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The effect of government facilitated ICT access interventions on the well-being of marginalised communities in the Overberg District, South Africa

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ABSTRACT

In recent years there has been a shift towards the assessment of the contribution of technology to citizens' well-being rather than a focus on issues only related to the availability of ICT infrastructure. However, the mere change in evaluation foci does not mean that all is fine. The South African government considers Government Facilitated Access (GFA[1]) to computers and the internet as a critical tool for transforming the way it conducts its business with its citizenry. In so doing it seeks the improvement of socio-economic well-being of marginalised communities through improved service delivery. The Global Corona Virus pandemic has escalated the importance of GFA interventions for communities that are far flung and who cannot afford the high costs of mobile broadband internet.

In spite of Government's stated intention, studies indicate that GFA interventions continue to serve the interest of the rich, since they tend to be urban based, thus leaving out the masses of citizens living in rural areas. As such, an assessment of GFA in rural contexts has become important. This study examines the effect of GFA on the well-being of rural marginalised communities and on the associated government service delivery in the Overberg District Municipality of the Western Cape Province in South Africa. The study ascertains the extent to which GFA has contributed to changing the lives of the marginalised communities who have interacted with computers and the internet offered by GFA. The study's point of departure was the persistence of the digital divide despite the presence of the GFA. The main research objective was to explore how the GFA programme affects the well-being of marginalised communities in the Overberg District and further whether the outcomes of the GFA warrants increased spending on the programme.

The underlying framework for the study was the 'Citizens' Well-being Framework' which comprises a synthesis of selected elements of Amartya Sen's Capability Approach and Dorothea Kleine's Choice Framework. Through the use of a mixed methods approach data was collected and analysed to evaluate the effects of GFA on the selected rural communities.

[1] Government Facilitated Access can be defined as a public space that is designed to serve community needs for access to computers, internet and integrated ICT services offered by government. In addition GFA facilities provide affordable and reasonable proximity to access ICT services for the purpose of building inclusive socio-economic development in the community it serves.

The findings demonstrate that the benefits of ICT programmes should not only be assessed through quantitative indicators (such as the number of GFA facilities that are deployed, and the number of users logged at the centres) but also through the programme awareness, users' agency, and e-skills of users.

The data indicates that, only those users who identify opportunities embedded in GFA programmes have been able to reap benefits, with active users of GFA reporting that they were able to realise some of their preconceived life wishes. The study showed that citizens benefit from the GFA initiatives both directly and indirectly. However, the issue of racial divides and geographical location of GFA continue to discourage users who could have benefitted from GFA. South African's GFA policies design and implementation strategies therefore need to be revised to ensure GFA programmes are more robust than they currently are. This means that policymakers need to pay more attention to addressing existing community needs through the improvement of both individual's and community capabilities. In addition, the findings suggest that improved collaboration and consultation between all stakeholders is paramount to achieve intended benefits.

The main theoretical contribution of the study, the Citizens' Well-being Framework, incorporates all the salient aspects of the findings. The framework serves two objectives. Firstly, it has explanatory power in respect of how GFA programmes create citizen benefit. Secondly it incorporates a set of indicators that provides a basis on which Government may evaluate the success or otherwise of their GFA interventions.

Key words: *Government Facilitated Access, Information Communication and Technology Investment, marginalised communities, Well-being, Capabilities and Functionings, Evaluation, Socio-Economic Development, Overberg District and Western Cape.*

DECLARATION

I, declare that the contents of this PhD dissertation/thesis titled: The Effect of Government Facilitated Access Intervention on the Well-being of Marginalised Communities in Overberg District, South Africa represents my own unaided work, and that the dissertation/thesis has not previously been submitted for academic examination towards any qualification. All sources that I have used or quoted have been acknowledged and indicated in the references

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Date 12 August 2022

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DEDICATION

This thesis is dedicated to my late father, Mr Francis Kassongo Mkata.
My father was looking forward to attend my PhD graduation ceremony but God took him before he could experience it.

"Blessed be the God and Father of our Lord Jesus Christ, who hath blessed us with all spiritual blessings in heavenly places in Christ." Job 30:21, Job 42:2 & Isaiah 42:6.

GLOSSARY OF ACRONYMS

Abbreviations	Definition/Explanation
ASGISA	Accelerated and Shared Growth Initiatives of South Africa
CA	Capability Approach
CamP	Referring to Cape Agulhas Municipality participants.
ASSAf	Academy of Science of South Africa
COCT	City of Cape Town
DPME	Department of Performance and Monitoring and Evaluation
DLG	Department of Local Government
DPSA	Department of Public Service and Administration
DoC	Department of Communications
DTPS	Department of Telecommunication and Postal Services
EUC	European Union Commission
EGPF	Electronic Government Policy Framework
FMPPI	Framework for Managing Programme Performance Information
FSAPP	Framework for Strategic and Annual Performance Plans
GFA	Government Facilitated Access
GNP	Gross National Product
GDP	Gross Domestic Product
ICASA	Independent Communications Authority of South Africa
ICT	Information and Communication Technology
ICT4D	Information and Communication Technology for Development
ISP	Internet Service Provider
ITU	International Telecommunication Union
IDP	Integrated Development Plan
MERO	Municipalities Economic Review and Outlook
MSF2014/19	Medium-term Strategic Framework 2014/19
NDP2030	The National Development Plan 2030
NSDP	National Spatial Development Perspective
NeST	National e-Skills Institute
NBAC	National Broadband Advisory Council

OvP	Referring to participant from the Overstrand Municipality
P	Participants
PGDS	Provincial Growth and Development Strategy
PIH	Performance Information Handbook
PSDF	Provincial Spatial Development Framework
PFOSS	Policy on Free and Open Source Software
PGDS	Provincial Growth and Development Strategy
PSP	Provincial Strategic Planning
PP	Provincial's Participants
SARS	South Africa Revenue Service
SPSS	Statistical Package for Social Science
SSA	Sub-Saharan Africa
STI	Strategic Integrated Project
SLL	Siyakhula Living Lab
SDGs	Sustainable Development Goals
UN	United Nations
UNDP	United Nations Development Programme
WC	Western Cape
WCPG	Western Provincial Government
WPTPSD	White Paper on Transforming Public Services Delivery

LIST OF TABLES

LIST OF FIGURES

CONTENTS

Chapter 1: INTRODUCTION

1.1 Background to the study

Social development deals with the complexities and ever-changing relationships between people and the environment in which they live and work. Rambaree & Nässén (2020), postulate that if the emphasis of social development is on promoting the improvement of citizens' well-being, then marginalised[2] communities require special attention within the context of socio-economic development.

For a decade, South Africa's Government Facilitated Access (GFA[3]) has been promoted as a vehicle to promote inclusive human development with emphases on improving the lives of disadvantages communities (Gi-Garcia et al., 2019). The desire to close the digital gap between the haves and have nots has led to increased spending on ICTs by many developing countries. Several countries in the developing world, South Africa included, rely on GFA for connecting citizens in a context of limited home-based internet access (Gillwald, Mothobi & Rademan, 2018:22). Sey et al. (2015) show that only 10-15% of citizens in the South Africa have home internet access, comparing to the figure for Chile, Brazil and Lithuania ranges between 38-62%. In contrast, a World Bank report reveals that citizens in the top 20 percent income in the most connected European Union countries have a 45 times higher chance to use e-services as compared to the bottom 20 percent in the least connected European Union countries (World Bank, 2016). Countries that have been doing well on ICT for development rely on education, employment, broadband access, integrated policy development and citizen's participation in the design of ICT policy (World Bank, 2016; 2018:23).

