holmner, 2015). In a report by the World Bank in 2013 showing ICT facts and figures, Africa had an estimated 63% mobile-cellular penetration. The report cites the following ICT statistics: 16% of Africans are using the Internet, 7% of African households have Internet access; the annual household Internet access growth stands at 27%; less than 10% of wired broadband subscriptions have speeds of 2 Mbps or more; and mobile broadband penetration has increased from 2% in 2010 to 11% in 2013 (Ponelis and Holmner, 2015).

2.8. Effects of telecentres on women empowerment

The telecentre has effects on women empowerment as the telecentres have the power to cut across social and geographical distance, helping people find innovative ways of facilitating the flow of information and knowledge (Negroponte, 1995:6). Women living in the rural areas can have access to relevant information that can help to address the needs of women and empower their lives. Hence, telecentres are assumed to be used for empowerment purposes. Women having access to telecentres can gain access to information, knowledge and share their knowledge, concerns, best practices and experiences, gain a greater understanding of their current situation, and solve issues that were previously beyond their capability and enhance their livelihood (Kwake et al., 2006).

Consistent access to telecentres can help to create better opportunities, assist women to make decisions that can lead developmental objectives and contribute to gender equality. Several case studies from various countries have demonstrated the potential of ICT for economic empowerment of women, such as the establishment of the 'Village Phone' programme initiated by the Grameen Bank in Bangladesh (Kwake et al., 2006), the e-marketing of women's products in Pakistan (Shaheen, 2011), and of rural women's products by Smile (Savitri Marketing Institution for Ladies Empowerment) project in India (Suresh, 2014).

2.8.1. The influence of telecentres on women entrepreneurs

The influence of telecentres on women entrepreneurs has been emphasized as several other studies from various countries have shown that ICT applications can empower women by promoting their business, increasing their levels of income (Gurumurthy, 2006; Suresh, 2014), and enhance access to information on employment opportunities, thus supporting their economic empowerment (Potnis, 2011; Shaheen, 2011; Suresh, 2014). Apart from economic empowerment, women can use the telecentre for enhancing their education levels and health.

For instance, the SMILE project in India has increased literacy levels of underprivileged women using ICT (Suresh, 2014). The Aamagaon, Soochna Kendra project in India is an ICT initiative with 73 kiosks situated in the rural areas, a partnership with Mission Shakti that has made a significant impact on women empowerment. Women members are trained in the fundamentals of computer and Internet basics at the IT Kiosks on payment of an affordable fee (Suresh, Rama and Ahmed, 2004).

2.8.2. Effects of telecentre on political empowerment of women

The telecentre has effects on political empowerment of women as the potential of ICTs for women empowerment is demonstrated to promote community building and political organization, democracy, and governance (Kelles-Viitanen, 2003). ICTs tools such as the Internet are used by various feminist agencies and NGOs that advocate for gender issues to create, collate and disseminate information on rights, legal rights, sexual and reproductive rights, women's human rights both locally and internationally. These initiatives have enabled women to participate in raising their voices on issues that affect their livelihood (Suresh, 2014). In general, the telecentre can empower women to make better choices and achieve their developmental objectives, such as increase their participation in community building, political organization, democracy and governance.

2.8.3. Impact of telecentres on economic empowerment of women

The impact of telecentres on the economic development of women is not precise despite the importance of ICTs to women, as research shows that the acceptance of mobile phone technology is skewed more to the male gender than women. A study in Iringa region, Tanzania showed that men are culturally taken as the main responsible persons in the family, having more authority over women, men have more income than women do, and men use mobile phones for business or work of any kind more than women do (Ngumbuke, 2010). Although statistics and findings show that men have greater access to the telecentres than women do, other studies have revealed that women have more knowledge on ICTs, and they are active users as compared to men. A survey of ICT in 17 African countries found that in some instances more women than men-owned mobile phones such as in South Africa and Mozambique (Milek et al., 2011). In developing countries like Cameroon, women were found to have greater knowledge of the Internet than their male counterparts (Milek et al., 2011). Generally, as women do not have the same access to those core factors (such as income, education and employment status) that enhance ICT access and usage, their access to ICT is generally low (Milek et al., 2011).

Another study of 12 Latin American and 13 African countries from 2005 to 2008 also revealed that fewer women access and use ICT due to unfavourable conditions with respect to employment, education and income (Hilbert, 2011). When controlling for these variables, women turn out to be more active users of digital tools than men do (Hilbert, 2011). Therefore, it is important to enhance access of ICTs to women, since “digital tools represent an opportunity for women to fight longstanding inequalities” (Hilbert, 2011). The implementation of the telecentre can increase the income of women, promote businesses, and enhance their education levels.

Although ICTs alone cannot empower women, other issues need to be addressed, including the establishment of public access ICTs, regulations and incentives to facilitate the actual usage of ICTs, and adequate local content (Hilbert, 2011). Attempts to use the telecentre approach for women empowerment through ICT need to support women individually and in groups, deal with limitations first, then with ICT issues, and require policy makers’ support, which is very crucial (Huyer and Sikoska, 2003).

2.8.4. Impact of telecentres on cultural empowerment of women

The impact of telecentre on the cultural empowerment of women is limited, because there have been some contributing barriers hindering women from benefiting from the use of the

telecentre. This was due to socio-cultural factors, cultural and religious norms and societal perception that hindered women from being empowered using public access centres, which may need to be considered for women to be economically empowered. Rural women do not have the opportunity to be exposed to ICTs, unlike men that have the power and the opportunity to buy or access ICTs which they wish to use.

These women are, therefore, less likely to own ICTs such as computers, mobile phones, radios, and other ICT devices. Instead, they use income from minor jobs from the community or from their spouses to meet their household needs such as food, clothing and other essentials. Research shows that rural women are the least likely to reap the gains of ICTs in sub-Saharan Africa, where the number of female-headed households varies between 50% and 80% of rural households as men migrate to urban centres seeking employment, leaving their wives behind (Muller, 2009; Keifer-Boyd, 2011).

2.8.5. Impact of telecentre on social empowerment of women

The telecentre has an influence on the social empowerment of women because women can use the telecentre to interact with other users and communicate with friends and family online through social networks such as Facebook, WhatsApp, Instagram and other known online social networks. In addition, women use the mobile phones as a communication tool to socialize and communicate with family. Mobile phones are essential devices that can be regarded as a useful medium for married working mothers to avoid potential negative effects that may affect the quality of their family life, such as conflicts that may lead to divorce, separation from spouses due to the negligence of family responsibilities, well-being and career prospects.

Conversely, insufficient access to ICTs such as mobile phones might lead to career women that are mothers not being able to balance between their work and family life. To address some of these challenges, access to mobile phones can be used to coordinate the activities of these women and may empower them to be more effective in executing their roles (Bentley and Metcalf, 2009). ICTs play a significant role in the lives of single working mothers when there is a need for communication between the mothers and their support system that take care of the children in their absence. Mobile phones help to bridge the communication gap through text, phone calls and Internet facilities such as WhatsApp. ICT development initiatives like telecentres consist of various ICT tools. Subsequent subsections highlight the factors that affect women's choice to use telecentres, negative consequences of the use of telecentres, and psychological effects of using telecentres on users.

2.8.6. Factors that affect women's choice to use telecentres

There are factors that affect women's choice to use the telecentre as women from urban areas may be literate and have the skills, can afford to own and have the knowledge of how to derive benefits and opportunities from the Internet commonly used technologies. There is a tendency that women living in rural communities sometimes do not have the access or competencies to deal with the digital environment and are socially excluded from the digital society which may lead to these women not being empowered (Purushothaman, 2013). The choice rural women make plays a significant role when it comes to not being empowered, it is evident that not all rural women want to use or access ICTs tools like the telecentre for distinct reasons.

Sinclair and Bramley (2011:6) refer to the "obstacles imposed by the social, economic, geographical or physical situation of individuals, such as not being able to afford a computer" and digital choice, to be understood as "the personal choices of individuals shaped by an individual's cultural or social characteristics". Educated people can acquire and have material access. For example, a home PC, secure Internet, etc., and the necessary skills and awareness. There is a tendency that women living in disadvantaged or rural communities sometimes do not have the access or the competencies to deal with these digital environments and are socially excluded from the digital society which leads to their not being empowered (Helsper, 2011).

The provision of affordable access or the development of digital skills can enable rural dwellers to be empowered. Also, not all rural areas have broadband Internet access like the urban areas, and this has led to the lack of ICT access. For instance, this is not caused by lack of interest in using technology by rural community dwellers but rather the lack of interest from needed investors are higher than the potential returns (Steyaert and Gould, 2009).

The installation of information centres involves huge investments that only the government and very few private investors such as NGOs can decide to invest in. High-income areas have become automatic and the obvious place for investments in innovative infrastructures and services, whereas the rural and disadvantaged areas was left aside. This situation leads to some rural areas not having access to information centres in their communities, similarly, not having the opportunities to gain the necessary skills using ICT facilities that enable them to access the opportunities that exist in the digital world. All these contribute to rural people not being digitally empowered. Dimensions of empowerment (see section 3.5) is used to explain the factors affecting women's use of the telecentre. Table 2.3 presents the factors that affect women's choice to use the telecentre.

| FACTORS AFFECTING WOMEN CHOICE TO USE TELECENTRES | DESCRIPTION |
|---------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Social | Occurs when people have limited opportunities to access resources such as technology as an instrument to reach their personal and collective developmental goals (Sinclair and Bramley, 2011). Women having limited opportunities to access ICTs are discouraged from developing their full potentials of using ICTs (Bianchi et al., 2006). |
| Technological | Not all people such as women have access to ICTs or can afford to purchase computers, laptops, tablets and other ICT tools for personal use in their homes, even though they might have the skills to use it. Limited ICT facilities and sustainability of telecentres discourage potential women users from using technology. This leads to women not being empowered (Gigler, 2004). |
| Political | Rural women are sometimes not allowed to participate in developmental projects, access to information services (e-Government), awareness about political issues in their communities and the catalyst for improving the quality of their lives are politically not empowered (Gigler, 2004). |
| Psychological | Some women lack the confidence to participate in using ICTs, due to their lack self-esteem, ability to influence strategic life choices and have a sense of inclusion in the modern world and are not able to process a self-reflection (critical concentration) (Lennie, 2005). |
| Economic | Involves rural women not having the appropriate skills, capabilities, resources, and access to secure a sustainable income and livelihood (Carney, 2003). Especially not having a job, access to job opportunities, entrepreneurial skills and capacity to interact with the market maybe disempowered. |
| Cultural | Involves rural women not being free to practice their culture. The redefining of rules, norms and the recreating of cultural and symbolic practices (Stromquist, 1993). Not all individuals have cultural identities; some people don't have an idea of their heritage, family background, traditional beliefs or religious background due to some certain factors caused in their lives in the past (Daskon and Binns, 2010). |

Table 2.3: Factors affecting women's choice to use telecentres.

2.8.7. Negative consequences of the use of telecentre

There are possible negative consequences of using telecentres, expressed as questions such as: “Is technology considered to contribute to the social-economic development of any country?”. However, the question to ask is: “Do technologies destroy or contribute to the society”. New technology like telecentres contributes to the change in an economy, leading to economic growth (Yousefi, 2011). On the other hand, the role ICT tools like telecentres play in a society can also have negative consequences on human development in the society.

Telecentres provide Internet that has caused the bridge in communication between families in a way that family members hardly communicate within themselves. The Internet obstructs sociability (Nie and Erbring, 2002; Soule et al., 2003; Whitty, 2008; Fodeman and Monroe, 2009; Karim et al., 2009). The use of the Internet and the mobile phone that are part of the ICTs available in the telecentre have caused the bridge in communication, allowing users to create a wall around themselves and enabling users to ignore activities happening around them. This has led to conflicts in families and relationships in the society.

Similarly, technologies at times have reduced the social isolation of geographically dispersed people with few opportunities for face-to-face meetings (Eveland and Bikson, 1987). There are indications of the use of the Internet through social networking, improving socialisation processes (Ellison et al., 2007). This is expected because of the diverse functions that the Internet serves, ranging from information seeking, entertainment and interpersonal communication.

Habitual use of the Internet by people is known to be a major public health problem and has received increasing empirical attention over the years (Meerkerk et al., 2010). Previous studies examining the perspective of younger Internet users indicated that users feel technology improves their sociability (Lenhart et al., 2001; Valkenburg and Soeters, 2001; Bargh et al., 2002). The Internet allows people to make friends globally via social networks; it also enables users to communicate with friends and loved ones that are not in their immediate environment via social networks and calls, thereby restricting face-to-face interactions and the cost of travelling to see loved ones. Nie and Erbing (2002) and Soule et al. (2003) argue that Internet users are more likely to become less social by losing contact with family and friends than people that do not use it.

2.8.8. Psychological effects of using telecentres on users

There have been psychological effects of technology as the use of the Internet at the telecentre has caused its potential users to be addicted and has contributed to be the cause

of behavioural and psychological health problems during adolescence, which must lead to depressive symptoms, cyberbullying and other health-related diseases (Greydanus and Greydanus, 2012; Gámez-Guadix et al., 2013). As users become addicted, they tend to overlook other activities around them and are only involved in activities that occur with the use of the Internet. This has caused some users of the telecentre to visit sites that may be dangerous to their well-being.

Some users visit dating site sources for potential partners and may end up getting involved with people who have criminal intentions. This is because some of the Internet users at the telecentre have the perception that online social interaction is safer, more comfortable, and less threatening than face-to-face interactions (Caplan, 2003; Morahan-Martin and Schumacher, 2003). In previous studies as portrayed, the Internet acts as a dysfunctional emotional controller (LaRose et al., 2003; Spada et al., 2008). Some addicted users of the Internet mainly use it to relieve their emotions and feelings of sadness, anxiety, or loneliness than the moderate Internet users who use it to source academic information or other productive reasons (Muñoz-Rivas et al., 2010).

Other obsessive Internet users sometimes are cyber-bullied by their friends and peer groups, which have occasionally led to people committing suicide because of so much humiliation and public embarrassment. Furthermore, some users become so addicted that they refuse to socialize, meet new or old friends and families in public places, but rather prefer to eat, drink and stay glued to their computer screens, smartphones, tablets and laptops (Song et al., 2004).

Over the years, this has led to health hazards, as some users tend to be obese and develop several types of sickness due to lack of exercise. Mobile phone users tend to concentrate on various social network sites like Facebook, Instagram and YouTube. This has caused very limited communication between them and the people in their immediate surroundings. This usually creates an environment where face-to-face communication is limited because mobile phone users tend to be more engrossed in chat applications such as WhatsApp, WeChat, Yahoo chat and Gmail chat (Eveland and Bikson, 1987).

Chen and Yang (2008) state that the detrimental effect of the Internet can lead to antisocial behaviours and symptoms of addiction such as “withdrawal” (Song et al., 2004), among users. Users may usually prefer not to spend their free time with others and may likely avoid social gatherings. Furthermore, the Internet has negative consequences on users in terms of computer games. Some of these games encourage the users to use harmful tools such as guns, knives and all sorts of violent activities, which can be harmful to the society. The users

tend to get some hype and satisfaction when playing these games on the computers, sometimes via the Internet. This sometimes tends to encourage violence and disruptive behaviours among users of all ages and sexes when practised in society.

2.9. Women in society

Women are expected to play certain roles in the society, which include taking responsibilities for managing the home. It is also their responsibility to bear children and take up the responsibility of motherhood. Motherhood comes with stress, which includes the economic burden of raising children, the concern about children's health and well-being and the increase in family conflict (Kowalski, 2007). Furthermore, women are primarily responsible for the nurturing and development of their children and members of the family, and the needs of the family take precedence over the individual needs of the women (Johnston and Swanson, 2006).

Women bear most of the family burden, caregiving and household responsibilities (Bergstrom and Heymann, 2000). The gendered division of labour means that a rural woman's domestic responsibilities include caring for the sick, the elderly, children and managing the domestic chores of the home, making it difficult for them to simply 'pick up and leave' for urban areas (Hilbert 2011). This urban bias means that more men than women are likely to be exposed to more opportunities to empower themselves (which are often unavailable in rural areas); in addition, men have more purchasing power to access opportunities in locations that are within or outside their immediate environment.

There are few rural women that are employed and have remained employed through the period of raising children and looking after their family while developing and investing in their careers (Dillaway and Pare, 2008). The implications of working and managing the home in the life of a rural woman have increased challenges and tension in managing their time, roles and responsibilities. These women are sometimes married and always concerned with managing and juggling many activities at the same time, which is demanding and time-consuming.

There are other categories of rural women, such as single working mothers are women who have no partner but look after their children on their own. These women do not stay with husbands or partners but may have children out of wedlock or be separated or widowed. Furthermore, due to the increase in divorce rates, so many women are now rearing their children without the assistance of a man and working to earn a living so that they can take

care of themselves and their children. These women face challenges of their own and work to earn a living to take care of themselves and their children. The economic hardships of raising children alone may exceed the resources of a young single mother. The negative effects may affect her ability to cope with parental role demands (Kowalski, 2007).

There are also young girls in the society that might be under the care of their guardians, foster parents, family members and parents, either married or not. They are not yet mothers and are sometimes educated, while some of these girls' lack education. These females are known to be minority in the society. These young girls may have the privilege to access telecentres for various needs and might take the opportunity to partake in the free computer training organised by some telecentres situated in their communities and some might even have access to other ICT tools in their leisure time (Hughes, 2003).

However, rural women are another category of women that are uneducated and unemployed and relatively poor are not getting the full benefit of using the telecentre due to certain factors that have hindered them from using the telecentre situated in their communities.

2.9.1. Women in rural areas

Rural women live in communities that are in remote locations that are situated outside cities and towns. A woman's presence in a home signifies support and well-being of her family unit. (Johnson, 2012). Some cultural norms and beliefs define the role of women as being responsible for managing the affairs of the home and basically to bear children, while some cultures believe that the basic role a woman should play in the family unit is not to take up jobs or have careers.

Most women in rural communities are not encouraged to have their own personal desires outside their home, individual needs and pursue careers that would lead to their self-development. These women are affected by cultural norms, societal and religious perceptions and beliefs that are practised in the society. Women living in the rural areas of developing countries often suffer more gender discrimination than women in the urban areas of developing countries (Hilbert, 2011).

Women in rural communities in countries like South Africa usually manage their families, while their husbands migrate to work in the urban areas or the mines. These women are often expected to look after their husbands and children, but when it comes to making decisions on economic and political issues, men take the lead (Ntomb'futhi Zondo, 1995; Kongolo and Bamgose, 2013). Thus, women living in rural areas usually have more barriers to education

than men. These women lack adequate time to attend school for a basic education because they devote most of their time to household chores, managing of the family and social-cultural norms that usually give low priority to education (Pande Ed, 2012). Melhem and Tandon (2009:9) claim, “Women and girls are poorly placed to benefit from the knowledge society because they have less access to scientific technical education specifically and to education in general”.

Women living in the rural areas often have low levels of literacy. It is estimated that 2.3% of the world’s illiterate are women (Poverty, 2015). Women not educated are usually not economically empowered because they would often lack the ability to source for job opportunities that would enable them to earn an income. An educated woman usually influences positively not only to their families but also to the society (Hill and King, 1995, Stromquist, 2015). These women also lack the opportunity of being informed about proper hygiene and a healthy diet and may not be able to invest their time, resources and access to vital information on health issues and services which can be of great benefit to themselves, family and economic well-being (Hill and King, 1995; Stromquist, 2015).

2.9.2. Women in South Africa

South Africa is a country of 55 million people having a predominantly female 52% population (Statistics SA, 2011). South Africa is known to be a middle-income country with enormous mineral and agricultural wealth with a very high unemployment rate (Statistics SA, 2011). These affect the minority populace of the country, leading to extreme wealth inequality and remains extremely divided, conspicuously between the haves and have-nots (The RSA Presidency, 2011). The apartheid era in South Africa created racial groups comprising of 79% Africans, 9% whites, 9% Coloureds, and 3% Indians (Statistics SA, 2011). Table 2.4 presents the mid-year population estimates for South Africa by population and gender.

| MALE | | | FEMALE | | TOTAL | |
|------------------|------------|------------------------|------------|-----------------------|-------------|-------------------------|
| Population group | Number | %distribution of males | Number | Distribution of males | Number | % distribution of total |
| African | 22 119 200 | 80.0 | 22 990 700 | 80.6 | 45 109 900 | 80.7 |
| Coloured | 2 368 00 | 8.6 | 2 529 200 | 8.9 | 4 897 200 | 8.8 |
| Indian/Asian | 701 900 | 2.6 | 684 100 | 2.4 | 1386 000 | 2.5 |
| White | 2 190 700 | 8.0 | 2 325 100 | 8.1 | 45 15 800 | 8.1 |
| Total | 27 399 800 | 100.0 | 28 529 100 | 100.0 | 55 908, 900 | 100.0 |

Table 2.4: *Mid-year population estimates for South Africa by population and sex, (Statistics SA, 2016)*

The country's historical racial division also included women of all races being subservient to males. They were regarded as "minors" and their primary role was to take responsibility for managing their homes (Jewkes et al., 2012). However, when they did work, black, Coloured and Asian women worked primarily in domestic and unskilled factory work, while white women were employed in administrative and predominantly female occupations such as nurses and teachers (Jewkes et al., 2012). The impact of this unique cultural history produced unique behaviours on the part of leaders of an Asian, black, Coloured, and white racial heritage (Jewkes et al., 2012). Black and Coloured women mainly faced stereotypes rooted in their historical employment as domestic workers in the homes of white employers (Jewkes et al., 2012).

The apartheid era in South Africa was the cause of an unusual pattern of family structure in South Africa. According to Jewkes et al. (2012), 40% or a minority of South African households are headed by women. The main cause of some children born out wedlock to black South African women was traditional marriage, which was part of a socially negotiated relationship between families, formalized through payment. Men in South African cultures are expected to pay *lobola* (the bride wealth or bride price), which many black South African men may find difficult to pay, which hindered some black South African women from being married in wedlock (Jewkes et al., 2012). But this is not usually the case with other races in South Africa.

The mean age of marriage for South African women is 28 years, whereas some women have their first child before the age of 21 (Jewkes et al., 2012). Due to the birth of children born outside of wedlock, fathers often have little or no role in the upbringing of their children (Jewkes et al., 2012). In 1993, 36% of children had absent (living) fathers. By 2002, the proportion of children with absent (living) fathers had jumped to 46% (Jewkes et al., 2012). This had major implications on poverty, as the poorest families are those with one adult in the home and headed by women (Barbarin and Richter, 2001).

Research results also show that women in South Africa face similar barriers to their progress and upward mobility as their female counterparts in the rest of the world (Erwee, 1994; Erasmus, 1998; Mathur-Helm, 2002). Erasmus' (1998) study on South African career-women found that, despite being talented, educated and committed to their careers, misconceptions and stereotyping hindered women's upward mobility. Few South African women worked in pink-collar jobs in contrast to professional and technical positions (Naidoo, 1997; Jacobson, 1999). The first nationwide census of the status of corporate women in South Africa in 2004

provided data on women's access to executive positions (Business Women's Association, 2004).

The result of the study shows a list of 364 companies on the Johannesburg Stock Exchange and state-owned enterprises in South Africa that had only seven female Chief Executive Officers (CEO) and 60% having no women on their boards. Women account for 41.3% of South Africa's workforce, but there are only 14.7% of executive managers and just 7.1% of all directors (Business Women's Association, 2004). However, after the apartheid era and the introduction of democratic parties in the country, the emergence of rights and policies that support women empowerment encouraged South African women to take careers in organisations and to engage in political placements such as ministerial and parliament positions.

2.9.3. Economic challenges facing women

Although there have been many economic challenges facing women in developing countries, studies have shown that there is no tool for development more effective than the empowerment of women (Karl, 1995; UN, 2005; Mosedale, 2014; Nussbaum, 2014). Economic empowerment is the development of the ability of the historically disadvantaged to engage in economic activities that benefit both the individuals and the broader society. Women face economic challenges due to unemployment, lack of skills, lack of education and gender-based discrimination in developing countries. Women living in rural communities usually are not economically empowered due to lack of job opportunities and skills to earn an income. These factors have contributed to women's inability to improve their economic standards because of their lack of computer skills and lack of education, and some women are not able to adopt the use of the telecentre in their daily routine.

Fewer women than men migrate to urban locations despite the increased urban migration rate in search of economic opportunities and a better life (Mamba and Isabirye, 2015). Traditional notions portray the way women are perceived in the society as taking the responsibility of managing their families and the domestic chores of their homes. These sometimes contribute to the factors that hinder these women from empowering themselves and contributing to their economic development (Hafkin and Taggart, 2001; Ngumbuke, 2010). Women living in rural areas or urban locations are sometimes prohibited from progressing beyond their traditional roles of home management and thus, this does not allow them to reach their full potential as individuals in the society (Ngumbuke, 2010). These women are hindered from contributing economically to the societies in which they live and are unable to participate in economic

activities. This indirectly inhibits positive effects on the often-struggling economies of developing countries.

Lack of education also hinders women from being economically empowered (Suresh, 2014; Nussbaum, 2014; Rehman et al., 2015). Women living in the rural areas usually have limited education, while women with education usually experience more rapid economic growth, longer life expectancy, lower population growth, and improved quality of life (Hill and King, 1995; Stromquist, 2015). Women who are educated to at least secondary level will have the ability to get involved in possible economic activities such as employment, learn skills that can be used to generate income and get involved in numerous opportunities that can be used for prospects and their self-development (Nussbaum, 2014; Rehman et al., 2015). Women that are not educated are likely to only engage in the traditional role of managing the family and might not have the ability to engage in opportunities that might be available to them within and outside their environment.

The gender digital divide is one of the most significant inequalities amplified by the digital revolution (Moolman et al., 2007). Women continue to face gender-related discrimination that prevents them from accessing the full benefits of having computer skills and other skill work, which can be used to empower them economically (Hilbert, 2011). They are more likely to be unemployed and have limited employment and educational opportunities (Chadwick et al., 2013). An increased number of these women, approximately 60%, according to the UN statistics survey (2012), end up as unpaid family workers (UN Statistics Survey, 2012). This is because women are usually trapped in traditional family roles and lack literacy skills that can allow them to achieve more of their potential (Antonio and Tuffley, 2014). Women are sometimes hindered from public spheres due to socio-cultural norms, lack of education, lack of computer skills and other valuable skills. These barriers at times apply to both genders, but women usually face these obstacles than men do (Moolman et al., 2007). Despite the challenge's women face, they can be economic contributors in their countries. The next sub-section highlights the economic contributions of women.

2.9.4. The economic contributions of women

Women play a part in being economic contributors in their respective countries whenever they are empowered in their various domains. There is a strong positive correlation between the relative position of women in society and the level of economic development (Duflo, 2012; Voena, 2012). Women are usually the pillar of strength to their families and the society they belong to. Empowering women to become economic contributors will be a worthy goal and could serve as a tool to increase economic growth. The United Nations' Millennium

Development Goals claimed effects on development: “putting resources into poor women’s hands, while promoting gender equality in the household and society results in large development payoffs” (World Bank, 2012).

Women empowerment can accelerate development, thereby expanding women’s opportunities, and accelerates economic growth (World Bank, 2013). While the recognition of gender equality and the empowerment of women are important goals vital to poverty elimination and achievement of the Sustainable Development Goals (SDGs), otherwise known as the ‘Global Goals’: a universal call to action to end poverty, protect the planet and ensure that all people enjoy peace and prosperity (Sachs, 2015).

2.10. The economic contributions of gender equality

Gender equality is an essential development objective that enhances economic contributions to a country. Kofi Annan, the former Secretary-General of the United Nations, supported gender equality, claiming that achieving gender equality is a “prerequisite” to achieving the other Millennium Development Goals (MDGs), which includes eliminating poverty, reducing infant mortality, achieving universal education, and eliminating the gender gap in education by 2015. (UN, 2005). Gender equality enhances smart economics by enhancing productivity and improving other development outcomes, including prospects for the next generation and for the quality of societal policies and institutions.

The World Development Report (2012) claims the following policies should be implemented for gender equality: reducing gender gaps in human capital, specifically those that address female mortality and education; closing gender gaps in access to economic opportunities, earnings, and productivity; shrinking gender differences in voice and agency within the society; limiting the reproduction of gender inequality across generations (World Bank, 2012). This policy, if implemented, would enhance women empowerment and improve the economic contribution of women living in developing countries.

The UN (2001) defined women empowerment in terms of five components:

“Women’s sense of self-worth; their right to have and determine choices; their right to have access to opportunities and resources; their right to have the power to control their own lives; both within and outside the home; and their ability to influence the direction of social change to create a more just social and economic order; nationally and internationally”. In support of

gender equality, empowering women enables societal change, society's choices in important ways; this is because women are known for making the best decisions for long-term development.

Empowering women of any economy can help to eliminate poverty and boost the economy of any country. Some policies in some countries prohibit women from owning resources (Lyons et al., 2001). Improvement of women's access to credit, land and other resources can increase the income of their families. For women to contribute to the various economies of their countries, there should be an increase in women's labour force participation and strengthening of labour policies affecting women. These would enable an increase in the job market and skills development programmes that support the empowerment of women (Carney, 2003). Women should also have the political rights and participation in their country of domicile, as this would enable the collective action that is needed for collective change in a country (Gigler, 2004).

2.10.1. Gender inequality and the effects of telecentre adoption

Gender inequality is essential to address the issue of 'digital divide' and gender divide is a thing of concern, this increases the gap between the 'information haves and have-nots'. As the use of ICT tools can enhance inequalities that potentially lead to social exclusion (Ofuma et al., 2014). Technology is explained as contributing to a growing digital divide among genders. This is caused by the inability or skills of rural women to use ICTs to access information that can be used to improve their livelihood and self-development.

Many ICT projects such as telecentres have been established to contribute towards improving digital skills among rural people to solve this problem. Hettiarachichi (2006) claims technologies can contribute to the multiplier effects across income levels and innovative capacity. It can, therefore, be argued that telecentres can be used to address issues of gender inequality through using the telecentre to equip rural women to have computers skills and to use other ICT tools in the rural areas. ICTs are perceived as being part of a process that leads to development. There have been discussions about how ICTs can contribute to individual development specifically and reduce poverty (Duncombe, 2001), and expands opportunities for economic development (Prosser, 1997; World Bank, 2012).

Technological empowerment in women can be achieved by supporting women's use of the telecentre for personal needs and goals (Mat et al., 2010). Individuals empowered to use technology usually have confidence, high self-esteem, feelings of self-efficacy, control over their life, increased critical awareness and increased civic participation (Perkins and

Zimmerman, 1995; Zimmerman, 1995, 2000). There are those who do not seek access to and use of ICTs as a luxury, but instead see them as determinants of the sustainable development of individuals, communities and nations, hence, a necessity (McNamara, 2000).

Therefore, ICTs are viewed as crucial in the development agenda because they can be used in public administration, business, education, health, and environment, among others (WSIS, 2003). Nevertheless, women and men do not have equal access to ICTs in the rural communities. It is assumed that more men than women living in the rural areas are likely to be exposed to ICTs which are often limited or unavailable in rural areas (Venkatesh and Morris, 2000; Ngumbuke, 2010). Men are exposed to ICTs because they have more opportunities to seek jobs in cities, while women are expected to manage their homes (Ngumbuke, 2010). This indicates that men and women do not start out equally when it comes to establishing their rights to social citizenship largely because of the imbalance brought about by the large responsibilities' women have at home (Lister, 2000). It is expected that because of this inequality, access to communication facilities may also be affected, with men having more opportunities than women do.

2.10.2. Gender perception of technology

Gender perception of technology is a result of women's subordination. Unequal gender relations are deeply rooted in religion, culture and history in laws, legal systems, political institutions, and social attitudes (Olatokun, 2008). As a result, a society's ability to develop depends on the capacity of the society to access information so that access to ICTs may no longer be a luxury but a human need, and by inference, a basic human right. Therefore, ICTs and women rights are inextricably linked (Opoku-Mensah, 2000). Women's basic right to use and access to use the telecentre should be incorporated into their daily routine. Women must understand their own information needs and develop enough technical knowledge to be credible advocates of their views in policy debates (Hafkin, 2002).

Use of ICTs can lead to gender disparity and marginalize both men and women in Africa. Women are likely to be slower in adopting the ICT tools such as the telecentre unless there are conscious strategies developed to involve women (Hafkin, 1998; Golmohammadi, 2011). These strategies can focus on how to integrate women into ongoing processes, while exploring and analysing the extent to which these processes meet the needs of women and take account of their perspectives (Opoku-Mensah, 2000).

There are presumptions that women are "fearful" of using the telecentre or reluctant to experiment to use new technology, which is interpreted as a "female problem" rather than as

a reflection of the inappropriate design of the technology or the aura of male dominance surrounding the use of the technology (Opoku-Mensah, 2000). Hence, women non-users are not participating in the use of the telecentre due to the following: having their own choice, or the fact that women are slow to recognize the importance or benefit of the use of technology. Seldom does anyone consider that women may take less interest in using technology out of the sense of pragmatism, that is, out of their needs to deal with a multiple of task, meet a variety of demands and play diverse roles with limited time (Opoku-Mensah, 2000).

In other words, women may not have a “fear” of using the telecentre because of their pressing need to attend to many diverse duties and have little time to use technology simply out of a sense of interest (Opoku-Mensah, 2000). Women that use technology like telecentres usually do so to organize their user group and their use is thereof is often more cooperative and collaborative than that of men, who have a more individualistic approach (Opoku-Mensah, 2000). It has been found that men tend to use technology like telecentres out of curiosity and fascination. Women, on the other hand, do not use the telecentre because of time constraints or they are technophobic, having limited access and only tend to use the telecentre out of necessity, showing a genuine willingness to communicate effectively with others, such as friends and families (Opoku-Mensah, 2000).

2.11. Summary of chapter

This chapter reviews previous studies on the use of the telecentre. The aim of the Cape Access project was discussed, while the success factors that contributed to the effective operations of telecentres were also described in this chapter. The study discussed the economic contribution and the challenges women experience in their communities. Furthermore, the factors that affected women’s choice to use the telecentre, negative consequences of using telecentres and the psychological effects of using telecentres were discussed. The various roles women play in the society, discussions on women in South Africa, gender inequality and vital roles ICT plays in the lives of women were further important aspects discussed in this chapter.

CHAPTER 3: Conceptualization of Empowerment

3.0. Introduction

This chapter places emphasis on the conceptualization of empowerment, explaining the concept of empowerment, the various definitions of empowerment, the process of empowerment, the different levels of empowerment and the stages of empowerment. The study further discusses the different dimensions of empowerment concepts, explaining how these concepts relate to the empowerment of women in the various aspects of their lives.

3.1. Definitions of empowerment

The term 'empowerment' has been defined in many ways. This is because it does not mean the same thing to different fields of professions (Lyons, Smuts and Stephens, 2001; Gigler, 2004; Tengland, 2008; Mohajer and Earnest, 2009). Empowerment may be defined as something that is done for or provided to someone; it can also be an individual, psychological process, but one which may be influenced by external processes (Maton and Salem, 1995; Zimmerman, 1995, 2000).

Empowerment is a form of power; however, not all types, but power which experiences the actualization of influence or force (Wartenberg, 1990). Relatively speaking, empowerment is regarded as an individual gaining power from association with or support from someone or something outside of themselves. It is the ability of an individual to empower themselves to overcome situations that are not satisfactory to their circumstances.

Although empowerment may not be easily measured, it can be specified in terms of a concrete domain of action (Alsop and Heinsohn, 2005). Similarly, empowerment is not seen as an increase in self-confidence or control, rather the ability to take an action (Alsop and Heinsohn, 2006). Table 3.1 shows the summary empowerment definition.

3.2. Rhetoric concept of empowerment

The perspective of empowerment was associated with politics and key movements globally. This was linked with anti-apartheid and freedom from colonial oppressions (Cornwall and Brock, 2005). The word empowerment was used in the media, scholarly literature, political rallies which was linked with the prioritizing the marginalized voices, allowing people's issues to be seen in a light of 'Critical consciousness' which differs from 'Dominant consciousness'

that was associated with the privileged group (Freire, 1970). Scholars have related the term empowerment with the socially disadvantaged and associated with gender subordination. (Solomon, 1987). Unequal gender relations that are deeply rooted in religion, culture and history in laws, legal systems, political institutions, and social attitudes (Olatokun, 2008).

Over the years, the human development and capabilities approach the Sustainable Development Goals (SDGs), otherwise known as the “Global Goals”, a universal call to action to end poverty, protect the planet and ensure that all people enjoy peace and prosperity (Sachs, 2015), and other credible approaches/goals point to empowerment and participation as an essential aspect in tackling obstacles relating to poverty and development (Fukuda-Parr, 2003). These goals include provision of improved health facilities, employment opportunities, education, skills development, economic growth, improved quality of life and other necessities vital to human life.