The Western Cape Province of South Africa introduced GFA to promote computer use and access to the internet as a means to facilitate the improvement of citizens' well-being. The Global Coronavirus pandemic escalated the importance of GFA interventions for communities who cannot afford the high costs of mobile broadband internet. The effects of the pandemic

[2] In this study marginalised communities are regarded as citizens who are needy, poverty stricken, destitute or disadvantaged communities' members. Individuals that are affected by more of a social setting of haves and have-nots in which political, economic and social agency can be introduced.

[3] Government Facilitated Access can be defined as a public space that is designed to serve community needs for access to computer, internet and integrated ICT services offered by government. Also, GFA can refer to a facility with affordable and reasonable access to ICT services for the purpose of building inclusive socio-economic development for the community.

saw governments across the globe, including the South African government, increasing their online capacity in order to respond to extensive demands for remote service delivery. The subsequent lockdowns imposed in reaction to the pandemic had a negative impact on social, economic and psychological condition of citizens. Technology can help eliminate some of the burden associated with the pandemic, although a prerequisite is that users have access and ability to use it. In France, Rowe, Ngwenyama & Richet (2020) found an increased use of smart phones in contact tracing and in helping citizens to remain connected, although those without enough capability to support the increased demands of data were left out.

Debates over the last 20-30 years have noted the challenges and issues surrounding the digital divide within and between communities (Heeks, 2011). Fairchild, Gostin and Bayer (2020), show that the coronavirus pandemic has further divided the global community and expanded the longstanding divides between the powerful and the less powerful, and that these divides are more visible in poor communities. Whilst a few continue do enjoy sharing and accessing information online, many individuals in poor communities remain offline.

There is a growing global recognition of the role that access to internet can play in enabling socio-economic well-being of users (Najarzadeh et al., 2014; Minges, 2015; World Bank, 2016; UNDP, 2018). The World Bank and the United Nations both acknowledge the role that access to the internet can play in the fight against poverty and enabling people to lead the lives they value, which has prompted both developed and developing countries to invest heavily in broadband internet (Minges, 2015). Galperin and Viecens (2017) show that access to internet contribute to the improvement of socio-economic conditions and the well-being of the marginalised communities. This widely held belief continues to influence developing countries to invest substantially in ICT projects.

The World Bank (2018:22) claims that investment in ICT promotes economic growth, citizen's engagement and job creation; i.e. it has become a driver of economic development and transformation. The report shows that by 2020 increased spending on ICT could add US$1.4 trillion to total global economic output. It further reveals, however, that 4 billion people remain offline, with the majority of them living in Africa. Thus, Africa is still growing its adoption base while developed countries have been experiencing stability in ICT penetration (Asongu & Le Roux, 2016). The fact, that Africa remains well behind while other parts of the world are

benefiting from ICT investment, highlights the need to revisit ICT policies and examine their relevancy towards socio-economic development and individual well-being. The 2015 report on progress towards achieving the Sustainable Development Goals (SDGs) noted an increase in poverty in Africa despite massive investment in ICT (World Bank, 2015; Asongu & Le Roux 2016; Salahuddin & Gow, 2016).

While the relationship between internet use and socio-economic well-being may be complex, there nevertheless appears to be a gap between the investment in ICT for poverty alleviation, and the return on such investment (Gigler, 2011, 2015). Galperin and Viecens (2017) postulate that the effect of internet technologies on poverty may be unclear for two reasons: Firstly, those interacting with ICT need to possess certain basic skills; and secondly, there is a need to invest in human capital and organisation change. Any increased spending on ICT related projects in Sub-Saharan Africa (SSA) therefore highlight the need for evidence-based decision making with regards to internet usage and economic well-being in Africa (Evans, 2019).

For decades, there was a dearth of empirical studies on the contribution of ICT to human development in SSA (Asongu & Le Roux, 2017; Evans & Adeola, 2018; Evans 2019). The shortage of empirical studies had negative impacts on policy development and implementation. Evans (2019) claims that besides Salahuddin and Gow's (2016) study that showed the positive contribution of ICT on economic growth in South Africa, there is no other study that has examined the effect of internet on the economic well-being of users in SSA. According to Gomes and Pather (2012), globally by 2007, a total of 840 billion USD were invested in ICT, with only 57 billion USD going to low income countries. Despite this global investment, there appears to be no framework to evaluate the impacts of these investments on the well-being of marginalised communities. This prompted this study to develop "Citizens Well-being Framework" which is derived through a juxtaposition of two extant theoretical models viz, Capability Approach and the Choice Framework.

1.2 Research problem

The widespread digital divide which exists in many parts of South Africa prompted the Western Cape Provincial Government to continue investing in GFA, particularly in marginalised communities (World Bank, 2018:23). The Western Cape Government spent R3.8 billion on ICT initiatives which were intended to connect its citizens by 2020 (WCPG, 2012:2; WCPG, 2015:16).

Despite this enormous spending of public funds in the province, a number of authors argue that

there is scant evidence of evaluation of GFA in South Africa as well as in many developing nations (World Bank, 2015; Asongu & Le Roux, 2017; Salahuddin & Gow, 2016). Furthermore, some postulate that there is no evidence on how investment in GFA might contribute to the well-being of marginalised communities (Mimbi & Bankole, 2016). There appear to be deficiencies in the provincial government ICT policy as well as the Cape Access programme, which is supposed to address inequality that is prevalent in poor Cape communities, but which has apparently not been properly evaluated. Similarly, the local Western Cape Overberg District municipality Integrated Development Plan (IDP) document fails to articulate how investment in GFA intervention contributes to improving social and economic development of marginalised communities.

With much being written on the subject, policies created and investments made, it is imperative to understand whether GFA intervention is having the desired effects on the well-being of marginalised communities. Any expenditure of the public funds must be assessed in terms of whether it results in value for money. Government needs to evaluate whether the GFA intervention is working to achieve the objectives it originally set out in terms of its policy statements. Evidence is also important to strengthen and inform further ICT policy design and its implementation in terms of how the digital divide should be addressed. Several scholars have criticised the promotion of ICT policies and interventions without a clear implementation strategy (Maumbe & Klass, 2009:759; Matavire et al., 2010:162; Wilson 2012; Dombeu & Rannyai, 2014). Therefore, there is a need to establish whether increased spending of public funds on GFA programmes in the Overberg District of Western Cape is having the desired effects on the well-being of marginalised communities, and on service delivery. This study bears in mind the notion of ICT facilitated benefits being complex and difficult to measure. But the literature provides a range of examples from tangible to quite complex less tangible benefits in relation to development. Similarly, this study acknowledges that every act of evaluation itself is complex. In an effort to overcome these complexities of measurement and to close the current gaps in the body of knowledge regarding evaluation, a framework – The Citizens' Well-being Framework - was developed.