Gender empowerment have been tackled by the World Bank report and United Nations to allow equal rights, resources and facilities to accomplish Millennium Development Goals (MDG) that claimed effects development: “putting resources into poor women’s hands, while promoting gender equality in the household and society results in large development payoffs” (World Bank, 2012).

Empowerment perspective have been linked with feminist paradox. Moser (2012) associates’ empowerment with women empowerment in the context of addressing women’s “strategic gender needs”, transforming structures, institutions and beliefs that embody “women’s subordinate position to men in the society” helps women to achieve greater equality. Other scholars claim that the empowerment of women in a society may enhanced through the transforming of gender subordination and deconstructing the traditional oppressive structures such as economic, legal and social freedom, gender and class gaps that leads to supremacy (Sen and Grown, 2013).

The Inter-American Development Bank (2010:3) refers to women empowerment as ‘expanding the rights, resources, and capacity of women to make decisions and act independently in social, economic, and political spheres. The non-market benefits of women's education experienced by the family are considerable; these benefits extend beyond the family and to the society. Women are usually categorised as marginalised in the society and it is presumed that educated women are better informed about issues regarding to health conditions of their family, poverty alleviation and reduced infant mortality. Women that are educated usually can be empowered, and this can lead to the development of children’s welfare (health and nutrition) which contributes to the buoyancy of any economy.

| SCHOLARS | DEFINITION |
|-----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Zimmerman and Rapaport (1988) | Allowing individuals to gain social, economic, psychological, political control in matters affecting their lives through access to information, skills, self-efficacy, decision-making, community participation as well as perceived control. |
| Bush and Folger (1994) | Restoring people's sense of their own worth and strengthening their ability to resolve their own problems. |
| Kabeer (1999) | The expansion in people's ability to make strategic life choices in a context where this ability was previously denied to them. |
| Lyons, Smuts and Stephens (2001) | Community or people gain independence to their agenda and take ownership in running their affairs or livelihood through the transfer of control over actions, decisions and resources to their communities. |
| Gigler (2004) | Entails enabling people to develop their full range of human capabilities. |
| Narayan (2005) | Any process that enables "self-confidence, self-direction, autonomy, and self-worth" |
| Alsop and Heinsohn (2006) | Group's or individual's capacity to make choices and then to transform those choices into desired actions and outcomes. |
| Taylor (2007) | Any process whereby people can gain increased control (individually or collectively) over their lives. |
| Chen and Ravallion (2008). | Identified as a key component of poverty reduction and sustainable development in deprived communities. Empowerment is not only seen as a catalyst for excising rights in general but as a mechanism for realizing rights, allowing greater control and influence on matters and resources affecting lives. |
| Nikkhah and Redzuan, (2009) | Enabling individuals, a group of people or communities to be in control of their circumstances' realizing their goals and thus, work towards maximizing the quality of their lives. |
| Ibrahim-Dasuki and Abbott (2011). | The process of gaining a concrete, new capability to perform some specific action. |

Table 3.1: Summary of empowerment definition.

People's freedom in exercising their rights to negotiate with the outside world is central. Empowerment, then, is a pro-active concept that encourages an active and initiative-taking approach to life, on the individual level (Sadan, 1997).

The study defines the empowerment of women as the ability to build the abilities and skills of women to improve their awareness of issues affecting their lives to enhance their economic standards. This definition will be used to explain the need for women to be empowered in using the telecentre model.

3.3. Process of empowerment

The process of empowerment involves two processes, the internal change and external change. Empowerment is not something to measure, but something to be qualitatively specified in terms of a concrete domain of action. Based on this line of argument, Kabeer (2005) emphasizes option, choice and control as the basic components of empowerment. She argues that empowerment is “the expansion in people’s ability to make strategic life choices in a context where this ability was previously denied to them” (Kabeer, 2003).

The internal change is the psychological empowerment and the external change, which is political empowerment (Sadan, 1997, 2004). Individual or psychological empowerment occurs on the level of a person’s consciousness and sensations, while internal change is a real change, which enables a person to take part in the making of decisions that affect their lives. To achieve Individual empowerment a person requires mainly internal strength, while to realise external change of empowerment a person requires environmental conditions, mainly organizational ones, which will enable them to exercise new abilities (Gruber and Trickett, 1987). Table 3.2 summarizes the process of empowerment.

| PROCESS OF EMPOWERMENT | DEFINITION |
|----------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Internal process such as psychological empowerment | An individual's sense or belief in their ability to make decisions and to solve her own problems (Sadan, 1997, 2004). |
| External process such as political empowerment | Finds expression in the ability to act and to implement the practical knowledge, the information, the skills, the capabilities and the other additional resources acquired during the development of empowerment (Parsons, 1988; Sadan, 1997, 2004). |

Table 3.2: Summary of empowerment process.

3.4. Stages of empowerment

The process of empowerment involves individuals going through the various stages of empowerment, such as Stage 1: critical consciousness; Stage 2: self-realization of power; Stage 3: assurance of assisting others to be empowered and stage 4: the wiliness to empower others for empowerment to be achieved. This study argues the perception that a product should be domesticated before it can lead to empowerment. In other words, women's continuous use of the telecentre can promote individual empowerment. Conversely, the process of empowerment promotes consumer domestication of use of the product or the process of empowerment. In this scenario, the telecentre is the proposed technology artefact used for empowerment. The outcome of the stages of empowerment may determine the effects that occur in the lives of women living in the rural communities.

Individual empowerment can be achieved when a person goes through various stages. Sadan (1997) claims a person is not formed only by heredity and conditions of growth and care, but also by opportunities and experiences in the world around them. An individual's ability to make decisions and to act to attain goals involves personal conviction to better one's circumstances. This ability (or its absence) shapes the person's character and influences the degree to which an individual will be the effective actor in their life (Pinderhughes, 1983). This process conveys an integration of self-acceptance and self-confidence, social and political understanding, and a personal ability to take a significant part in decision-making and in control over resources in the environment (Sadan, 1997). The following sub-section explains the stages of empowerment.

3.4.1. Stage 1: Critical consciousness

Critical self-consciousness stage includes people's recognition of their right to give their experiences a name. There are two distinguishing main approaches to the significance of critical consciousness in the empowerment process, which includes empowerment as essentially an internal process and an external process, the development of critical consciousness as the main realization of empowerment. In this view, critical consciousness is the outcome of empowerment (Luttrell, 1988; Bookman and Morgen, 1988). The critical consciousness stage of people requires an increasingly greater understanding of the cultural-social conditions that shape their lives, and of the extent of their ability to change these conditions (Sadan, 1997). A person lives, not only in the present, but also in history, and is capable not only of interpreting but also of interpreting interpretations. Hence, a critical consciousness is essential and basic to all human learning (Freire, 1970). The change in people's outlook on themselves, and in their ability to understand the world in which they live,

is important in critical consciousness and it is people's better understanding of their powerlessness and of the systematic forces that oppress them (Sadan, 1997).

The individual process entails the will to influence the environment on all levels: it begins with a sense of faith in one's own strength, advances to activity in interpersonal domains, and continues from there to activity for social change (Sadan, 1997). Individuals must recognize and accept change in their circumstances before deciding to choose to empower themselves. An example is a person's experience of having internal strength or feeling strong from their association with or following a charismatic leader (Rocha, 1997). At times individuals gain some strength or can be empowered from information that they receive from an already empowered person or be empowered through attaining skills or embarking on actions that may lead to their self-development (Sadan, 1997; 2004).

3.4.2. Stage 2: Self-realization of power

Self-realization of power stage is the ability to affect the behaviour of another, to prompt a person to "do something he would not otherwise do" (Dahl, 1957:2002). Empowerment can be broadly understood conceptually as encompassing a range of power experiences. At the self-realization stage of empowerment, power is experienced as an individual feeling of being powerful through self-control and may not include the actualization of power (Rocha, 1997). An example of this type of power orientation involves feeling powerful because one is self-sufficient. An empowered person may realize self-confidence because of the self-development that has been obtained. Individuals may feel empowered by the fact that they are still independent and control their own private affairs, but they can feel much greater control over their life when they are involved in neighbourhood activities for themselves and for other people in their situation (Rocha, 1997).

Action and consciousness are bound up with one another and vary from one person to another. They, together with the other constituents of the process, contribute to the vast variety of forms and contents of the empowerment process. This process involves both a development of skills and abilities, and a more positive self-definition. Individuals testify to a better feeling about themselves, a sense of more self-respect and self-esteem (Sadan, 1997). A new self-confidence and a feeling of self-efficacy relate to a redefinition of the self, and the latter is closely linked with a real improvement in personal knowledge, abilities, skills, resources and life opportunities.

3.4.3. Stage 3: Assurance of assisting others to be empowered

The stage of assurance of assisting others to be empowered involves a high degree of control over others (Rocha, 1997). The source of power is usually the self and the object are mainly the other. It may be characterized by a type of behaviour not thought of as being power-related, for example helping. Helping behaviour often establishes the relations of strength and weakness; for help to be given, it must be accepted, and through accepting help the receiver acknowledges the need for help, for example weakness (Rocha, 1997). In this stage of power experience in an individual empowerment, the help-giver purposely satisfies a need to feel and be powerful at the expense of the helper or receiver (Rocha, 1997).

An individual that is empowered is most likely to render assistance to someone else. Similarly, an empowered individual would like to have an impact on a person not yet empowered and sometimes would want to gain control over others. Individual empowerment cannot be an exclusive or principal component of the concept of empowerment because an individual not having the ability to assist or empower themselves is not only an individual problem, but also a social and structural condition (Rocha, 1997). People, generally, are not powerless or unable to empower themselves because of lack in their private lives or their personalities, but because they belong to a powerless group or live in a community where empowerment of individuals is not evident.

3.4.4. Stage 4: Williness to empower others

The 'Willingness to empower others' stage involves an individual gaining strength from serving and influencing others (Rocha, 1997). This type can be characterized by the concept of togetherness and moralized action. Power or influence to empower others is often based on carrying out the collective will of others, for example a community (Rocha, 1997). It involves being powerful by serving sanctified principles, as selfless service is ideal. In contrast to having to help an individual is behaviour that gives a powerful experience, and the willingness to help others or an individual's helping behaviour or willingness to empower others is defined as sharing and is sometimes obliged to empower others.

3.5. Levels of analysis for empowerment

The levels of empowerment are the unit of analysis of empowerment which explains the level of analysis that provides the basis for developing the outcome of an individual (Zimmerman and Warschausky, 1998). Empowerment can be classified into three levels, namely:

individual, community and organizational empowerment (Perkins and Zimmerman, 1995).

Table 3.3 summarizes the levels of empowerment sub-sections.

| EMPOWERMENT LEVELS | DEFINITIONS |
|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Individual empowerment | The transformation of individuals' lives in achieving goals and reaching targets, which they had thought impossible. For example, to gain authority, skills, status, self-belief and image, progressing to greater things and increasing rewards (Wilson, 1996). |
| Community empowerment | Involving a network of individuals working together for collective change (Zimmerman, 1995). Community empowerment is a collective action to improve the quality of life in a community and to the connections among community organizations (Clement, 1994; Perkins and Zimmerman, 1995; Wilson, 1996). |
| Organisational empowerment | The organizational processes and structures that enhance member participation and performance and eventually improve the achievement of organizational goal (Clement, 1994; Perkins and Zimmerman, 1995; Wilson, 1996). |

Table 3.3: Summary of levels of analysis for empowerment

3.5.1. Individual empowerment

The individual empowerment known as psychological empowerment is a combination of the personal beliefs of control, involvement in activities to exert control, and a critical awareness of one's environment (Zimmerman, 2000). Individual empowerment is a process of personal development that is the most significant personal experience in the empowerment process (Sadan, 1997). This is because individual empowerment is the ability of individuals to redefine their self and to act efficiently for themselves (Sadan, 1997).

The empowerment of a person involves an individual's participation in shared actions and has a greater control over a person's livelihood. This phenomenon is referred to as "human agency" (Aji, 2010; Gigler, 2014). Individuals can act as agents when they can follow the purposeful course of action to advance their goals relating to their individual well-being as well as other objectives that they deem desirable. Individuals as agents can see alternative courses of action, decide and take actions to advance the chosen course.

Therefore, empowerment at an individual level involves the development of people's self-esteem and the extension of their potential and capacity to reach a kind of life they would value and make strategic choices which are translated into actions and outcomes, thus enabling one "to define their goals and act upon them" (Gigler, 2004:7; Kleine, 2010b).

Furthermore, individual empowerment enables an individual to acquire strong self-esteem, improved ability to analyse one's own situation and solve problems, a strong ability to influence strategic life choices and a sense of inclusion in the digital world (Gigler, 2014).

3.5.2. Community empowerment

A community is referred to as a group of people that share common interest or value to achieve a common objective, to improve the quality of life in a community and the connections among community organizations (Clement, 1994; Perkins and Zimmerman, 2000; Wilson, 1996). At the community level empowerment refers to the collective improvement to the quality of life and to the connections among community organizations at community level. Empowerment is rooted in the principle of self-help (Gutierrez, 1990). For example, women may require the use of the telecentre to learn computer skills which can be used to improve their economic standards. Empowerment rejects the reliance on experts from outside a community. Instead, it encourages communities to build on their strengths and resources in handling negative situations (Van den Eynde and Veno, 1999).

Community empowerment emerges from the immense sense of achievement that comes from safeguarding the community's continued existence, and from the assurance of the well-being of its residents (Rappaport, 1984; Couto, 1989). Community empowerment is expressed in the community's ability to create new human, existential, economic, social and political values for its residents, as an alternative to dysfunctional values that penetrate the community from the capitalist economy, such as intensive consumption separated from daily life isolated individualism (Friedmann, 1987). It is also described as a place in which the residents have the skills, the will and the resources to act to regulate the quality of life in their community.

The empowered community responds to threats to its quality of life, or initiates efforts to improve their quality of life, by means of a network of community organizations. To propagate community empowerment, neighbourhoods act as a community to improve security, services or quality of life, at times to protect the value of local property, and at times because inaction means participating in the destruction of the community through silent agreement (Yuval-Davis, 1994).

3.5.3. Organizational empowerment

Organizational empowerment comprises the processes and structures that enhance member participation and performance and eventually improve the achievement of organizational goals (Clement, 1994; Perkins and Zimmerman, 2000; Wilson, 1996). Organisational empowerment involves structures and processes within the organisation that facilitates the skill enhancement or mutual support for members for them to effect change at the community level (Zimmerman, 2000).

3.6. Dimensions of empowerment

The dimensions of empowerment are regarded as economic, informational, social, cultural and political empowerment. The dimensions of empowerment describe the output indicators that may occur in individual empowerment. Table 3.4 presents the dimensions of empowerment and their output indicators.

| TYPE OF EMPOWERMENT | DESCRIPTIONS | OUTPUT INDICATOR |
|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Economic empowerment | Described as having enough wealth to take care of the needs (Chafetz, 1990). | <ul style="list-style-type: none"> • Improved access to markets • Enhanced entrepreneurial skills • Alternative sources of income • Stronger productive sources • Improved employment opportunities. • Improved income through <ul style="list-style-type: none"> (a) lower transaction costs (b) reduced transport need (c) improved timeliness |
| Information empowerment | Comes from the way individuals' benefits from using the technology to derive information to use in their daily lives (Gurstein, 2003:10). | <ul style="list-style-type: none"> • Improved capital to use different forms of information • Enhanced information literacy • Enhanced capacity to produce and publish local content. • Improved ability to communicate with family members and friends outside immediate location. |
| Social empowerment | This is a multi-dimensional social process which helps people to gain control over their own lives and allows all members of the society to be treated fairly and equally (Ahmad, 2011). | <ul style="list-style-type: none"> • Enhanced communication skills. • Enhanced leadership skills. • Improved programme management skills. |
| Cultural empowerment | Comes from being free to practice your culture. The redefining of rules and norms and the recreating of cultural and symbolic practices (Stromquist, 1993). | <ul style="list-style-type: none"> • Improved social-cultural context that prevents gender (male) bias of computer culture and expectations. |
| Political empowerment | Comes from having a say in how things are organized and how decisions are made in an individual environment (Ahmed et al., 2016; Piron, 2005). | <ul style="list-style-type: none"> • Increased access to government information or services via access to the telecentre. • Improved capabilities to interact with local government and party politics via the use of telecentres. |

Table 3.4: Dimensions of empowerment, descriptions and output indicators

3.6.1. Economic empowerment

Economic empowerment ensures that people have the appropriate skills, capabilities, resources and access to secure and sustain incomes and livelihoods. For example, women using the telecentre to seek employment and other opportunities (Suresh, 2014). Women can

gain economic empowerment through the participation of the computer skills training to receive certificates that can equip and enable them to gain employment, improve their economic standards and obtain improved access to markets, entrepreneur skills, and alternative source of income at the telecentre. Women also receive ICT service support that provides them with confidence and improved job opportunities.

Emphasis is placed on the way individuals derive real benefits from using technology, depends on “the way people are making use of technology in their daily lives and how well individuals integrate technology into their social, productive, and cultural activities” (Gurstein, 2003:10). The telecentre provides services such as ICT skills development, support with job seeking and other assistance such as typing of CVs and application letters, job advertisements posted on the information board and free printing services.

3.6.2. Information empowerment

Information empowerment is the ability to improve the access to information and informational capabilities (Gigler, 2014). Information is necessary but in insufficient condition due to lack of infrastructures for its use. Sen (1999: 74) says, “People have diverse ways of transforming technology into opportunities for achieving their plans in life”. This explains that having access to information through technology is a privilege and there is a key requirement for its use. Nevertheless, differences in people’s capabilities determine whether they are indeed able to transform a set of actual opportunities into realized functions (that is improved access to information) (Gigler, 2014).

3.6.3. Social empowerment

Social empowerment is the ability to strengthen people’s human capital, for example skills, knowledge, ability to work and good health (Gigler, 2014). Individuals can have the ability to enhance their technology and ICT literacy skills, enhance leadership skills and improve programme management skills through the services provided in the telecentre (Gigler, 2014). This process fosters power (that is, the capacity to implement) in people, to empower themselves, their communities and society, by being able to act on issues that they define as important (MacDonald, 2006).

Social empowerment fosters power, for example people having the capacity to implement and be able to use it in their own lives, their communities and society, and be able to act on issues that they define as important (Mac-Donald and Hedge, 2006). Women use the telecentre to access social media platforms to communicate with friends and family and access information that addresses their personal needs.

3.6.4. Cultural empowerment

Cultural empowerment is the ability to strengthen people's cultural identity (Gigler 2014). Individuals can identify with their culture using the telecentre. The dimensions of the empowerment indicator highlight the use of ICTs as a form of cultural expression that individuals can use to increase the awareness of their cultural identity (Gigler, 2014). Women can use the computer and Internet available at the telecentre to express their culture. However, women are not able to focus on their minority rights using culture as an entry point. This is because women do not have the freedom from socio-cultural norms that affects them from being empowered.

Many women non-users of the telecentre were not using the telecentre due to lack of computer skills and the gender (male) bias of computer culture. Women are usually limited by their cultural beliefs, which sometimes hinder empowerment. Some cultures do not allow women to expose themselves to opportunities that can empower them, but rather, women are expected to be committed to their family responsibilities. Many feminist critics have argued that computer culture and the Internet were inherently endured and predominantly androcentric. Therefore, any reproduced existing power structures and gender differences of the offline world are examples of virtual reality (Bruestle, 2009; Geetha and Indira, 2010).

Similarly, women hindered by cultural beliefs in cultures that do not allow rural women to expose themselves to empowering opportunities are expected to be committed to the management of the home and mostly be responsible for reproducing and rearing children (Ngumbuke, 2010). In this study, the empowerment of women can be realized if women can overcome socio-cultural norms which prevent them from using the telecentre.

3.6.5. Political empowerment

Political empowerment refers to an individual acquiring the capacity to analyse, organize and mobilize their respective communities. This results in the collective action that is needed for collective change. It often relates to the rights-based approach to empowerment and the empowering of citizens to claim their rights and entitlements (Geetha and Indira, 2010; Pallas, 2011; Piron, 2005). Individuals should have a say in how things are organized and how decisions are made in their environments (Geetha, 2010). For example, women living in poor communities are usually not involved in the decision-making and political activities of their communities. This is because of the socio-cultural perception that women were expected to manage their respective homes (Hilbert, 2011).

Women in Africa are marginalized, geographically dispersed and lack access to the process of governance (Kole, 2001; Cummings and O'Neil, 2015). For women to obtain political emancipation they would need to acquire the skills that enable them to access, publish and propagate issues, opinions and experiences from their own perspective. Emancipation is a political process that requires analysing, strategizing, accessing information, lobbying and advocacy. ICTs offer networking, creating peer support, campaigning and sharing of information spaces that women can control and use to further their interest.

Internationally, APC has been involved in supporting women through electronic communication. Women from countries such as those in Latin America, Canada and the United States have been using the APC networks to empower themselves for information engagement. Likewise, the Women Networking Support Program (WNSP) has provided training workshops for women in Africa and Asia (Webb and Buskens, 2014).

3.6.6. Rationale for using the Dimensions of Empowerment Theory

The choice of this framework was to present the perception of women respondents on empowerment issues. The Dimensions of Empowerment Theory was used to analyse how the telecentre contributes to women empowerment in rural communities. The adoption process of the telecentre, and the possible impact of the use of the telecentre on women empowerment were explained.

Strategic gender needs include broader social, political, cultural and economic issues such as gender division of labour and legal rights that relate to the concepts in the dimensions of empowerment. The theory describes the diverse types of the Dimensions of Empowerment Theory that were used to analyse the various aspects of the individual empowerment of women. Moser (1993) views empowerment in the context of addressing women's "strategic gender needs", transforming structures, institutions and beliefs that embody "women's subordinate position to men in the society". She argues that meeting these needs helps women to achieve greater equality, which is analysed in the study.

3.6.7. Previous studies of Dimensions of Empowerment Theory

Empowerment is the process of gaining a concrete, new capability to perform some specific action, which can reflect in the different dimensions of empowerment of an individual (Ibrahim-Dasuki and Abbott, 2011). Likewise, empowerment is an active, multi-dimensional process that enables individuals to realize their potential and powers in all spheres of life. Hence, empowerment is multi-dimensional as it covers social awareness, economic, cultural and

political consciousness of an individual. These elements can be categorized as the dimensions of empowerment (Moulaert et al., 2007).

The empowerment of women involves women having a right to develop their potential and improve on their self-development (Miller, 2012). This allows women to gain social, economic, psychological, political control in matters affecting their lives through access to information, skills; self-efficacy; decision-making; community participation as well as perceived control (Zimmerman and Rappaport, 1988). Scholars like Knight et al. (1995) state that if African women do not take the opportunity offered by ICT initiatives such as telecentres to “catch up” technologically, they would find themselves further marginalized and not empowered. Table 3.5 presents the list of studies that used the Dimensions of Empowerment Theory.

| DIMENSIONS OF EMPOWERMENT CONCEPTS | SCHOLARS | TITLE |
|-------------------------------------------|---------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| Economic empowerment | Brody et al. (2016). | Economic self-help group programs for improving women’s empowerment: A systematic review. |
| Information empowerment | Gigler (2014). | Informational Capabilities: The missing link for understanding the impact of ICT on development. |
| Individual empowerment | Miller (2012). | Toward a new psychology of women |
| Information empowerment | Gigler (2011). | Informational capabilities the missing link for the impact of ICT on development. |
| Political empowerment | Gigler (2004, September). | Including the “Excluded Can” ICTs, empower poor communities? Towards an alternative evaluation framework based on the capability approach. |

Table 3.5: List of studies using Dimensions of Empowerment Theory

3.7. ICTs and empowerment

ICT is a vital tool that can be used to release the creative potential and knowledge embedded in people (Ponelis and Holmner, 2015). ICTs can enhance empowerment and contribute to the development of Africa, which is the continent that has the fastest growing countries with the poorest inhabitants (Ponelis and Holmner, 2015).

Empowerment is concerned with alternative approaches to social development for the underprivileged, disadvantaged, or oppressed (Carrasco et al., 2015), in gaining greater control, efficacy and social justice (Ractham and Kaewkitipong, 2015). The implementation of ICT projects in rural communities would enhance skills development among community members that take part in possible ICT training.

Technology empowerment can be defined as a means of transforming skills into actions to produce a self-determined and positive change in an individual's life. Individuals using technology are presumed to have confidence, high self-esteem, feelings of self-efficacy, control over their life, increased critical awareness, and increased civic participation (Perkins and Zimmerman, 1995; Zimmerman, 1995, 2000). The telecentre enables women in the rural communities to access information that can be used to improve their livelihood. Table 3.6 presents the list of empowerment studies.

| SCHOLARS | DEFINITION |
|------------------------------|--------------------------------------------------------------------------------------------------|
| Gigler (2014). | Informational Capabilities: The missing link for understanding the impact of ICT on development. |
| Bailur and Gigler (2014). | Introduction: The potential for empowerment through ICTs |
| Malhotra and Schuler (2005). | Women's empowerment as a variable in international development. |
| Collins (2002). | Black feminist thought: Knowledge, consciousness, and the politics of empowerment. |
| Zimmerman, M. A. (2000). | Empowerment theory. In Handbook of community psychology. |
| Kabeer (1999). | Resources, agency, achievements: Reflections on the measurement of women's empowerment. |
| Spreitzer (1995). | Psychological empowerment in the workplace: Dimensions, measurement, and validation. |
| Zimmerman (1995). | Psychological empowerment: Issues and illustrations. |

| | |
|-------------------------------|--------------------------------------------------------------------------------------------------------|
| Cummins, 1996). | Negotiating identities: Education for empowerment in a diverse society. California Assn for Bilingual. |
| Perkins and Zimmerman (1995). | Empowerment theory, research, and application. |
| Batliwala (1994). | The meaning of women's empowerment: new concepts from action. |
| Thomas and Velthouse. (1990). | Cognitive elements of empowerment: An "interpretive" model of intrinsic task motivation. |
| Conger and Kanungo, (1988). | The empowerment process: Integrating theory and practice. |

Table 3.6: *List of empowerment studies*

3.8. The effects of women empowerment

An important effect of the empowerment of women is education, which improves the educational outcomes of children. For instance, a woman's education has a larger impact on the children than the fathers. An educated woman is most likely to have a greater impact on a child's development even though the father's education may also capture a beneficial income. The Inter-American Development Bank (2010:3) defined women's empowerment as 'expanding the rights, resources, and capacity of women to make decisions and act independently in social, economic, and political spheres. The non-market benefits of women's education experienced by the family are considerable; these benefits extend beyond the family and to the society. Educated women are better informed about issues regarding health conditions of their family, poverty alleviation, reduced infant mortality. In other words, women that are educated usually can be empowered, and this can lead to the development of children's welfare (health and nutrition). This would contribute to the buoyancy of any economy because children are the future of any country.

3.9. Summary of chapter

The chapter gives in an-depth explanation of empowerment, the different types of empowerment and the various levels of empowerment. In addition, the stages which lead to the process of empowerment and the different dimensions of empowerment were further explained in the chapter.

CHAPTER 4: Theoretical Framework

4.0. Introduction

This chapter presents the theoretical background of the study, and alternative theories suitable for the study were explained. While, suitable theories were used to analyse the research problems. The aim of the chapter was to create a relationship between the theories used in the study, and to emphasize how the qualities of each frameworks complement each other. The theories used were the Domestication Theory, the Individual Difference Theory and the Dimensions of Empowerment Theory. These theories were combined to develop a conceptual model that explained the process of empowerment in women.

4.1. Theories used for the study

The theoretical underpinnings explore the different options of theories that were used in the study. This phenomenon which was used to carry out the study comprised of the different theoretical frameworks explained in sections 4.3, 4.5 and 4.6. The researcher used the Domestication Theory, the Individual Difference Theory and the Dimensions of Empowerment Theory as frameworks to guide the study. Table 4.1 summarizes the framework of the study.

| THEORY | CONTRIBUTIONS |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>Domestication Theory (Silverstone, 2005).</p> <p>Stages of Domestication</p> <p>Commodification Phase</p> <p>Appropriation Phase</p> <ul style="list-style-type: none"> • Integration • Objectification <p>Incorporation Phase</p> <p>Conversion Phase</p> | <p>The theory is an adoption framework used to analyse the outcome of the use of technology in the daily routine of users or consumers. This theory addresses how women adopted the telecentre in their daily lives. The theory further discussed the various stages of adoption, used to explain the outcome of the various stages of domestication in women’s use of the telecentre.</p> |
| <p>Individual Difference Theory (Trauth, 2004)</p> | <p>The theory explains the different concepts hindering women’s use of the telecentre. This theory explains the factors that impact or hinder women’s use of the telecentre.</p> <p>The use of the theory produced an in-depth information on the lifestyle, factors and cultural barriers of the women participants.</p> |
| <p>Dimensions of Empowerment Theory (Gigler, 2014)</p> | <p>The theory describes the various types of empowerment and the outcome of the different empowerment indicators. This theory explained the outcome of how the different indicators of empowerment reflect in the daily lives of women.</p> |

Table 4.1: Summary of study framework

The table was used to explain the contributions of the theories used for the study to discuss the research questions of the study.

4.2. World view of technology

The worldview of technology is an important aspect to discuss in this chapter because it explains how the use of technology is perceived and accepted in society. Technology includes computers, satellites and other forms of electronic media, and its significance goes far beyond

the tool itself. Technology influences the way people think and how they relate to one another (Mutekwe, 2012), for example in gender relations. Technology is an inseparable part of human society, especially in its economic aspects, and funding sources for new technological endeavours are virtually unlimited.

Social construction of technology (SCOT) argues that technology does not determine human action, but that human action shapes technology (MacKenzie and Wajcman, 1999). The key concept of interpretive flexibility claims that: "Technological artefacts are culturally constructed and interpreted and there is usually flexibility in how people think of or interpret the technology artefacts and there is also flexibility in how artefacts are designed" (Pinch and Bijker, 1987: 40).

Technological determinism suggests views of the world that assume that technology can 'fix' social problems (Van Dijk, 2005). However, technologies are 'owned' and how these technologies are used to solve social problems is not predictable (Silverstone, 2005). Technologies do not emerge without active involvement of users, who must accept them as relevant and useful in their everyday lives (Silverstone, 2005). Some rural women use the telecentre to improve themselves, while some women non-users of the telecentre assume the telecentre has no benefits. Individuals shape technology to fit into their lives. Women may adopt the use of the telecentre as a daily routine to improve their economic standards or change their circumstances, socially, economically and educationally. Silverstone et al. (1992) suggest that for an artefact to be incorporated it must be actively used, such as in the performance of a task. They explain further how meanings of ICTs in a formal and public life are transformed and translated through negotiations in the practices of everyday lives of individuals as technologies are becoming a part of everyday life (Silverstone et al., 1992)

The social shaping of technology explains the impacts of technology on society. A 'social shaping' of technology means to establish technology as a product of social interaction. Knopke (2013) explains that technology must be understood as part of the social fabric that holds the society together; it is never merely technical or social. Rather, technology is always a socio-material product, 'a seamless web or network combining artefacts, people, organizations, cultural meanings and knowledge' (Wajcman, 2004:106).

The determinist view says the potential for societal change lies in the invention of technology. Technology is perceived as an autonomous, coercing element that determines the social and economic relationship. A 'social shaping' or constructivist approach to technology means locating technology as something social, or a product of social interaction. Technology is viewed as determining the development of social structures. The 'social shaping' of technology

(SST) perspective in contrast, radically reserves the views advanced by technological determinism advocates, emphasising that technologies are embedded in the social fabric (MacKenzie and Wajcman, 1985, 1999). The theory seeks to grasp the complexity of socio-economic, cultural and political processes involved in technological innovation used to move beyond narrow technical considerations.

4.3. Alternative theories not considered for the study

Part of the theory that describes the well-being of individuals is the Capability Approach (CA) Theory, which is a normative framework for the evaluation and assessment of individual well-being and social arrangements. It comprises the design of policies and proposals about social change in the society (Robeyns, 2005a:94). The CA approach has been used in empirical studies to evaluate a wide aspect of people’s well-being, such as individual well-being or the average well-being of the members of a group, inequality, and poverty (Hatakka and Lagsten, 2012; Zheng, 2009).

The CA framework focuses on people’s capabilities, what people are effectively able to do and to be, to live a life that is considered valuable in this study (Sen, 1999).The study would have used Sen’s Capability Approach to capture the main fundamentals of empowerment because it has developed the theoretical foundations to evaluate development projects from a human development perspective. However, this theory was not used to analyse the study. This study focuses on the contributions of telecentres for the empowerment of women, which entails improved access to information and ICT skills, improving the capabilities of users to make strategic life choices and to achieve the lifestyle they value. Table 4.2 shows the research questions probed in the study.

| THEORY | QUESTIONS PROBED |
|----------------------------------|-------------------------------------------------------------------------|
| Domestication Theory | How does women incorporate the telecentre into their daily lives? |
| Individual Difference Theory | How does the telecentre impact the different dimensions of empowerment? |
| Dimensions of Empowerment Theory | What factors affect women’s use of the telecentre? |

Table 4.2: Research questions probed in the study theory

Emphasis on this study explained the telecentre as a possible means of incorporating technology into the daily lives of its users. Other alternative theories that were suitable for the study include the Technology Acceptance Model (TAM), which describes how users come to accept and use a technology (Davis, 1985); the Theory of Planned Behaviour (TPB), which predicts an individual's intention to engage in a behaviour at a specific time and place (Ajzen, 2002); the Uses of Gratification Theory (UGT), an approach to understanding why and how people actively seek out specific media to satisfy specific needs, and an audience-centred approach to understanding mass communication (Blumler, 1979).

4.3.1. Rationale for not using alternative theory.

The study did not use the Capability Approach Theory because it does focus on poverty, inequality, or well-being, but rather concentrates on the tool and space within which to conceptualize and evaluate this phenomenon. Other related technology theories not used in the study include Technology Acceptance Model (TAM) (Davis, 1985), the Theory of Planned Behaviour (TPB) (Ajzen, 2002) and the Uses of Gratification Theory (UGT) (Blumler, 1979). These theories were not used in the study because the theories discussed the aspect of the technology adoption and not the processes of technology adoption for individual empowerment. Instead, the study was interested in the adoption of the telecentre, and therefore focused on how the stages of domestication unfolds in the adoption process.

4.4. Domestication Theory

The Domestication Theory explains how technology was used and the role of users. The framework was first developed with the invention of new ICTs consisting of devices such as satellite televisions, phones, personal computers, video recorders, compact discs, but technology has evolved differently thereafter (Berker et al., 2005). The Domestication metaphor was originally drawn from the idea of 'wild' animals being 'tamed' (Haddon, 2006). This idea was then applied to explain the processes involved in bringing technology into the home and 'domesticating' them. The theory examines the interaction between people, the technology artefact and the systems running on it. The theory states that limited there is attention in the social constructs where the computer is being used and this act influences how the computers are acquired, used and made sense of in the environment in which they are situated (Silverstone, 2005).

The theory was developed to describe the adoption and use of new media technology by households (Silverstone, 1994). This may need mutual adjustment on behalf of both the users and the technology. In context, the person shapes the technology to fit into his or her lifestyle.

The concept catches the practical, temporal, spatial place, but most importantly, it underlines how this is mixed with culture as an expression of lifestyles and values. The domestication process is often an unconscious attempt to make technologies fit into the surroundings of their existence in a way that it makes them invisible or taken for granted.

Assessments and uses of technology can change over time, depending on how the technology is perceived (Silverstone, 2005). Domestication adds a similar element of partial (and ambivalent) power to the user of technologies in general (and shifts the emphasis from the content to the technology). The theory thus adds perceptions concerning the artefact in question to the process of appropriation and use of technologies, including the idea that sometimes only parts of the technology are adopted or rejected, even after the acquisition (Silverstone, 2005).