1.3 Research questions

The primary research question of this study is: In what ways does the Government Facilitated Access programme impact the well-being of marginalised communities living in the Overberg

District of Western Cape? This primary research question is supported by following sub-questions:

I. How do selected ICT policies influence the implementation of GFA intervention in marginalised communities living in rural areas of Overberg District?
II. What factors influence the success or failure of GFA intervention deployed in marginalised communities?
III. Does the adoption and use of GFA intervention in marginalised communities contribute towards the improvement of interaction between marginalised community and stakeholders[4]?
IV. What are the effects of Government GFA intervention programmes on the well-being of marginalised community living in rural areas?

1.4 Objectives of the study

The primary objective of this study is to investigate the effect of Government Facilitated Access interventions and service delivery on the well-being of citizens in marginalised communities living in the rural areas, so as to inform more effective implementation. In order to do this, subsidiary objectives are:

I. Establish whether marginalised communities living in rural areas were involved in the process of developing GFA policy and its implementation and whether the outcomes of GFA warrant an increased government spending on GFA.
II. To inform better ICT policy decisions by identifying factors influencing the success or failure of GFA interventions that have been deployed in marginalised communities living in rural areas.
III. To establish whether the adoption and use of GFA intervention in rural communities contribute towards the improvement of interaction between marginalised community and stakeholders.

    To evaluate the extent to which GFA interventions affect the well-being of marginalised communities living in rural areas.

1.5 Context of the study

The provision of GFA in developed countries as well as in developing countries is gaining momentum as a result of several nations promoting universal access to computer and internet

[4] In this study, stakeholders refers to "any individual or group who can affect or is affected by the achievement of Government Facilitated Access this can be government, business and other community grouping (Freeman et al, 2004; Grunig 1992:125).

(Muriithi, Horner & Pemberton, 2016). While a study in 2016 on internet penetration found that more than half (or 3.9 billion) of the world's population did not have access to the internet, countries such as Singapore, Japan, Finland, Sweden, Norway, the Netherlands, Switzerland, the United Kingdom, Luxembourg and the United States have shown clear support for improved ICT intervention (ITU, 2018).

Despite an increase in Internet penetration in developing countries, the digital gaps persist in rural areas as a large number of populations remains offline (Gillwald, 2020; Ibrahim, Croxton, & Buthelezi, 2021. As an ITU study (2021) revealed at the end of 2019, only 6.3% of households in rural areas had access to Internet, and only (20.2%) of women used the Internet, compared with (37.1%) of men. The most noted divides that continue to manifest consist of gender, age, education, and economic divides (Adedonkum & Zulu, 2022). Rodríguez-Castelán et al. (2021) noted that rural areas and poorer households in Africa exhibit lower Internet access. For example, by 2017 only a relatively small proportion of the South African population had good ICT infrastructure such as internet access (22%), against more developed countries such as the United Kingdom (92%) and United States (89%) (ITU, 2017). However, ICASA (2022) claims that by 2020 Internet access penetration was at (74.1%), due to the increase in ownership of mobile phones. In spite of the noted increase on a national level, only (52.9%) of rural areas were connected when looking at proportion of households using mobile devices to access internet as compared to metros at (66.8%) and urban (71.6%).

According to Adedonkum and Zulu (2022), there is a dearth of studies that have demonstrated the exact statistics of digital gaps that exists between rural and urban in South Africa. Scholars such as Duma et al. (2021) argue there is a need to increase Internet access for rural populations. In addition, Duma et al. (2021) are of the view that schools located in rural areas in South Africa are disadvantaged regarding the Internet connectivity. In South Africa, rural schools are also faced with numerous challenges, such as unstable electricity and poor classroom infrastructure (Pillay, 2021). Many of South Africa's rural areas remain impoverished because they have no access to basic infrastructure essential for digital development (Duma et al., 2021; Matli and Ngoepe, 2020). Despite the above argument, Nyagadza et al., (2022) opinionated that more than half of the South African population has digital access to the internet, standing at (59%), compared to other countries in the Southern African Development Community (SADC). As internet penetration increases, countries in Sub-Saharan Africa are witnessing an expansion of GFA facilities that offer computers and internet (Mawela, Ochara &

Twinomurinzi, 2017). Most African governments have chosen the path of investing in ICT initiatives. This is in spite of notable failures of ICT policies and programmes (Heeks, 2010), which have been attributed to the use of various initiatives without appropriate adaption to local context (Mawela, et al. 2017).

Even if programmes are developed within country contexts, challenges of access may persist. The European Union Commission (2016) found that there was a decline in online interactions with government, from 51% to 49% among UK residents between 2014 and 2015. It attributed this decline to lack of access to ICT, despite the increased investment and adoption of GFA. Exclusion of residents remained a problem to be overcome. The World Bank (2016:8) further postulated that countries that have overcome the digital divide are still facing new divides in digital capabilities.

Notwithstanding the above problems with ICT related projects, the global perspective remains that the use of GFA can increase a user's chances of employment, one of the primary development goals associated with public access (Sey & Fellows, 2009). It is believed that GFA can offer conceivable opportunities for individuals, communities and countries to raise their standard of living, and increase their chances of living the kind of life they want to lead (Kleine, 2013; Kingston, 2017). For this reason, governments around the world have shifted their attention to online integrated service delivery (Heginbotham, 2006; Shanshan, 2014). Several governments have moved their services online in the hope of increasing digital interaction between government and citizens, in spite of the persistent digital divide and deficiencies in user's competency.

Policy makers are failing to acknowledge that having access to GFA intervention is little use to citizens if they lack skills or are not competent in making meaningful use of services offered online. On the contrary, such mismatch will potentially have a negative impact on the adoption and use of GFA (Černáková, 2015, World Bank, 2018). Competence in technical skills and the ability to search, identify and analyse content remains critical for successful adoption and use of GFA operating in marginalised rural areas. Ruhode (2016) postulates there remain several groups in society that are not enjoying the benefits of electronic participation. For this reason, governments should create strategies and policies that will identify and respond to the needs of the target population. This compels governments promoting GFA to employ competent and

helpful staff capable of supporting users' needs (Taylor, Jaeger, McDermott, Kodama & Bertot, 2012).

1.6 The South African rural context

South Africa remains a divided nation based on its colonial history. Despite the transition to democracy in 1994, high levels of inequality continue to manifest in many rural areas. As such, GFA intervention is viewed as tool that could enhance conversations among citizens of different backgrounds, and improve engagement between stakeholders in spite of their geographical isolation (Department of Telecommunication and Public Service, 2016). Apart from its progressive Constitution, the government of South Africa has developed various legislation and strategic documents such as, the National Development Plan and New Growth Path & Strategic Integrated Project (SIP), which seek to address the issue of disconnect between government and citizens, improve the living standards of the poor, and place emphasis on expanding access to ICT (DTPS, 2016). While digitising a community is a beautiful concept, the digitisation of cities, if not properly handled, can further establish existing inequality. For instance, Johannesburg and Cape Town each contain a world of two cities: on the one hand, there are affluent areas that can keep pace with developments in ICT, and on the other hand there are poor townships where residents hardly have the basic needs. It is difficult for the cities to balance and address the digital divide where citizens have nothing to put on the table, ongoing protests result from poor service delivery, and unemployment remains rampant (Mushongera et al., 2018).