4.5. Stages of Domestication

Domestication is explained in phases to make sense of the processes experienced by individuals and households (Vuojärvi et al., 2010). Silverstone et al. (1989) describe four main aspects, or non-discrete elements, identified to analyse this process of how technologies become part of everyday life, as follows: commodification, appropriation, incorporation, and conversion. (See Table 4.3).

| STAGES | DEFINITION |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Commodification | The ways in which a product is imagined or formed in the mind of the user, developing from an unfamiliar state to a potential product of interest. A product is given symbolic and functional meaning and the mental construction of the product could be a result of advertisements. |
| Appropriation <ul style="list-style-type: none"> <li>• Integration of technology artefact <li>• Objectification | The purchase and integration of the product into users' lives and habits. There are two sub-phases for the appropriation phase namely objectification and incorporation. The technology artefact becomes socially integrated into the users' routines and becomes part of everyday life. Values, tastes or styles are expressed through the display of the new technology. Involves both a spatial aspect (where it is placed in the house) and a temporal aspect (how it is fitted in the time structure). |
| Incorporation | Emphasises how ICTs are used, and the temporal aspect is more central in the incorporation phase for an artefact to be incorporated, it must be actively used. Such as in the performance of a task. |
| Conversion | The user demonstrates to others that they are consuming the product. The user talks about the technology to others and "shows off" their mastery of the product (Vuojärvi and Isomäki, 2010). The feedback from users in this stage influences future product development. |

Table 4.3: Stages of Domestication process

The appropriation phase can be grouped into two sub-categories: Integration and objectification. For ease of presentation, these two was presented as independent phases.

4.5.1. Commodification Phase

The commodification phase is the process by which material and symbolic artefacts are created, opened to influence the consumer and brought for sale in the formal market economy.

In this phase, a product is given symbolic and functional meaning and the mental construction of the product could be a result of advertisements (Vuojärvi and Isomäki, 2010). The commodification phase displays the user evidence and perception of the use of technology by users. In this stage, technology emerges in a public space of exchange values, which could be through advertisements (Silverstone and Haddon, 1996), and is given an image by the potential user (Chigona et al., 2010). The commodification phase explains the ways the users of the technology advertise the technology artefact to friends, family and the social network within their community. The commodification enables individuals to imagine the technology, and users of a household acquire the technology artefact which becomes a known product (Chigona et al., 2010).

4.5.2. Appropriation Phase

The appropriation phase centres on the motivations and reasons associated with acquiring technology. In this phase, possession and ownership of technology are central. The technology is purchased into households and it is integrated into the daily routine and life of the users. This phase decides the acceptance or rejection of the technology (Silverstone and Haddon, 1996). A technology is appropriated when it is bought, and then owned by an individual or household. That is the point at which a commodity crosses the threshold between public and private, beginning its new life as a domestic or owned object (Silverstone et al., 1989).

Silverstone, as cited by Habib and Cornford (2002), proposed two sub-phases for the appropriation phase: objectification and incorporation. In the former phase, the product becomes physically integrated into the users' surroundings through the exhibition or display of the product. The appropriation phase can be used to describe the process of how individuals react to and tame new, wild and strange technologies (Silverstone et al., 1992).

4.5.2.1. Integration of Technology

This is when the technology becomes socially integrated into the users' routines and becomes part of everyday life (Ward, 2005). This is conveyed in usage but also in physical dispositions of objects in the spatial environment. It is expressed in the construction of the environment as such. All technologies have the potential to be appropriated into an aesthetic environment. This phase captures how values, tastes or styles are expressed through the display of the new technology. It involves both a spatial aspect (where it is placed in the house) and a temporal aspect (how it is fitted in the time structure of the daily routines and habits of the owner) (Silverstone et al., 1989). However, the spatial aspect is more central in this phase. The

physical artefacts, in their arrangement and display, in the 'creation of the environment for their display, provide an objectification of the values, the aesthetic and cognitive universe of those who feel comfortable or identify with them' (Silverstone et al., 1992:22–23).

4.5.2.2. Objectification Phase

This is expressed in the display and physical dispositions of objects in the spatial environment of the home (Silverstone et al., 1992). Thus, the technology is integrated into the users' environment and incorporated into the daily routines of users (Habib and Sønneland, 2010; Hynes and Richardson, 2009). In the perspective of the telecentre users' purpose of using the technology artefact, how they tend to use the services of telecentres and the cause of use and non-use of the telecentres is analysed in the study. This phase involves both a spatial aspect (where it is placed in the house) and a temporal aspect (how it is fitted in the time structure of the daily routines and habits of the owner) (Silverstone et al., 1989). It is expressed in the construction of the environment. This tries to capture how values, tastes or styles are expressed through the display of the new technology. However, this is the physical placement and use of technology within the home (Silverstone et al., 1992). All technologies have the potential to be appropriated into an aesthetic environment.

The physical artefacts in their arrangement and display have effects in the creation of the environment of their display, providing an objectification of the values, the aesthetic and cognitive universe, of those who feel comfortable or identify with them' (Silverstone et al., 1992:22–23). Nevertheless, the spatial aspect is more central in this phase, when the household gives a new project a physical location and a timetable of use.

4.5.3. Incorporation Phase

The incorporation phase refers to the established practices emerging, and a technology becomes embedded into everyday-life routines. The phase refers to ways in which objects, especially technologies, are used. Technologies are functional and may be bought with other features in mind and serve other cultural purposes in appropriation. Technology can be functional in ways other than the intention of the designers. This phase emphasizes how ICTs are used, and the temporal aspect is more central in the incorporation phase (Silverstone et al., 1989). For a technology artefact to be incorporated, it must be in use, as in the performance of a task (Silverstone et al., 1989). In the Domestication Theory, households are mostly actively engaged in the products and meanings of the formal commodity and individual-based economy (Silverstone, 1994). This involves the appropriation of commodities into the domestic culture. The commodities are, therefore, incorporated and redefined in different terms; in

accordance with the households' own values and interest. Hence, the way a commodity is used defines the meaning and value of the commodity to its consumers.

4.5.4. Conversion Phase

The conversion phase describes the relationship between the household and the outside world, focusing on the processes of how the technology's meaning is shared with others. This phase is concerned with the relations between the households or individuals' internal/personal affairs and the public domain or outside world (Silverstone et al., 1989). Users take part in displaying and exhibiting signals to others in their participation of adopting and using the technology (Habib and Sønneland, 2010; Silverstone and Haddon, 1996). For example, the relations between the users of the telecentre (internal affairs) and the non-users (public domain or outside world).

Although the users play a role in how the telecentre is used in the environment in which it exists, usually a physical space; users show off their mastery of the technology and the benefits derived from thereof. The users tend to make use of the technology artefact in their daily routines and create awareness of the benefits to non-users, describing how it has influenced their lives. In other words, the telecentre conversion is noticed when users acknowledge the benefits of using the telecentre and recommend it to others.

4.6. Rationale for using Domestication Theory

The rationale for using the Domestication Theory is that domestication as an analytical and methodological concept is appropriate for the domestic sphere, in terms of the personal engagement with technologies in the society. The study used the domestication approach because it is concerned with households' and societal institutions' use of commodities and helps analyse how such use of commodities affects the culture (way of life) in a society. In the study, the telecentre was the actual commodity and the effects of the use for the empowerment of women was analysed. Domestication deals with cultural, social and technological networks of the everyday life of users. Silverstone (1994:40) says, "The meanings and significance of our media and information products depend on the participation of the user". The study focused on women's use of the telecentre as a daily routine.

The theory can be used to describe technology change in a wide range, for example households and institutions. The framework offers a network for understanding complex interrelationships of cultures and technologies as they emerge in institutions and individuals.

Domestic studies are used for qualitative studies and ethnography to explore the emerging change in technology, routines and conflicts that would not normally be accessible to qualitative methods.

The Domestication Theory uses various concepts to distinguish various aspects of a process, for example appropriation is the process of bringing a technology into a household. Domestication is criticized as a framework that relies on case studies and its descriptive approach, which is difficult to change into prescriptive lessons of the type required by business and policymakers (Silverstone and Hirsch, 1994). However, this rich descriptive approach is also the strength of the theory because it enables processes and the complex role of our artefacts of cultural values to be explored in much more depth and individualistic quantitative methods.

The Domestication Theory describes the integration of technology into social relationships and structures using evidence obtained from qualitative methods, contradicting the individualistic and quantitative approaches such as the technology acceptance model that explains the determinants of computer acceptance and user behaviour across a broad range of end-user computing technologies (Tewari and Priya, 2017).

The Domestication Theory allows the use of methods such as in-depth interviews and observation and is used for the practical and the symbolic aspect and use of technologies, showing how technologies such as telecentres can become part of the everyday life of users in the communities (Tewari and Priya, 2017). The theory examines women's use and non-use of the telecentre in their daily routine.

4.6.1. Operationalizing Domestication Theory

Operationalization of the Domestication Theory explains giving technology a place in the everyday life of people (Silverstone, 2005). Domestication of technology may be defined as 'the capacity to incorporate and control technological artefacts into its own technological culture, to render them 'invisible' within the daily routines of people' (Silverstone et al., 1989:24). This theory was used to justify the study research question: How does the telecentre contribute to women empowerment in rural communities? The theory was used to explain how the telecentre was adopted into the everyday lives of women. The outcome of the different domestication phases, such as the commodification, appropriation, incorporation and conversion, were explained in the study and how it transpired in women's daily routine. Table 4.4 presents the questions which the Domestication Theory sought to answer.

| DOMESTICATION PHASE | QUESTIONS |
|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Commodification Phase | <ul style="list-style-type: none"> • What images of the telecentres do the women have? • How was the telecentre advertised? • How did people become aware of the telecentre? |
| Appropriation Phase | <ul style="list-style-type: none"> • How was the telecentre introduced into the lives of users? • How did the users of the telecentre use the artefact in their daily routine? • What measures did the women users of the telecentre make to integrate the telecentre into their daily lives? |
| Integration Phase | <ul style="list-style-type: none"> • How did the telecentre become socially integrated into the communities? • How was the telecentre integrated into the user's daily routine? |
| Objectification Phase | <ul style="list-style-type: none"> • How did the users in the community accept the telecentre? • How did the users of the telecentre use the services? • What was the cause of use by the users and non-use of the telecentre? |
| Incorporation Phase | <ul style="list-style-type: none"> • How did the telecentre become embedded into the everyday routines of the users? |
| Conversion Phase | <ul style="list-style-type: none"> • How were the benefits of the use of the telecentre distributed to the users? • How did the distribution bias the existence of the telecentre? • How was the telecentre marketed to other users? |

Table 4.4: Questions asked in Domestication Theory

4.6.2. Limitations of Domestication Theory

The implementation of the Domestication Theory used the domestication approach to describe the integration of technologies into social relationships and structures using evidence obtained from qualitative methods, which stands in sharp contrast to individualistic and quantitative

approaches in the Technology Acceptance Model in IS research drawing on primarily psychological models (De Reuver et al., 2016). Domestication studies are carried out using qualitative methods, such as long interviews and ethnography to explore the emerging meanings of technologies, the changing routines, and conflicts that would not normally be accessible to quantitative methods (Tewari and Priya, 2017). The domestication approach depends on its reliance on detailed case studies; it is rather a descriptive approach, which is difficult to turn into prescriptive lessons of the type required by business and policy makers. However, this rich-descriptive approach is also its strength as it enables processes and the complex interplay of artefacts and cultural values to be explored in much more depth than individualistic, quantitative methods (De Reuver et al., 2016).

4.6.3. Previous Information employing Domestication Theory

The previous studies employing the Domestication Theory shows that the theory is mainly used in the context of the development of theory related to the social shaping of technology, study of adoption and use of technology which is mainly used in the IS research discipline. Silverstone et al. (1989, 1992) first researched the literature of the theory and the studies by focusing on the Domestication Theory within the household and media technologies (Silverstone et al., 1992). 'Domestication is practice, it involves human agency, it requires effort and culture and it leaves nothing as it is' (Silverstone, 2005:231). He suggested that for technology to be incorporated in the daily life of its users, it must be actively used by them as a daily routine to achieve a task. The users of the technology artefact play a significant role in how the technology is adopted, not only into the household as a physical space, but also into their everyday life.

The framework implies that the process of domestication has been successful when technologies are not regarded as cold, lifeless, and problematic, but as comfortable, useful tools, functional as well as symbolic, that are reliable and trustworthy (Berker et al., 2006). Technology is perceived differently in the society by various disciplines and audiences such as media studies, cultural studies, and anthropological treatments of objects in everyday life. Haddon (2006) claims the Domestication Theory discusses the adoption and non-adoption of ICTs, time and space constraints, symbolic dimensions of ICTs, the social consequences of ICTs and understanding trade-offs between what is gained and lost, social and cultural capital (Richardson, 2009; Hynes and Rommes, 2006) and the social shaping of technology.

Domestication, both as a metaphor and as an analytical concept, is used to find the crossover where technologies and people adjust to each other and find (or do not find) a way to coexist. Central to the domestication process is the constant attempt to make technologies fit into their

surroundings in a way that makes them invisible or taken for granted. This requires mutual adjustment on behalf of both the users and the technology, and it is where social shaping comes into play. The person shapes the technology to fit into his or her life.

The list of other studies using the Domestication Theory were researched on domesticating ICTs and other technologies, but this study focuses on the domestication of the telecentre on users and non-users. Table 4.5 presents the list of other studies that used the Domestication Theory.

| SCHOLARS | TITLE | COUNTRY | ARTEFACT |
|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|-----------------------------------|
| Chigona et al. (2016). | Domestication of Free Wi-Fi Amongst People Living in Disadvantaged Communities in the Western Cape Province of South Africa. | South Africa | Wi-Fi |
| Chigona (2015). | Teacher education students' domestication of ICTs for teaching and learning. | South Africa | ICTs |
| De Schutter et al. (2015). | The domestication of digital games in the lives of older adults. | Belgium | Video games |
| Juntunen (2014). | Domestication pathways of small-scale renewable energy technologies | Finland | Renewable energy technology |
| Chigona et al (2010). | An empirical survey on domestication of ICT in schools in disadvantaged communities in South Africa. | South Africa | ICTs |
| Vuojärvi et al. (2010). | Domestication of a laptop on a wireless university campus: A case study. | Australia | Laptop |
| Richardson (2009). | A 'smart house' is not a home: The domestication of ICTs | United Kingdom | ICTs |
| Buré (2006). | Digital inclusion without social inclusion: the consumption of information and communication technologies (ICTs) in homeless subculture in central Scotland | Scotland | ICTs |
| Hynes and Rommes (2006). | Fitting the Internet into our lives: IT courses for disadvantaged users: IT courses for disadvantaged users | Netherlands | Internet |
| Berker et al. (2005). | Domestication of media and technology | United Kingdom | Media and Technology |
| Habib (2005). | Finding a place and a space for online learning environments in | Norway | Online learning environment (OLE) |

| | | | |
|---------------------------------------|-------------------------------------------------------------------------------------------------------|----------------|----------------------|
| | an institutional setting: issues of objectification | | |
| Silverstone (Ed.) (2005). | Media, technology and everyday life | United Kingdom | Media and technology |
| Silverstone (2005). | 12 Domesticating domestication. Reflections on the life of. Domestication of media and technology. | United Kingdom | Media and technology |
| Wajcman. (2004). | Techno feminism | United Kingdom | Technology |
| Hirsch and Silverstone (Eds.) (2003). | Consuming technologies: Media and information in domestic spaces. | United Kingdom | Media |
| Ling et al. (1999). | The domestication of video-on-demand: Folk understanding of a new technology | Norway | Video |
| Silverstone (1994). | Television and everyday life. | United Kingdom | Television |
| Silverstone et al. (1994). | Information and communication technologies and the moral economy of the household. | United Kingdom | ICTs |
| Silverstone et al. (1989). | Families, technologies and consumption: The household and information and communication technologies. | United Kingdom | ICTs |

Table 4.5: List of studies using Domestication Theory

The study is contributing to the Domestication Theory by addressing how the telecentre contributes to the empowerment of women. The Domestication Theory has not been used to analyse women’s perception of the telecentre, the adoption process of the telecentre, and the possible impact of the use of the telecentre on women empowerment in previous Information Systems research and will make a significant contribution in the IS field.

4.7. Individual Difference Theory

The Individual Difference Theory explains the difference in individuals due to environmental influences on personality and social behaviour by specifying some of the ways these outcomes are affected by people's experiences. The notion that an individual difference causes differences in human behaviour is not new to research (Jiang, Klein, and Pick, 1996). This theory was applied for the consideration of socio-cultural factors that helps to explain the participation of other under-represented or minority groups (Kvasny and Trauth, 2003).

The implications of using the Individual Difference Theory support and evaluate societal interventions directed at redressing individuals in society. This theory was used to offer a scholarly contribution to the development of a theory that aids the understanding of factors that influence the participation of women as individuals to engage in the use or access of the telecentre. The Individual Difference Theory is grouped into three classes or constructs, namely: personal data, shaping and influencing factors, and environmental context (Trauth et al., 2004).

Collectively, these constructs contribute to the differences in an individual’s life choices, for example a rural woman’s choice to use the telecentres can be hindered through individual experiences, environmental influence on personalities that affects an individual by a range of factors such as economically, informationally, socially, culturally and politically.

The theory offers constructs that help us to understand reasons why some women in rural areas are not using telecentres, and reasons some women are using telecentres to derive information that are used to improve their economic standards. Table 4.6 presents the theoretical perspective of Individual Difference constructs.

| HIGH-LEVEL CONSTRUCT | SUB-CATEGORY CONSTRUCT |
|---------------------------------|-----------------------------------------------------------------------------|
| Personal data | Demographics Lifestyle Workplace |
| Shaping and influencing factors | Personal characteristics Personal influences |
| Environmental context | Cultural attitudes and values Geographic data Economic data Policy |

Table 4.6: Individual Difference Theory constructs

4.7.1. Personal data

Personal data includes the demographic data (such as age, race and ethnicity), lifestyle data (such as socio-economic class and parenting status), and the workplace data (such as job title and technical level) (Trauth et al., 2004). Personal data includes descriptive data about a person or individual. The data is correlated with individual women’s differences in experience, influence and responses to them. Demographic data contains data relating to membership groups within the population, such as race or ethnicity. Lifestyle data refers to descriptions of

the person's life, past and present. Included in this would be socio-economic class and the individual's growing up history, employment, and lastly, parent and mentor type. While, the workplace data refers to information about the individual's status or career (Trauth et al., 2004). In the study, the demographics of the women using the telecentre and the non-users were analysed and discussed, for example age, education and economic status.

4.7.2. Shaping and influencing factors

The shaping and influencing factors include personal characteristics such as educational background, personality traits, and abilities. Personal influences include mentors, role models, experiences with computing and other significant life experiences. The theory explains the factors that influence individual decisions to use ICTs. There is a combination of personal characteristics owned by the individual and influences experienced by individual personal characteristics such as educational background, personality traits, interests and abilities, identity in the use of computers. For example, women users and non-users, and gender identity and what behaviours one associates with being female (perception). Personal influences refer to the people and experiences that have influenced individuals' use or non-use of ICTs. These include factors such as early experiences with computing, role models, mentors and other significant others, significant life experiences such as the early death of a parent, father out of work or divorce.

4.7.3. Environmental context

The environmental context includes cultural attitudes and values such as attitudes, geographic data such as the location of work, economic and policy data such as the region in which an individual works. The environmental data offers the context within which the person's responses are situated. Cultural attitudes and values refer to the attitude to use ICTs. These would include experiences of regional cultural attitudes toward women. Geographic data refer to contextual information about the geographic region or location in which the individual lives, for example, urban or rural location, while economic and policy data offer more socio-cultural context.

Individuals can also differ not only in their current state but also in the magnitude or even direction of response to a given stimulus. Women can make decisions that can affect events and circumstances around them; benefit from resources and opportunities; exercise control over their own lives, body and resources; have a say in public and decision-making, all with the result of increasing or achieving autonomy and improving health and well-being (Hafkin and Huyer, 2006). People vary in personality and social behaviour, it is generally accepted

that some of this variation is due to differences in genes and some to 'environment' that is different in peoples' experiences.

Morgan et al. (2004) explain that not all women react in similar ways to technology. Most women live in rural areas of developing countries and they often suffer even more gender-related discrimination than their female counterparts in urban areas of developed countries. At the same time, if ICT were to hold a promise to empower women, then this promise is much larger in the developing world, given that the lower starting point supports greater potential gains. Women in deprived communities may experience the digital divide, which applies to access and to the frequency and intensity of usage of technology (Hilbert, 2011).

Morgan et al. (2004) state that the theory also views women as individuals who have different talents and inclinations and respond to the social shaping of gender in unique ways. This theory acknowledges that common social shaping of messages is conveyed to subgroups in a culture, for example, women by age, race. However, at the same time, it also considers the varied influence of individual background and critical life events that result in a range of responses to those uniform messages. For example, not all women of a certain age group respond in the same way to commonly received messages. Women in poor communities presume not to relate well with technology; they usually lack the ability or skills to use ICTs due to their individual life experiences that have influenced how they perceive technology.

This is unlike women in the urban settings that perceive technology in an unusual way and can relate better to the use of technology. This is usually because of the opportunities these women have been exposed to in using technology and having the ability to use these technologies. Women in the rural areas rarely have access to sources for information which they can use to empower themselves due to certain factors such as cultural norms, religious norms and societal norms. They experience barriers such as lack of ICT infrastructure, resources, computer skills and training.

4.7.4. Rationale for using Individual Difference Theory

The rationale for using the Individual Difference Theory is that traditional gender roles are evolving in recent society and women are considered as economic contributors to the countries they live in (Boserup, 2007). More women are taking the role of managing the home and at times being the sole providers of their families. Despite this, women are still under-represented in the workplace and are generally more limited in the employment aspect than men, who are presumed to be the sole providers of the family. Men can seek jobs more easily than women, who are mainly expected to manage their homes (International Labour

Organization, 2014; World Economic Forum, 2015). This is due to the perception that women are assumed 'caretakers', while male roles are perceived to be "breadwinners". Men are known to occupy a privileged position in the society, while women occupy a subordinate position in the same society (Correll and Ridgeway, 2004).

4.7.5. Previous studies of Individual Difference Theory

Previous studies on the Individual Difference Theory shows there have been several literatures that have examined the gendering of technologies in various aspects (MacKenzie and Wajcman, 1999; Venkatesh and Morris, 2000; Nielsen et al., 2003; Kvansny and Trauth, 2003, Morgan et al., 2004; Stewart, 2004; Trauth and Quesenberry, 2004; Trauth, 2006; Trauth and Howcroft, 2006, Trauth, 2007). Hellens et al. (2009) researched on the gender differences in technology usage for farm management. The scholar explores individual differences using three distinct theories: Essentialism, Socially Constructivism, and Individual Difference Theory. The first two viewpoints, those of essentialism and social shaping, are considered. and the third theory focuses on individual differences in gender and IT.

A recent study using the Individual Different Theory by Urquhart and Vodanovich (2017) discussed a Grounded Theory study of women's experience of ICTs in the United Arab Emirates (UAE). The study asked questions such as: can ubiquitous computing discuss the issues raised by work-life balance? The Individual Difference Theory was used to focus on the ways that women with a range of work-life balance issues, use ubiquitous computing to address their needs (Urquhart and Vodanovich, 2017). The Individual Difference Theory was used to focus on the differences within rather than between the genders and enables a deeper understanding of the range of work-life balance considerations for women and their influence on the use of ubiquitous computing (Urquhart and Vodanovich, 2017).

Technology is gender-neutral and the natural characteristics and biological differences between these genders explain the disparities in the use of technology (Venkatesh and Morris, 2000). In contrast, Armstrong et al.'s (2012) study argues how social phenomena develop social contexts, for example how technology may be socially shaped as a male domain and not a female terrain. Trauth and Quesenberry (2008) explore an instance of how ubiquitous computing is used to support work-life balance from the perspectives of women in the Information technology workforce. Trauth (2006) argues that the Individual Differences Theory is the intermediate between the essentialist argument and the social constructivist perspective: individual gender differences exist in a range of women that are individuals.

Scholars have researched on gender individual difference in socio-cultural factors, gender relations with respect to technology and the nature and value of diversity. (Huang et al., 2006; Huang et al., 2008, 2009). Trauth et al. (2004) also made use of the Individual Difference Theory to explain the under-representation of women in the IT profession, explaining the different construct involved in the theory. The investigation of “the individual differences across genders because of the combination of personal characteristics and environmental influences with focus on differences within rather than between genders” (Morgan et al., 2004; Trauth, 2006:1156). Table 4.7 presents the list of studies that used Individual Difference Theory.

| INDIVIDUAL DIFFERENCE THEORY CONCEPTS | SCHOLARS | TITLE |
|---------------------------------------|-----------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| Personal Data | Trauth (2013). | The role of the theory in gender and information systems research. |
| Personal Data | Quesenberry et al. (2012). | The (dis) placement of women in the IT workforce: an investigation of individual career values and organisational interventions. |
| Shaping and influencing factors | Trauth (2009). | Theorizing gender and information technology research. |
| Environmental factors | Trauth et al. (2008). | A multicultural analysis of factors influencing career choices for women in the information technology workforce. |
| Shaping and influencing factors | Trauth et al. (2004, April) | Understanding the under representation of women in IT: Toward a theory of individual differences. |

Table 4.7: List of studies using Individual Difference Theory.

4.8. Dimensions of Empowerment Theory

The Dimensions of Empowerment Theory illustrates the different dimensions of empowerment in the study. Empowerment in this framework is classified into different concepts: economic, information, social, political and cultural empowerment (Gomez, 2014). The Dimensions of Empowerment Theory was explained in section 3.5, highlighting the output of empowerment indicators that may occur in the empowerment of women.

4.9. Conceptual model for the study

To create the conceptual model, data collected was observed and compared with the interpretations of the concepts of the theories used as a guide during the fieldwork. The researcher explored the possibility of constructing a theory by combining concepts from the theories used for the study. The conceptual model of the study was developed to describe how the empowerment of women can be achieved using telecentres. The model used the three theories to guide the study such as the Domestication Theory (Silverstone, 2005), Individual Difference Theory (Trauth et al., 2004) and Dimensions of Empowerment Theory (Gigler, 2014).

The model explains that women can achieve empowerment despite the factors that may impact and hinder their use of the telecentre as explained in the Individual Difference Theory. This consists of concepts (as explained in section 4.7) which can either impact or hinder women from using the telecentre and may or may not allow women to make decisive decisions that may motivate the process of empowerment.

However, despite the factors hindering women from becoming empowered, the empowerment of women begins through the internal change or external change of empowerment. The internal change is an individual's sense or belief in their ability to make decisions to solve her own problems, while, the external change is when the individual finds expression in the ability to act and to implement the practical knowledge, the information, the skills, the capabilities and the other additional resources acquired during the development of empowerment (Parsons, 1988; Sadan, 2004) (See section 3.2 for details on the process of empowerment). The process of empowerment motivates women to experience the stages of empowerment. While, the various stages of empowerment can allow individuals to want to improve on their economic standards and to increase their ability to access the telecentres as explained (See section 3.3) and the result is reflected on the outcome of the effects of the dimensions of empowerment such as the economic, informational, social, political and cultural empowerment.

The process of empowerment can also be motivated through the Domestication Theory which examines the adoption of technology, the interaction between users and the technology and the systems running on it (Silverstone, 2005). Furthermore, the Domestication Theory emphasises four main aspects used to analyse how the telecentre can become part of the everyday life of women, such as the commodification, appropriation, incorporation, and conversion phases. Women can experience the domestication stages which include:

The commodification phase that explains how women users advertise the telecentre to other women in the rural community; then the appropriation phase helps to explain how women integrate the use of the telecentre into their daily lives in the rural community. The incorporation phase explains how women users incorporate the telecentre into their daily routines. While, the conversation stage explains the effects of the use of the telecentre on users, namely employment, school admission, fund allocations and other opportunities.

Furthermore, the conversion phase explains how these women made efforts to convince other women to use the telecentre due to the benefits they derived from using the telecentre. This process is expected to facilitate the individual empowerment of women, which possibly reflects on the outcome of the dimensions of empowerment. Figure 4.1 presents the conceptual model of the study.

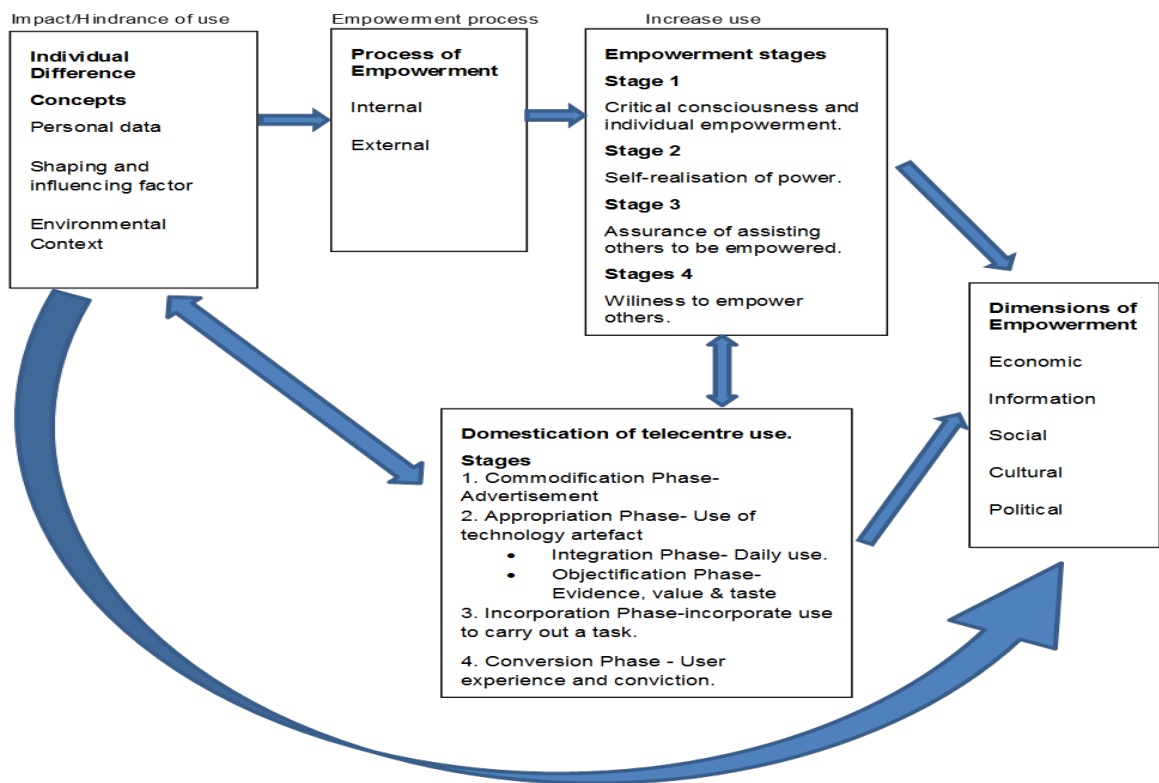


Figure 4.1: Conceptual model for the study.

The assumption is that the interactions between the theories can motivate individual empowerment as reflected in the outcome in the dimensions of empowerment indicators (economic, informational, social, political and cultural empowerment). However,

empowerment may be limited if women do not experience the interactions that occurred between the constructs.

4.10. Summary of chapter

The chapter summarizes the different theories used for the study, such as the Domestication Theory, Individual Difference Theory and the Dimensions of Empowerment Theory. The chapter described the different theories and how the process of empowerment was achieved through a model creation. The reasons why the Capability Approach Theory and other alternative theories were not suitable to analyse the study were explained in the chapter. The rationale for the choice of theories for the study was further clarified in the chapter.

CHAPTER 5: Case description

5.0. Introduction

The case study for this research is the Cape Access project of the Western Cape Province. This chapter focuses on describing the Cape Access e-Centre service delivery to rural communities, and a descriptive explanation of the communities used for the study.

5.1. Overview of the Western Cape Province

The Western Cape Province takes up 10.6% of South Africa's land area (Town, 2004). It is the fourth largest of the nine provinces in terms of both area and population, with an area of 129,449 Square Kilometres and more than 5.8 million people living in 1,634,000 households (Lehohla, 2012). About two-thirds of the population lives in the metropolitan area of Cape Town which is the provincial capital. The Western Cape of South Africa was site appropriate for the study because the study used the Cape access projects which is a Western Cape initiative that facilitated community development.

5.1.1. Demographics of the Western Cape Province

The selected statistics of the Western Cape shows 2.7% of its residents are between aged 20 and over, with no formal education or schooling. 10.7% only had some primary education; 5.6% have completed primary school but gone no further; 38% had some secondary education without finishing Grade 12; 28% had finished Grade 12 but gone no further; and 14% have higher education beyond the secondary level. Overall, 43% of residents of the Western Cape Province have completed high school (Statistics SA, 2011). Table 5.1 presents selected statistics of the Western Cape Province.

| INDEX | WESTERN CAPE | NATIONAL |
|--------------------------|--------------------------|--------------------------|
| Population | 6.5 Million | 57.4 Million |
| Population groups | | |
| Coloured | 48.8% | 80.7% |
| Black African | 32.8% | 8.8% |
| White | 15.7% | 8.1% |
| Indian or Asian | 1.0% | 2.5% |
| Other 93969 | 1.61% | 100.0% |
| Language | | |
| Afrikaans | 58% | 13.5% |
| IsiXhosa | 24.7% | 16.0% |
| English | 20.2% | 9.6% |
| Other | 2.2% | 1.6% |
| Unemployment | 18.6% | 26.7% |
| GGP* | 14.21% | 7.9% |
| Area (km2) | 129 386 % of total 10,6% | 1,219,090km ² |

Table 5.1: Selected Statistics of Western Cape Province (adapted from statistics SA, 2016).

The Western Cape Province’s population of 6.5 million residents accounts for 11.5 % of South Africa’s registered population (Statistics SA, 2016). The Western Cape contributed 14% of the national GDP, making the province the joint second largest contributor to the country's total GDP (Statistics SA, 2017). The province also has one of the fastest growing economies in the country, growing at 47.9% (Statistics SA, 2011). However, about 1.3 million residents of the Western Cape are not economically active: 552,733 residents are unemployed, with an additional 122,753 discouraged work seekers who want to work but have given up looking for it (Ganie, 2016).

The province has relatively high levels of employment, with 54% of the working age population compared to a national average of over 40% (Statistics SA, 2017). Furthermore, the Western Cape's Human Development Index is the highest in South Africa, at 0.7708 compared to the South African average of 0.6675 as of the year 2003 (Adelzadeh, 2003). The Western Cape demographics consist of 49% Coloured, 33% black African, 17% white and 1% Indian or Asian (Statistics SA, 2011; 2017) with 50% of the province's population given as Afrikaans-speaking, 25% speaking first-language isiXhosa and 20% speaking English.

The median age for females in the Western Cape is 28 years and for every 100 women, there are 96 men (Statistics SA, 2011; Lehohla, 2012); 86.9% of the Western Cape households use

electricity for cooking; 34% of households own a computer, and 44% have access to the Internet (Statistics SA, 2011; Lehohla, 2012). Figure 5.1 shows the map of the Western Cape Province.



Figure 5.1: Map of Western Cape Province (source: <https://goo.gl/images/k47vdr>).

5.2. The Cape Access project

The Cape Access project trains telecentre managers that are employed to operate the e-Centres. The Cape Access initiative provides 10-12 computers with access to Internet to the e-Centre in remote communities. Access to the computer terminals is mostly free use, including all ICT facilities available at the telecentre such as Fax machine, scanner, printer and photocopy machine. User benefits include free personal e-mail address, access to job database, government information and access to various ICT services. Computer skills training is conducted to registered members of the telecentre on International Computer Driving License (ICDL) and Basic computer skills. A certificate was issued to registered members of the program after the completion of either of the computer skills training programmes.

The Cape Access telecentres are operated in collaboration with community structures known as e-Community forums. In 2011-2012 fiscal years, Cape Access Projects trained over 1600 users in basic and advanced ICDL; and the user base of the Cape Access project continues

growing, recording over 75,517 users in various communities of the Western Cape Province. The Cape Access project provides access to ICTs to rural communities across the province. A range of technologies that include computers, cell phones and the Internet, as well as the many services and applications associated with these technologies are provided to rural communities to use for a wide variety of purposes such as school projects, job applications, Internet banking, South Africa Revenue Services electronic filing system (SARS e-filing), CV creation and computer skills training. Residents of the Western Cape Province can, therefore, access technology and increase digital literacy within marginalised rural communities.

5.2.1. Cape Access Operation

The Cape Access operation allocates the Western Cape Provincial Government sponsored e-Centres to various localities in the province. As at the years 2014, Cape Access enrolled about 1000 students in the computer skills training and ICDL programmes at these e-Centres. This initiative has led to improved ICT availability and the provision of better education, employment and business opportunities with increased socio-economic development in communities where it is needed.

The e-Centres consists of ICT facilities such as computers, printers, fax machines, Internet facilities for the community people to access. These computers have essential productivity tools such as Excel, Powerpoint, Microsoft Word and email. The Cape Access e-Centres also provides 45 minutes of Internet use daily to access emails, government services and products and various online services, thereby enabling community people to communicate more effectively with the government and globally.

Cape Access is a project created to empower poorer communities to tackle the challenge of poverty. The Cape Access e-Centres was selected as the study site because the researcher wanted to carry out a homogeneous study of telecentres with similar services which helps rural dwellers to access ICTs and increase digital literacy within poor and disadvantaged communities. At the time of the study, there were currently 52 e-Centres situated in six different districts of the Western Cape Province. The user's experience from a select few from the e-Centres in the Western Cape was collected and compared. The criteria for selecting the e-Centre are as follows:

- The e-Centre should be situated in the rural communities
- The e-Centre should be a Cape Access initiative
- The e-Centre should have been in operation for more than one year and should offer Internet, printing, scanning services and computer skills training.

5.2.2. Services offered at the e-Centre

The study used five e-Centres situated in different rural district municipalities. All the selected e-Centres specifically offer computer skills training sessions to community people registered to use the facility at the e-Centre. The computer programmes offered to people interested in participating in the computer skills training sessions include:

- E-learner entry-level accredited certificate for successful learners
- International Computer Driving License (ICDL)
- Informal computer training

Furthermore, some of the e-Centres are involved in the following community support projects and activities:

- Annual community meetings for members and users
- Skills/leadership programme for learners (Grade 3 learners) in the afternoons (Fridays, 15:00 PM and 16:00 PM)
- Daily youth development programme
- Special activities for kids during the school holidays (Includes information sessions about computers and movie sessions). Grade 5-7 (Daily, 14:00 PM and 17:00 PM)
- Meetings with local organisations

5.2.3. e-Centre training programmes

The e-Centre offer computer skills training sessions on the ICDL and basic computer training to the community people at no charge and certificates are issued to successful participants that complete the computer training sessions. The ICDL programme is the world's leading computer skills certification. To date, more than 14 million people have engaged with the ICDL programme, in over 150 countries, through our network of over 24,000 ICDL Accredited Test Centres (ATC).

The ICDL programme defines the skills and competencies necessary to use a computer and common computer applications. It offers a wide range of modules that include Computer Essentials, Word Processing and IT Security. Candidates, thereby, create their ICDL profile and take tests in the modules which are most relevant to their educational and professional requirements. ICDL offers skills and certification of computer skills of international standards needed for schools, universities or workplace professional applicants from around the world.

5.2.4. Cape Access e-Community forum

A group of e-Community members was created in different communities. The members consist of representatives of the community, community leaders and non-governmental organisations (Vosloo and Van Belle, 2004; Chigona, 2007). The e-Community forum aims at creating a bottom-up approach to ICT development and are responsible for initiating the ICT-enabled projects for the community.

5.2.5. e-Centre linking government to community development

The e-Centre is a link between the government and the community people using its services. The Western Cape provincial government and several Departments of Statistics, Labour and Public Works mainly advertise vacancies, learnership and apprenticeship programs to the public through the assistance of the telecentre managers. Most times, information is posted by the e-Centre group on the social media and on the advertisement board in the telecentre. For complaints by the general public, the government website provided toll-free numbers to the public to e-Centre users to make their complaints via landline with the assistance of the telecentre managers who act as a link between the government and the community.

5.3. Stakeholders of the Cape Access project

The stakeholders of the Cape Access contribute to the operation of the e-Centre. The stakeholders include Municipalities, Thusong Centre, Universal Service and Access Agency of South Africa (USAASA), Government departments, Non-Government organisations and Local communities. Table 5.2 shows the list of Cape Access stakeholders.

| STAKEHOLDERS | ROLES |
|-------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Municipality | The local government representative manages the e-Centre and provides government services to the community |
| Thusong Centre | The Thusong centre offers government services to the community for easy access to information |
| USAASA | USAASA is a state-owned entity set up through electronic communications that ensure that every populace living in remote areas or urban areas can connect, speak, explore and study using ICTs. Their aim is to ease the establishment of access to ICT services in partnership with all stakeholders towards the achievement of an information society. |
| Government Departments | The several government departments carry out distinct functions at provincial, ministerial, local municipalities and districts level to ensure the successful running of different sectors in the economy. |
| NGOs non-profit organisations | NGOs are non-profit organisations, are independent of states and international governmental organisations. They are funded by donations, but some avoid formal funding altogether and are run primarily by volunteers. Some telecentres are sponsored by NGOs in different communities providing ICT services to disadvantaged communities. |
| Local Communities | This is a group of people interacting and sharing an environment. In communities, common intent, belief, resources, preferences, needs, risks, and several other conditions may be present and affecting the identity of the participants and their degree of cohesiveness. The local government assists Cape Access to ensure it operates smoothly in the communities they are located. |

Table 5.2: List of Cape Access stakeholders

The Cape Access initiative integrates and expands shared public access to ICT facilities to all communities in the province. The project tends to manage information and research on technologies access and drive Public Private Partnerships (PPP) to expand the availability to ICT networks across these dimensions. The Cape Access is advanced in their challenge to drive the infrastructure and services to as many people as possible regardless of income or

geographic location in the province. Furthermore, the provision of the Cape Access e-Centres provides community people information that can be of use to their self-development and economic standards.

5.4. Municipalities of the Western Cape

The Western Cape Province is divided into one metropolitan municipality (The City of Cape Town Metropolitan Municipality) and six district municipalities which are further sub-divided into 24 local municipalities. The six districts are Cape Town Metropolitan, Cape Wine lands, Central Karoo, Eden, Overberg and the West Coast. Cape Town is known as the provincial capital and there are other smaller towns in the province, namely; George, Knysna, Paarl, Swellendam, Oudtshoorn, Stellenbosch, Worcester, Mossel Bay and Strand. Five e-Centres were selected for the research site from Klawer, Elim, Mbekweni, Lainsburg and Citrusdal rural communities in the six district municipalities in the Western Cape. Table 5.3 presents the summary of e-Centre locations, Municipality, language, population and services offered.

| e-CENTRE | MUNICIPALITY | LANGUAGE | POPULATION | SERVICES |
|------------|------------------------|------------------------|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Elim | Overberg | Afrikaans | 2,500 | Offers services to people, computer skills certifications and help with online searches, Internet banking, online chats, researching study opportunities, registration for online studies |
| Klawer | West Coast | Afrikaans | 5,122 | Offers free services, computer skills certifications, and help learners with school assignments, online job searches and applications, access to government services and information |
| Mbekweni | Cape Winelands | Afrikaans and IsiXhosa | 24,000 | Offers ICT services to community people, access to government information and services, accredited computer skills and research information |
| Citrusdal | Cederberg | Afrikaans | 7,177 | Offers ICT services and computer skills certifications, helps with the setting-up of e-mail accounts, and assists with online job searches and applications |
| Laingsburg | Central Karoo District | Afrikaans | 8,289 | Offers ICT services and computer skills certifications, provides access to government information, services, job opportunities, business and research information |

Table 5.3: Summary of e-Centre locations, Municipalities, language, populations and services (source: www.westerncape.gov.za/capeaccess/e-Centre)

5.5. Research site description

The Overberg District, Cape Winelands District, Central Karoo District, West Coast District and Cederberg Municipalities formed the research sites used for this study. The selected Cape Access e-Centres were situated in Mbekweni, Klawer, Elim, Laingsburg and Citrusdal rural communities. The Mbekweni community, a peri-urban community situated close to Paarl, was used as the pilot study. The criteria for this selection was to ensure that all the e-Centres were a homogeneous selection of the Cape Access e-Centres. The criteria used for selecting these e-Centres are that the e-Centre must be situated in the rural communities, and that the e-Centre must have been in operation for more than one year due to its functionality and offers a variety of services such as the Internet, information services, computer skills training, and free services to the community.

5.6. Summary of the research site

A detailed description of Elim, Klawer, Mbekweni, Citrusdal and Laingsburg communities (the research sites) is given in the following sub-sections.

5.6.1. Elim Community

The Bredasdorp/Elim region is situated in the Southern Overberg of the West Cape Province of South Africa. Elim is a village on the Agulhas Plain with a population of about 2,500 people. The Elim community consists of 91.6% Coloureds, 7.4% black African and 1.0% whites (Census, 2011). The community consists of 94.1% Afrikaans-speaking Coloureds that are of slave descent, 3.6% English-speaking and 2.3% of population speaking other languages. (Census, 2011; Schoeman and Visagie, 2014).

German missionaries established the Elim community in 1824 as a Moravian mission station (Atkin, 2009). The missionaries chose the area mainly for the proximity to the water source and for the terrain, which was ideal for planting wine vines used for communion services (Atkin, 2009). The missionaries conveyed preaching of the Gospel and a variety of trades and skills to the community. Currently, the main source of livelihood in Elim is agriculture, roof thatching and craftsmanship (Atkins, 2009). Elim is an emerging wine-producing area in the Western Cape Province with numerous farmers, farm workers and artisans (Atkins, 2009).

The Elim community has a high rate of unemployment and most of the populace use mainly seasonal farming as occasional jobs, while a few seek job opportunities in other surrounding

communities. The community also relies on seasonal festivals that attract tourists and visitors to the heritage centre situated in the community. Community members trade in handmade crafts and commodities during the festive season as an alternative source of income.

5.6.2. Klawer Community

The Klawer community is a rural town lying in the Olifants River valley, just off the road to Namibia. Klawer is situated among the Matzikamma Mountains. The Klawer community is 24km west-south-west of Vanrhynsdorp and 283 km North of Cape Town (Census, 2011). The community consists of more than 5,122 inhabitants (Plessis, 2007), consisting of 9.4% black Africans, 75.3% Coloureds, 1.0% Indian/Asians, 13.6% white. The Klawer community has a high rate of unemployment due to limited job opportunities available to community people. The main source of livelihood for the unemployed Afrikaans-speaking coloured population of Klawer is agriculture, especially grape farming which is mainly for wine production (Todd, 2011).

5.6.3. Mbekweni Community

Mbekweni is situated in the Drakenstein Municipality in-between the towns of Paarl and Wellington in the Berg River Valley region. The Drakenstein Municipality is a local municipality located within the Cape Winelands District Municipality (Drakenstein Municipality, 2011). Mbekweni is a township that has a growing population of about 30,000 residents (Plessis, 2007), of which 24,000 are urban black, isiXhosa-speaking people that migrated from the Eastern Cape Province in search of jobs opportunities (Ladley, 1982). The wine and fruit industry remain the main source of informal employment in the Paarl/Wellington area; 80% of vines in the country are in the Wellington region (Drakenstein Municipality, 2011). However, the area suffers a high unemployment rate, even though the district has wine and grape industries as the backbone of the agricultural industry employing only limited workers.

5.6.4 Laingsburg Community

Laingsburg community is situated in the Great Karoo area, a semi-desert region of approximately 400,000km² in the Western interior of South Africa. The town has an urban settlement, which is widely dispersed and generally developed to service the farming, religion and administrative needs of the scattered communities. The community has a low population and an extensive range of land for agriculture (Neil et al., 2011). The population of Laingsburg consists of more than 4,521 people that speak Afrikaans (Du Plessis, 2007), with 8.2% of the population being black Afrikaans, 82.3% Coloured, 0.3% Indian/Asian and 8.5% white (Statistics SA, 2012).

Laingsburg consists of a high number of unemployed people and the community is usually extremely hot and dry, with temperatures usually exceeding 34°C during the summer, and usually crisp to sometimes very cold, with snow occasionally occurring in the surrounding region during the winter (Conradie and Plessis, 2015). The Laingsburg community relies mostly on farming practice such as rearing goats and sheep, and lucerne (alfalfa), fruit and vegetables cultivation to generate income.

5.6.5. Citrusdal Community

The Citrusdal valley is a long-established farming area with a relatively small population situated north of Bredasdorp (South-Western Cape) and 160 km north of Cape Town (Census, 2011). The Citrusdal portion of the valley is bordered by the Olifants River mountains on the west and the Kouebokkeveld mountains and the Cederberg on the east. Thirty kilometres north of the town in the valley is the Clanwilliam dam and 30 kilometres south by the juncture of the two-mountain range (Census, 2011).

The community consists of more than 1,919 residents and 7,177 in population there (Census, 2011) with a high rate of unemployment (Plessis, 2007). The main source of income in the Citrusdal community is the farming of citrus fruits, with residents usually involved in seasonal labour in the citrus- and vine-picking season. Most of these farm workers are Coloureds whose origins are in the Citrusdal valley or surrounding districts. The Citrusdal community is populated with Afrikaans-speaking people; The population consists of 1,044 (14.55%) whites, 4,951 (69.0%) Coloreds, 13 (0.18%) Indian and Asian, 1,121 (15.62%) black Africans and other 49 (0.68%) (Census, 2011). The farm owners rely entirely on the labour of permanent farm workers and their wives and children who also work for casual rates and live on the farms (Census, 2011).

5.7. Summary of the chapter

This chapter presented a detailed description of the case study and the background of the Western Cape Province. The functions of the Cape Access project and the several stakeholders involved in the project were discussed. Furthermore, different rural communities selected for the study were explicitly described in the chapter.

CHAPTER 6: Research Methodology

6.0. Introduction

This chapter explains the qualitative research method used in the study to investigate the contribution of telecentres for the empowerment of women. The chapter starts with a discussion of the philosophical assumptions of the research and a clarification of the justification of the research method was further presented.

6.1. Philosophical assumptions of the study

The underlying philosophical assumption of a study emerged from our knowledge of reality, the domain of human action and a social construction by human actors (Walsham, 2017). The knowledge of the research philosophy helps to recognise which designs will work best in a study (for a given set of objectives) and which will not (Walsham, 2017). A research paradigm can be defined as a connection of logically related assumptions, concepts or propositions that situates research and thinking (Mack, 2010). states there are three main philosophical paradigm dimensions: ontology, epistemology and methodology (Guba and Lincoln, 1994).The research philosophy which informs the designs for this study is interpretive research. Qualitative research can be based on different underlying forms of research epistemology, such as positivist, interpretive and critical, depending on the underlying philosophical position implemented (Walsham, 2017). Social research has three philosophically distinct research paradigms; and its adoption depends mainly on the type of research selected for a study (Walsham, 2017).

The paradigms involve positivist research studies and generally attempts to test the theory to increase the predictive understanding of phenomena (Yin, 2002; Hartley, 2004). Critical research tends to develop explanations of events observed in the empirical realm and how they happen or come about (Bunge, 1993). Scientific realism considers that scientific methods can tap true representations of the world, although this may sometimes be fallible. However, critical research contends that the way we perceive the world depends, in part, on our beliefs and expectations; one outcome is that the complete truth may be hard to come by (Bunge, 1993).

6.1.1. Ontology

Ontology is the study of the nature of being and becoming an existence or a reality (Crotty, 1998). It deals with questions concerning what entities exist or may be said to exist and how entities may be grouped or related to a hierarchy and sub-divided to similarities and differences (Orlikowski and Baroudi, 1991). In the context of ontology, interpretive information systems research assumes that the social world (that is, social relations, organisations, the division of labour) are not "given", rather, it is produced and reinforced by humans through their action and interaction (Orlikowski and Baroudi, 1991). Organisations, groups, social systems do not exist apart from humans; therefore, these entities cannot be apprehended, characterized, and measured in some objective or universal way (Orlikowski and Baroudi, 1991). Ontologically, the interpretive perspective emphasizes the importance of subjective and socio-political meanings as well as symbolic actions in the processes through which humans construct and reconstruct their reality (Morgan, 1983: 396). The sub-section further highlights the subjective ontology.

6.1.1.1. Subjective ontology

This study, subjectivity offers an ontological stance that presents the perceptions of reality based on interpretative approach which allows the researcher to understand the empirical situation of the phenomenon (Walsham, 2017). Research ontology involves two main perceptions on the nature of reality namely:

- Subjectivity segregates separating the researcher and the researched of study. Subjectivity allows the researcher to understand the details of a research situation for reality to be understood. Reality is a result of and interactions and the meanings that people assign to it (Tuli, 2010). Subjectivity in interpretative method enables the values, attitudes and beliefs in a phenomenon, it admits an inherent subjectivity in the production of knowledge and has much in common with constructionist positions (Walsham, 2006).
- Objectivity asserts that social entities exist in a reality that is detached from the social actors hence, unbiased observation of reality, must be conducted in the absence of any influences or biases on the part the researcher (an independent reality from the researcher).

6.1.1.2. Ontology of interpretive research philosophy

The ontology or aim of the interpretive researchers begins with an attempt to understand the phenomena through the meanings that people assign to them. Interpretivism looks for 'culturally derived and historically situated interpretations of the social life-world' (Crotty, 1998: 67). Interpretive methods of research in the field of Information Systems are mainly "aimed at producing an understanding of the context of the information system, and the process whereby the information system influences and is influenced by the context" (Walsham, 1995: 4-5).

According to the interpretivist approach, it is important for the researcher as a social actor to appreciate differences between people (Saunders, 2012). Interpretive research does not predefine dependent and independent variables but focuses on the full complexity of human sense-making as the situation emerges (Kaplan and Maxwell, 1994).

The ontology belief is that reality is socially constructed; the interpretive researcher avoids imposing externally defined categories on a phenomenon. Instead of the researcher coming to the field with a well-defined set of constructs and instruments to measure the social reality like a positivist researcher, the interpretive researcher attempts to derive his or her constructs from the field by an in-depth examination of and exposure to the phenomenon of interest. Interpretive research method embraces empirical approaches that focus mainly on human interpretations and meanings (Walsham, 1995). It is argued that interpretive research emerged from our knowledge of reality, the domain of human action and a social construction by human actors (Walsham, 1995).

6.1.2. Epistemology

Epistemology is the study of the creation and dissemination of knowledge and of justified belief in the research or inquiry (Cohen et al., 2007). Epistemology provides a philosophical background for deciding what kinds of knowledge of research design are legitimate and adequate. Easterby-Smith et al. (2012), state that the epistemological perspective can help a researcher to clarify issues of research design. This means more than just the design of research tools, but also the overarching structure of the research including the kind of evidence that is gathered and how it is to be interpreted.

The notion of the objectivist's epistemology is that reality exists independently of consciousness, in other words, there is an objective reality 'out there'. Therefore, research is about discovering this objective truth, and in doing this, researchers should strive not to include their own feelings and values. Objectivism, however, does not entail the rejection of

subjectivity; peoples' subjective views can be studied (their values, attitudes and beliefs), but it must be done objectively (Bunge, 1993). Positivism, a theoretical perspective closely linked to objectivism, argues that reality exists external to the researcher and is investigated through the rigorous process of scientific inquiry. In contrast, relativist rejects this view of human knowledge. Truth and meaning do not exist in some external world but are created by the subject's interactions with the world. Meaning is constructed, not discovered, so subjects construct their own meaning in diverse ways, even in relation to the same phenomenon. Therefore, multiple, contradictory but equally valid accounts of the world can exist.

6.1.2.1. Interpretive epistemology

In epistemology, interpretivism is closely linked to constructivism. Interpretivism asserts that natural reality (and the laws of science) and social reality are different, therefore, they require various kinds of methods (Chile, 2002). While, interpretivism and objectivism hold different epistemological positions, both are still based on ontology which is the study of the nature of being and becoming an existence or a reality (Chia, 2002). More highlights of ontology (See 6.1.1).

several types of interpretivist approach, such as symbolic interactionism, phenomenology, realism, hermeneutics and naturalistic inquiry. This study used a naturalistic inquiry to carry out the research. The interpretivist approach was used to investigate the natural reality of understanding how telecentres contribute to the empowerment of women in rural. The research methods used were selected by naturalistic inquirers and involved those most closely associated with a human component: interviewing, participant observation, document and content analysis (and other forms of unobtrusive measures). Table 6.1 presents the diverse types of interpretive approaches (See Appendix 5).

6.1.2.2. Interpretive approach

Interpretive researchers consider social reality as only interpreted. Abell and Myers (2008:145) say: "Interpretive researchers assume that access to reality (given or socially constructed) is only through social constructions such as language, consciousness, shared meanings, and instruments". Interpretive researchers share with the positivist philosophy a belief in relatively orderly interaction. This regularity is not attributed to functional needs of the social system, but to the shared norms and interests that bind humans' together (Orlikowski and Baroudi, 1991), while not posting conflict or contradiction as endemic to social systems as in the critical philosophy.

Interpretive philosophical approach employs a case study research design strategy. This is due to the uniqueness of the social phenomena that was investigated with the other approaches that were adopted, a qualitative research methodology was considered appropriate to address the research problem.

The philosophical base of interpretive research is hermeneutics and phenomenology (Boland, 1986). Interpretivism is “associated with the philosophical position of idealism, and is used to group together diverse approaches, including social constructivism, phenomenology and hermeneutics; approaches that reject the objectivist view that meaning resides within the world independently of consciousness” (Collins, 2010). Additionally, interpretivism studies usually focus on meanings and may employ multiple methods to reflect various aspects of the issue. In terms of methodology, pluralism is the ‘gold standard’ of realist research (Pawson and Tilley, 2001: 323). This means that nothing is ruled out with methods used according to opportunity and need. The method of data analysis used for the study include the thematic analysis (Braun and Clarke, 2006).

Interpretive researchers recognize that as meanings are formed, transferred and used, they are also negotiated. Interpretations of reality may shift over time as circumstances, objectives, and constituencies (Orlikowski and Baroudi, 1991). In the interpretivist approach, it is important for the researcher as a social actor to appreciate the differences between people (Saunders, 2011).

6.1.3 Comparison of alternative research paradigms

There are other philosophical foundations in IS research that have not been used as a guide in this study. In order to give a summary of their axioms to justify the choice of subjectivism and interpretive position to guide this research. Table 6.2 presents the summary of the values and beliefs of the other alternative research paradigms.

| FUNDAMENTAL BELIEF | RESEARCH PARADIGMS | | | |
|------------------------------------------------------------------------|---------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|
| | Positivism or (Naïve Realism) | Post positivism or (Critical Realism) | Interpretivism or (Constructivism) | Pragmatism |
| Ontology: describes the position on the nature of reality | Objective, external and independent of social actors | Objective, independent of human thoughts, interpreted through social conditioning | Subjective, socially constructed reality, multiple realities, alterable | External, multiple realities, focus on best choice to answer a research problem |
| Epistemology: describes the view of acceptable knowledge | Observable phenomena, facts, focus on causality, law-like generalisations | Observable phenomena, facts. Focus on explaining within context(s) | Subjective meanings, social phenomena, focus on situation details & its reality motivating actions | Either Observable or subjective. Practical applied research integrating views to assist in data interpretation |
| Axiology: constitutes role of values and the researcher's views | Objective, Value-free, etic research, researcher is independent from data | Value-laden & etic research, researcher is influenced by his past experiences, culture and world views | Value-bond and emic research, subjective, researcher cannot be separated from what is being researched | Value bond and etic- emic both subjective & objective; Value plays a big role in data interpretation |
| Methodology: Methods or models used for the research process | Quantitative | Qualitative or Quantitative | Qualitative | Mixed methods (Qualitative and Quantitative) |

Table 6.2: Other research paradigms, Hallebone and Priest (2009); Lincoln et al., (2011); Saunders et al. (2015)

Other researchers have reasoned that there is significant contradiction to the philosophical positions that were inconsistent or whether could all be used to inform a single research study.

6.1.4. Methodology

Methodology is the strategy behind the choice and use of specific methods, hence methodological assumptions comprises the inquiry on what, when, when, where and how data is collected and analysed (Scotland, 2012). Methods are research techniques used in the data collection and the data analyse process of a study. Methods can be used to trace a study through methodology, epistemology and back to its ontological dimensions. It is mostly advised to define ontological positions before a study can be conducted (Grix, 2010).

6.2. Research method

The choice of research method can impact the way a researcher decides to collect data. Certain research methods also imply different skills, assumptions and research practices. A qualitative method is an approach for exploring and understanding the meaning individuals or groups ascribed to a social or human problem (Creswell, 2013).

6.2.1. Qualitative research Method

Qualitative research methods allow researchers to study social and cultural phenomena, which involve the use of qualitative data to understand and explain social phenomena (Myers, 1997; Marshall and Rossman, 2014). The qualitative research method provides complex textual descriptions of how people experience a given research issue. It provides information about the “human” side of an issue that is, the often-contradictory behaviours, beliefs, opinions, emotions, and relationships of individuals (Myers, 1997; Abell and Myers, 2008). This research method can assist the researcher to interpret and better understand the complex reality of a given situation.

This study adopted a qualitative approach, which allows the data presentation that holds an informative value as being more relevant than replicability (Friedhoff et al., 2013). Moreover, qualitative research can adopt a case study, ethnography, action research and grounded theory. This makes it suitable for this study, hence its adoption to present the perceptual views of women respondents on how the telecentre is used for empowerment to have an in-depth view of the phenomenon of interest. While, the method of data analysis used for the study was the thematic analysis (Braun and Clarke, 2006). All interviews conducted in the study were audio-recorded with a tape recorder, transcribed and secured to implement the analysis process.

6.2.2. Interpretive research in information systems

Interpretive research in the field of Information Systems entails the assumptions that our knowledge of reality is acquired through social constructions in form of shared meanings, textual documents, expressions, human consciousness and other artefacts (Klein and Myers, 1999). Interpretive research attempts to understand the social phenomena through meanings that people assign to them (Orlikowski and Baroudi, 1991). Interpretive emphasis on the complexities of how humans perceive and make sense of situations as they develop rather than depending on predefined dependent and independent variables (Kaplan and Maxwell, 2005).

The interpretive methods in IS research are focused on “producing an understanding of the context of the information system, and the process whereby the information system influences and is influenced by the context” (Walsham, 1995: 4-5). The subject of the implementation of technology and its discourse in organizations has increasingly become so important in IS research (Orlikowski and Baroudi, 1991). The interpretive methodologies can assist in the understanding of how information is used and interpreted during the implementation process of technology systems (Myers, 2004). This study allows a methodology that allowed the researcher to interact with respondents through the use of semi-structured in-depth interviews, focus group discussions and participant observations. This method was adopted for the researcher to understand the empirical situation of the study. While, the method of data analysis was the thematic analysis (Braun and Clarke, 2006).

6.2.3. Principles of conducting interpretive research in information systems

The research design of the study used the seven principles for conducting interpretive research to guide and evaluate interpretative research in information systems (Klein and Myers, 1999). This is consistent with similar features found in most interpretive studies in the information systems field. Despite the relentless references to the principles guiding the research project, the researcher was cautious during the application process to avoid research inflexibility. The interpretive paradigm is much influenced by hermeneutic and phenomenological bases as the research and the researcher’s learning process continually reiterate (Klein and Myers, 1999; Miskon et al., 2015). The researcher was guided by the understanding of the phenomenon which may change through further investigation of literature and especially through enquiry and interaction with the studied context (Klein and Myers, 1999: 71). The study theories were used to guide the research investigation to inform the formulation of research questions, interview guides and data analysis. Table 6.3 presents the seven principles of conducting interpretative research as adopted by Klein and Myers (1999).

| N/A | PRINCIPLES | DESCRIPTION | EMPIRICAL DEFINITION |
|-----|------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | The Fundamental Principle of the Hermeneutic Circle | This principle of human understanding is fundamental to all the other principles. This principle suggests that all human understanding is achieved by repeating between considering the interdependent meaning of parts and the whole that they form. | To understand the contributions of telecentres for the empowerment of women in rural communities' context; the researcher theorised how women adopted the telecentre in their daily lives to understand how the technology artefact was adopted. |
| 2 | The principle of Contextualization | This principle requires clear reflections of the social and historical background of the research setting to ensure the intended researcher able to see how the current situation under investigation emerged. | The researcher described the case study of the study, giving explicit description of the various communities used for the project. |
| 3 | The Principle of Interaction Between the Researchers and the Subjects. | This principle requires clear reflections on how the data or research materials were constructed through the interaction between researchers and respondents of the study. | The researcher had logical interactions with the respondents guided by theories used for the study was used to draft semi-structured interview questions in the data collection process. |
| 4 | The Principle of Abstraction and Generalization. | This principle requires relating the idiographic details revealed by the data interpretation through the application of principles one and two to theoretical, general concepts that describe the nature of human understanding and social action. | The researcher related the idiographic details revealed by the data interpretation through the application of principles of three theoretical, general concepts that described the nature of human understanding and social action. |
| 5 | The Principle of Dialogical Reasoning | This principle requires understanding to potential contradictions between the theoretical preconceptions guiding the research design and actual findings with subsequent cycles of revision | The researcher used a deductive approach to theory but remained open-minded to emerging concepts from the data which informed the conceptual framework for this study. |

| | | | |
|---|-------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 6 | The Principle of Multiple Interpretations | This principle requires understanding to potential differences in interpretation among the respondents as are typically expressed in multiple narratives or stories of the same sequence of events under study. | The researcher did a follow up visit to the communities of data collection to verify data collected from respondents used for the study to do member checking when the information provided was unclear. Participant were treated independently. |
| 7 | The Principle of Suspicion | This principle requires understanding to potential "biases" and systematic "distortions" in the narratives collected from the respondents | The researcher was a participant observer for the study. This was to identify any misrepresentation of facts. Also, to avoid research bias, the researcher remained sensitive to multiple meanings from respondents. |

Table 6.3: Principles of conducting interpretative research in information systems

The interpretative research is an appropriate approach for this study because of techniques such as textual analysis, case studies, and observation was examined in detail (Walsham, 2006). In conclusion, the interpretive approach was selected for the study because the researcher was trying to understand the empirical situation of the circumstances that arise in the phenomenon.

6.3. Research strategy

The research strategy is the general structure of an inquiry simplified as the logical process of conducting research to ensure effective answering of the research problem; it is the blueprint for data collection, analyses, and interpreting of observations (Yin, 2013). The research strategy chosen for the study justifies the use of a single case. Subsequent section highlights the case study research method and case selection.

6.3.1. Case study

Case study research method, as an empirical inquiry, investigates a contemporary phenomenon within its real-life context when the boundaries between phenomenon and

context are not evident, and in which multiple sources of evidence are used (Yin, 1984:23). A case study is presented as an intensive study of a single unit with an aim to generalise across a larger set of units (Gerring, 2004). It is understood to be a way of defining cases and not a way of analysing cases or a way of modelling casual relations (Gerring, 2004).

6.3.2. Case study research method

This study adopted the use of the case study research method since it enables a researcher to closely examine the data within a specific context. The researcher wanted to establish the meaning of the phenomenon from the views of the participants, and to observe the participants behaviour during their engagement in the activities of the telecentre. A case study is a design of enquiry used in many fields especially where the researcher develops an in-depth analysis of a case, often of a program, event, activity and process of one or more individuals. Case study research can be used in the positivist and interpretivist traditions for testing or building a theory with a single or multiple case study design that uses qualitative or mixed methods (Cavaye, 1996; Yin, 2012).

Cases are bounded by time and activities, and researchers tend to collect details using a variety of data collection procedures over a sustained period (Yin, 2012). This is because in most instances, a case study method selects a small geographical area or a limited number of individuals as the subjects of study (Zainal, 2007). A case study helps to understand complex issues or object and can extend experience or add strength to what is already known through previous research. Case studies emphasize detailed contextual analysis of a limited number of events or conditions and their relationships. Case study research has the tendency for “exploring and understanding the process and dynamics of change” (Yin, 1984:23) and identify critical factors affecting implementation as well as the linkages and patterns between them. This is implied in this study's inquiry into how the telecentre contributes to the empowerment of women in the rural community as the researcher understood the empirical situation of the research site before drawing the general conclusion of the study.

6.3.3. Case selection

A case refers to a meaningful but complex configuration of events and structures in a research setting or sites within which data is collected and analysed (Ragin, 2004). An in-depth case study analysis allows case selection to be carried out using purposive sampling and not random sampling since the total number of cases to be selected is small (Gerring, 2004; Yin, 2013). Gerring (2004) argues that methodological purposes case study method is best defined as an in-depth study of a single unit (a relatively bounded phenomenon) where

scholars aim is to elucidate features of a larger class of similar phenomena. Case studies provide a rich description in single cases and provide an in-depth investigation of structures for the purposes of testing, uncovering, or refining the hypothesised causal mechanisms and contextual conditions (Yin, 2009; Bennett and Elman, 2006).

The single case in an explicit setting is perceived as an ideal way of building an explanatory theory that matches the empirical facts as closely as possible. In addition, it enables the development of detailed context-sensitive causal descriptions of a specific phenomenon (Yin, 2009). The case selection of this study was driven by the way a case is situated along these dimensions within the population of interest (Seawright and Gerring, 2008). The study choice is a single case because the study focused on Cape Access projects, but it consists of multiple units of analysis because the e-Centres were selected from five communities were analysed. The single case using qualitative study allows the study to investigate how telecentres contribute to women empowerment in the rural communities. This was achieved using multi - methods that were adopted in the data collection process. The Cape Access e-Centres located in the rural communities of the Western Cape, South Africa was used as a tool for woman empowerment through the benefits derived from using the telecentre leading to pathways towards development.

6.3.4. Case description

The demographic characteristics of the telecentre show that most of the rural women were unemployed, lacked education and experience poverty. The household income for the women is below US\$20 weekly. A few of them were farm workers or engaged in casual jobs, while others owned small businesses. From the demographics, 30 participants (about 77% of the total respondents) were unemployed, while only 9 (23%) were employed. The study involved 32 women who used the telecentre and 14 women who were non-users. 11 out of the 32 women users constantly used the telecentre services provides in their daily lives.

6.4. Unit of analysis and observation

The unit of analysis of a study is the major entity analysed in a study. It entails the researcher identifying the social entity that the study is focusing on (Yin, 2009). In social science research, the unit of analysis defines what a case is all about, mainly individuals, groups, social organizations and the social artefacts (Yin, 2009).

This study focused on Cape Access e-Centres as a woman empowerment tool. As reflected in the research questions, the main goal of the research is to understand how the telecentre contribute to the empowerment of women in the rural areas. The outcome of women's use of the telecentre was analysed. Having a unit of analysis that is informed by the research question makes it easier for the researcher to know where to get the answers for the study, with whom to talk, and where to focus on for observations (Darke, 1998). Thus, this study considered women users of the telecentres as the unit of analysis.

“If your purpose is to ‘see’ what happens and what is enacted” in a study area, the unit of observation can be presumed to be an acceptable data collection method according to Moyles, (2002: 250). The unit of observation is what is being observed or the actual event that occurred at the telecentre. For example, how women use the telecentre in the rural community is the unit of observation in this study. This type of observation that was used for this study was primarily unstructured; the researcher observed the actual event that occurred at the telecentre which was how the women used the telecentre for empowerment purposes. Other events included the computer skills training sessions that occurred at the telecentre, the views and perceptions of women that participated in the computer skills training programme at the telecentre was understood and the reasons some women were users, while others were non-users of the telecentre was explored. This was actualised through the interview discussions that the researcher had with the women that participated in the computer skill training sessions at the telecentre.

6.5. Overview of sampling

There is no evidence that the values, beliefs and attitudes that form the core of qualitative investigation are normally distributed, making the probability approach inappropriate (Marshall, 1996). Sampling procedures can be purposive, random, convenient and snowball. Purposive sampling describes a random selection of sampling units within the segment of the population with the most information on the characteristics of interest (Guarte and Barrios, 2006).

Purposive sampling is used when the population is too small for a random sample (Tran and Perry, 2003) and when the researcher selects samples because they have features and characteristics to enable detailed explanation and understanding of central themes and puzzles which the researcher wishes to study (Tongco, 2007; Walsham 2017). Purposive sampling can be applied to research in several ways such as in preliminary studies where the

researcher is still testing the feasibility of a proposed study (Walsham, 2017), in sampling informants with a specific type of knowledge or skill (Tongco, 2007) and in comparisons of cultural practices (Tongco,2007).

A random sample provides the best opportunity to generalise the results to the population, but it is not the reliable way of developing an understanding of complex issues relating to human behaviour (Marshall, 1996). Mostly, the random sampling of a population is likely to produce a representative sample only if the research characteristics were normally distributed within the population (Tongco, 2007).

Snowball sampling is described as where participants recruit other participants for a test or study. This usually occurs where potential participants are hard to find. Snowball is a non-probability method (David and Morgan, 2008). The snowball sampling was not used for the study because the participants used for the study were consistent users of the telecentre that used the telecentre daily to achieve various daily task. The telecentre mostly occupied various categories of people from different background that were available to participate in the research.

This study used the convenient and purposive sampling techniques alternatively in the selection of participants because only respondents that were willing to participate in the interview sessions were chosen for the study (Tongco, 2007). The convenient sampling is the least rigorous technique that involves the choice of the most accessible subjects. It is mainly less costly to the researcher, in terms of time, effort and money. The limitation of the convenient sampling is that it may result in inferior quality data and lacks intellectual credibility (Marshall, 1996). Nevertheless, there is an element of convenience sampling in many qualitative studies (Marshall, 1996).