Within the South African context, it is useful to consider rural areas in contrast with urban areas. According to the Academic of Science of South Africa, rural areas provide a challenging environment to the implementation of infrastructure for connectivity, a lack of customer base and low-income streams (low-income communities), as well as highly scattered and low population density (ASSAf, 2020). Further, a typical rural area is characterised as under-resourced and historically disadvantaged education institutions (basic and higher education institutions) (Abrahams et al., 2022). Furthermore, challenges relating to water and food security, poverty, housing shortages, and unemployment are all present in rural communities. On the contrary, urban areas are more affluent in many facets as compared to rural areas (Gillward, Mothobi & Rademan, 2018; Liebenberg, Benadé & Ellis, 2018; Du Plessis & Mestry, 2019; Ndevu, 2020).

For example, the COVID pandemic of 2019 (COVID-19) revealed the level of inequality that exists between rural communities and urban communities. For instance, the South African universities which had an online learning platform for their learners were able to respond to COVID-19 swiftly, and quick to shift their learning online than under-resourced institutions mainly operating in marginalised communities (Ndevu, 2020; Pillay, 2021).

Black communities remain the most disadvantaged resulting from the apartheid legacy. Poverty and inequality inherited from the apartheid era continue to affect South African societies despite government efforts to reverse this legacy (Mushongera et al., 2018). The apartheid legacy is widely entrenched and shapes South Africa's current socio-economic environment, therefore, challenges such as economic and educational factors remain challenging to overcome in the short - term (Petersen et al., 2019).

The manifestation of continuality of the digital divide is a result of many reasons including the current approach to digital connectivity initiatives. Notwithstanding, the South African National Digital and Future Skills Strategy adopted a policy intended to address the gap in digital skills, creativity and problem solving, and the desire to create a knowledge and e-economy society (DCDT, 2020, Abrahams et al., 2022). Ndevu, (2020) indicates that investments in ICT related projects are aimed at profitability as opposed to empowerment, and companies investing in 5G and other technology continue to increase their ICT spending on those who are already connected and leaving behind the rural population.

Roberts and Hernandez (2019) show that the gap between most connected and least connected is on the rise, and it will take ages to resolve the existing gap; as the least connected citizen will always be on the catch-up side. Meanwhile, citizens that are financially secure and literate will continue to invest in new technology; thus, keeping them ahead of those relying on government funded ICT interventions. For instance, a study that investigated the usability of M-health by Petersen et al. (2019) concluded that the lack of multilingual content and interface in mobile applications may also be regarded as a barrier. This is an important factor in the South African context where English is not the home language of many ICT users, especially in the Western Cape where Afrikaans is dominant and the majority of GFA users are Afrikaans speaking. Yet most of those who are financially affluent barely struggle with the issue of language as the majority of them have gone through a well-established education system.

Therefore, government ICT policy should place emphasis on language as this remains a major area that needs to be addressed in order to permit ICT consumption by the majority. In schools, a crucial future focus needs to be on the use of dynamic software for language, as well as on building the specialised digital pedagogies required to effectively introduce technologies to be transformational to the learner experience. Digitally enabled, digital skills and capabilities must be fostered on a long-term basis.

In 1995, the South African government adjusted its Information and Communication Policy in order to facilitate the introduction of ICT initiatives (Heginbotham, 2006:78). On the national level, some of the notable ICTs interventions were initiated including the South Africa Revenue Service. The South African Revenue Service's e-filing is one of the ICT interventions that has made great strides, though its success is attributed to e-filing users being well educated and employed (Naidoo, 2007). In order to deal with the issue of skills, Abrahams et al. (2022) noted that DTPS policy emphases on ICT research and development (R&D), the ICT skills gap, specific sectoral interventions, and fostering a digital industrial revolution. In addition, the South African National Digital and Future Skills Strategy adopted a policy intended to address the gap in digital skills, creativity and problem solving, the policy desire to create a knowledge and e-economy society (DCDT, 2020). To conclude, the Siyakhula Living Labs (SLL) Project based in rural area in the Eastern Cape Province is noted to be a successful ICT project in terms of skills development. SLL is being used by poor community members interested in improving their skill sets. Its success is attributed to the fact that users were involved from the initial stage of the project and the community have demonstrated the ownership of the project.

1.7 Challenges in intervention implementation

Mawela et al. (2017) reveal that a number of South African ICT projects did not deliver to expectations, including the Golaganang (coming together) project, which aimed at improving government employees' ICT capability, along with providing each school with a computer. This project was launched by the South African government, in partnership with the private sector (Mutula & Mostert, 2010). Another example of a failed ICT initiative is the eThekwini Revenue Management System (RMS) in Kwazulu Natal. The eThekwini RMS project started in 2003 with an estimated cost of R250m. By 2013 the cost was standing at R474m after it had missed several deadlines. Failure has been blamed on poor system design and lack of good governance (Cloete, 2007; Thakur & Singh, 2013:46).

Mawela et al. (2017) have estimated that 50% of government run ICT projects fail, 35% partially failure, with only 15% being assessed as successful. The high failure rate is attributed to lack of critical engagement between stakeholders on how best ICT can be used to improve service delivery, and interaction between government and citizens (Philip & Kanya, 2018). Staff at local municipalities lacks the competency to effectively use technology to involve citizens in the delivery of government services. According to Mawela et al. (2017) the municipalities still rely on the use of letters, e-mail, special event and mass media to engage with the public. Further, the failure is blamed on adopting ICT without taking note of users' capabilities, especially at local government level (Mutula & Mostert, 2010). A study on adoption and use of ICTs conducted by Meyer (2007) in the Eastern Cape reveals that 28% of participants needed assistance to navigate the internet, 22% needed assistance to read the content and 23% could not understand it at all. The study concluded by stating that ICT literacy remained a substantial barrier to citizens achieving their functionings (Meyer, 2007). This is compounded by the fact that in South Africa, 11 different languages are officially recognised, and citizens may expect to be assisted in their home language (Mawela et al., 2017).

In addition, factors including socio-economic status, education level, income, race, geographical location, age, gender, language and level of literacy, continue to leave many South African potential users of GFA without access to technology or without knowledge on how to use the technology, both of which play key roles in determining the adoption and use of GFA (Pick, Gollakota & Singh, 2014). The success of GFA is associated with user's competences, helpful staff members, location of GFA, and appropriate content that is relevant to local context (Clark & Gomez, 2011).

Notwithstanding the above challenges, the South African government recognises the need to speedily improve the well-being of all citizens through improved social and economic condition of communities. This is in line with the United Nations Sustainable Development Goals, and the South African government has committed to investment in ICT so that it can connect communities and benefit all citizens through building the nation's capability. "SA Connect", the country broadband policy, was endorsed by cabinet on 4 Dec 2013. According to DTPS (2016:157) the endorsement helped the Department of Communications (DoC) to connect 788 schools to internet through cyber-labs, launched the iKamva National e-Skills

Institute and National Broadband Advisory Council (NBAC). Despite these developments, to successfully address the inequality that is prevalent in South Africa, defined engagement strategy that outlines the role of each stakeholder in the process of planning, monitoring and evaluation is required (Gomez and Pather, 2012). Also required is on-going coordination between government agencies and other critical stakeholders (DTPS, 2016:157).

1.7.1 Policy perspective of GFA: interventions in the Western Cape

Since the introduction of ICT polices at national level, the Western Cape Provincial Government (WCPG) has introduced several ICT initiatives including Cape Gateway Projects, Cape Information Technology Initiative, Cape Access projects, SchoolNet South Africa project, Mindset Network organisation and Khanya Project (WCPG, 2003; 2021).

The WCPG launched a customized online portal in 2004 to enable users to download and upload application forms, which is in line with the WCPG ICTs for Development vision (WCPG, 2003). The vision for the electronic delivery of services in the Western Cape focuses on ensuring easy access to information that is easily understood by intended beneficiaries and staff. The WCG ICTs for Development vision includes improving transparency and accountability of government, thus enabling citizens to actively participate in government activities and decision-making processes through ICTs; to capacitate government through appropriate technologies and skills, and to ensure citizens pay less for services (WGP, 2012). The WCPG introduced the e-Innovation centre, which focuses on realising the effectiveness of GFA (DLG, 2015:19), further noting that the design of GFA policy should be guided by the National Spatial Development Perspective (NSDP), Accelerated and Shared Growth Initiatives of South Africa (ASGISA), iKapa Elihlumayo guidelines, Provincial Growth and Development Strategy (PGDS) and the Provincial Spatial Development Framework (PSDF).

The provincial government relies on its Knowledge Economy and E-Government branch departments. The two departments are responsible of crafting ICT strategic documents and foreseeing its implementation. The focus of GFA in the province is on ensuring transformation of internal and external public sector through Internet, and taking the advantage of GFA to improve service delivery, citizen participation and governance. Notwithstanding the well thought and long-time conceived development desire of Western Cape Provincial Government,

studies on GFA shows that government internet-based initiatives have not produced the anticipated outcomes (Walsham, 2013).

The success of ICTs requires alignment of government institutions, accurate coordination and wide citizen participation (Ruhode, 2016:2). The WCPG planned that by 2020 every government building in the province would be connected to affordable broadband infrastructure for the purpose of improving service delivery and servicing the needs of citizens. The government envisaged that by 2020, 90% of citizens would have access to broadband services. Also, it aimed to link over 4,000 government facilities in the province (WCGP, 2012:2). The idea was to ensure equal opportunity among the citizens. However, inequality remains a major problem in the country as well as the province, and it is not sufficient to simply increase spending on ICT interventions without proper strategies that challenge the existing inequality. Without such challenges, the socio-economic imbalances between the different groups within the country will be aggravated (World Bank, 2018). Therefore, the introduction of GFA in the Western Cape must be accompanied by clear strategies to address the existing inequalities.

In spite of the provincial government's desire to improve the living conditions for all, the current state of ICT intervention demonstrates this objective is far from being attained. At the time of writing, there is little or no tangible evidence demonstrating that underserved citizens have managed to improve their well-being as a result of increased expansion of GFA in the province. Some of the Western Cape GFA projects will be described below.

1.7.2 Cape Access: A provincial intervention

Cape Access is an ICT intervention that set out to provide ICT access to less privileged people in rural communities across the Western Cape. At the time of this research, the provincial government had 70 Cape Access interventions across the province. Figure 1.1. indicates sites where Cape Access intervention projects are located.

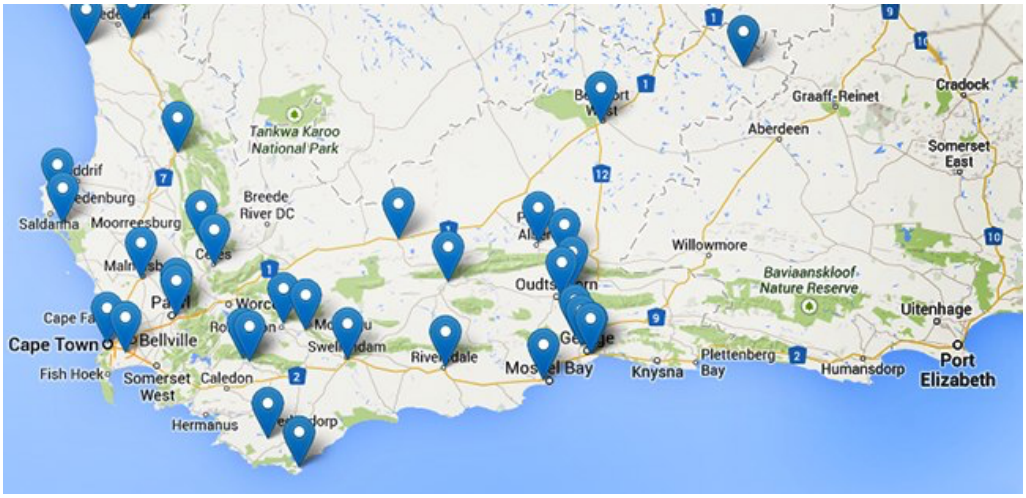

Figure 1-1 Representation of Cape Access
Source: Western Cape Government (2021).

The emphases of this study is on GFA particularly Cape Access. According to Cloete (2007:11), Cape Access intervention aims to create equal access to opportunities for all communities. This view corresponds with the WCPG goals of promoting an inclusive province, to control poverty and to improve poor citizens' well-being (2015. Among the strategic objectives for Cape Access are; "to improve access to government services; to bring government information and services closer to the people and to promote access to opportunities; to create a platform for greater dialogue between citizens and the government; to improve good governance in the Western Cape Government and to increase service excellence through technology" (WCPG, 2010). The WCPG believes Cape Access users will gain online and research skills; gain more access to government information and service including communicating with government, paying municipality accounts, SARS e-filling, licenses and fines; economic development including increased business opportunities (WCPG, 2001a; WPG, 2001b). Other projected benefits are increased employment opportunity and transacting with business.

In theory, the benefits associated with the use of ICT intervention are hard to dismiss. In the public sector, ICT makes it possible for government to increase service volume, getting instant feedback on government operation, increase efficiency and effectiveness and enhance governance (WCPG, 2015). However, when it comes to Cape Access intervention there is little information to show the extent to which Cape Access has been beneficial to users. Pretorius' (2012) study on ICT showed that a lack of governance strategy contributed to ineffective service delivery in the Western Cape. A similar view was noted by provincial government

publications suggesting that the province has witnessed ICT regression, despite the 70 Cape Access interventions in operation (WCPG. 2010; WCPG, 2012:26; DPSA, 2013).

1.8 Overview of the Overberg District case study

In spite of lack of evidence on how marginalised citizens are benefiting out of the GFA, the project has expanded to Overberg District of the Western Cape Province. For this reason, this study examined whether access to GFA - particularly the Cape Access programme in the Overberg District - has contributed to improving individuals' capabilities, and how such improved capabilities have impacted the well-being of users.