6.5.1 Sampling techniques

The sampling procedure used for the qualitative research was the purposive sampling strategy. This sampling strategy was used to select the target population and provide the information used in the study. It is assumed that to carry out a qualitative research, the researcher must identify that some participants have 'richer' and in-depth information that can provide insight and understanding to the researcher (Marshall, 1996). The sample in a qualitative research allows interviewing until the redundancy of concepts (also known as saturation) which is a situation where new concepts are no longer emerging (Trotter II, 2012).

The samples used in the study are the telecentre managers, assistant managers, women users (Women using the e-Centre), and non-users (Women not using the e-Centre) were interviewed in different selected communities. Thereafter, focus group discussions were held with women using the e-Centre in the selected rural communities.

6.5.2. Sampling of study

The researcher was able to compare the operations of the e-Centres because they were all located in the rural communities of the Western Cape, were homogeneous and had a similar kind operation with uniform structure or composition throughout and constant across the project. A total of 39 respondents consisting of the telecentre managers, users and non-users were selected through informal discussions. The sampling steps involved selecting telecentres (e-Centres) from the Cape Access projects established in each district of the Western Cape, and women from rural locations within these districts. Table 6.4 summarizes the community e-Centres, dates of data collection and methods.

| COMMUNITY e-CENTRES | DATE | DATA COLLECTION METHOD |
|------------------------|----------------------------------------|----------------------------------------|
| Mbekweni, Paarl | 15 th of July 2014 | Pilot study and Interviews |
| Klawer | 25 th of July 2014 | Interviews and focus group discussions |
| Elim | 2 nd of August 2014 | Interviews and focus group discussions |
| Laingsburg | 19-23 rd of October 2015 | Interviews and focus group |
| Citrusdal | 26-30 of November 2015 | Interviews and focus group discussions |

Table 6.4: Community e-Centres, dates of data collection and methods.

The sample population used for the study was selected women from different rural communities of the Western Cape of South Africa. These women were categorized into users and non-users (women using and not using the telecentres) living in the neighbourhoods surrounding the telecentres. This was because the researcher wanted to select women from

diverse age groups with the criterion of having user or non-user experience. Convenient sampling was first carried out in Mbekweni, Paarl for the pilot study. Thereafter the purposive sampling technique was used to select the samples for the face-to-face interviews and focus group discussions from the users and non-users of the telecentre. The interview sessions were administered to 35 respondents and four telecentre managers in the study (See Table 6.4) for the number of participants and their roles.

With the assistance of a telecentre manager, the respondents constituted a purposive sample. The telecentres used for data collection had been in operation for more than one year. The women interviewed were members of the communities that either consistently made use of or did not use the telecentre for their daily routine. Table 6.5 summarizes the sample information used for the study.

| DESIGNATION | AGENCY | NUMBER |
|---------------------|----------------------|--------|
| Telecentre Managers | e-Centre | 4 |
| Users | Community | 23 |
| Non-User | Community | 7 |
| Thusong manager | Thusong centre | 1 |
| Focus group | Cape Access e-Centre | 4 |

Table 6.5: Sample information used for the study

The semi-structured in-depth interviews and the focus group discussions involved 39 respondents. Table 6.6 shows the demographics of information of the all the respondents interviewed in the study.

| AGES | USERS | NON-USERS | TOTAL |
|--------------------------|--------------|------------------|--------------|
| 15-19 | 5 | 3 | 8 |
| 20-29 | 11 | 2 | 13 |
| 30-39 | 8 | 2 | 10 |
| 40-Above | 8 | 0 | 9 |
| Qualification | | | |
| Degree | 1 | 0 | 1 |
| Professional certificate | 10 | 0 | 10 |
| Matric | 10 | 3 | 13 |
| Grade 9 to 11 | 10 | 5 | 15 |
| Location | | | |
| Elim | 8 | 2 | 11 |
| Lainsburg | 3 | 0 | 3 |
| Citrusdal | 3 | 0 | 3 |
| Klawer | 9 | 3 | 12 |
| Mbekweni | 8 | 3 | 11 |
| Employment | | | |
| Employed | 9 | 0 | 9 |
| Unemployed | 16 | 14 | 30 |

Table 6.6: Demographics of respondents.

The table explained the demographics of the respondents such as age, education and employment status of women used for the study analysis.

6.6. Data collection methods

This study used a multi-method for data collection which involved semi-structured in-depth interviews, focus group discussions and participant observation for the data collection process with the telecentre manager, assistant manager, women users and non-users of the telecentre in the surrounding environment of the communities. These were all carried out to gain insights into interviewees' views on the use of the telecentre in the community. The data collection methods used were interviews, participant observation and focus group discussions.

The semi-structured in-depth interviews were open-ended questions, flexible and explanatory in nature. Semi-structured in-depth interviews are preferred as predetermined interviews only "get reactions to the investigators' preconceived notions of the world" (Merriam, 1998: 74). There have been preconception and criticism of the use of open-ended interviews, which says, "both parties (interviewer and participants) bring biases, predispositions, attitudes, and physical characteristics that colour the interaction and the data elicited" (Holstein and Gubrium, 2004: 87).

Semi-structured in-depth interviews can, however, portray a mix of loosely structured and open-ended questions, which allows the researcher to gain more insight into the actual study location. This allowed more insight and probing on the issues relating to the study area, such as understanding how the telecentre contributed to women empowerment in the rural community. The researcher took into consideration the respondents' views on the empirical situation to be able to understand their perspectives and differences during the interpretations and explanations of the data gathered during the study.

The researcher ensured that data gathered accurately reflected what the participant said or did during face-face interactions. This guided the researcher in obtaining the necessary information shedding light on the conversations highlighted during the interview as well as a proper understanding of the meanings and individual experiences of the respondents' sub-cultures. Holstein and Gubrium (2004: 146) describe this intricate interplay as "pull of conversation" and "push of inquiry". The study theories such as the Domestication Theory, Dimensions of Empowerment Theory and the Individual Difference Theory were used to generate interview questions and served as the lens to guide the interview process.

The data from the pilot study was later discussed and brainstormed with the researchers' supervisor and other researchers. Thereafter, the interview questions were rectified in some areas that were not clear, and the researcher used the final questions as a guide for the

interview sessions. All the data collected at the research site were transcribed by the researcher, analysed and kept in archives.

6.6.1. The first phase of data collection

The first phase of data collection used the purposive sampling procedure to select the women interviewed. The respondents used for the study were selected with the assistance of the telecentre managers. A semi-structured in-depth interview was physically administered to the telecentre managers, focus groups, telecentre users and non-users. Women users were respondents using the telecentre in their daily lives to achieve a different task that is beneficial to their personal needs. Non-users are respondents not using the telecentre but living within proximity of the telecentre.

The first set of data collected was from women telecentre users and non-users of the Mbekweni community e-Centre in Paarl, Western Cape. Mbekweni was used as a pilot study so that the researcher could understand the users' and non-users' perspective of the telecentre. Subsequently, data collection took place at other selected community e-Centres situated in the Western Cape. (See Table 6.1 for a summary of the community e-Centres and the dates of the data collection)

6.6.2. The second phase of data collection

The second phase of data collection involved semi-structured in-depth interview protocol, and focus group discussions were administered to telecentre managers, women users, non-users and focus groups consisting of about four to 10 people at Elim, Klawer, Citrusdal and Laingsburg community e-Centres of the Western Cape. The respondents selected for the interviews and focus group discussions were selected purposively through discussions with the telecentre managers. Some months after the first data collection the researcher revisited these rural communities to carry out a follow-up on the previous data collected from the other communities in the Western Cape. Discussions were concluded with the focus group, telecentre managers, women users, and non-users, and the researcher made a comparison of the experience of the various telecentre user and non-user living in these communities.

6.6.3. Conducting the interviews

The interviews and the focus group discussions were focused on the main objectives of the study. The aim was to generate rich data and to stimulate the participants to express their experiences in relation to the objectives of the study (Schultze and Avital, 2011). The semi-structured in-depth interview questions allowed for an in-depth contextual sharing of

experiences on the issue discussed and how these have affected or hindered the user's or non-user's experience of computers. The conversations with the participants were reflective and open-ended, allowing the expression of emotions, feelings, long answers and opinions.

The researcher used discretion to source more information relevant to the study, and the respondents were given the opportunity to express themselves without disruptions. This enabled the researcher adequate time to gather more facts and to listen attentively to the views and opinions of the respondents. The interviews were based on direct questions and there was enough time of 45-90 minute for the researcher to probe for further information that would generate rich data (Myers and Newman, 2007).

6.6.4. Focus Group Discussions (FGD)

Focus groups are a method of having group discussions for obtaining qualitative data. FGD is not a research design rather it is a data collection method. Focus groups are justified as an ideal forum that encourages reflexivity and participants to react and respond to each other's remark, which could yield more insights (Kaplan and Maxwell, 2005).

The researcher adopted this method to have different views and opinion on the user and non-user experience of the telecentre. FGDs were carried out with a group of women users at the telecentre as a final technique by the researcher to derive more information regarding the study. The FGD guide directed the discussions with participants on different community issues that may be helpful regarding the community lifestyle and cultures. The FGD discussions were audio-recorded and lasted 90 minutes. These discussions aided the researcher in gathering more in-depth information that became useful and contributed to the findings of the study.

6.6.5. Participant observation and field notes

According to Cohen et al. (2007: 396) "Observation is the use of immediate awareness, or direct cognition, as a principal mode of research which has the potential to yield more valid or authentic data that would otherwise be the case with mediated or inferential methods". Participant observation was adopted as one of the data collection tools. This allows the researcher to get more information on the happenings occurring in the study area and reveal other situations that may need to be addressed openly during a discussion with the respondents. This explains Robson's (2002) notion that claims the actions of people may depart from what they say or do. The researcher played the role of a participant observer by becoming a temporary participant for a brief period at the research site for the following reasons:

- For the researcher to be able to get an inside view of the activities in the telecentre. This enabled the researcher to have direct interactions with the women users of the e-Centre on the various happenings and perceptions of the user's view of the services provided at the telecentre.
- To enable the researcher to observe how the telecentre was operated and to view the frequent users of the telecentre.

6.7. Validity and reliability of the study

Validity and reliability are key aspects of all research and should be coherent with the methodology in qualitative research designs (Morse, 1991; Leung, 2015). Reliability and validity refer to trustworthiness and credibility that can be assessed in terms of several specific strategies (Morse, 1991). Reliability refers to “the trustworthiness of observation or data” and validity refers to “the trustworthiness of interpretations or conclusions” (Stiles, 1993: 601). Validity in qualitative research entails rigour in the research design and the interpretation of data (Venkatesh et al., 2013). Validity is used to refer to the extent to which research findings are a true reflection or representation of reality rather than being the effects of extraneous variables. External validity addresses the degree or extent to which such representations or reflections of reality are legitimately applicable across groups. Unlike quantitative researchers who apply statistical methods for establishing the validity and reliability of research findings, qualitative researchers aim to design and incorporate methodological strategies to ensure the ‘trustworthiness’ of the findings. The method of data analysis used for the study was the thematic analysis (Braun and Clarke, 2006). This method was used to justify the research findings of the study.

6.7.1. Validity in interpretive approach

Validity is to verify that the information gathered in the data collection process was complete and accurate in a qualitative study and the results were not generalized (Babbie and Mouton, 2010; Gumbo and Letlape, 2016). To validate the research in the interpretative approach of a study, inquirers involve those most closely associated with a human component such as interviewing, participant observation, document and content analysis (and other forms of unobtrusive measures). Application of validity techniques depends on the paradigm assumptions of the researcher (Creswell and Miller, 2000). Regarding this research study, data interpretation involved thinking theoretically and confirming emerging concepts with new data (Morse et al., 2002).

Validity in qualitative research indicates consistency and trustworthiness regarding activities and events associated with the phenomenon as signified by the study results explored in the research (Golafshani, 2003). Qualitative researchers are not interested in causal laws but in people's belief, experience and meaning systems from the perspective of the people. Methods used are more subjective than in quantitative research and do not include statistical analysis and empirical calculation. Phenomena are viewed holistically and in their social context (Brink, 1993; Leung, 2015).

Qualitative research methods allow researchers to examine people's experiences in detail, by using a specific set of research methods such as in-depth interviews, focus group discussions, observation, content analysis, visual methods and life histories or biographies (Chapman and Smith, 2002; Holsten and Gubrium, 2004). Qualitative research methods in Information Systems (IS) are mainly illustrated with case study research methods (Campbell et al., 2015; Demirci et al., 2015), ethnographic research methods (Johnson and Rasulova, 2017; Green et al., 2017), and action research methods (Napitupulu and Sensuse, 2014; Mohammadzadeh, 2018).

Qualitative studies' validity is concerned with the trustworthiness of results to be applied in a different context rather than a generalization of results to a wider population (Miles and Huberman, 1994; Bengtsson, 2016). Trustworthiness in qualitative research is concerned with concepts such as credibility, dependability, transferability and confirmability (Noble and Smith, 2015).

This study employed a case study approach; the procedures for conducting this study were documented and achieved so that in case the process was repeated, it would yield related results and conclusions (Noble and Smith, 2015). The documented processes were followed all the time during the study to avoid biases and to minimize errors (Miles and Huberman, 1994; Bengtsson, 2016). The researcher documented the procedures for conducting activities in the study and the copy of the protocol for conducting interviews is in the Appendix.

Data verification was carried out to test the trustworthiness of this study and observation of the research standards and methodology applied ensured that the data collected was verified. The internal consistency was checked and proof-read; the study was found to be logical, and the recommendations well interpreted and informed by the findings derived from the study (Sharma, 2016). To validate findings, feedbacks from the data analysis were reviewed with informants for the accuracy of the content during the process of the follow-up interviews. This ensures that the researcher and the informant are viewing the data consistently to increase reliability (Harvey, 2014). Verifying participants' answers, response uniformity, and

triangulation provides a construct to test instrument reliability related to the interview questions (Casey and Murphy, 2009). Similarly, the responses among the participants throughout the interview corroborate the research instrument and the accuracy of responses (Stevenson and Mahmut, 2013).

A rigorous search was conducted in the research to identify disconfirming evidence and trustworthiness. This included both purposive sampling and constant engagement with respondents in the field. The use of purposeful sampling enabled the researcher to select different participants from the those used in the first phase of the data collection. This enabled individuals and the inclusion of conflicting, as well as complementary accounts, strengthen the description of the phenomenon in question (Corbin and Strauss 1990). Representativeness of the data was checked in the coding categories, and examples were illustrated during analysis to present the data. Quotes from respondents were presented to support arguments in the research findings (Morse, 1991). Table 6.7 presents the list of experts consulted for the fieldwork.

| POSITION | AGENCY | FIELD |
|--------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Professor of Global Management and Director | Institute of Innovation and Technology Management, Ted Rogers School of Management, Ryerson University, Toronto, Canada. | Information Systems Development and Acquisition, Support, Information Technology Management, IT Innovation, Philosophical Approach: Critical, Research Approach: A case study, Research. |
| Associate Librarian Professor (principal researcher). | Muhimbili University of Health and Allied Sciences (MUHAS). Tanzania, Dar e Salaam | Information Science, ICT4D, Information and Learning Technologies. |
| Professor and Research Director of Information Systems. | University of Nantes | Information-Systems Enabled Organizational Transformation, Electronic Marketplaces, Enterprise Systems (ERP, SCM, PLM) and related organizational change. |
| Associate Professor and Senior Lecturer (School of Electronics and Computer Science Department). | University of Southampton, United Kingdom. | ICT4D |
| Head of School of Information Management and Professor | Victoria University of Wellington. New Zealand. | International Business |

Table 6.7: List of experts consulted for the fieldwork.

6.7.2. Triangulation from data collection

Triangulation involves multiple sources and ways of research using different methods to see that there is reliability in the progression of the study. Triangulation from data collection ensures that there is reliability in qualitative studies and that it is generally more complex than in quantitative approaches. Reliability is used for quantitative approach, while credibility is used for qualitative methods. Instead of concentrating on exact replications, researchers are concerned with presenting findings, which are like observations made by different researchers under similar conditions (Collis and Hussey, 2013).

Feedback from the data collection was triangulated during the planning stage of the research and after the data collection. The research was studied at various stages and through several processes involving independent analysis of the data by other academics. The researcher presented the data collected to other academics and held discussions with the experts in the ICT4D research area.

Also, during preparation and after the field work, the investigator had to constantly comprehend the empirical situation and understand the research site. Discussions were held with the study leader and other researchers to understand the nature of research that was being conducted. The knowledge gained from these conversations assisted the investigator in drafting possible research instruments used for data collection.

During the data analysis phase, the results were discussed with other researchers and academic experts on how to make conclusive choices on the findings. This was to gain proper understanding and interpretation of the data, for the study to integrate interpretations from other perspectives for the researcher to have an explicit explanation that can clarify the outcomes on the contributions of telecentres on the empowerment of women.

6.8. Research instrument

The research instrument used for data collection were pre-tested interview questions in the pilot study to remove items that might not be understood by the study respondents, as well as to increase the reliability, validity, and practicability of the instrument (Cohen et al., 2007). The questions used for data collection emerged from the three frameworks used to guide the study, to assist the researcher to understand the empirical situation of the study.

The pilot study carried out at Mbekweni involved distributing 59 interview questions in nine sections that were administered to the women users; distributing 53 interview questions in eight sections that were administered to the non-users of the telecentre and 38 interview questions distributed in eight sections that were administered to the telecentre managers during the interview process.

6.9. Method of data analysis

The method of data analysis used for the study was the thematic analysis (Braun and Clarke, 2006). All interviews were audio-recorded with a tape recorder and the researcher transcribed and secured them to implement the analysis process. The researcher analysed the data collected using the six steps (after Braun and Clarke, 2006) presented in section 6.10.

6.9.1. Preparation of the data

Patton (2002) defines data analysis as a process of reducing the volume of raw information, shifting significance from trivia, identifying significant patterns and constructing a framework for communicating the essence of what the data reveals. The data gathered for the study was verbatim and transcribed verbatim into a written text before analysed. The demographics of the women interviewed during the data collection process were analysed and codes were used to represent the identities of the respondents. For example, codes K, E and M represent Klawer, Elim and Mbekweni locations respectively. Therefore, codes K2 and E1 were used to identify respondent 2 of Klawer and respondent 1 of Elim respectively.

6.9.2. Computer-assisted qualitative data analysis software

The interview data was imported into the qualitative data analysis software tool “NVivo”. The NVivo software assisted in organizing the data into different codes and groupings that were identified during the first and second order analysis. The use of NVivo software supports separate phases of analysis such as outlining concepts within themes called codes. It is not expected to automatically code data but is useful for data analysis capabilities such as grouping, searching and relating these codes. The NVivo 11 software further assisted in data analysis in the following ways:

- Clarifying, sorting and arranging many types of non-numerical data such as field notes, audios, recordings, Word documents and Excel files.
- Helping to examine the relationship between the data collected.
- Helping to analyse the data to determine relationships and themes.

- Providing an organised storage file system where the researcher can quickly search and locate research material.
- Allowing the researcher to visualise their projects and draw models and charts to represent the findings.
- Helping to keep the researcher close to their data to conduct an in-depth and systematic analysis that may be difficult to achieve manually.
- Providing objectiveness to the data analysis because it records how the analysis was conducted and how it changed over time.

6.10. Steps to data analysis

The steps to data analysis explain the different steps in which data analysis was carried out. The phases of thematic analysis include the phase description of the process of analysis presented in the study. A descriptive analysis of all study variables and demographic variables examined in the interviews were explained, and data collected from the interviews and FGDs were transcribed into word format. Digital copies of the data collected were retained for future reference. Table 6.8 presents the phases of thematic analysis.

| STEPS OF THEMATIC ANALYSIS | DESCRIPTION |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>Familiarizing yourself with your data Transcribing data (if necessary), reading and re-reading the data, noting down initial ideas.</p> | <p>The researcher transcribed the data to have a holistic understanding of the data collected at the research site.</p> |
| <p>Generating initial codes Coding interesting features of the data in a systematic fashion across the entire data set, collating data relevant to each code.</p> | <p>All the transcripts were first thoroughly read by the researcher to understand the participant responses in relation to the objectives of the study. Thereafter, the researcher transcribed interviews and coded the data.</p> |
| <p>Searching for themes Collating codes into potential themes, gathering all data relevant to each potential theme.</p> | <p>Studied the transcriptions to identify themes. The themes identified were discussed with the researcher's supervisor for further feedback.</p> |
| <p>Reviewing themes Checking if the themes work in relation to the coded extracts (Level 1) and the entire data set (Level 2), generating a thematic 'map' of the analysis</p> | <p>Reviewed the themes and checked if the themes work in relation to the coded extracts as stated in (Level 1) and the entire data set (Level 2), generating a thematic 'map' of the analysis.</p> |
| <p>Defining and naming themes Ongoing analysis to refine the specifics of each theme, and the overall story of the analysis tells, generating clear definitions and names for each theme.</p> | <p>Identified themes on all transcripts gathered in the data collection. Repeated Step 3 carefully to clarify the categories and sub-categories by looking at their interconnectedness. The categories were generated from the transcripts.</p> |
| <p>Producing the report The final opportunity for analysis. Selection of vivid, compelling extract examples, the final analysis of selected extracts, relating back of the analysis to the research question and literature, producing a scholarly report of the analysis.</p> | <p>Finalised the themes categories and sub-categories that emerged. Assembled data under explicit themes categories and sub-categories. In the process, consistency was checked in most cases through an assessment to see if there is a consistency in and interconnections of data in each theme.</p> <p>Compared themes categories and sub-categories with transcripts to check for the data which was left out. The coding consistency was checked, and coding revised in a cyclic iterative process until enough coding consistency was achieved (Miles and Huberman, 1994).</p> |

Table 6.8: Thematic analysis phase description as presented by Braun and Clarke (2006).

6.10.1. Step 1: Familiarizing with data

Familiarizing with data entails that the process of transcription being an excellent way for researchers to familiarize themselves with the data (Riessman, 1993). The researcher read the transcripts to have a holistic understanding of the data. Table 6.9 shows the code presentation using NVivo (v11).

| CONSTRUCTS | RESPONDENT IDENTIFICATION | INTERVIEW TRANSCRIPTS |
|----------------------------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Benefits of using the telecentre | M2 | <i>"Yes, the women who used the e-Centre save money because the services are free. If they go to the library, they must pay for some services offered"</i> [Focus group-M2]. |
| | E7 | <i>"I am a known farmer; I work for myself with my husband and two sons. I also own an accommodation business and a fashion business, which I operate. From my business, I come to the telecentre to use emails, to do online research, promote myself at the telecentre, to make copies and use Skype"</i> [User E7]. |
| | C6 | <i>"I also use the e-Centre for my personal needs like social media"</i> [User-C6]. |

Table 6.9: Code presentation using NVivo (v11).

6.10.2. Step 2: Generating initial codes

The researcher generated codes for interesting features of the data in a systematic fashion across the entire dataset and collated data relevant to each code. Data were organized into meaningful groups (Tuckett, 2005) with codes involving active participation in the reading of data and labelling data (a word, sentence, or paragraph) per phenomenon of interest (Tong et al., 2007). The coded data, however, differed from the units of analysis, which are often broader (Miles and Huberman, 1994). All the transcripts were thoroughly read by the researcher to understand the participant responses in relation to the objectives of the study. Thereafter, relevant information in the data was identified, labelled and organized in a code based on similarities. The code generation phase involved:

- Assigning a word or phrase (concepts) that best represents the relevant information

- Documenting why the information or node is important (taking notes of your thoughts about the codes using memo).

Table 6.10 shows the codes created using computer-assisted qualitative data analysis software.

| CONSTRUCTS | INITIAL CODE | RESPONDENTS VIEW | TRANSCRIBED INTERVIEWS |
|----------------------------------------------------|--------------------|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Access to computer knowledge and Information need. | Computer knowledge | C1 | <i>“The users were shown on the website local, national and provincial government information, especially matriculants, I show them what they can do with their lives & that they should not say, they do not have money but search for possibilities on the Internet” [Telecentre manage C1].</i> |
| | Internet | M7 | <i>“I use the Internet at the e-Centre to search for jobs and to type and get some information” [User M7]</i> |

Table 6.10: Codes created using NVivo (v11).

6.10.3. Step 3: Searching for themes

Searching for developed themes occurs in the interpretative analysis of the data collected in relation to the arguments about the phenomenon being examined (Boyatzis, 1998). Thematic analysis was conducted using a deductive approach or an inductive approach (Braun and Clarke, 2006; Clarke and Braun, 2013). The inductive approach requires analysis of data and development of themes as data requires. An abductive approach merges deductive and inductive approaches (Doz, 2011). This research follows the abductive approach by linking data extracts to the framework, followed by identifying themes or sub-themes not included on the framework. Thematic analysis begins with data familiarization and completes with a written report.

Initially, open coding techniques were used to inductively identify preliminary groups, with no definite coding or categorization (see codebook listed the Appendix 7 of the study). Codes

were collated into potential themes with all relevant data. The coding consisted of narrative compilation, open-ended narration, incorporated words, concepts, themes or issues which frequently occurred in the interviews or found in documents. There was a cautious reflection on questions outlined in the transcript. Seventy-seven codes were created and assessed in the coding process to avoid code duplication. All texts were coded, and clubbing instances were collectively gathered into categories as per constructs or categories by grouping concepts or labels (Bryman and Burgess, 1993).

The researcher studied the transcriptions to identify themes. Codes were examined to identify the broader related meanings and patterns. Thereafter, 21 themes were created, after careful reflection, from the codes created. Codes that were related and had similar theme understandings were identified and grouped. Some codes had contrary meanings and were grouped individually based on logical sense to avoid contradictions in the responses derived from respondents. Thereafter, the identified themes were reflected with the researcher's supervisor to derive further feedback. Table 6.11 presents the descriptions of themes created from codes in the analysis.

| THEME | DESCRIPTION | SUB-DESCRIPTION | RESPONDENTS VIEW AND IDENTIFICATION |
|------------------------------------------------------|--------------------------------------------------------------------------------------|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| How does telecentre contribute to women empowerment? | The contribution of telecentres to women empowerment. | Impact | <i>"In the past, people only had hand-written CVs and there was lack of communications as well, but now people are using the e-Centre for communications, typing their CVs and accessing information for business opportunities because the services are free of charge in the e-Centre" [User-C15].</i> |
| How is language affecting the use of the telecentre? | The language used as the medium of communication during the computer skills training | Factors affecting use | <i>"Women learn the computer course in English instead of the local dialect and no one is perfect in English. They only know the basic kinds of stuff so when women visit the e-Centre for the computer skills training they go like ahhhh! Why does the training have to be in English language and not in Afrikaans or Xhosa language" [User M6].</i> |

Table 6.11: Description of themes created from codes.

Response from the respondents shows that the telecentre contributed to women empowerment. For instance, the respondents report that prior to the establishment of the telecentre, people in the community were using their hands to write CVs for job applications and there was lack of communications and access to information. But now, with free services offered at the telecentre, people can now access information, type their CVs and seek opportunities for business and employment.

In addition, based on answers from the respondents, language was presumed to be a factor that hindered women's use of the telecentre. They claimed that the medium of communication during the computer skills training programme was discouraging because most women were not comfortable learning in English but preferred to learn in their local language.

6.10.4. Step 4: Reviewing themes

Reviewing the themes entailed checking if the themes work in relation to the coded extracts (Level 1) and the entire data set (Level 2) and generating a thematic 'map' of the analysis. Internal uniformity/ homogeneity and external heterogeneity are important in the creation of themes (Braun and Clarke, 2006; Venkatesh et al., 2013). Internal homogeneity is defined as the quality of having a uniform structure as all related themes are grouped together. While, external heterogeneity means the quality or state of consisting of dissimilar or diverse elements in themes during categorizing (Braun and Clarke, 2006). The researcher ensured that the concepts in the theme relate to the respondent's views by making sure that the codes were leading to themes and sub-themes (Tuckett, 2005; Clarke and Braun, 2013).

Themes with similar concepts were grouped together, while themes with diverse meanings were individually created. The researcher ensured consistency in the theme creation as the prior codes created had to be revisited for accuracy during the process of theme creation. All themes construction details were compiled into one report and illustrations from transcribed interviews were assessed in an internal uniformity/ homogeneity and external heterogeneity to ensure that all themes created were in conformity with the respondents' views.

The benefits derived from using the telecentre promotes empowerment. Women using the telecentre had access to information that contributed to improving their self-development and individual empowerment. The hindrance to women's use of the telecentre was the use of the English language, which was the medium of communication during the computer skills training programme. This contributed to factors affecting women non-users from using the telecentre because most women were not comfortable speaking and learning in English language but

rather preferred to use their local dialect. Table 6.12 presents the reviewed themes created from codes.

| REVIEWED THEME | THEMES | DESCRIPTION | SUB-DESCRIPTION | RESPONDENTS VIEW AND IDENTIFICATION |
|------------------------------|------------------------------------------------------|---------------------------------------------------------------------------------------|------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Consequences/benefits of use | <i>How does the telecentre benefit women users?</i> | The contributions of telecentres for women empowerment. | Impact | <i>"In the past, people were using their hands to write CVs and there was lack of communications, but now people are using the e-Centre for communications, accessing information for their business because the services are free of charge in the e-Centre" [User C15].</i> |
| Hindrance to use. | How is language affecting the use of the telecentre? | The language used as the medium of communication during the computer skills training. | Factors affecting use. | <i>"Women learn the computer course in English instead of the local dialect and no one is perfect in English. They only know the basic kinds of stuff so when women visit the e-Centre for the computer skills training they go like ahhhh! Why does the training have to be in English language and not in Afrikaans or Xhosa language" [User M6].</i> |

Table 6.12: Reviewed themes created from codes.

6.10.5. Step 5: Defining and naming of themes

Defining and naming of themes entailed identifying the themes for all transcripts gathered in the data collection. Step 3 was repeated carefully to clarify the categories and sub-categories by looking at their interconnectedness. The categories were generated from the transcripts and occurrence of the assessment of respondents' transcript illustration developed in internal and external heterogeneity as explained in step 4.

Defining themes allowed the researcher to explain views from respondents and justify arguments captured from all themes. All the responses derived from conversations with the respondent were used as supporting arguments to justify the discussions and in explaining all the sub-themes created. To conclude this step, theme names were

evaluated, and the researcher retained newly created names to complete step 5. Table 6.13 shows the themes developed from data.

| THEME | DESCRIPTION | SUB-DESCRIPTION |
|----------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| <p>Domestication Theory</p> <p>Commodification phase</p> | <p>The ways in which a product is imagined or formed in the mind of the user; developing from an unfamiliar state to a potential product of interest. (Vuojärvi and Isomäki, 2010).</p> | <p>Word of mouth, Facebook profile creation, pamphlets.</p> |
| <p>Appropriation Phase</p> <ul style="list-style-type: none"> • Integration of technology artefact • Objectification Phase | <p>The user evidence and perception of the use of technology. The phase explains the ways the end users of the technology and advertise the technology to others within their community. There are two sub-phases for the appropriation phase, objectification and incorporation.</p> <p>This explains when the technology artefact becomes socially integrated into the users' routines and becomes part of everyday life (Ward, 2005).</p> <p>This explains how values, tastes or styles are expressed through the display of the new technology (Silverstone et al., 1992).</p> | <p>Technology use</p> <p>Integration</p> <p>Expression of use</p> |
| <p>Incorporation Phase</p> | <p>The artefact is incorporated and actively used by users such as in the performance of a task (Silverstone et al., 1992).</p> | <p>Adoption of use</p> |
| <p>Conversion Phase</p> | <p>The user demonstrates to others that they are consuming the product. In this phase, the user talks about the technology to others and "shows off" their mastery of the product (Vuojärvi and Isomäki, 2010).</p> | <p>Awareness</p> |

Table 6.13: Themes developed from codes.

6.10.6. Step 6: Producing the report

A report was produced after finalizing the themes, categories and sub-categories. In the process, a thorough check was done to see if there are consistency and interconnections of data in each theme. The themes, categories and sub-categories were compared with transcripts to check for any data that could have been left out and the coding was revised in a cyclic iterative process until enough coding consistency was achieved (Miles and Huberman, 1994).

6.11. Developing a conceptual model

The conceptual framework was developed by summarizing the mental image of themes and patterns that emerged from the data collection using a deductive approach in qualitative research. The study used an abductive approach by merging deductive and inductive approaches and linking data extracts to the frameworks to explain the process of individual empowerment (Doz, 2011).

6.12. Timeframe

The timeframe is a cross-sectional design adopted for this study. It is mainly used for studies that involved collecting data on relevant variables at a time only from a variety of people, subjects, or phenomena (Olsen and St George, 2004). Since the variables or demographics used in this study were a single case based on the type of research conducted and on what the study aims to prove or validate, data was collected at the same time within a brief period during the study.

The data gathered was cross-sectional and mainly from a pool of participants with varied characteristics and demographics known as variables, such as age, gender, occupation, education, geographical locations, and ethnicity (Olsen and St George, 2004). Cross-sectional studies are descriptive studies used to describe some feature of the population of a study. The cross-sectional survey involves researching a specific group; it has its strength and contribution to the study, and it is used to verify and/or disprove assumptions (Olsen and St George, 2004). The study was cross-sectional because of the limited time available to carry out the research, and because it was costly. Research carried out using cross-sectional studies was helpful in carrying out the research due to financial constraints and did not require

much time. Also, research carried out using a cross-sectional study captures a specific point in time and contains multiple variables at the time of the data snapshot (Olsen and St George, 2004). The data can also be used for several types of research, and many findings and outcomes can be analysed to create new theories/studies or in-depth research (Olsen and St George, 2004).

However, the limitation of the cross-sectional study is that it cannot be used to analyse behaviours over a period and the timing of the snapshot is not guaranteed to be representative. Findings derived in a cross-sectional study can be flawed or skewed if there is a conflict of interest with the funding source, and the researcher may face some challenges putting together the sampling pool based on the variables of the population (Olsen and St George, 2004). In addition, in cross-sectional studies, routinely collected data may not be designed to answer the specific question and does not normally describe the variable that is the cause and which the effect (Olsen and St George, 2004).

6.13. Ethical considerations

The ethical consideration involved getting approval from necessary authorities for the study to be carried out. Approval for this study was granted by the University of Cape Town, South Africa. The introduction letter obtained from UCT was used to obtain permission from Cape Access to carry out research in the selected e-Centres' communities. An informed consent form was used to help voluntary participation in the study. The Cape Access office was emailed to seek their support to conduct the study on-site and approval for interviews to be started on the data-collecting process. Appointments were booked with the telecentre managers of the various communities and the telecentre managers were instructed to help in informing the e-Centre users of our visit. The study upheld the ethical values of women living in disadvantaged areas as the researcher suggested the benefits of using the telecentre to improve women's economic standards despite their economic status. The telecentre was explained as an ICT tool that can be used for the empowerment of women to improve the way the telecentre is perceived. Other ethical issues that the researcher had to overcome when promoting the benefits of the telecentre was to convince the community leaders to allow the community women to participate in the study.

6.14. Limitations of the Study

The study limitations highlighted show the possibilities of future research for academics, stakeholders and ICT policyholders. The limitation of the study identified was the language barrier, due to many women's non-ability to speak English language fluently. The main language spoken in the communities was Afrikaans. The researcher could not speak Afrikaans but got assistance from a female language translator recommended to the researcher by the telecentre managers. Likewise, some of the respondents had difficulty reading the interview questions that were written in English, and a language translator had to assist the respondents. Another limitation was the time constraint during the process of data gathering. The researcher had limited time and a financial constraint to carry out the research and was constrained to having frequent follow-ups on the respondents' interviews carried out after the data gathering.

6.15. Summary of research design and chapter

This chapter described the qualitative method used to present the perceptual views of women respondents and the different methods adopted in the research. The unit of analysis of the study were women respondents. The technique used for the data collection included semi-structured in-depth interviews, participant observation and the focus group discussions. The method of data analysis used for the study was the thematic analysis (Braun and Clarke, 2006). All interviews were audio-recorded with a tape recorder and the researcher transcribed and secured them to implement the analysis process. A description of how all data was analysed using computer-assisted qualitative data analysis software, coded and collated in an extensive list of the different codes that were identified across the data set, was presented in the chapter. Table 6.14 presents a summary of the research design for the study.

| RESEARCH DESIGN | DEIFINITION |
|-------------------------|-----------------------------------------------------------------------------------------|
| Research domain | The contributions of telecentres for women empowerment in rural communities |
| Research contribution | Explanatory |
| Approach to theory | Deductive |
| Ontology | Subjective |
| Generalisation | Theoretical statements to empirical observations |
| Theoretical frameworks | Domestication Theory, Individual Difference Theory and Dimensions of Empowerment Theory |
| Research design | Case study |
| Units of observations | Women users and non-users |
| Units of analysis | Telecentres |
| Research methodology | Qualitative methodology |
| Data collection methods | Semi-structured in-depth interviews, participant observation, focus group discussions |
| Data analysis | Thematic analysis |

Table 6.14: Summary of research design for the study.

CHAPTER 7: Case Analysis

7.0. Introduction

This chapter provides a descriptive analysis of the frameworks used to suit the study. This analysis unpacks the answers to the main research question of the study. Results show that there is a limited impact of the telecentre and a myriad of factors contributed to the impact or hindrance of women's use of the telecentre.

7.1. Telecentre usage pattern of respondents

The telecentre usage pattern differs as women, men and children used the telecentre at various times daily. Most women that visited the telecentre in the morning were unemployed and only visited after completing their morning chores between 10:30 a.m. and 12:00 noon, while women that were employed visited the telecentre after working hours between 4:00 p.m. and 5:00 p.m. Men visited the telecentre at times that suited their daily schedules. Other users included primary school children that used the computers at the telecentre to carry out their assignments and to play computer games after school hours between 1:30 p.m. and 2:30 p.m., whereas high school children visited the telecentre after school between 3:00 p.m. and 4:00 p.m. to use the Internet to complete their assignments. The usage pattern shows that different users adopted the telecentre as a daily routine. It was realised that the services offered at the telecentre empowered users in diverse ways.

According to the telecentre managers, more people visited the telecentre from 2:00 p.m. for several reasons. The computer skills training programme was only offered in the evenings to interested registered members that wanted to participate in the programme for six weeks to three months, from 5:00 p.m. to 6:00 p.m. on selected days of the week. Findings show that the telecentre was not patronized in the mornings but occupied mainly by children during the school holidays throughout the day. In addition, the telecentre attracted more users whenever job advertisements were posted on the noticeboard. This attracted job-seeking applicants who mostly use the space to type and update their Curriculum Vitae and cover letters for various job applications. Table 7.1 presents the usage pattern of users.

| TIME | USAGE PATTERN |
|-------------------|--------------------------------------------------------------------------------------------------|
| 10:30PM – 12:00PM | Unemployed women use the telecentre |
| 2:00PM-5:00PM | Different users access the telecentre such as Men, children and women |
| 1:30PM-2: 30 PM | Primary school children play online games and to complete their assignments |
| 3:00PM-4:00PM | High school children browse websites to complete assignments and browse the Internet for leisure |
| 4:00PM-5:00PM | Employed women use the telecentre as a daily routine |
| 5:00PM-6:00 PM | Computer skills training programme for registered members |

Table 7.1: Telecentre usage pattern of users.

7.2. How the women domesticated the telecentre

This section discusses data based on the Domestication Theory. The data is grouped according to the various stages of the framework. Table 7.2 presents the summary of Domestication Theory results.

| STAGES OF DOMESTICATION | SUMMARY OF DOMESTICATION RESULTS |
|-------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Commodification | Women were informed through word of mouth from friends and family. The telecentre was advertised by the telecentre managers through the social media networks such as Facebook, distribution of pamphlets and word of mouth in some communities. |
| Appropriation | <p>The services offered at the e-Centre was offered at no charge. The user realizes the technology and integrates it into their daily routine. For example, some women entrepreneurs used the telecentre to operate their businesses.</p> <p>The computer skills training was offered to registered members at no charge. This allowed some women that completed the computer training sessions to get jobs after receiving accredited certificates of completion.</p> <p>Some women used the telecentre to communicate with friends and loved ones via social media and interacted with other people at the e-Centre.</p> <p>The use of the telecentre becomes a daily routine for some women as some women used the telecentre to apply for jobs, government grants,</p> |

| | |
|----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | <p>school applications and other personal needs. Some women gained employment and obtained government contract jobs.</p> <p>There was limited use of the telecentre due to some challenges. For example, the proximity of the telecentre location, limited space and limited computers available for use.</p> <p>The programmes offered at the telecentre focused on the empowerment of the community and not women. This hindered women’s use of the telecentre.</p> <p>Although, the telecentre was displayed in the community to enhance development and to promote empowerment. Women non-users did not integrate the use of the telecentre into their daily routines. This was because most women spoke Afrikaans and preferred the programme to be facilitated in their local language Afrikaans and not English language.</p> |
| Incorporation | <p>Some women incorporated the use of the telecentre in their daily routines as some women checked their emails and browsed the Internet for possible opportunities. While, some women non-users claim they were not aware of the telecentre existed in their community and were deprived of the benefits offered at the e-Centre.</p> |
| Conversion | <p>Women users of the telecentre propagated the benefits of using the telecentre through word of mouth or face to face to their social network and family members. This created some awareness of the telecentre to other women in their respective communities.</p> |

Table 7.2: Summary of Domestication Theory results.

7.2.1. Commodification phase

Women users advertised the telecentre to other women in the community through the avenue of word of mouth and face-to-face.

7.2.1.1. Word of mouth

The women in the respective communities advertised the benefits of using the telecentre services to other women within their neighbourhood. This created some awareness of telecentre in the respective communities.

7.2.1.2. Face to Face

This avenue explains the ways which women users of the telecentre advertised the telecentre to others within their community. The women in the communities advertised the telecentre to other women in their communities through face-to-face discussions.

7.2.1.3. Social Media

Women became aware of the telecentre through social media networks such as Facebook. The telecentre manager used the social media to advertise the telecentre services to the community because there was limited awareness, and prior campaigns were held to introduce the telecentres to the communities:

*“We make use of the social media to create awareness of the telecentre”
[Telecentre Manager C2].*

Similarly, a few respondents became aware of the telecentre because they worked at the government offices situated at the Thusong centre, for example Social Development, Home Affairs, Public Library and other government offices.

7.2.1.4. Advertisement of the telecentre

The telecentre managers made minimum efforts to promote the telecentre in the communities distributing pamphlets and posters to the community members and the surrounding environments. Furthermore, advertising the telecentre was not fruitful due to the perception that the telecentre was not a conducive space for women to use due to cultural norms and values. Despite this, some women benefited from using the telecentre, as the telecentre managers claim to have received a slight increase in the number of users at their centres:

“A lot of people are becoming aware of ICTs because we are busy promoting the ICT services provided by the centre. There are a lot of people who have become beneficiaries of the telecentre; like a lot of people have been employed and are getting government employment” [Telecentre Manager L2].

Other shortcomings of the telecentre were the awareness attempts made by the telecentre managers to distribute pamphlets which were written in the English language. This attempt was ineffective as the readers preferred the pamphlet to be written in their local dialect of Afrikaans. This hindered women’s use of the telecentre more than men:

“I think most of the people are afraid to speak English, and that is part of the reason why women are not visiting the e-Centre. Language is a barrier that is why women are not benefiting from the e-Centre. Also, the pamphlets distributed at the e-Centre and the computer skills training is written in English which is not encouraging [Focus group K1].

7.2.1.5. Perception of the telecentre

The average South African women living in rural areas are poor and only a few worked on the farms to generate their daily income. Some women perceived the telecentre positively after being informed by their friends of the benefits of using the telecentre, while others perceived the telecentre negatively and did not find the space suitable to meet their personal needs:

“The e-Centre has no value to women in Klawer because of their educational level. Women mostly work on the farms or otherwise survive on social grants. There is drug abuse, prostitution, unemployment, high rate of crime and dropouts in Klawer and mothers and fathers drink a lot, and this affects the children” [Non-user M1].

Furthermore, the telecentre was perceived as having limited space to occupy users. Likewise, the telecentre was negatively imagined as a space that could only accommodate men and not women users:

“Women say only men use the telecentre because men usually have the opportunity to seek for opportunities than women” [Non-user M8].

As addition, women in the rural areas' computer skills fall short as they lack basic education, self-confidence and self-assurance to utilize the services provided at the e-Centre. The telecentre was perceived as a space only occupied by skilled computer users and not for people that lack computer skills:

“Maybe they are scared that someone may laugh at them that he or she is not computer literate” [Non-user M3].

The Thusong centre was in the community hall nearest to the community library and business corners. The Thusong centre housed various government departments such as Home affairs, a health centre, South African Social Security Agency (SASSA) offices, the community library and Social Development office providing government services to the rural community. Although, the telecentres were in strategic locations, women were not encouraged to patronize the free services offered at the telecentres.

Additionally, the community imagined the telecentre as a public space that provided the hardware and software of a computer and where people could improve their self-development. Women assumed the telecentre was established for disadvantaged people in the rural

community that could not afford to own a computer. Likewise, the community perceived the telecentre as an organization that trained people in computer skills:

“The telecentre was created to give the community ICT skills, computer skills and to give the community accredited certificates as well” [User C26].

“It is for the people to uplift themselves; it is because our community is disadvantaged” [User E10].

Few women used the telecentre during the peak hours because of their busy responsibilities managing their homes. Women complained of that the insufficient time of 45 minutes allocated to use the computer at the telecentre hindered use. The telecentre managers also confirmed that adults were only using the telecentre between 8 a.m. and 2 p.m., while, the afternoon hours were allocated to school children to use for their schoolwork. These schedules created a negative impression in the minds of some women because the telecentre was perceived as a space where online tasks were rarely completed:

“The time given is not right for women to come here because they are housewives” [Non-user K4].

Women perceived the telecentre negatively due to the socio-cultural perceptions that clouded their judgment of the public space as being mostly occupied by male users. Most rural women felt only men could use the public space. This presumption explains the gender (male) bias of the computer culture; another reason as that women were not allowed to socialize with other men in their communities.

7.2.2. Appropriation Phase

The analysed data shows that some women users valued the services offered at the telecentre and adopted the use into their daily routine for the following purposes:

1. Business operation
2. Employment
3. Education
4. Seeking information
5. Social communication

7.2.2.1. Business operation

Women entrepreneurs claim using the telecentre daily significantly improved their economic standards and digital literacy. Similarly, women commercial farmers claim to use the telecentre daily for numerous tasks such as Internet browsing, printing, photocopying, scanning and lamination of documents:

“The telecentre is one of the valuable things in our community and in the surrounding farms. People come daily to use the facilities at the e-Centre because it is free of charge” [User E1].

“I ask our farm workers to visit the telecentre so that they can train how to use computers and to not stay as a farm worker forever. Whenever the farmers visit the telecentre to get computer skills training, they say I have sent them here to get the training so that they can learn how to use the computer” [User E5].

Some women used the telecentre daily to operate their businesses which sustained their livelihood:

“I have my own business of curtain sewing, I am an entrepreneur, I always visit e-Centre to get unique designs for my business. This business helps me sustain my family” [User K1].

Women entrepreneurs used the telecentre to advertise their businesses and to communicate with their clients using emails, while, some women used the telecentre for online banking transactions and to order goods and services from manufacturers.

7.2.2.2. Employment

The rural areas have a high rate of unemployment and poverty (Underwood et al., 2002). Women’s main responsibility is to manage their families. Most women are more unemployed, and men have more opportunities to seek employment opportunities elsewhere:

“Women in this community are mostly unemployed, only few women are farm workers and do not want to visit the telecentre to learn computer skills so as not stay as farm workers forever. But some of these farmers visit the telecentre to get computer skills training so that they can learn how to use the computer” [Non-user C9].

"Women are more housewives and the men go seeking for jobs" [Non-user M6].

Furthermore, some women had success stories and realised positive outcomes from using the telecentre:

"A lot of people are becoming aware of ICTs because we are busy promoting the ICT services provided by the e-Centre. There are a lot of people who have become beneficiaries of the telecentre and have been employed getting government employment" [Development manager E2].

7.2.2.3. Education

Rural women in South Africa have challenges getting educated and learning computer skills which they can use to empower themselves. These women have more barriers to education than men because they lack adequate time to attend school and only a few have a basic education.

Moreover, social-cultural norms usually give low priority to education for these women (Ragas, 2012). Instead, women mostly devote most of their time to household chores and their families.

The South African poor live mainly in rural communities because of their poverty (Carter and May, 1999). Rural women lack self-confidence and computer skills to use the telecentre due to their lifestyle and lack of computer experience:

"Some women lack education and are scared to use the computer to source for personal needs" [Non-User L4].

Sociocultural and conceptual factors prevented women's daily use of telecentres:

"Lack of education and fear are reasons women are afraid to come and sit here to learn the computer skill training. Also, lack of confidence is the reasons why some women don't want to come here" [Non-User E14].

Men are more fluent and comfortable speaking the English language than women because men have more opportunities to seek jobs in urban areas. Men embrace the language medium used to facilitate the computer skills training programme at the telecentre (Pease and Pease, 2016). But women prefer to be taught in their local language, Afrikaans:

“So, because they learn the courses in English instead of the local dialect and no one is perfect in English, women only know the basic stuff. So, when women visit the e-Centre attend the computer skills training, they go like arghhh! Why does the training have to be in English language and not in Afrikaans or isiXhosa language” [User M7].

“Most women are scared to use the computer in the telecentre because the language used for teaching is English and not Afrikaans while some of them have a very low educational level” [User E8].

Furthermore, men were more educated than women because most men had more opportunities to get educated, while women were less educated because of their sole responsibilities of managing their families when the men were away from their respective homes (Hilbert, 2011).

7.2.2.4. Seeking information

Telecentres were used to search for information about government funds, jobs, school admissions and other opportunities for personal needs. Results show that instead the telecentre, women sometimes preferred to use the computer at the library to read, while only a few women use the telecentre to access information on the Internet.

“In the past, people were using their hands to write CVs, there was lack of communication as well but now people are using the e-Centre to communicate, accessing information and operate their business because the services were free of charge” [Development Manager C1].

Women saved money by using the telecentre because of the free services offered, while some women entrepreneurs acquired money using the telecentre to apply for government funds and opportunities to grow their private businesses.

7.2.2.5. Social communication

The telecentre was used to access social media platforms such as Facebook, Instagram and Twitter. Similarly, women with Internet access on their mobile phones preferred to use the Internet at the telecentre to socialize with other women. The telecentre provides access to ICT services and supports other social activities that enhance the well-being of women.

7.2.3. Challenges using telecentre

Some women could not integrate the telecentre use into their daily routine because of the lack of computer skills, geographic location of the telecentre and insufficient space available at the telecentre:

“Space is a barrier; lack of computer literacy and the location is not suitable. The e-Centre is not close to the suburbs because most people from the suburb must walk a distance to visit the e-Centre to use the free services. There are a lot that can be done using the e-Centre but only if more space and more e-Centres can be created in the suburbs” [Telecentre manager L1].

“Coloureds mainly use this e-Centre, while the whites use other places at the suburbs. Yes, there is a lot of challenges that we encounter like we do the marketing of the e-Centre then we have the problem of people not being interested” [Development manager L2].

Furthermore, the computer skills training programme offered at the telecentre focused only on the general community and not specifically on the empowerment of women. This contributed to a gender divide and discouraged women from adopting the telecentre into their daily routine:

“Normally there are computer skills training programmes organised for the community users, these programmes are not specifically for women. Programmes introduced to the people can never be enough especially when it comes to women empowerment and women entrepreneurship programmes” [User L3].

In summary the findings show that the factors hindering women’s use of the telecentre can be categorized as sociocultural, geographical location, lack of computer skills and experience, lack of education and language, lack of space and resources [User C8].

Women experience different challenges using the telecentre which are explained in the study. Table 7.3 presents the factors affecting the integration of telecentres.

| FACTORS | OUTCOMES |
|--------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Socio-cultural norms | Rural women were hindered from using the telecentre due to societal and cultural reasons that did not allow them to mingle in the society. The telecentre was perceived as a public space mostly occupied by male users. |
| Geographical location | The distance to the telecentre hinders rural women use of the telecentre. |
| Lack of computer skills | Some rural women did not have prior computer experience using the telecentre. |
| Educational level | Some rural women have a very low educational level and have the fear to use the computer. |
| Language | Language is a barrier as the medium of teaching the computer skills training programme was not satisfactory to the women participants. The women users preferred to be taught in their local dialect Afrikaans and English language. |
| Lack of space | The telecentre limited space that occupied only few users. |
| Lack of enough resources | The telecentre provided insufficient computers at the telecentre to users. |

Table 7.3: Factors affecting the integration of telecentres

The telecentre was established in the rural communities to empower people, to connect people to the outside world, to reduce poverty and to provide computer skills training with accredited certificates.

However, only a few women used the telecentre daily to perform personal needs. collecting process. Appointments were booked with the telecentre managers of the various communities and the telecentre managers were instructed to help in informing the e-Centre users of our visit. The study upheld the ethical values of women living in disadvantaged areas as the researcher suggested the benefits of using the telecentre to improve women’s economic standards despite their economic status. The telecentre was explained as an ICT tool that can be used for the empowerment of women, to improve the way the telecentre is perceived.

7.2.4. Incorporation Phase

Some women incorporated the telecentre into their daily routines, domesticating the telecentre use to achieve various tasks. Women used the telecentre to improve their economic standards in the following ways:

1. Operate personal businesses
2. Check emails and social networks
3. Browse opportunities and online transactions
4. Job applications

7.2.4.1. Operate personal businesses

Women used the telecentre services to apply for government funds to enhance their personal businesses:

“Women benefit a lot from using the e-Centre because in my growing business as a commercial farmer, I benefit from the free services offered at the e-Centre like other organizations that also make free copies. People from shops, also come here to use the Internet for 45 minutes free of charge and they do not have to pay for copies” [User E6].

7.2.4.2. Check emails and social networks

Women used telecentres to write and check their emails daily and to socialize on social networks.

“I have previously worked here so I know the confidentiality and I know how we do things around here. The telecentre managers assist me whenever I cannot be in Elim or my husband visits the e-Centre on my behalf. You know older people like my husband are afraid of using the computer, so I would rather ask him to print or scan my document. Also, I was selected out of 12-member farmers after using the telecentre to apply for a government sponsored program to go to other countries with agricultural students to visit different organisations” [User E4].

Results show that some women using the telecentre attended to their personal needs and had more access to information about opportunities advertised on the noticeboard of the telecentre than women non-users.

7.2.4.3. Browse opportunities and online transactions

Few women used the telecentre to browse for opportunities online, to apply for school applications for their children and online banking transactions.

7.2.4.4. Job applications

Women used the telecentre to apply for jobs online. The telecentre managers assisted women to type their CVs for job applications and search for possible job opportunities online daily to improve their economic standards.

7.2.5. Conversion Phase

Women users marketed the benefits of the telecentre to other women in the communities, which encouraged some women to participate in the computer skills. The conversion phase motivated women in the following:

1. Influenced telecentre use
2. Affected women's decision making

7.2.5.1. Influenced telecentre use

Some women were motivated by other women to use the telecentre. Few women benefited from the free services offered at the telecentre and exercised control over their lives and resources. For example, some women entrepreneurs used the telecentre to encourage other women business owners to use the telecentre to promote their businesses:

"I am a known farmer; I work for myself with my husband and two sons. I also own an accommodation business and a fashion business, which I operate. From my business, I come to the telecentre to use emails, to do online research, promote myself at the telecentre, to make copies and use Skype"
[User E7].

Few women users claim using the telecentre to acquire digital knowledge through their participation in the computer skills training programme and adopted the use of the telecentre in their daily routine.

7.2.5.2. Affected women's decision making

Few women were motivated by other women using the telecentre to make the decision to become empowered and to make strategic life choices in a context where this ability was previously denied to them by the social group (Kabeer, 2003):

"I use computer programmes like excel, word and power point presentation at the e-Centre because last year I was the top runner-up of the female commercial farmer award in the Western Cape. In addition, I received the ministerial reward for a female entrepreneur for the youth sector nationally. Therefore, whenever I come here, I do my PowerPoint presentations and stuff. If I am not here, then I contact the centre manager for assistance" [User E3].

In addition, some women achieved positive results that improved their economic standards and their status in the Community.

7.3. Dimensions of empowerment analysis

The study shows the different outcomes of the Dimensions of Empowerment Theory to analyse women's use of the telecentre. These included the accessibility of computers and the services provided at the telecentre and women's perception of the telecentre. Prior to the creation of the telecentre, privately run computer centres provide ICT services to the communities at a fee. However, the government-owned telecentres offered ICT services at no charge. The telecentre users were also empowered with free computer skills training that offered free ICDL and Basic computer training and certificates.

Results show that few rural women benefited from using telecentre services which influenced their lives positively. The outcomes of women's use of the telecentre provided limited empowerment for ICT literacy, access to information and public services, job adverts and government opportunities; all of which can be classified under the different dimensions of empowerment as: Economic, Informational, Social, Political and Cultural empowerment (Gigler, 2014). The classifications of these outcomes are further explained in the subsequent subsections.

7.3.1. Economic empowerment

Results show that few women used the telecentre to improve their economic standards and to enhance their personal development. The free services offered at the telecentre allowed women to save money for other necessities. Women used the telecentre to look for employment opportunities. A telecentre manager claims some women got employment offers after completing the computer skills training programme and applied for jobs at the telecentre:

“Yes, there is this woman whom we helped at the e-Centre to get a job, she is a chef and we helped her with her CV, and she got a job at the children school. Another lady did a computer course and she got an administrative job at the local clinic” [Telecentre Manager K2].

Although the employment rate of the women in the rural was low, some women had success stories of applying for jobs and getting employed. The telecentre improved employment opportunities of some women using the services. In addition, some women used the telecentre to apply for government assistance funds and loans, while some women used the telecentre to identify opportunities to generate income to improve their economic standards:

“Women make money from the telecentre through so many means. Some work on farms for different organizations and they use the telecentre to source for funding to use for their organisations which they also benefit from” [User K4].

Likewise, the telecentre use improves the economic standard of some women using the services daily, which changes their circumstances. Some women value using the telecentre service to overcome difficult social situations through self-reflection:

“You can change your income by a second if you can search for a job online at the telecentre. Also, there is a lot of stuff you can do at no cost” [User E19].

The free computer skills training programme offered at the telecentre encouraged women to use the telecentre services with confidence. Some women used the telecentre consistently and had positive outcomes:

“Yes, I mentioned three women were part of the computer skills training offered at the telecentre and one got a job at Standard Bank and when the job expired, she applied for another job and started working at another organization. Women also got jobs as client service in private organizations” [User C6].

“Yes, there is this woman whom we helped at the e-Centre to get a job, she is a chef and we helped her with her CV, and she got a job at the children school. Also, another lady did a computer course and she got an administrative job at the local clinic” [Telecentre Manager K1].

Findings show that women entrepreneurs used the telecentre to support their businesses daily instead using personal laptops or tablets. Some of these women benefited from using the free programs installed on the computers at the telecentre. Likewise, some women could cut costs in their business activities such as the cost of printing, search for information, emailing, Internet banking, online shopping and advertising. Women used the telecentre to reduce the cost of acquiring assets for their businesses.

7.3.2. Information empowerment

The outcomes of women’s use of the telecentre in the information empowerment includes ICT literacy, access to information and public services. Although, most women used telecentre to play games and use other websites, other women used the telecentre to obtain information for research and to access information that that could assist them to overcome their circumstances. Some women became empowered, having better access to information and were informed about the happenings within and outside their communities. Women not using the telecentre missed out the necessary information that could be used to empower themselves. Women non-users were deprived of the benefits of using the computer at the telecentre as women non-users lack the information capabilities to achieve individual empowerment:

“Women not using the telecentre miss a lot. On the Internet, you see a lot of things” [User K13].

Furthermore, the telecentre added value to women using the services to achieve daily task:

I think the telecentre adds value to the people of Elim because they can learn more. You can read there, visit other sites and you can even buy stuff and shop online” [User E2].

Some women used the telecentre services to access information that assisted them to deal with the different circumstances of their life, for example, poverty and unemployment.

7.3.3. Social empowerment

Women used the telecentre to access social media platforms to communicate with friends and family despite having Internet-enabled smartphones. The telecentre empowered some women to establish and strengthen social relations, network and share knowledge and skills. Women used the telecentre to socialize with other people using the telecentre:

“I think the women use the e-Centre for social networking because you don’t see a lot of men using the Internet for social media but for business only. I think it is the women that use it mostly for social media, not men (lol!)” [User M1].

However, due to the socio-cultural perception of the telecentre, a few women did not perceive the telecentre as a public space that could be used to improve their social standards. Women feared the risk of being described as forward, not serious, or wayward.

7.3.4. Political empowerment

The telecentre gives women the potential to have some degree of empowerment and it magnifies the lack of empowerment in the physical world. The telecentre did not encourage political activities that promote exclusions from people belonging to different political parties. The telecentre space is free of all form of political party propaganda and the engagement of political activities is not encouraged to avoid misconceptions from users belonging to different parties.

Women used the telecentre to communicate with government authorities through the assistance of the telecentre managers who served as a link to the government. The telecentre managers assisted the communities to address community development issues, and to access other needs from the necessary government sub-departments and departments, such as, Parliament and municipalities via emails.

However, some women faced challenges such as unemployment, and gender-related issues and required support from the government, the ruling party in the Western Cape, the Democratic Alliance (DA) and the official opposition to the governing African National Congress (ANC). Whenever, rural women had difficulties obtaining government support from higher authorities, the telecentre managers assisted women to establish contacts with other NGOs working in these areas who could address the challenges that were beyond the services of the telecentre:

“Every day I face challenges in this area of the Western Cape, I don’t want to speak politics now, but we are in the area where the DA is ruling, and we are having lots of challenges as women seek for jobs, government funds or stuff are very hard for us to push through” [User K13].

However, the political empowerment of women in the communities was superficial because politics were perceived as male-dominated in the communities:

“It is hard for women in this community because the community council is not engaging with women. Women are struggling with the council in our area because there is a lot that needs to be addressed in Klawer on the empowerment of women” [User E4].

Women were not fully empowered to participate and influence political decisions affecting their communities and daily challenges. This was because women did not have the voice and were not aware of the procedures to follow to become involved in political activities which restricted women from taking an active part in political activities.

7.3.5. Cultural empowerment

Elim telecentre used the public space to promote the Heritage Centre of their community. Women used the telecentre to strengthen their cultural identities and to increase their cultural expression. Some women used the telecentre to obtain information related to their cultural heritage, ways of life and other cultural aspects of the community. For example, some women used online videos to learn about diverse cultures. These women accessed the YouTube video website to access diverse and specific cultures and religions for themselves and other people, as well as understanding the reasons some religions or cultures were practised:

“Many of the women were stranded, and many of them have men, and because of the culture the men would say no to the women and they would not be able to come to the e-Centre because she must respect the man” [Non-user M7].

The cultural perspectives influenced some women against using the telecentre. In addition, some respondents alleged that the telecentre was mainly for men to seek job opportunities instead of for women:

“The women are more of housewives and the men go there seeking for jobs” [Non-user M6].

According to the senior librarian from one of the selected communities, the lack of space at the telecentre discouraged women from using the telecentre often as some women preferred using the community library:

“Some women do have the Internet at home but prefer to use the library. Moreover, I think the e-Centre is too small, so it cannot accommodate many people” [User C9].

Furthermore, women were not using the telecentre because the telecentre was mostly occupied by male users as gender (male) bias of computer culture affected women. This means that the cultural norms affected the way women perceived the role of the telecentre in their communities:

“Women say that only men can use the telecentre because the place is always filled with male users” [Non-user M2].

Women non-users could not benefit from using the telecentre and strengthen or express themselves using the telecentre which affected women’s self-development and economic standards. Table 7.4 presents the summary of the Dimensions of Empowerment Theory results.

| DIMENSIONS OF EMPOWERMENT THEORY | RESULTS |
|----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Economic empowerment | Few women were empowered using the telecentre. These women benefited from using the telecentre to apply for job opportunities and eventually becoming employed. Some women entrepreneurs used the telecentre at no charge to operate their businesses. While, some of women participated in the computer skills training programme to acquire accredited computer skilled certificates which were used to source for opportunities such as employment and other opportunities within the neighbouring communities. |
| Information empowerment | Some women used the telecentre to source for information on opportunities that were used to source for information that could improve their economic standards. Some women used the Internet at the e-Centre to source for government grants and other opportunities that met their needs. |
| Social empowerment | Women used the telecentre to socialise on social media networks to communicate with friends and family members and to socialise with other users at the telecentre. |
| Political empowerment | The women used the telecentre to communicate with the government department address community complains and needs via the government websites. |
| Cultural empowerment | The telecentre was perceived as mainly occupied by male users seeking opportunities which hindered some women from using the services offered at the telecentre. The socio-cultural perception hindered women from socialise with other males other than their partners and family members in the society. |

Table 7.4: Summary of the Dimensions of Empowerment Theory results.

The subsequent section analysed the Individual Different Theory.

7.4. Analysis of Individual Difference Theory

The Individual Difference Theory shows the constructs that contributed to the individual difference of women’s use or non-use of the telecentre. These constructs were mostly structural and conceptual. The three main constructs explained the differences in individuals’

subjective experiences and environmental influence of personalities that affected women’s life choices. Table 7.5 presents the individual differences of women’s use of the telecentre.

| INDIVIDUAL DIFFERENCE | DETAILS OF INDIVIDUAL DIFFERENCES | OUTCOME OF INDIVIDUAL DIFFERENCES WOMEN’S USE OF THE TELECENTRES |
|---------------------------------|-----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Personal Data | Gender | Female respondents benefited from using the telecentres. |
| | Age | Age was not a contributing factor hindering the use of the telecentres. Women of all ages used the telecentre services. |
| | Socioeconomic factors | The socioeconomic factors of women contributed to the high rate of unemployment in the rural communities. Only a few rural women were employed or worked on the farm. |
| | Computer skills training | Computer skills training offered at the telecentres empowered women to become digital literate |
| | Race and ethnicity | The respondents of the study where mostly Afrikaans speaking from the Western Cape of South Africa. |
| | Parenting status | Most of the women were either single mothers, married, single ladies or under age high school matriculates. |
| | Education | The lack of education hindered women’s use of the telecentres. |
| Shaping and influencing factors | Role model | Women with prior computer experience, role models, mentors, workplace, college or school labs had a better influence using the telecentres. |
| | Personality types | Women’s personality determined the telecentres usage. |
| Environmental context | Contextual factors | Contextual factors such as lack of availability of space, computers and other societal perceptions of the telecentres hindered usage. |
| | Cultural Norms | Cultural norms and belief contributed to the lack of use of the telecentres. |
| | Location | The location of the telecentre hindered usage. Due to the distance and lack of awareness. |

Table 7.5: Individual differences of women’s use of telecentres

7.4.1. Personal data

The personal data of the respondents shows the demographics of women using the telecentres. In the study, the demographics include age, education, socio-economic status and socio-economic class of women using the telecentres and the non-users were analysed and discussed in the subsequent section (see subsection 7.4.1).

- **Age:** The age of women did not contribute to factors that hindered the use of the telecentre because some women that participated in the computer skills training were above 60 years of age.
- **Education:** Education or qualification was a major factor hindering women's use of the telecentre. South African women living in the rural communities have little or no education because of poverty (Carter and May, 1999). Rural women mainly devoted most of their time to household chores and managing of their families. In addition, social-cultural norms usually give low priority to education of these women (Ragasa, 2012).
- **Occupation and socio-economic class:** Women in the different communities spoke Afrikaans and were regarded as Coloureds in the South African context. Some of these women were married, some were single mothers, and some were young single women. The socio-economic status of women was characterized by poverty and a high rate of unemployment. Most of the women were unemployed and only a few worked on the farms and in small jobs to support their families. Hence, the existence of this factor calls for the need for empowerment of these rural women.

7.4.2. Shaping and influencing factors

Women continue to face gender-related discrimination that prevents them from accessing the full benefits of having skills such as ICTs and other skilled work that can be used to empower them economically (Antonio and Tuffley, 2014). Some women did not have prior computer experience, which is a shaping and influencing factor that hinders women from using the telecentre. Likewise, women lacking basic education were not confident to use the ICT services at the telecentres:

“Lack of education, women being afraid to come and sit here to learn from the training and the lack confidence is the reason why women don't want to come here” [Non-User E1].

“Maybe they are scared that someone may laugh at them because they are not computer literate” [Non-user M3].

Furthermore, women lack self-assurance to use computers, which contributes to the non-use of the telecentre’s facilities.

7.4.3. Environmental context:

The environmental context explains factors which hinder women from using the telecentre and the way women perceive the role of the telecentres in their communities. The geographical location of the telecentres also hindered women’s use of the telecentre. Centres such as the Thusong service centre (a government centre) are sometimes located in the community hall which is a distance from some communities and sometimes not suitable for women residing in the neighbouring communities of the telecentres. Some women claimed the telecentre location was not visible in the neighbourhood, while others said, there was no noticeboard to advertise the services and the existence of the telecentres:

“The location of the telecentre is not good now because there is no branding, the e-Centre is hidden, and people don’t know where the e-Centre is situated” [User C5].

Table 7.6 presents the summary of the Individual Difference Theory study results.

| INDIVIDUAL DIFFERENCE THEORY | RESULTS |
|---------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Personal data | <p>The age of the women did not hinder women’s use of the telecentre because some women participated in the computer skills training programme where between 18 and above.</p> <p>The level of education was a considering factor that hindered some women from using the telecentres because most non-users perceived the telecentre as a public space mainly used by people with computer knowledge.</p> <p>Few employed women use the telecentres after working hours to check emails and carry out other tasks. While, some unemployed women used the telecentre to search for employment opportunities.</p> |
| Shaping and influencing factors | <p>Some women had prior experience using the telecentre at high school, colleges and had personal laptops at home.</p> <p>While, some of the women had no prior experience using the telecentre and where intimidated to use the facility.</p> |
| Environmental factors | <p>The distance which some women lived was not conducive to travel which hindered women from using the telecentres.</p> |

Table 7.6: *Summary of the Individual Difference Theory study results.*

7.5. Women empowerment programme

Results show that the telecentres did not offer programmes on the empowerment of women. Women suggested that empowering programmes such as how to grow vegetables, bead-making, pastry-making and baking, the art of cooking and other types of small business tactics using the Internet should be introduced at the telecentre:

“I think the e-Centre can be used to offer more training programme and provide information on how women can overcome their personal challenges and needs” [User E29].

The introduction of new programmes at the telecentre could enhance women’s ability and capacity to improve programmes facilitated to empower women at the telecentre and promote their individual empowerment.

7.5.1. Resources of the telecentre

The telecentre establishment has resources that include the provision of computers, Internet access, staff, computer skills training programmes and ICT tools such as printer, fax, scanner, laminating machines. Some women claim the telecentre lacks some facilities:

“I think they have to have more computers for users than more computers for the staff. Mostly when the staff goes for computer training, the e-Centre is closed for a whole week. If they have more staff two can go for training while two can stay back to operate the e-Centre” [User C11].

The resources available at the telecentre were not enough for the efficient operation of the telecentre. This contributed to the factors that hindered women’s use of the telecentre.

7.5.2. Shortage of space and facility availability in the telecentre

The availability of space and time allocated to use the computer at the telecentre was a major concern of most respondents. Women claim the space provided at the telecentre was not enough for users to accomplish online tasks during peak hours:

“There is not enough space and computers for people to use at the e-Centre. I will be glad if we can have more computers at the e-Centre, then the centre can accommodate more users” [User C7].

“The time is not enough; the e-Centre closes early. By the time, we come back from work the e-Centre closes” [User C5].

The telecentre consisted of 12 computers including the computer that was allocated to the telecentre manager and development manager.

7.6. Challenges women face using the telecentres

Women experience some challenges in their communities that affect them from becoming technologically empowered. They are stereotyped as being technologically unskilled and are presumed to have a different perception about the use of technology. Women have different perceptions about computers; some women believe they can be empowered using ICTs, while some are still struggling to be empowered due to no prior experience and familiarity with technology (Trauth, 2002). Women used the telecentre to contact the government offices and other NGOs working to address women’s challenges that were beyond the services of the telecentres:

“We will give the community people the Western Cape government referral numbers whenever necessary. There was a time a lady was not happy with the services she received at the clinic and she wanted to complain, and we assisted here” [Telecentre Manager C2].

“Every day I experience challenges in this area of the Western Cape. I don’t want to speak politics now, but we are in the area where the DA is ruling, and we are having lots of challenges as women; to seek for jobs, government funds. It is very hard for us to push through in person, but the telecentre manager assisted us” [User K13].

The level of development, skills, technology, household and many other aspects of social, political, cultural and economic life create different types of life experiences, and this has contributed in shaping how women relate to the use of ICTs (Trauth, 2002). Women can benefit from using the telecentre if they are exposed to computer skills training and how to use technology for their self-developmental goals (Hilbert, 2011).