The Western Cape Province consists of one metropolitan area, five rural district municipalities (including the Overberg District) and 24 local municipalities. The Overberg District is a category C municipality and comprises four local municipalities: Cape Agulhas, Overstrand, Swellendam and Theewaterskloof (see Figure 2).

The Overberg District has been selected for this study since it has benefited from investment in GFA; it has a high rate of ICT illiteracy among black and coloured communities; and the gap between the rich and poor continues to widen. The scope of this research was limited to GFA located in Cape Agulhas Municipality, Theewaterskloof Municipality and Overstrand Municipality.

Another reason that motivated the selection of these three municipalities is that the local and provincial ICT strategic plan did not clearly articulate how GFA intervention would promote the socio-economic development of marginalised communities. The policy did not specifically address basic human needs and capabilities, yet it is often believed that citizens' well-being and poverty reduction will be achieved by the use of GFA facilities (Ndou, 2004; Madon, 2004; Mhlanga, 2006; Ruhode, 2016).

Figure 1-2 Overberg Region District
Source: Overberg District Municipality, (2021).

1.9 Evaluation of intervention

Gomez and Pather (2012) states that GFA contribute to socio-economic development although its contribution remains limited. The evaluation of the effects of GFA on well-being is not a simple task, and authors such as Tassum and Yeo (2015); Uys and Pather, (2016) have advocated for evaluation that goes beyond tangible and direct effects to an evaluation that focuses on both the tangible and intangible and direct and indirect effects associated with the use of GFA. Self-esteem, sense of self-confidence and growth of their capabilities, and self-worth may be very important to some users. Tabassum and Yeo (2015) showed the assessment of intangible effects of GFA on citizens' well-being should look at how access to information can improve users' information capabilities and lead to improvement in human capabilities. There is thus a need to conduct research into the complexity associated with evaluating the effect of GFA on the well-being of users. The emphasis of evaluation should be on assessing how GFA intervention is affecting the well-being of marginalised communities and its contribution to their socio-economic condition (Sey & Fells, 2011). This is because citizens living in remote rural areas are to a certain extend left out of ICT related projects since most investment in ICT puts emphases on profitability as opposed to empowerment of the needs (Mushongera et al., 2018; Petersen et al., 2019).

1.10 Gaps in the literature

The literature has shown that if the views of marginalised citizens have not been included in policy design and implementation strategies, a truly participatory process has not been followed (Uys & Pather, 2016). Similarly, the focus of several evaluation studies has been solely on those citizens using GFA, without exploring the reasons why certain community members are not making use of GFA (Uys &Pather, 2016). By focusing only on those using GFA, studies deny researchers the chance to identify reasons why users are not using the GFA services, and the findings of such studies will be skewed because they only represent the view of certain group in the community (Heeks, 2010). Also, the literature reviewed showed that most studies tend to focus on infrastructure and systems as opposed to evaluating the effect of ICTs interventions on the lives of users.

The issue of which indicators should be considered during intervention evaluation remains a challenge. Several studies selected indicators that seem to have failed to adequately demonstrate the contribution of ICT initiatives to the lives of marginalised citizens. Finally, the most notable gap, requiring immediate attention, is the issue of the divide in users' capabilities; and the design of an evaluation framework that might reveal whether GFA is having effects on the well-being of marginalised citizens living in remote area who are interacting with GFA. Several studies (Mikko, Ramiro, & Angeliki, (2003); Taylor, Jaeger, McDermott, Kodama, & Bertot, (2012) stressed the issue of infrastructure against users' capabilities. In this case, understanding how GFA is affecting the lives of marginalised communities, as well as its contribution to their well-being and improving service delivery, is worthwhile exploring.

1.11 Research methods

The study used a mixed methods research design which combined both quantitative and qualitative methods. Both methods were given equal weighting because the study collected enough empirical data using each method. On the one hand, 387 householder surveys were collected and analysed using Statistical Packages. On the other hand, the study made use of qualitative approach. This was done through reviewing literature on the adoption and use of GFA with emphases on local, continental and global scales, and by reviewing WCPG's policy

documents. To collect data, several instruments were developed, including questionnaires. Two types of questionnaires were designed, one for quantitative studies and the other for qualitative data. Focus group discussions and content analysis were also utilised. Similarly, semi-structured interviews with policy makers, staff working at GFA comprising managers and development managers, also enabled triangulation of evidence.

1.11.1 Scope and delineation

The scope and delineation of this study is established in the following ways:

- Notwithstanding the fact that e-government, digital divide(s) and mobile phone penetration are very pertinent areas of the study in ICT4D programme evaluation, they have not been given much attention in this study. This study is focusing on Government Facilitated Access to ICT, Therefore; it is not about e-government, digital divide nor mobile phone penetration; although Government Facilitated Access to ICT is one of the ways in which government hopes to deploy e-government.
- The study was only conducted within three municipalities of the Overberg District; therefore, the findings of the study will reflect the opinions of marginalised communities based in these areas.
- The study emphasis was on marginalised communities; the group of citizens that are underrepresented, underprivileged and most dependent upon government subsidies.

1.11.2 Motivating the methodology and design

The study examined the effects of GFA intervention and policy on service delivery in the Overberg District. The emphasis of the analysis is on exploring how different factors have affected service delivery depending on the statistical evidence coming from the dataset. For this study it was very significant to explore different issues that have influence on GFA as a tool that could enhance service delivery and improve the well-being of marginalised communities.

This study further explored several factors influencing the adoption and use of Government Facilitated Access. Looking at the nature of the study and the technicality in analysing the data, it was necessary to use mixed methods since there was a need to quantify the findings yet at the same time, explore and understand marginalised citizens' perception of GFA. Hence the study paid attention to exploring users' perceptions and testing various variables. To make

meanings from the empirical data, the researcher has interlaced discussions with rich descriptions from household surveys, interviews, relevant literature and the key principles of the Capability Approach (Sen, 1999) and Choice Framework (Kleine, 2013).

This study made use of Case Study methods. Case study research is widely used in social science research especially when studying an organisation, sector of industry and small communities. According to Yin (2014), case study method is an empirical inquiry that investigates a contemporary phenomenon within its real-life context when the boundaries between phenomena and context are not clearly evident, and in which multiple sources of evidence are used. This method is appropriate to the study because it investigated the contemporary phenomenon of marginalised citizens' perceptions within the real-life setting of the Overberg District municipality in which multiple sources of evidence were used. For example, "The strengths of a mixed methods approach lie in its ability to collect quantitative and qualitative data concurrently as means to confirm (or not confirm), cross validate, corroborate and/ or verify findings within a single study while keeping the conceptual framework in mind. In most cases quantitative data are discussed first, followed by qualitative data quotes that support or disconfirm the quantitative results (Creswell, Gutmann & Hanson, 2003; Creswell 2009). In term of research design, this study made use of a mixed methods approach, and opted for concurrent triangulation during data collection and analysis. The purpose of this design strategy was on integrating data during the interpretation phase in order to explain convergences that were identified (Creswell 2014).

1.12 Motivating the study

The increased availability of ICT infrastructure across the different levels of government contributes to increasing demand for an effective ICT policy and implementation. Policy promotes online services delivery, telecommunication and ICT education across all spheres of governments (Pretorius, 2012:116). Some scholars argue that GFA is merely a small part of the broader requirements needed to effect citizen well-being (Heeks & Bailur, 2007; Wilson, 2012:73). On the whole, the World Bank (2016) demonstrates that in spite of some individuals making progress, the effect of GFA to poor citizens remains a major challenge in the developing world, including South Africa. Therefore, the contribution of GFA has not met many of its investment objectives. According to the World Bank (2016:2), digital technologies can contribute to a polarised labour market, as well as increased inequality in developing

countries. In spite of massive investment in ICT, many have not benefited out of digital dividends; nearly 60% of world population remains offline and unable to participate in the digital economy meaningfully (World Bank, 2016:2). Thus a study of this nature contributes significantly to the field of GFA by identifying what should be considered by policy makers, scholars and practitioners when addressing factors affecting the success of GFA intervention and ICT policy in rural communities. Heeks (2006:9) suggests that the intention of a study examining users' perception of ICTs should be on evaluating the effect on citizens interacting with ICT products and services, instead of focusing only on access to information. Gupta, Dasgupta and Gupta (2008:14) state that most implementation policy and strategies fail to consider the needs of poor citizens living in rural areas; thus making it difficult to effectively evaluate the contribution of GFA on citizens' well-being. Gomez (2014) says that providing GFA without paying attention to other factors contributing to the development of the communities will not help. The focus of ICT initiative is supposed to be on finding ways to enhance individuals' well-being, increase individual choice and freedom to pursue the lives they value (Qureshi, 2015).

This study examines how GFA intervention in the Overberg District of Western Cape is affecting the well-being of marginalised communities in order to inform service delivery and more effective implementation. The Overberg District in the Western Cape Province in South Africa serves as the study context. The study ascertains the extent to which GFA intervention has contributed to changing the lives of marginalised community interacting with computer and internet offered by GFA. GFA venues comprise telecenters, public libraries, community centres, and internet cafés. These are places where marginalised citizens have the opportunity to learn about and use Information and Communication Technology (ICT) (Baron and Gomez, 2013). The divide in digital literacy persists and actually continues to expand as new knowledge is learnt daily. Hence it is critical to evaluate the effect of GFA on the socio-economic well-being of marginalised citizens interacting with an ICT intervention in rural communities.

1.13 The structure of the thesis

This rest of the thesis consists of the following:

Chapter two presents an overview of available academic literature. It starts by examining GFA to ICT policy and its implementation, factors contributing to access and the failures of GFA in

developing countries. Also, I reviewed literature on the adoption and use of GFA to ICT programmes. Finally, it explores the effect of GFA to ICT on the well-being of marginalised communities. The literature review describes, summarizes, evaluates and clarifies each of the above sub-objectives of this inquiry.

Chapter three discusses the Citizens Well-being Framework which is a framework guiding data analysis. The Citizens Well-being Framework is drawn from the capabilities approach by Amartya Sen (1999) and the Choice Framework by Dorethea Kleine (2013).

Chapter four presents qualitative and quantitative methods to explore the South African government's ICT4D policy documents. It discusses the methodology underpinning the investigation, including the reasons for adopting a mixed methods approach. All the analysis approaches employed in chapters Four, Five and Six are also discussed. In summary, it reports on collecting the quantitative data, and on qualitative analysis of the government's ICT4D policy documents and related work.

Chapter five presents the study area and covers case description and data analysis. Data presented in this chapter answers questions one, two and three of this study. The chapter discusses the findings of the study by studying various factors affecting GFA. It looks at current situation, opportunities and barriers to effective GFA intervention in Overberg District.

Chapter six presents answers to question four of this study by exploring the effect of GFA on citizens' well-being. The chapter focuses on needs and requirements on one hand, and evaluation on the other. It concludes by reporting on the current situation, and users' perceptions GFA interventions.

Chapter seven presents study overview, contribution of the study, limitations and conclusions. Further, the chapter presents the overall evaluation of the study, and theoretical, methodological, knowledge and practical contributions of the study to the broader GFA discourse within the development studies field. Also discussed in this chapter are limitations of the study and recommendations for further research.

Chapter 2: RELATED WORK

Chapter overview

Chapter one discussed preliminary literature on Government Facilitated Access (GFA) as well as GFA interventions within the context of South Africa. Two decades ago, the use of Information Communication and Technology (ICT) was more focussed on servicing government activities than on servicing the larger public. This chapter presents a detailed discussion of the literature on the contribution of GFA interventions to the well-being of marginalised citizens living in rural areas. It further broadens the discussion of certain key points that were introduced in chapter one. GFA interventions serve different needs. The emphasis of this study is on establishing how and to what extent GFA impacts the well-being of marginalised communities, and whether the impacts warrant more investment in GFA interventions. This chapter draws on key sources in the literature with the intention to learn how and what poor citizens do when visiting GFA sites. The literature review is framed around the following themes, derived from the research questions in chapter one:

- ICT policy design and its influence on the intervention implementation of GFA
- Factors influencing the success or failure of GFA intervention
- Adoption and use of GFA intervention
- Evaluation of GFA intervention and its effect on the well-being of marginalised communities

2.1 ICT policy design and its influence on the implementation of Government Facilitated Access interventions

Evans (2018) claims that various studies confirm the importance of ICT for improving the way the public sector works, stating that ICT policy designed in Africa needs to pay attention on how Africa is developing. Good policy and implementation could help improve the delivery of public services, creating opportunities for strengthening public management in Africa. The development of public policy should always involve all stakeholders and pay more attention to global trends to ensure that the return of investing in GFA intervention will be acknowledged by all stakeholders (Hackney and Tassabehji, 2017). Asongu and Le Roux (2017) assessed the effect of increased spending on ICT from 2000-2012 against inclusive human development in 49 Sub-Saharan African countries. Their study showed that policy design to promote the

adoption and use of ICT intervention increased the likelihood of inclusive development in the post sustainable development agenda. The process of developing policies influences the implementation and sustainability of GFA interventions. The conclusion to be drawn is that success and failure of GFA intervention is associated with how policies were designed and implemented in marginalised communities. The following sections will discuss the promise of national and provincial government ICT policies in South Africa.

2.1.1 South African ICT policy perspective

In 2011 the South African government, in partnership with the private sector, endorsed the job competitiveness compact with the desire of delivering 100 percent broadband penetration and the creation of 1 million jobs in the ICT sector by 2020 (Uys & Pather, 2016). This development was followed by the adoption of an Integrated National Broadband plan, and SA Connect in December 2013. These initiatives target the building of an information society, the promotion of access to affordable broadband, the establishment of the Ikamva National e-Skills Institute entrusted with building e-literacy capacity, and the promotion of access to information and good usage (DTPS, 2015). In addition, the government launched various development programmes including the 2013 National Development Plan (NDP). The government interventions were aimed at ensuring quality of life and opportunity for all, as the current state of South African economical divide is worrisome (DTPS, 2016:7). South Africa has a high unemployment rate, and poverty is on the rise. If unemployed citizens lose faith in the government's ability to create jobs for them, the stability of the stable society may be threatened.