7.7. Factors hindering women using telecentres

There are factors that contribute to the reason's women were unemployed and unable to empower themselves. These factors include sociocultural norms that expect women to assist children with homework and manage domestic chores (Hilbert 2011). These factors hinder women's use of the telecentre and are a visible reflection of what affects women's adoption of the telecentre. These factors include women's cultural values, family beliefs, religious belief and activities that contributed to identity formulations, roles and responsibilities, personal aspirations and opportunities (Trauth, 2002).

7.8. Summary of chapter

The chapter summarized the case analysis and described the demographics of the respondents used for the interview sessions. The general distinctiveness of the telecentre and the usage pattern of respondents were explained. The Domestication Theory, Dimensions of Empowerment Theory and the Individual Difference Theory were used to analyse how telecentres contributed to the empowerment of women.

CHAPTER 8: DISCUSSIONS

8.0. Introduction

The study investigates the contributions of telecentres to women empowerment in the rural communities. The findings of the study were presented in relation to the theoretical lens of the study. This chapter endeavours to make inferences from the findings obtained from the analysed data to answer the following research questions:

- How do telecentres contribute to women empowerment in the rural communities?
- How do women incorporate telecentres into their daily lives?
- How do telecentres impact the different dimensions of empowerment amongst women?
- What factors affect women's use of the telecentres?
- How does the telecentre affect the process of empowerment in women?

8.1. The study propositions

The study proposition explains that individual empowerment can be realised if the person desires a change in their circumstances, to achieve goals and reach targets which they had previously thought impossible. These could be, for example, to gain authority, skills, status, self-belief and image, progressing to greater things and increasing rewards (Barnald, 2013; Wilson, 1996). The contribution of the study proposes that the telecentre can be used to accommodate programmes that enhance women's capabilities and information needs for the empowerment of women. Some women were empowered after they participated in the computer skills training offered at the telecentres and attained economic empowerment (Suresh, (2014). Despite the obstacles that hindered women from becoming empowered, some women still benefited from using the telecentre. The telecentre, therefore, contributed to the empowerment of some women and improved their economic standards (Suresh, 2014).

On the other hand, the non-users of the telecentre lack computer skills and were not motivated to use the telecentre services. Therefore, the scenarios surrounding this problem and plausible causes are considered and highlighted in the propositions as follows:

Proposition 1: When telecentres do not focus on women empowerment but only the community in general, women are less likely to be empowered

The planning, designing and implementation phases of the telecentre focused only on the community and not specifically women (Huyer and Sikoska, 2003; Hallberg et al., 2011). The telecentre offered programmes that did not focus on the empowerment of women but on basic computer programmes that empowered only the different communities. This hindered women's use of the telecentre and restricted them from being encouraged to become empowered.

Proposition 2: Inappropriate marketing strategies affected awareness which in turn affects the telecentre usage

The marketing strategies used to propagate the telecentres provided only limited awareness and this affected the usage. To rectify this, the telecentre managers distributed pamphlets, posters and created Facebook pages that were assessed by the members of the telecentres. The telecentre was advertised by some members that discussed the services to their families and social groups by word of mouth and face-to-face (Silverstone and Haddon, 1996). However, there is still a need for more awareness campaigns.

Proposition 3: Women already empowered through other programmes are likely to get more empowered using the telecentres

Some women might have been empowered through the internal (Sadan, 1997, 2004) and external change (Gruber and Trickett, 1987) (see section 3.2) without having direct contact with the telecentre. Only women already empowered through other means and programmes other than the telecentre, for example, with prior computer experience and the privilege to own personal computers, were more empowered using the telecentre. Women non-users may lack education, prior computer experience and confidence and fear to use computers.

Proposition 4: Telecentre market strategy focused on limited people in the communities and are likely to perpetuate exclusion of women

The market strategy used to advertise the telecentre focused only on people in the communities while rural women were marginalized (Hallberg et al., 2011). Women were notinformed of the full benefits of using the telecentre because the marketing strategy of the telecentres was not designed to reach everybody in the communities (Hallberg et al., 2011).

Proposition 5: Access to the telecentres can contribute to direct or indirect information empowerment

The telecentre contributed to the direct and indirect information empowerment of women. Women received direct information disseminated at the telecentre through the Internet (Gomez, 2012), while, indirect information is disseminated about possible opportunities posted on the noticeboards at the telecentre.

Proposition 6: Language of instruction hindered the acquisition of computer skills for women using the telecentre

The language used to moderate the computer skills training hindered some women from participating in the computer skills training programme (Trauth, 2002). English language was accepted as the medium of teaching by women that participated in the computer skills training sessions (Antonio and Tuffley, 2014). Women preferred to be taught in their local language, Afrikaans.

Proposition 7: Contextual factors hindered how women incorporated telecentres in their daily lives

Women's use of the telecentre was hindered by some contextual factors such as lack of space, limited computers, geographic location, and environmental and technical factors (Trauth et al., 2004). Most of the telecentres lack space to accommodate computers at the telecentre. The location in which the telecentres were situated was sometimes not suitable for some users to access. The environmental factors include the negative societal perception of people about the telecentre (Trauth et al., 2004), while the technical factor hinders women's use of the telecentre because the telecentre is assumed to be used by computer-savvy users and not for individuals that lack computer experience.

Proposition 8: Telecentres may fail to improve sociocultural context preventing gender (male) bias to computers

Telecentres did not improve the cultural context preventing gender (male) bias towards computers due to the societal perception of the telecentre as a male-dominated space (Milek et al., 2011). The sociocultural perception affected women's use of the telecentre as only few women achieved individual empowerment after they integrated the telecentre use into their daily routines.

Proposition 9: Social network of women used the telecentres to interact among themselves

Only a few women's social groups used the telecentres to interact among themselves. This did not encourage a wide range of awareness of the telecentres as only a few people knew of the existence of the telecentres. The social network of women was empowered through this medium, while other women not in the same social group were not empowered (Ahmed, 2011).

8.2. How can women incorporate telecentres in their daily lives

Results shows few women incorporated the telecentres into their daily lives. Some women used the telecentre to achieve daily their tasks, for example, emailing, browsing the Internet, typing other ICT services. Some women valued the services provided at the telecentres and benefited from using the telecentre services after they participated in the free computer skills training programmes. Elsewhere, telecentres have empowered women and significantly improved their economic standards. The Aamagaon, Soochna Kendra project has 73 kiosks located in the rural areas of India. The ICT initiative in partnership with Mission Shakti made a significant impact on the empowerment of women. Women members were trained in the fundamentals of computer and Internet basics at the IT Kiosks on payment of an affordable fee (Suresh, 2014).

8.2.1. Incorporation of telecentres into the daily lives of women

The incorporation of telecentres into the daily routine of women was explained in the Domestication Theory as women used the telecentre for personal needs and goals (Mat et al., 2010). The adoption of the telecentre enables a person to have confidence, high self-esteem and feelings of self-efficacy, control over their lives, increased critical awareness and increased civic participation (Perkins and Zimmerman, 1995; Zimmerman, 1995, 2000).

Women have incorporated the telecentre into their lives to achieve diverse tasks; for example, some women entrepreneurs have used the telecentre to operate their personal businesses. Business owners used the telecentre to respond to client emails and other business requirements. Some women received accredited computer certificates after they completed the computer skill training programmes at the telecentres. These women were empowered to seek employment and other opportunities to improve their economic standards.

Women gained computer skills using the telecentre and communicated with the outside world. The telecentre assisted women not only to attain individual empowerment, but also contributed to community development and advancement:

"I think the aim of the e-Centre was to empower people with computer skills, to give them online training and connect people to the outside world because this is a very small place. I must say the government really did an excellent job. I was a part of this group that established the e-Centre [User E2]."

The findings show that rural women used the telecentres to access relevant information needed to address their personal desires. They were able to gain access to information and knowledge and share their knowledge and concerns, achieve a greater understanding of their current situation, and solve issues that were previously beyond their capability, and so enhance their livelihood.

8.2.2. Hindrances to incorporating telecentre into women daily lives

Rural women were restricted from incorporating the telecentre into their daily lives due to cultural, religious and sociocultural factors that hindered them from being empowered as follows:

1. Language hindered telecentre usage
2. Male users have more opportunities using telecentres

8.2.2.1. Language hindered usage of the telecentre

The computer skills training sessions and functionality were written and taught in English, not the local language, Afrikaans. This discouraged women from using the telecentre services.

8.2.2.2. Male users have more opportunities using telecentres

Findings show that men incorporated the telecentre use into their daily lives more than women did. Generally, men were more educated than women in the rural areas simply because they had more opportunities to get educated. Women have challenges getting educated and learning computer skills as they are expected to manage their families whenever the men migrate to seek for job opportunities elsewhere. Similarly, men speak English more fluently than women do because they use the telecentre more often than women do in the appropriation phase.

The pamphlets and posters distributed in the community were written in English were not acceptable because women wanted the materials to be written in Afrikaans. The telecentres programmes taught in English affected women more than men in the commodification phase.

8.3. Effects of telecentres on the different dimensions of empowerment

The different dimensions of empowerment were used to explain women's use of the telecentres using the empowerment indicators (see section 3.5). Results show fewer women using the telecentre were empowered than women not using the telecentre. Some women were economically empowered after they completed the computer skills training programmes at the telecentres. These women became employable and improved their economic standards as women using the telecentre have the confidence to use computers and better job opportunities and bright prospects:

“Another lady did a computer course and she got an administrative job at the local clinic” [Telecentre manager K1].

Several studies from other countries have shown that ICT applications can empower women, for example to promote their businesses and increased their level of income and enhanced access to information on employment opportunities and supported their economic empowerment (Gurumurthy, 2006; Potnis, 2011; Suresh, 2014).

The SMILE project in India increased literacy levels of underprivileged women using ICT tools like telecentres (Suresh, 2014). Likewise, in this study, women commercial farmers and entrepreneurs used the telecentres to achieve daily routines such as Internet browsing, printing copies, scanning and lamination of documents at no charge. The following subsection highlights the outcomes of economic empowerment.

8.3.1. Outcomes of economic empowerment

The outcomes of the economic empowerment show that some women became empowered using the telecentres and gained access to markets. For instance, women entrepreneurs used the telecentres to source information on the market value of their goods online.

The telecentre also enhanced business skills of women as some women entrepreneurs used the telecentres to apply for government grants and personal loans for their small-scale businesses from relevant government departments online to improve their businesses. In

addition, the telecentre provided women with productive sources such as information on advertised vacant government positions and provided information to women to apply for capital, resources and alternative sources of income:

“A lot of people are becoming aware of ICTs because we are busy promoting the ICT services provided by the centre. There is a lot of people who have become beneficiaries of the telecentre like a lot of people have been employed and are getting government information on grants” [Development manager L2].

Women used the telecentres for the free services provided at the telecentres for (a) lower transaction cost for business, (b) reduced transport need for travelling to use the telecentre, (c) improved timeliness. The free services provided at the telecentre allowed women to save money for other necessities, for example, to buy goods, apply for school admissions and online transactions using the Internet without the need to spend money on transportation and other household necessities.

8.3.2. Outcome of information empowerment

Information empowerment was used to explain women’s use of the telecentre to source information to improve their economic standards. Information empowerment is “The way people make use of technology in their daily lives and how well individuals integrate technology into their social, productive and cultural activities” (Gurstein, 2003:10). Women using the telecentres had access to information and were more informed about the happening in their surrounding environment and other places. Overall, women used the telecentre for research and to obtain ICT literacy, more knowledge on how to use the different forms of information to empower themselves and enhanced capacity to produce and publish local content at the telecentres:

“We print local content free at the e-Centre, but in the library, all the services used must be paid for” [Focus group C3].

8.3.3. Outcome of social empowerment

Social empowerment refers to a multi-dimensional social process that helps an individual gain control over their own lives (Ahmed, 2011). The outcome of the social empowerment shows telecentres provided women with the opportunity to communicate with each other. The computer skills training programme provided at the telecentres improved women’s ability to use the computer effectively. Social empowerment provides enhanced leadership skills, but

women did not achieve enhanced leadership skills due to the sociocultural factors that do allow rural women to social in public spaces.

Some women valued the information received at the telecentres through online social interactions and discussion sessions held at the telecentres. Other women strengthened their social relations, knowledge-sharing and computer skills. The telecentre was used to communicate with friends and family using social media platforms such as Facebook and Instagram despite having Internet-enabled smartphones. Similarly, women had more improved social ability to communicate with family members and friends outside their immediate location than the men:

"Some women come to the telecentre to use social media like Facebook while some come to the telecentre to mingle in the e-Centre and make new friends" [User E6].

However, some women enhanced their ICT literacy skills and improved programme management skills using the computer programs provided at the telecentres. This process fostered power because it built capacity, implemented the lives of people, communities and society to be able to act on issues that they define as important (MacDonald and Hedge, 2006). The women non-users did not have improved programme management skills because they did not have a good knowledge of computer techniques and communication skills and were not participants in the computer skills training programme offered at the telecentres. These women did not have prior computer knowledge and the opportunity to own personal computers.

8.3.4. Outcome of political empowerment

The outcome of the political empowerment in the Dimensions of Empowerment Theory shows there was limited political participation by the women in the rural communities. The women were not involved in decision-making and political activities in their communities due to the sociocultural issues that hindered women from voicing their political opinion. Political empowerment refers to an individual acquiring the capacity to analyse, organize and mobilize in their respective communities. It is recognized as individuals having a say in how things are organized and how decisions are made in their environments (Geetha, 2010).

Prior to using the telecentre, rural women did not know the procedure to initiate contacts with higher authorities but were assisted by the telecentre managers to address their complaints through the government departments such as the Parliament and provincial government using emails:

“The telecentre helps the community to plug in with other community-based organisations and non-governmental organisations” [User E15].

African women are marginalised, geographically dispersed and lack access to the process of governance (Hilbert, 2011). Despite these hinderances, some women used the telecentre to communicate with government authorities with the assistance of the telecentre’s managers. There women gained improved capabilities to interact with the local government and political parties through the Internet.

8.3.5. Outcome of cultural empowerment

Cultural empowerment involves individuals having the freedom from socio-cultural norms that would hinder them from being empowered. Many feminist critics have argued that computer skills and Internet use were inherently gendered and predominantly androcentric, and therefore, reproduced existing power structures and gender differences of the offline world in virtual a reality (Bruestle, 2009). The sociocultural factors have contributed to the limited number of computer-literate women increasing the low rate of digital and gender divide in rural communities of South Africa.

Other socio-cultural factors included the cultural norms, religious norms, and societal perception of telecentres and other contributing factors. Rural women were not empowered like urban-based women due to lack of computer skills and cultural beliefs:

“Yes, it can because we are poor people and we don’t have computers for our services and many of the women were stranded and many of them have men and because of culture. The men would say no to the women that they are not allowed to use the e-Centre and she must respect the man” [User K4].

The empowerment of women is ‘expanding the rights, resources, and capacity of women to make decisions and act independently in social, economic, culturally and political spheres’ (Inter-American Development Bank, 2010:3). However, women in rural communities are culturally hindered from empowering themselves.

8.4. Factors affecting women’s use of telecentres

Few women used the telecentre to source information on their self-development. Research shows that women continue to face gender-related discrimination that has prevented them from accessing the full benefit of having computer skills that could empower them economically (Hilbert, 2011). Rural women lack computer skills, lack education and prior

computer experience using the telecentre. Similarly, some rural women cannot read, contributing to the high rate of unemployment.

Women were not using the telecentres because of the lack of confidence to ask for assistance from others which contributed to the more limited employment and educational opportunities than the men in rural communities (Chadwick, Wesson and Fullwood, 2013). Subsequent subsection highlighted the consequent factor hindering women's use of telecentre.

8.4.1. Conceptual factors hindering women's use of telecentre

The conceptual factors hindering women's use of the telecentre are listed as follows:

1. The gender usage pattern hindered telecentre usage
2. Lack of awareness
3. Teaching moderation used for computer skills training programme
4. Limited computers and space
5. Geographical factors
6. Sociocultural factors

8.4.1.1. Gender usage pattern hindered telecentre usage

The contributing factors of telecentres us on gender-specific usage pattern show women had limited use of the telecentre compared to men. Women were preoccupied with other personal needs like domestic chores, while men were more fortunate to be empowered using the telecentre. The results derived from this study illustrate the common disparities in the use of telecentre in these communities and explains the different gender perceptions, awareness and usefulness of the telecentres in the various rural communities. These contributed to the high rate of digital and gender divide in rural communities.

8.4.1.2. Lack of awareness

Findings were like previous studies carried out on telecentres in the rural communities and arguments on ICTs and gender divide (Hilbert, 2011; Attwood, 2013; Antonio and Tuffley, 2014; Cummings and O'Neil, 2015; Fowlie and Biggs, 2015; Akther et al., 2015; Genilo, 2015). Some women were not aware of the telecentre existence in their communities, while some women were not aware of the benefits attained using the telecentre services.

8.4.1.3. Teaching moderation used for computer skills training programme

The mode of teaching adopted during the computer skills training programme affected women's use of the telecentres. The computer skills training was facilitated in English, which most women could not speak, preferring to be taught in their local language, Afrikaans.

However, the facilitators tried to incorporate Afrikaans into the computer skills training sessions but could not incorporate the components of the computer software applications into Afrikaans. This discouraged some women from concluding the computer skills training sessions held at the telecentres.

8.4.1.4. Limited computers and space

The telecentre had limited computers and space available at the telecentre which hindered women from using the telecentre. The telecentre could not accommodate many users, which discouraged some women the benefits which the telecentre offers.

8.4.1.5. Geographic factors

The geographical location of the telecentre hindered women from using the telecentre. Some women were discouraged from using the telecentre due to the distance from the homes which was not conducive to using the telecentre. Some women lived in neighbouring towns and were discouraged from walking long distances or traveling daily from their homes to use the telecentre.

8.5 How can telecentres affect the process of empowerment in women

Women showed a tendency to calm down and open themselves up to changes such by adopting the use of the telecentre to improve on their economic standards after being informed about the benefits by their social groups in the community. Women experience Introspection, an informal reflection process when women are curious and determined to have a change in their circumstances (Pfeifer et al., 2009).

This study explains that the domestication of the telecentre motivates empowerment. Women need to experience the steps of empowerment to motivate the domestication of the telecentres through personal reflection for an individual to change their circumstances. A person's self-reflection helps them to build their emotional self-awareness which motivates them to indulge

in the steps of empowerment. This empowerment process then encourages a person to motivate themselves to participate in the computer skills training programme, the outcome of which is reflected in the dimensions of empowerment.

The individual environment that a person is identified with impacts on their personality and allows them to make strategic life choices to improve their circumstances (Gigler, 2011). This usually occurs through self-reflection and an in-depth assessment of an individual's personal circumstances without bias (Pfeifer et al., 2009). Some rural women used the telecentre's services after they identified its usefulness in their environment and motivated them to use the telecentre to overcome difficult societal situations.

Telecentres have contributed to the empowerment of women through the provision of digital literacy. Some women use the telecentre to achieve empowerment in various aspects of their lives. While women not using the telecentre could not improve their economic standards. Women using the telecentre became economic contributors to their families, communities and country. Women not using the telecentre lacked computer skills and were not empowered but remained economically unproductive.

8.5.1. Effects of telecentre on the process of women empowerment

Women empowerment is the process through which women gain the capacity for exercising strategic forms of agency in relation to their own lives as well as in relation to the larger structures of constraint that positioned them as subordinate to men (Kabeer, 1999; 2001). This process involved women realising the potentials to improve their self-development and gain the capacity to exercise strategic life choices.

Telecentres cannot be a solution to poverty in and of itself but can best be adopted as a tool in poverty reduction initiatives (Duncombe, 2001). Women using the telecentre can access information to improve their economic standards. Investing in telecentres in rural areas motivates the desired economic and social development of communities. Telecentres in rural areas promote ICT skills development and increase the potential to contribute to rural development (Khane et al., 2010).

8.5.2. Telecentre as a male public space

Telecentres are a social space which few women use for interactions and disseminating and receiving information daily. Findings show the telecentres as a space that occupies both male and female users daily. Women sometimes do not use the telecentre because of the social misconception of the public space as a male-dominated space. Telecentres are mostly

occupied by more male users than female users due to some factors that prevent women from using the services.

8.5.3. Telecentres used for infomediaries

The telecentre is also used as an infomediary for women, with the assistance of the telecentre managers. The latter are used as a source of information to provide relevant information on job postings and other opportunities to women. Women using the telecentre access information about government funding and government departments to lay complaints on community issues with the assistance of the telecentre managers.

8.5.4. Telecentres as a community of practice

The telecentre is also used as a community of practice as women users influence other women to use the telecentres services. Women users propagate the benefits of using the free telecentre services through word of mouth and face-to-face communication with their family and social network in the community.

8.5.5. Social community network of telecentre

Women use the telecentre as a social community network. Women using the telecentres were empowered and play a significant part in assisting other women to apply for possible opportunities posted at the telecentres:

*“Yes, there is a woman whom we helped at the e-Centre to get a job, she is a chef and we helped with her CV and she got a job at the children school”
[Telecentre manager K5].*

The telecentre managers assist women to apply for jobs advertised online and the telecentre noticeboard.

8.6. How can telecentres contribute to women empowerment in the rural communities

Literature shows women living in the rural areas have low levels of literacy and are estimated at 2.3% of the world's illiterate (Chandy and Gertz, 2011). The study shows the insights on the structural factors that have hindered women from using the telecentre to include lack of education, lack of awareness, lack of computer skills, language and socio-cultural factors. Rural women are known to have limited education and only a few women are empowered in the communities. According to Melhem and Tandon (2009:9), "Women and girls are poorly

placed to benefit from the knowledge society because they have limited access to scientific technical education specifically and to education in general”. Rural women can be empowered using the telecentre through various free computer programs and other free services offered at the telecentre to improve their economic standards:

“Women benefit a lot from the use of the e-Centre because, in my growing business as a commercial farmer, I benefit from the free services offered at the e-Centre like other organisations that also make free copies. People from shops, also come here to use the Internet for 45 minutes free of charge and they do not have to pay for copies” [User E6].

Some women use the telecentre to achieve success stories that improve their economic standards. Other women use the telecentres in their daily routine and improve their status in the community. The telecentres empower women to strengthened social relationships, to share information knowledge, and communicate with their social groups and families using the social media.

8.7. Summary of chapter

This chapter discussed the findings from the research relating to previous studies. Inferences were drawn from the findings and the overall objective. Insights on the factors that hinder women from using the telecentres were discussed. The chapter discussed the key findings of how women incorporated the telecentre to achieve economic empowerment, informational empowerment, social empowerment and some cultural empowerments. It was realised that the outcome of political empowerment was limited in the different communities. Furthermore, findings show that the telecentre contributed to the empowerment of women through the provision of computer skills training programmes that allowed women to have computer skills. Finally, the telecentres strengthened women’s social relationships, allowed women to share information knowledge and to communicate with their social groups and families using the social media.

CHAPTER 9: CONCLUSIONS

9.0. Introduction

This chapter aims at discussing the conclusions of the study and the probable future work. It summarises the results of the research and recommends an active interventionist vision for ICT policymakers in South Africa and other developing countries.

9.1. Summary of the study

This study investigated the contribution of telecentres for women empowerment in rural communities of the Western Cape Province of South Africa. There is limited literature on telecentres and empowerment of women; hence, the need for this research. Women in rural areas experience digital exclusion largely because of some factors that restrict them from becoming empowered.

There is a need to address the issues that focus on the gender digital divide because the failure to address the specific ICT needs of women in rural areas continues to contribute to the barriers women generally experience accessing ICTs, as most telecentres do not focus on the empowerment of women (Hilbert, 2011; Klugman et al., 2014; Potnis, 2015). The approach to universal services and ICT policies in general neglect gender issues, which may affect women's social and socio-economic conditions when the policies are implemented (Nath, 2001). Therefore, there is a need to understand the actual use of telecentres in rural communities, and how gender equality can be promoted to avoid the exclusion of women (Asiedu, 2012).

Countries like South Africa have made substantial efforts to tackle digital literacy to make ICT infrastructures available in the rural areas, providing access to the Internet and other ICT facilities through the provision of telecentres (Hilbert, 2011). This is demonstrated as the Western Cape government provided sponsored telecentres in the six district municipalities of the province.

Women can adopt the use of the telecentre to source r information to overcome daily life challenges and personal issues. One resource that liberates people from poverty and empowers them is knowledge (Jain, 2006). Telecentres can be used to strengthen women's

human capital in areas of knowledge, skills and the ability to work and attain good health from the information obtained from using the telecentre.

9.1.1. Findings of the use of the telecentre

Findings show that, based on the empirical evidence from this research, few women utilised the telecentre to search for information to improve their economic standards. A general perception of women's use of the telecentre shows that only few women benefited from the services. Findings revealed that some women valued the services provided at the telecentre:

"I think the telecentre adds value to the people of Elim because they can learn more. You can read there, visit other sites and you can even buy stuff and shop online" [User E2].

According to Haque and Quader (2014), the telecentre has the potential to completely redefine traditional gender roles, especially for women who have limited skills and lack the resources to invest in higher education. Some women enrolled in educational programmes and used the telecentre to complete assignments and receive study notes using computers with Internet connections at the telecentres. Some women enrolled in part-time certificate, diploma and degree programmes to empower themselves.

Results show that most of the women were non-users because they were not aware of telecentres' existence. Also, some women were not participants in the computer skills training programme because they were unaware of the free services offered at the telecentre. Additional findings reveal that the telecentre contributed to limited value to women in the aspect of political empowerment because women had very limited political involvement. Similarly, women were not active participants in the decision making of the community development projects and did not have a political voice.

Findings further show that some women benefited socially using the telecentre through interactions with friends and family members online. Other benefits included ICT skills development, improved communication, access to information, employment opportunities, access to government information and strengthening of social capital. The findings from the study were consistent with similar studies on telecentres in other rural communities (Mbatha, 2015). However, the study did not differentiate the usage of telecentres in terms of gender.

Therefore, this study joins the ongoing debate about the benefits of using the telecentre, differentiating between men and women users (Hilbert, 2011). There were positive responses from some women using the telecentre to acquire computer knowledge from the computer

skills training programmes offered at the telecentre. These women acknowledged that the telecentre contributed to their economic standards. The women's involvement in the computer skills training sessions helped them overcome the fear of using computers and they obtained digital literacy in the process.

However, women non-users were not using the telecentre because of the lack of education, lack of computer skills and the fear of humiliation by other users. Some were not confident to ask the telecentre managers for assistance to use the computers available at the telecentre. Women in the rural areas lacked education and were unemployed, which contributed to the high rate of unemployment. Results further show very few women use the telecentre to search for information to improve self-development and women continued to experience challenges such as unemployment, limited education and poverty.

Further findings show that the telecentre had limited space available to users and users complained that the telecentre provided limited time of 45 minutes per session to access each computer offered at the telecentre to complete online tasks. This discouraged some women from using the telecentre. More findings from the study show that some women perceived the telecentre positively, while some women non-users perceived the telecentre negatively. Literacy is key to knowledge, as without literacy there can be no empowerment, particularly for women and girls (Dighe and Reddi 2006; Sen, 1999). Other contributing factors that hindered women from using the telecentre included socio-cultural norms, lack of education, language and lack of computer skills. The following subsection highlights the factors contributing to gender (male)-biased use of the telecentre.

9.1.2. Factors contributing to gender (male)-biased use of telecentres

Factors that contributed to the gender-biased use of the telecentre, such as the male-biased computer culture which influenced the behaviour of some women. To address these factors there are pending issues of how to share information with people having limited knowledge of how to use telecentres due to low levels of literacy, little time, highly contextualized knowledge and language requirements. Some women were not using the telecentre because of the perception that the telecentre was mainly a male- dominated space. They felt they were not qualified to use the computer due to lack of computer skills.

9.2. The contribution of the study

The contribution of the study suggests that telecentres should be used to accommodate programmes that enhances women's capabilities and information needs for the empowerment of women. The subsections that follow highlight the empirical contribution, theoretical contributions and contributions to practice.

9.2.1. Empirical contribution of the study

The empirical contribution of the study discussed the economic contribution and the challenges women experience in their communities. Furthermore, the factors that affected women's choice to use the telecentre, negative consequences of using telecentres and the psychological effects of using telecentres were discussed. The various roles women play in the society, discussions on women in South Africa, gender inequality and vital roles ICT plays in the lives of women were further important aspects discussed in this chapter

9.2.2. Theoretical Contributions

The study used three theories, namely the Individual Difference Theory, Domestication Theory and the Dimension of Empowerment Theory to develop a conceptual model. These theories were used to explain the process of empowerment. The study makes a significant contribution in the Information Systems field because the theories have not been combined to analyse women's perception of the telecentre or the process of the telecentre.

9.2.3. Contributions to practice

The study allows the government and non-government organisations to use telecentres to overcome digital literacy in development of developing countries. Implementing a gender transformation policy provides women with the resources that allow them to take greater control of their own lives to figure out what kind of gender relations they want to live within and devise strategies and alliances to help them get there (Kabeer, 1994:97). In this context, this study makes practical contributions in the following:

- The study makes practical contributions to ICT policy makers, the South African government and non-government organisations to use telecentres for socio-economic development.
- The study informs national policy makers on the contribution of telecentres for women empowerment, rural livelihoods and poverty reduction.

- The study suggests that actions should be required at the various levels of the African society to ensure that the full potential benefits of technologies available to women in developing countries are made accessible.

9.3. Assessing contributions

The assessing contributions to research-reviewed literature from other scholars and the views of other studies on the women's informational needs in prior studies focused on the user and non-user Internet experience, while, a few studies focused on the challenge's women experienced using the telecentre (Gcora et al., 2015; Chigona et al., 2016; Lwoga and Wallace, 2016). Others have focused on the positive impact of ICTs on women (Buskens and Webb, 2009; Choudhury, 2009; Shirazi, 2012), and the opportunities ICTs offer women for enhancing productivity (Karubi and Ching, 2017; Masika and Bailur, 2015; Gill et al., 2010; Thompson and Walsham, 2010). However, this study focused on the contributions of telecentres for women empowerment and addressed concerns of gender inequality.

Assessing the contributions was an insightful procedure that entailed continuous reflections on the outcome of the data collection process. A thorough reflection on the findings of the study shows deep meanings to the data obtained from the research site. Also, the activities from the fieldwork were explained in a strategic way and incorporated the concepts from three theories. This was a reflective moment which allowed the researcher to have a deep understanding of the study to describe the data analysis phase. The study was assessed with experienced scholars and feedback was received from other research fellows, colleagues, Information Systems department workshops, ICT seminars, conferences, and journal publications. The subsequent subsection shows evidence as follows:

9.3.1. What is new? Does the study make a significant, value-added contribution to current thinking?

This study added significant value and contribution to the current thinking. The evidence presented an understanding of the outcome of the process of empowerment in women. The study proposed how the government and the policymakers can use the telecentre as an empowerment tool for socio-economic and women empowerment. There is a need to understand the actual use of the telecentre, how gender equality is promoted and how to avoid the exclusion of women (Asiedu, 2012). The findings from the study show the outcome of telecentre use for the empowerment of women. The study contributed to knowledge and the academic environment in ICT4D research that related to human science research, policy-

relevant and social scientific projects for the public-sector users and science and technology on addressing poverty.

Literature shows telecentres as a valuable ICT development initiative that can be used through the provision of information receiving and dissemination (Ngumbuke, 2010). Studies demonstrated the personal characteristics of respondents in the rural areas, the extent of their effect on the diffusion and adoption of telecentres and challenges women encounter using telecentres (Mbatha, 2015; Chigona et al., 2016). Prior studies have looked at the effects of the use of telecentres on the well-being of communities in South Africa (Attwood, 2013). However, insights on the benefits women derived from using the telecentre and how they empower women are still lacking (Uys, 2016).

The research gap shows there are limited studies that focused on telecentres and women empowerment. Most research on telecentres addressed challenges women experience using telecentres, while the contributions of telecentres for women empowerment and gender implications for the use of telecentres were not addressed. Hence this study focused on the contributions of telecentres for women empowerment developing a conceptual model to explain the process of individual empowerment.

9.3.2. What will the study contribute to women empowerment?

The study developed a conceptual model to explain the process of individual empowerment. The conceptual models described how women empowerment can be achieved using the telecentre. The study allows the government, non-government organizations and ICT policy makers in developing countries to understand the significance of the empowerment of women and development.

Enhancing women's informational capabilities is the most critical factor to determine the impact of ICTs on women's well-being. The limited access to ICTs calls for the provision of ICT infrastructure to provide the information needs of women using telecentres for the empowerment of women (Rao, 2008). This study discussed the significance of telecentres for social-economic, political, economic growth and equality of developing countries. The study used telecentres as a positive spin-off that can contribute immensely to the empowerment of women in the rural communities.

9.3.3. Why so? Are the underlying logic and supporting evidence compelling?

The underlying logic and supporting evidence provided in the study were compelling as the theories used complemented and validated each other. The study combined three theories to

create a conceptual model to explain the process of individual empowerment. The discussions and conclusions derived from the outcome of the results shows the different chapters in sequence. The evidence derived from the study explained the outcome of telecentre use in rural areas.

The study further described the descriptive analysis of the frameworks used to suit the study. The Domestication Theory explained the adoption of technology to explain women's use of the telecentre in their daily routine. The study explained a true analysis of the Dimensions of Empowerment Theory which shows the outcome of women's use of the telecentre using the different indicators of empowerment. The Individual Difference Theory was used to analyse the factors that impacted or hindered women's use of the telecentre. These theories were linked together to create a conceptual model that described the process of an individual empowerment.

9.3.4. How well done is the study? Does the study reflect seasoned thinking, conveying completeness and thoroughness?

The study reflects seasoned thinking, conveyed completeness and thoroughness using three theoretical approaches to develop a conceptual model (see section 4.9). These theories were analysed to generate research findings and to address the research problems from different angles to derive completeness and thoroughness to the inquiry. The Domestication Theory examined the adoption of telecentre use in the everyday life of women; the Dimensions of Empowerment Theory examined the outcomes of the different empowerment indicators in the lives of women, while, the Individual Difference Theory analysed the concepts that impacted and hindered women's use of the telecentre. To derive completeness, the research questions were individually discussed, and reflections were thoroughly explained for completeness of the research.

9.3.5. Outcome of research

The research findings show the outcome of women's use of telecentre for their daily routine. Attempts were made in inferences from the findings obtained from the analysed data to answer the research questions (see section 8.0). To ensure diligence of the study, the results and frameworks used for the study were presented at conferences, published as manuscripts in journal publications and feedback was received from fellow researchers from Information Systems department workshops and seminars, all of which have contributed to the shaping of the research. Instances of the platform at which this research was presented and evaluated were as follows:

- The South Africa Institute for Computer Scientists and Information Technologists (SACIST) conference.
- The Young Scholar Workshop, Communication Policy Research South (CPRsouth).
- The International Conference on Social Implications of Computers in Developing Countries Indonesia.
- The Information Systems Department (University of Cape Town, South Africa) seminars.
- The Information Systems Department Writing Workshop.

The feedback received from reviewers of all these academic platforms aided further discussions on critical issues drawn from the study and assisted in the fine-tuning of the final write-up of this research.

9.3.6. Is the study done well? Is the study well written? Does it flow logically? Are the central ideas easily accessed?

Critical discussions and conclusions of the outcome of the study were based on the evidence derived from the research findings. The study was supported by literature that discussed the key areas and its important components. The case analyses showed evidence of the research findings from the data collection and the empirical evidence of the study emphasized the research problem. The findings obtained from the analysed data was used to answer the research questions.

The empirical evidence from the data collection was analysed using three frameworks to define the process of individual empowerment. The frameworks used for the study discussed the relevant research questions asked in the study, while the research method adopted in the study addressed how the data enquiry was conducted.

The study was well written as the services of a professional editor were used to edit the entire thesis to ensure a quality writing style. The table of contents, lists of figures, tables and acronyms created in the thesis with clearly outlined page numbers and chapter outlines ensure readers' accessibility.

The methodology described design and the philosophical stance of the study giving meaning and comprehensiveness to the inquiry. The case description shows evidence of the research setting and originality of the study.

9.3.7. Why now? Is this topic of contemporary interest to scholars in this area?

The research topic is of contemporary interest to scholars as this study provides an in-depth literature for scholars that have researched issues relating to gender and women empowerment in developing countries. The study is of contemporary interest to ICT4D research areas because women's increased use and better understanding of the importance of telecentres for the empowerment of women was researched.

The study allows women to learn about the knowledge society and has addressed African developmental issues such as the gender divide which needs attention and awareness. Gender-role stereotyping is a major barrier for women, whether it manifests in the home or the society (Aderemi et al., 2009; Aji et al., 2010). Rural women have limited opportunity to use telecentres because of their busy home schedules while the men have more opportunities to use the telecentre.

The individual's increased reliance on, computers and other ICT tools in communities is not evenly distributed in developing countries as ICT infrastructures are relatively out of reach of rural women. The study explains using telecentres for the empowerment of women. The research suggests using telecentres to respond to women's development challenges and have the freedom to empower themselves.

9.3.8. Who cares? What aspect of the study makes academic readers interested in this topic?

This study area is vital to the government, ICT policy makers, non-government organizations and ICT policy researchers in the developing world. There are bodies that find ICT4D study areas significant; these bodies include CPRafrica/CPRsouth which promotes ICT policy research, capacity in Africa and Asia-Pacific which has organized annual conferences on ICT policy for academics and practitioners, researchers, government workers, students, non-government organizations and policymakers from all walks of life.

The study is a compelling research area which focuses on ICT and policy and was presented at The International Federation for Information Processing (IFIP) annual conference in Indonesia. IFIP's Technical Committee 9 (TC 9) is a high-ranking conference held in the field of Information Systems and it is responsible for ICTs and societies. Institutional annual conferences organized by universities in Africa and developing countries for ICT4D researchers, Information Systems and computer science are research related to the study. Table 9.1 answers to the key questions of theorizing.

| KEY QUESTIONS | ANSWER TO QUESTIONS |
|---------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| What is new? | The study provides an insight on the impact of telecentres on women empowerment |
| So, what? | The study discussed the need to adopt telecentres for the empowerment of women in developing countries |
| Why so? | The study addressed concerns of gender inequality and provides policy recommendations to the government authorities in charge of ICT developments to implement appropriate ICT policies and strategies in developing countries. |
| Well done | The study used three frameworks to analyse the data and provides an in-depth explanation to ensure diligence and completeness of the study. |
| Done well | The study provides literature that discussed key areas and important components that can contribute to academic knowledge. |
| Why now | This study discussed African and gender developmental issues which needs attention. The increased use of telecentres and the better understanding of the importance of ICTs can assist rural women to learn about the knowledge society. The study responds to development challenges and expressed women's freedom to empower themselves. |
| Who cares | This study makes recommendations to the government, ICT policymakers and NGOs to consider the differences in the access to ICTs and cultural issues that may affect the implementation of telecentres for the empowerment of women. |

Table 9.1: Answers to key questions of theorising (Whetten, 1989).

9.4. Possible future research directions

The probable future research directions on telecentres and the empowerment of women are explained in the following:

- Further investigation should be done on the lifestyle and needs of women from marginalized communities and ways of identifying how the telecentre could be improved to motivate and attract women's attention should be addressed.
- The essence of empowerment is to enhance the circumstance of an individual, so the possible factors contributing to the reason's women are not concerned with becoming empowered but rather disempowered should be investigated.

- Future studies should further investigate both the male and female perspective of how the telecentre may or may not contribute to empowerment.
- Future studies should research how the local government and other stakeholders can promote women empowerment using the telecentre.

9.5. Recommendations

The study recommends to the South African government, ICT policy makers, Non-government Organisations (NGOs) and the government of other developing countries to adopt the telecentre as a tool for women empowerment. These recommendations assist to bridge digital literacy of women in rural communities.

Special emphasis should be placed on the design phase of the telecentres to introduce programmes that focus on the empowerment of women. The study suggests that telecentres need to provide measures to create programmes that do not only provide computer skills to communities but enforce skills development that motivate the empowerment of women. Similarly, gender awareness programmes on the actual benefits of using telecentres should be provided to encourage an environment for women's participation, especially in poor communities where women have limited access to information and computer skills training opportunities that improve the quality of people's lives in developing countries (Jain, 2006).

This study informs the national policy makers on the contribution of telecentres for the empowerment of women, to rural livelihoods and poverty reduction (Adera et al., 2014). Therefore, telecentres should be implemented into government policies for the empowerment of women, and to reduce poverty and lack of computer skills in South Africa and other developing countries.

The study recommends that the Cape Access initiative should create campaigns on the awareness of the telecentre. The government of developing countries have decentralized their government to strengthen local government administrations through strategic ICT intervention (Kabeer, 2005). The local government should be used to strengthen women's political and public participation and support Cape Access projects to implement programmes that motivate the empowerment of women using telecentres to encourage gender digital literacy and increase the output of women using telecentres. Table 9.2 presents prior policy goals for government implementation for women.

| POLICY GOAL | ICT IMPLEMENTATION | MEASURE OF SUCCESS |
|-----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
| Promote women's participation in political debate and government decision-making. | Promote information on town meetings, agendas and minutes on concerns of women groups. | Women have increased participation, electronic or otherwise in local government affairs. |
| Enhance government accountability. | Provide electronic access to government officials via emails. | The result of a survey of women to measure the quality of responses to complaints and comments. |

Table 9.2: Policy goals for government implementation for women (Kabeer, 2005).

9.6. Personal reflection of study

I am a researcher with a background in the field of communications with prior experience researching Information and Communications Technologies for development (ICT4D). I have a great interest in working with researchers in the Information Systems field, which was a completely different field of knowledge to my prior educational background. The IS field broadened my research knowledge on how to conduct future research relating to ICT4D and allowed me to acquire a distinct perspective on how to conduct sensitive research issues that relate to gender.

This study taught me how to understand a situation in a research site without being biased and allowed me to investigate incidents that contributed to the events in the case. The research gave me the opportunity to interact with people from diverse backgrounds and cultures, giving me the chance to witness the lifestyles and cultures of other people different from me.

During the study, I reflected on the issues of empowerment affecting women and constructively made decisions on how to carry out the research inquiry and to address the outcomes derived from the study. This study allowed me as a female researcher to contribute to the issues of the empowerment of women through research. This has allowed the passion I have within to recommend possible measures that could contribute to women empowerment issues such as increasing women's leadership and participation and engaging women in all

aspects of training and facilitation programmes. I believe this would encourage education for women, enhance women's economic empowerment and make gender equality central to national development planning and budgeting.

I have a keen interest in women's developmental issues, which I feel need attention and awareness. ICT4D research is my area of interest because it discusses issues that affect the well-being of people living in disadvantaged communities and it promotes community development in developing countries. Undertaking this research has been a constant reflection of different scholarly views of ICT4D practice.

Based on my experience conducting this study, I have come to realise that women can learn about knowledge of society and they can be empowered to respond to development challenges. Women can be encouraged to contribute immensely to the economic development of their various countries. Also, I am in support of the assumption that investing in telecentres has the potential to contribute to the economic growth and social development of rural communities in the developing countries.

The selected theories used to carry out the research was carefully considered because it described aspects that impacted or hindered the use of telecentres, how the telecentre was incorporated into the daily lives of women and how this has reflected in the several types of empowerment. However, the capability approach (CA) would have been an ideal theory to use in the study, but I understood that the framework was too abstract and needed to be operationalized before it could of use for the study. The CA Theory had limitations and had been overused and focused only on agency but ignored social structures (What the individual is able to do or not do), for example the norms and values of people of a community. Finally, the CA framework only focused on the well-being of an individual during an evaluation which would have limited my overall view of the research.

9.7. Final word

This chapter addressed the discussion and conclusion section of the study. The objective of this study was addressed to understand how telecentres contributed to the empowerment of women in rural communities. Furthermore, this study focused on women using the telecentre to gain access to information and knowledge and have a greater understanding of their current situation to solve issues that were previously beyond their capability and enhance their livelihood. The research findings allow the government and NGOs to use telecentres as

pathways towards development. The study is expected to inform the South African government on ways to introduce ICT policies in rural South Africa to empower women, while, the case study method, the recommendation, limitations and future work were explained. Furthermore, the chapter explained the contributions and assessing contribution of the study. Finally, the personal reflection of the researcher on the whole study was presented to conclude the chapter.

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UNIVERSITY OF CAPE TOWN

Department of Information Systems
Leslie Commerce Building

Engineering Mall – Upper Campus

OR Private Bag – Rondebosch 7701

Cape Town

South Africa

Telephone: +27 21 650-2261

Fax: +27 21 650-2280

Consent to participate in a research study on the contribution of ICT in women empowerment

Purpose of the Study

The purpose of the study is to assess the contribution of ICT for women empowerment and human development in South Africa and Tanzania. In particular, the study seeks to establish the current status of ICT sector development in the selected rural areas, secondly to determine the use pattern of ICTs, and impact of ICT use on women empowerment and development, and to identify factors affecting effective utilisation of ICTs.

Significance of the study

The study will provide recommendations to governments and donor agencies in charge of ICT developments, which can assist them in developing and implementing appropriate ICT policies and strategies. The results of this study will enable general public to recognize the importance of ICTs in empowering women and improving their livelihoods and reduce poverty.

What Participation Involves

If you agree to join the study, you will be required to answer questions, and be interviewed

Confidentiality

All information we collect on forms will be entered into computers with only the study identification number and they will be used for the purpose of this study only.

Risks

We do not expect that any harm will happen to you because of joining this study.

Rights to Withdraw and Alternatives

Taking part in this study is completely your choice. If you choose not to participate in the study or if you decide to stop participating in the study, you will continue to receive all services that you would normally get from this hospital. You can stop participating in this study at any time, even if you have already given your consent. Refusal to participate or withdrawal from the study will not involve penalty or loss of **any** benefits to which you are otherwise entitled.

Whom to Contact

If you ever have questions about this study, you should contact the study Coordinator or the Principal Investigator: **Prof Wallace Chigona**, Department of Information Systems, University of Cape Town, Tel: 021 6504345; 0765204125, email: Wallace.chigona@uct.ac.za.

Signature:

Do you agree?

Participant agrees Participant does NOT agree

I, _____ have read the contents in this form. My questions have been answered. I agree to participate in this study.

Signature of participant _____

Signature of witness (if mother/caretaker cannot read) _____

Signature of research assistant _____

Date of signed consent _____





Faculty of Commerce

Private Bag X3, Rondebosch, 7701

2.26 Leslie Commerce Building, Upper Campus

Tel: +27 (0) 21 650 4375/ 5748 Fax: +27 (0) 21 650 4369

E-mail: com-faculty@uct.ac.za

Internet: www.uct.ac.za



@Commerce_UCT



UCT Commerce Faculty Office

24 November 2015

Ref: 1510201501

Abiodun Alao

Project title: The contributions of telecentres for women empowerment in rural communities of South Africa.

Dear researcher,

This letter serves to confirm that this project as described in your submitted protocol has been approved. You will need to obtain permission from the Executive Director, Department of student Affairs before commencing data collection.

Please note that if you make any substantial change in your research procedure that could affect the experiences of the participants, you must submit a revised protocol to the Committee for approval.

Regards

Ms. Samantha Alexander
Administrative Assistant
University of Cape Town
Commerce Faculty Office

Room 2.24 | Leslie Commerce Building

“Our Mission is to be an outstanding teaching and research university, educating for life and addressing the challenges facing our society.”

Appendix 1: Interview Schedule (Part I)

Interview schedule questions for women users

BIOGRAPHICAL DETAILS

| | | | | |
|-----------------------|------------------|---------|--------------------------|---------------------|
| Name/Pseudonym | | | | |
| Age | | | | |
| Marital status | | | | |
| Number of Children | | | | |
| Nationality | | | | |
| Race | | | | |
| Languages | | | | |
| Level of education | Less than Matric | Matric | Certificate in the trade | Professional Course |
| | Gr1/8 | Gr 9/11 | | |
| Employment/Occupation | | | | |

Section A: Awareness

1. How did you know about the telecentre?
2. In your view, what was the aim for establishing the telecentre?
3. Who are the target users for the telecentre?
4. What is your understanding of a telecentre?

Section B: Use of Telecentre in women's daily lives

6. How long have you been using the telecentre?
7. How have women incorporated the telecentre into their daily lives?
8. What do you use the telecentre for whenever you use it?
9. What benefits do you derive using the telecentre?
10. What do you find attractive about the telecentre?
11. What challenges do you find using the telecentre?

12. What things do you do at the telecentre that you could have done in person elsewhere?
13. What keeps other people from using the telecentre?
14. If the government asked you if you needed a telecentre **OR** something else in this community, 15. what would you prefer? Please explain why?
16. What do you think about the location of the telecentre?
17. Before the establishment of the telecentre, what were you using to access information?
18. How has the telecentre affect women from becoming empowered?

Section C: ICT proficiency

19. What do you generally use the telecentre for whenever you visit?
20. How and where did you learn how to use a computer?
21. What skills have you got relating to IT?
22. What computer programmes do you know?
23. What do you use these programmes for whenever you visit the telecentre?
24. Besides the telecentre, where else do you access the computers?
25. What draws you to access computers at that other place?
26. What do you think other people use the telecentre for whenever they visit?

Section D: Mobile phone Use

27. Do you have a cell phone?
28. What kind of cell phone do you have?
29. What do think other people use their phones for when using? If you had a more advanced
30. phone, what would you use it to do?
31. If you have/had a mobile phone, which has Internet access, would, you still visit the telecentre?
32. What challenges do you find using the cell phones?

Section E: Empowerment

33. What challenges did you face in your daily life as a woman in the community?
34. What challenges do you face as a woman in this community?
35. What do you think ICTs can do to assist in dealing with those challenges?
36. What other values do you think women get from using the telecentre?
37. What do you think those who are not using telecentre are missing out?

Section F: Benefits

38. What things do people do using the telecentre which would have otherwise cost them money to do in person?
39. In your view, how does the use of the telecentre help in the following:
- (a) Saving money
 - (b) Making money
 - (c) Getting a job: How do you think women got jobs? In addition, women that have not gotten a job yet, why does you think they have not gotten jobs yet?
 - (d) Access to services and opportunities such as health, education, e-government services?
 - (e) Improve the level of your skills: computer skills, information literacy, leadership skills
 - (f) Ability to express opinion and participation in setting the agenda for issues related to the welfare of the village
 - (g) Access to information and knowledge to help solve your problems/needs
40. Would you tell me of any stories that you have heard about someone who benefited from using the telecentre?
41. Are there any risks or bad things that you think comes from using the telecentre?
42. As a woman, what do you think about other woman who use computers at the telecentre?

Section G: Design Phase of Telecentre

43. Before the telecentre was established, where the women in the community informed of this initiative by the government?
44. Are there programmes that empower women during the computer skills training taking place at the telecentre?
45. Did women participate in the design phase of the telecentre?
46. Are there special programmes for women during the computer skills training sessions at the telecentre?
47. Where campaigns held in the community promoting the use of the telecentre in the community?
48. Do you think the government considered women during the design phase of the telecentre in the community?
49. Has there been any awareness campaigns introducing the telecentre as an ICT initiative that can be used for empowerment in the past?
50. Are there enough resources for the efficient running of the telecentre as follows?
- (a) Finance
-

- (b) Man power
- (c) Infrastructure

51. How has the telecentre assisted in empowering women in the community?

Section H: Telecentre linking the government and community people

52. Are the telecentre managers acting as the intermediary between the community people and the government? If yes, please explain how the telecentre managers have acted as the intermediary between the community people and the government?

Section I: Information on the Individual Difference of women

53. Do have any knowledge on how to use the computer?

- (a) If yes, how did you know how to use the computer?
- (b) If No please explain

54. Where you ever exposed to a mentor that taught you how to use the computer in the past?

55. Does your culture hinder you from using the telecentre?

56. Is the geographical location of the telecentre conducive for you to access the telecentre?

57. Are you employed or unemployed?

58. Do have any knowledge on how to use the computer?

- (a) If yes, how did you know how to use the computer?
- (b) If No please explain

59. Do you have an idea of how to use of the computer? If yes, how do you use of the computer?

Conclusion: Are there any questions or anything you want to add?

Appendix 2: Interview Schedule (Part II)

Interview schedule questions for women non-users

BIOGRAPHICAL DETAILS

| | | | | |
|-----------------------|------------------|---------|--------------------------|---------------------|
| Name/Pseudonym | | | | |
| Age | | | | |
| Marital status | | | | |
| Number of Children | | | | |
| Nationality | | | | |
| Race | | | | |
| Languages | | | | |
| Level of education | Less than Matric | Matric | Certificate in the trade | Professional Course |
| | Gr1/8 | Gr 9/11 | | |
| Employment/Occupation | | | | |

Section A: Awareness

1. Are you employed or unemployed?
2. How did you know about the telecentre?
3. In your view, what was the aim for establishing the telecentre?
4. Who are the target users for the telecentre?
5. What is your understanding of a telecentre?

Section B: Use or non-use of the telecentre in women's daily lives

6. How long have you been using the telecentre?
7. How have women incorporated the telecentre into their daily lives?
8. What do you use the telecentre for whenever you use it?
9. What benefits do you derive using the telecentre?
10. What do you find attractive about the telecentre?

11. What challenges do you find using the telecentre?
12. What things do you do at the telecentre that you could have done in person elsewhere?
13. What keeps other people from using the telecentre?
14. If the government asked you if you needed a telecentre **OR** something else in this community, what would you prefer? Please explain why?
15. What do you think about the location of the telecentre?
16. Before the establishment of the telecentre, what were you using to access information?
17. How has the telecentre affected women from becoming empowered?

Section C: ICT proficiency

18. Do you use the telecentre or not? Why do you not use the telecentre?
19. Can you use computers?
20. Do you have skills relating to IT? If yes, what computer programmes do you know?
21. What do you use these programmes for whenever you visit the telecentre?
22. Besides the telecentre, where else do you access the computers?
23. What draws you to access computers at that other place?
24. What do you think other people use the telecentre for whenever they visit?

Section D: Mobile phone Use

25. Do you have a cell phone? If yes, what kind of cell phone do you have? If No, why?
26. What do think other people use their phones for when using? If you had a more advanced phone, what would you use it to do?
27. If you have/had a mobile phone, which has Internet access, would, you still visit the telecentre.
28. What challenges do you find using the cell phones?

Section E: Empowerment

29. What challenges did you face in your daily life as a woman in the community?
30. What challenges do you face as a woman in this community?
31. What do you think ICTs can do to assist in dealing with those challenges?
32. What other values do you think women get from using the telecentre?
33. What do you think those who are not using telecentre are missing out?

Section F: Benefits

34. What things do people use the telecentre, which would have otherwise cost them money to do in person?
35. In your view, how does the use of the telecentre help in the following:
 - (h) Saving money
 - (i) Making money
 - (j) Getting a job: How do you think women got jobs? In addition, women that have not gotten a job yet, why does you think they have not gotten jobs yet?
 - (k) Access to services and opportunities such as health, education, e-government services?
 - (l) Improve the level of your skills: computer skills, information literacy, leadership skills
 - (m) Ability to express opinion and participation in setting the agenda for issues related to the welfare of the village
 - (n) Access to information and knowledge to help solve your problems/needs
36. Would you tell me of any stories that you have heard about someone who benefited from using the telecentre?
37. Are there any risks that you think comes from using the telecentre?
38. As a woman, what do you think about other woman who use computers at the telecentre?

Section G: Design Phase of Telecentre

39. Before the telecentre was established, where women in the community informed of this initiative by the government?
40. Are there programmes that empower women when the computer skills training is taking place at the telecentre?
41. Did women participate in the design phase of the telecentre?
42. Are there special programmes for women during the computer skills training sessions at the telecentre?
43. Where campaigns held in the community promote the use of the telecentre in the community?
44. Do you think the government considered women during the design phase of the telecentre in the community?
45. Has there been any awareness campaigns introducing the telecentre as an ICT initiative that can be used for women empowerment in the past?
46. Are there enough resources for the efficient running of the telecentre as follows?

- (d) Finance
- (e) Man power
- (f) Infrastructure

How has the telecentre assisted in empowering women in the community?

Section H: Telecentre linking the government and community people

47. Are the telecentre managers acting as the intermediary between the community people and the government? If yes, please explain how the telecentre managers have acted as the intermediary between the community people and the government?

Section I: Information on the Individual Difference of women

48. Do have any knowledge on how to use the computer?

- (a) If yes, how did you know how to use the computer?
- (b) If No please explain

49. Where you ever exposed to a mentor that taught you how to use the computer in the past?

50. Does your culture hinder you from using the telecentre?

51. Is the geographical location of the telecentre conducive for you to access the telecentre?

52. Do have any knowledge on how to use the computer?

- (a) If yes, how did you know how to use the computer?
- (b) If No please explain

53. Do you have an idea of how to use of the computer? If yes, how do you use of the computer?

Conclusion: Are there any questions or anything you want to add?

Appendix 3: Interview Schedule (Part II)

Questions for the telecentre manager

Section A: Background of telecentre

1. How did the telecentre project start?
2. When did the telecentre start?
3. What are the objectives of the telecentre?
4. What facilities are available in the telecentre?
5. What services does the telecentre offer?
6. What do you think about the number of computers at the telecentre relation to the number of users who want to use the telecentre?
7. Are there any organisations offering similar services in the area? How does that affect the use of the telecentre? (Follow up what the organisations are, how far they are from the telecentre and how different they are from the telecentre.

Section B: Factors affecting the use of the telecentre

8. What factors affect women's use of the telecentre?
9. Please explain any challenges that affect the operations of the telecentre
10. How were these challenges addressed?

Section C: Usage of the telecentre

11. What are characteristics (gender, occupation, age) of the users of this telecentre?
Follow-up why that is the trend.
 12. What is the pattern of use in terms of time? What times do women use the telecentre most – why is that the case?
 13. How do you ensure that the awareness of the telecentre services (marketing) reaches everyone in the area?
 14. What sort of support is available for the telecentre users?
-

15. What programmes, does the telecentre offer to the users?

16. How are these programmes aligned with the overall objectives of the telecentre?

17. How would you describe the extent of use of the telecentre facilities and services?

Section D: Impact of the telecentre on women

18. In your opinion, what are the outcomes or change (before and after) for using the telecentre to the users?

Section E: Women use of telecentre in women's daily lives

19. Please explain how women use the telecentre in their daily lives.

20. Please describe the computer skills programmes that focus on women empowerment offered at the telecentre.

21. What factors are affecting women use of the telecentre

22. How are the factors that affect women addressed?

Section F: Questions related to women empowerment

23. What challenges do women in this area face?

24. How does the use of telecentre address these challenges?

25. How does the telecentre help to address the challenges for women?

26. Are the women who are not using the telecentre missing out?

27. How is the use of the telecentre services affecting women in terms of the following?

- a. social relations
- b. economic activities
- c. cultural activities
- d. Political activities
- e. Informational activities

- f. Access to services and opportunities such as health. Education?
- g. Skills such as computer skills, information literacy, leadership skills
- h. Access to knowledge and information to solve people's information needs

28. In your view, how is the use of the helping women to:

- (a) Save money
- (b) Make money
- (c) Getting a job

29. Can you tell me any stories about someone who have benefited from using telecentre?

30. Are there any risks or that have affected women using the telecentre?

31. In your opinion, what are the factors that hinder women from benefiting from using the telecentre?

Section G: Business related questions

32. What sort of businesses are operating in this area?

33. How does the telecentre support or help those businesses?

Section H: Design Phase of the telecentre

34. Has there been campaign promoting the use of the telecentre in the community?

35. Does the telecentre manager act as an intermediary between the government and the community people?

36. Are there any computer skills training offered to women specifically in the telecentre?

37. Are there any computer skills training programmes offered at the telecentre that promote the empowerment of women?

Conclusion

38. Do you have anything else to add?

**Appendix 4: South African Mid-year population estimates by province,
2017**

| | NATIONAL | % POPULATION |
|---------------|---------------------|---------------------|
| Provinces | Population Estimate | Total |
| Eastern Cape | 6,498,700 | 11.5 |
| Free State | 2,866,700 | 5.1 |
| Gauteng | 14,278,700 | 25.3 |
| KwaZulu-Natal | 11,074,800 | 19.6 |
| Limpopo | 5,778,400 | 10.2 |
| Mpumalanga | 4,444,200 | 7.9 |
| Northern Cape | 1,214,000 | 2.1 |
| North West | 3,856,200 | 6.8 |
| Western Cape | 6,510,300 | 11.5 |
| Total | 56 521 900 | 100,0 |

Table 5.2: South African Mid-year population estimates by province, Statistics SA (2017).

Appendix 5: Types of interpretive approach

| TYPES OF INTERPRETIVE APPROACH | DESCRIPTION |
|--------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Symbolic interactionism | <p>This is the conceptualising of human behaviour that is focused on people’s practices and lived realities. It is believed that central to social behaviour is the notion of meaning. Human interaction with the world is mediated through the process of meaning-making and interpretation. The following are the essential tenets of symbolic interactionism.</p> <p>People interpret the meaning of objects and actions in the world and then act upon those interpretations.</p> <ul style="list-style-type: none"> • Meanings arise from the process of social interaction • Meanings are handled in and are modified by, an interactive process used by people in dealing with the phenomena that are encountered. |
| Phenomenology | <p>Phenomenology holds that any attempt to understand social reality must be grounded in people’s experiences of that social reality. Hence, phenomenology becomes an exploration, via personal experience, of prevailing cultural understandings. Value is ascribed not only to the interpretations of researchers but also to the subjects of the research themselves (Tesch, 1994).</p> |
| Realism | <p>In general, realism holds that there is an external reality ‘out there’ that can be measured but achieving this can be difficult (Madill et al., 2000). Realism believes that the picture that science paints of the world is a true and accurate one (Chia, 2002). The realist researcher, objects of research such as ‘culture’, ‘the organisation’, ‘corporate planning’ exist and act quite independently of the observer. They are therefore as available for systematic analysis as natural phenomena. Hence, knowledge is advanced through the process of theory building in which discoveries add to what is already known. However, although reality includes entities, structures and events, realism holds that some observable ‘facts’ may be merely illusions. Conversely, there may be phenomena that cannot be seen, but which exists nonetheless.</p> |
| Hermeneutics | <p>Hermeneutic perspective, says social reality is socially constructed, rather than being rooted in objective fact. Hence, hermeneutics argues that interpretation should be given more standing than explanation and description. Social reality is too complex to be understood through the process of observation. The scientist must interpret to achieve deeper levels of knowledge and self-understanding.</p> |
| Naturalistic inquiry | <p>There are multiple constructed realities that can only be studied holistically. Inquiry into these multiple realities raises more questions than it answers. So that prediction and control of outcomes is a largely futile expectation, although some level of understanding can be achieved (Guba, 1985). Inquiry itself cannot be detached but is value bounded by the perspectives of the researcher. Rather than aiming to generalise, inquiry develops an ideographic body of knowledge that describes individual cases.</p> <p>Within these cases, plausible inferences on events and processes are made, but this falls short of claiming causality. A phenomenon can only be understood within their environment or setting; they cannot be isolated or held constant while others are manipulated. The real world is too complex, diverse and interdependent for this (Lincoln, 1985). The types of research methods usually selected by naturalistic inquirers involve those most closely associated with a human component such as interviewing, participant observation, document and content analysis (and other forms of unobtrusive measures</p> |

Table 6.1: A summary of principles for conducting interpretive research in IS, Klein and Myers (1999)

Appendix 6: Validity and reliability of an interpretive study

Strategies to take note when conducting a validity and reliability of an interpretive study include:

1. Accounting for personal biases which may have influenced findings (Morse et al., 2002)
2. Acknowledging biases in sampling and ongoing critical reflection of methods to ensure enough depth and relevance of data collection and analysis (Sandelowski, 1993).
3. Meticulous record keeping, demonstrating a clear decision trail and ensuring interpretations of data are consistent and transparent (Sandelowski, 1993; Long and Johnson, 2000).
4. Establishing a comparison case/seeking out similarities and differences across accounts to ensure different perspectives are represented (Morse et al., 2002; Slevin and Sines, 1999)
5. Including rich and thick verbatim descriptions of participants' accounts to support findings (Slevin and Sines, 1999)
6. Demonstrating clarity in terms of thought processes during data analysis and subsequent interpretations (Sandelowski, 1993).
7. Engaging with other researchers to reduce research bias (Sandelowski, 1993).
8. Respondent validation: includes inviting participants to comment on the interview transcript and whether the final themes and concepts created adequately reflect the phenomena being investigated (Long and Johnson, 2000).
9. Data triangulation, (Sandelowski, 1993; Long et al., 2000) whereby different methods and perspectives help produce a more comprehensive set of findings (Plsek, P. E., and Greenhalgh, 2001; Kuper et al., 2008).

APPENDIX 7: (NVivo Code Book)

Women Empowerment Project

Nodes

| Name | Description | Sources | References |
|----------------------------------------|-----------------------------------------------------------------|---------|------------|
| Access to knowledge & Information need | Women using the telecentre to access information | 2 | 2 |
| Aim of establishment | The aim of establishment of the telecentre | 3 | 12 |
| Attraction to telecentre | What attracts women to use the telecentre | 3 | 7 |
| Awareness of women empowerment | The awareness of women empowerment programmes in the telecentre | 2 | 2 |
| Benefits of using telecentre | Benefits women derive from using the telecentre | 8 | 39 |
| Success stories | | 3 | 6 |
| Challenges in using the telecentre | The challenges women encounter using the telecentre | 6 | 19 |

How Telecentres Contribute to Women Empowerment in Rural Communities

| | | | |
|---------------------------------------------------------|----------------------------------------------------------------|---|---|
| Computer skills | Women's ability to use the telecentre | 6 | 9 |
| Computer skills training | Women participation in the computer skills training | 1 | 4 |
| Design phase | The design phase of the creation of the telecentre | 4 | 8 |
| Dimensions of Empowerment theory (Cultural empowerment) | The indicator of the Dimensions of empowerment theory | 3 | 4 |
| Dimensions of empowerment theory (Social empowerment) | The emphasis on the outcome of the social empowerment of women | 1 | 2 |
| Domestication phase | | 1 | 1 |
| Factors hindering use of telecentre | The factors that hinder women's use of the telecentre | 3 | 6 |
| Gender representation | The gender aspect of the study | 1 | 1 |

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| | | | |
|------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|---|----|
| Government provision | The government provision other than the telecentre needed by respondents in the community. | 2 | 4 |
| Impact | The impact of the telecentre on women | 1 | 3 |
| Improving economic standards | How the telecentre has contributed to the economic standards of women | 1 | 2 |
| Improving information access & leadership skills | How the telecentre has improved the information access and leadership skills of women | 1 | 1 |
| Individual Difference affect use | How the concepts of the Individual difference theory affect the use of the telecentre. | 2 | 2 |
| Individual difference theory (Environmental Context) | The concept of Individual difference theory that relates to women's environment for example geographical location | 4 | 7 |
| Location | | 5 | 9 |
| Individual empowerment | Individual empowerment achieved by women | 5 | 10 |

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| | | | |
|--------------------------------------------------|--------------------------------------------------------------------------------------|---|---|
| Dimensions of empowerment (Cultural empowerment) | The Dimensions of empowerment outcome in relations to the cultural aspect | 3 | 4 |
| Economic empowerment | The outcome of the economic empowerment of women in the Dimensions of empowerment | 2 | 3 |
| Women empowerment | The definition of women empowerment | 1 | 1 |
| Political empowerment | The outcome of the political empowerment of women from the Dimensions of empowerment | 4 | 6 |
| Social Empowerment | The outcome of the social empowerment of women from the Dimensions of empowerment | 3 | 5 |
| Interest in computer | Women's interest in the use of the telecentre | 1 | 2 |
| Language factor | How language hinder women's use of the telecentre | 1 | 1 |
| Location | Factor that contribute to women's use and non-use of the telecentre | 1 | 1 |

How Telecentres Contribute to Women Empowerment in Rural Communities

| | | | |
|---------------------------------------------|----------------------------------------------------------------------------------|---|----|
| Mobile phone | Women's use of the mobile phone to access the Internet instead of the telecentre | 5 | 19 |
| Telecentre preference to Mobile | The reasons women prefer the telecentre to the mobile phone | 2 | 2 |
| Telecentre Services | The services provided to users of the telecentre | 4 | 7 |
| Telecentre staff | The staff that operate the telecentre | 1 | 2 |
| Other businesses benefiting from telecentre | Women entrepreneurs benefiting from the use of the telecentre | 2 | 2 |
| Other facilities | Other facilities needed in the community | 4 | 5 |
| Other Internet access | Women's access of the Internet other than the telecentre | 5 | 10 |
| Overcoming challenges | How women overcome challenges affecting their lifestyle | 3 | 6 |
| Pattern of usage | Women's pattern of use of the telecentre | 2 | 4 |

How Telecentres Contribute to Women Empowerment in Rural Communities

| | | | |
|------------------------------------------------------------|----------------------------------------------------------------------------------------------------|---|----|
| Personal data (Individual difference theory) | The demographics of women using the telecentre | 0 | 0 |
| Life styles | The lifestyle of women in the community | 2 | 3 |
| Programmes offered | Programmes offered at the telecentre in the computer skills training programme to users | 1 | 2 |
| Programmes on women empowerment | What programmes on women empowerment are taught in the computer skills training programme | 4 | 12 |
| Reason for e- Centre in the Thusong centre | The reason for the creation of the e-Centre in the Thusong centre | 1 | 1 |
| Reason for telecentre usage | The reason why women use the telecentre | 2 | 3 |
| Reason why women non-user does use the telecentre | The reasons why women non- users do not use the telecentre | 5 | 13 |
| Reasons for women's use of the library | The reasons for women's use of the library to source for | 1 | 1 |

How Telecentres Contribute to Women Empowerment in Rural Communities

| | | | |
|----------------------------------------------------------------|------------------------------------------------------------------------|---|---|
| | information on their various needs instead of the telecentre | | |
| Resources | Resources available for the telecentre | 6 | 9 |
| Risk of telecentre use | The risk involved in the use of the telecentre | 2 | 5 |
| Telecentre saving money | The telecentre providing free services to users | 1 | 1 |
| Services hindering women use of telecentre | Factors affecting women's use of the telecentre | 1 | 1 |
| Shaping and influencing factors (Individual difference theory) | The prior computer knowledge of women before the use of the telecentre | 1 | 8 |
| Suggestions on improving telecentre | Respondents suggestions on how to improve the telecentre | 1 | 1 |
| Technical knowledge of the telecentre | Women's technical knowledge of the telecentre | 1 | 2 |

How Telecentres Contribute to Women Empowerment in Rural Communities

| | | | |
|---------------------------------------------|---------------------------------------------------------------------------------------------------------------|---|---|
| Telecentre awareness | The awareness of the telecentre in the community | 2 | 9 |
| Telecentre daily opening time for operation | The description of the actual time for the opening of the telecentre for users daily | 2 | 2 |
| Telecentre equipment | Available equipment available in the telecentre | 1 | 2 |
| Telecentre establishment | How the telecentre was established in the community | 4 | 5 |
| Telecentre for receiving information | How women use the telecentre to receive information on the personal needs to improve their economic standard. | 1 | 1 |
| Telecentre free services | The free services provided to users of the telecentre | 5 | 7 |
| Telecentre infrastructure | The infrastructure available in the telecentre | 2 | 4 |
| Telecentre manager activities | The duties performed by the telecentre managers | 2 | 2 |
| Telecentre target group | The target group which the telecentre was created for in the community | 1 | 2 |

How Telecentres Contribute to Women Empowerment in Rural Communities

| | | | |
|--------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|---|----|
| Telecentre value | The value women derive from using the telecentre | 1 | 1 |
| Women non-user | Women living within the proximity of the telecentre | 1 | 1 |
| Telecentres managers linking women to government | How the telecentre managers assist women to link the government departments via internet using emails to address complains and personal needs | 3 | 6 |
| Thusong centre | The description of the Thusong centre | 2 | 14 |
| Time usage allocation | Usage pattern of the telecentre to users in the community | 1 | 1 |
| User characteristics | Characteristics of users of the telecentre | 1 | 1 |
| User computer knowledge | The knowledge women derive from using the telecentre daily | 3 | 4 |
| User support from the telecentre | The support women users derive in the telecentre by the telecentre managers | 2 | 3 |
| Value of the telecentre | The value derived from using the telecentre | 3 | 4 |

How Telecentres Contribute to Women Empowerment in Rural Communities

| | | | |
|-------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|---|----|
| Women challenges of computer skills training | The challenges women experience in the computer skills training programme | 1 | 1 |
| Women non-users | The reasons women non-users do not visit or are aware of the telecentre for the improvement of their self-development and economic standard | 1 | 12 |
| Women's domesticating use of the telecentre use | How women use the telecentre in their daily routine | 5 | 23 |
| Women's perception | Women's perception of the telecentre | 4 | 5 |