In South Africa, the Department of Public Service and Administration (DPSA) is responsible for the development and coordination of the government's e-government strategies. The Public Service Act of 1994 is the key legislation regulating ICT policy. In 2013 the government introduced a White Paper on Transforming Pubic Services Delivery (WPTPSD), the Electronic Communication and Transaction Act, Promotion of Access to Information Act, Electronic Government Policy Framework, Policy on Free and Open Source Software (FOSS). In addition, the South Africa's National Broadband Policy, "SA Connect", was intended to extend broadband infrastructure and services to the most marginalised communities of South Africa by 2020 (DPTS, 2013). However marginalised communities have not fully experienced much of this connectivity while many urban areas are covered via mobile broadband network many

gaps persist in rural areas (Ibrahim, Croxton & Buthelezi, 2021). For example, literature revealed despite an increase in internet penetration across the global south, and while many urban areas are covered via mobile broadband network many gaps persist in rural areas. Many individuals still unconnected, and the digital divide continue to manifest in different forms. In both rural and urban areas gender divide remain a reality with fewer women having access to internet (Ibrahim, Croxton & Buthelezi, 2021; James 2021). Further, A study conducted by ASSAf (2020) found that the majority of citizens in Africa live in rural areas, and more than 800 million individuals relies on government funded networks or GFA for their computer and internet needs. For example, by the end of 2019 only 6.3% of household in rural areas had access to Internet compared with (28%) of urban households and a widening gender gap (ITU, 2021). Rodríguez-Castelán et al. (2021) noted that rural areas and poorer households in Africa exhibit lower internet access rate. The evaluation of digital divide in rural South Africa has been argued to be one of the daunting exercise due to a limited data available because rural areas are often ignored in statistical coverage (Adedonkum & Zulu, 2022, Ibrahim et a., 2021; James, 2021). Many of South Africa's rural areas remain impoverished because they have no access to basic infrastructure essential for digital development (Du Plessis and Mestry 2019; Duma et al., 2021; Pillay, 2021; Duma, Mlambo et al., 2021). Nevertheless, a report by ICASA (2022) shows that by 2020 internet access penetration was at 74.1%, the increase was a result of increased ownership of smart phone and laptop. Notwithstanding, noted increase on a national level, rural areas were lagging behind (52.9%) when looking at proportion of households using mobile devices to access internet as compared to metros at (66.8%) and urban (71.6%) (Adedonkum & Zulu, 2022).

In relation to the use of mobile phones as a means to access to access the Internet, rural areas were lagging behind (52.9%) as compared to urban (71.6%) (Haftu; 2019). The substantial rise in Internet use in South Africa is somewhat attributed to increase in mobile broadband subscriptions from (26%) per 100 inhabitants in 2012 to (59.5%) per 100 inhabitants in 2015 (Liebenberg, Benadé and Ellis, 2018). In spite the rise of mobile phone penetration, the use of computer remains critical for citizens interested in interacting with government online services. For instance, Correa et al. (2018) opinionated that the characteristics of computers, such as a larger screen and greater speed make computers more attractive than mobile. Hence citizens using mobile phone hardly interact with government online service as compared to those who relied on both devices (Du Plessis & Mestry, 2019).

The SA-Connect initiative of DTPS had hoped to provide broadband access of 10 Mbps to 4444 schools in 8 District Municipalities by the end of 2017, and incrementally towards 1Gbps to all schools by 2030. All these policies show recognition of the significance of ICT related projects, and the need for the promotion of transparency, access to government information and good governance. In the same way, the World Economic Forum (2016) believes the stride in the expansion of broadband affordability, which is noted as lead barrier to ICT adoption at country level and use in sub-Saharan Africa, is a good move. Infrastructure and individual use has enabled advanced nation to see the effect of ICT on their economy yet sub-Saharan Africa is still lagging. Hence good policies facilitate the design and implementation of GFA interventions, the promotion of ICT intervention, and aim to increase users' capabilities and help them realise their individual goals (Mativire et al. 2010; Jantjies 2010).

2.1.2 Provincial government policy context

The Western Cape comprises of two broad groups of societies: the well-educated and economically advantaged community; and those living under the poverty line who tend to be focussed on survival in their daily lives (Jantjies, 2010). According to Sey et al. (2015), if citizens are going to be able to make meaningful use of GFA interventions, there are some basic requirements: generation of income, opportunity to education and access to employment. But as Kaisara and Pather (2011) show, the availability of ICT initiatives does not guarantee their success. They maintain that the Western Cape Government's ICT implementation strategies also need to be incorporated into the national government system. Notwithstanding the noted challenges, the Western Cape Government believed that by 2020 all of its provincial government buildings would be connected to affordable broadband infrastructure for the purpose of servicing the needs of citizens (WCPG, 2012:2).

With its vision of an inclusive province, the Western Cape government has developed policies to promote a knowledge economy, increase interaction between citizens and government, and close the existing digital gap. The aim is to accomplish three key objectives: service transformation, enhanced online service delivery and the building of a digitally enabled community (WCPG, 2012:2). The most prominent policy documents are the White Paper entitled: Preparing the Knowledge Economy for the 21st Century (PCPG, 2001a), and the E-government strategy known as Cape Online Strategy (PCPG, 2001b). In order to implement

these strategic documents, the leadership of the province introduced the Center for e-Innovation (CeI), mandated to create an information driving society initiative. One of the CeI's flagship programmes is the Cape Access Project. The province believe Cape Access will facilitate the delivery of its key objectives of improving the quality and efficiency of government service delivery, and also increase public participation in government through the expansion of GFA intervention in the province (Cel, n.d.). The ICT policy seeks to reduce the high levels of poverty in the province by inspiring citizen participation in the knowledge economy, and to provide business and citizens access to government information and services without having to visit the PCPG offices (Jantjies, 2010; PPG, 2001:12). Citizens have different needs that require government attention. Therefore, it is imperative to ensure that GFA interventions are inclusive and as universally accessible as possible (WCPG, 2009).

Likewise, the focus of the Western Cape e-Innovation centre is on restructuring in order to improve Local Government service delivery through ICT (WPG, 2015:49). The WPG believes that Batho Pele ("People First" in Sotho) should be the guiding principle for implementation of GFA interventions, and further, that citizens should be involved in the design of ICT policy (DLG, 2015:19). The National Spatial Development Perspective (NSDP), Accelerated and Shared Growth Initiatives of South Africa (ASGISA), iKapa Elihlumayo guidelines, Provincial Growth and Development Strategy (PGDS) and the Provincial Spatial Development Framework (PSDF) must also guide system design (DLG, 2015:19). Furthermore, to ensure that the Western Cape is a place where citizens can live the life they aspire to, the department of the Premier must align its strategic plans with national and provincial strategic policy documents (WPG, 2015:39).

2.2 Factors influencing the success or failure of Government Facilitated Access interventions deployed in marginalised communities

The promotion of GFA intervention in developing countries is influenced by the United Nations' SDGs which articulates that the widespread access to ICT is critical for promoting social inclusion. GFA interventions deployed in rural areas continue to face various challenges. GFA sustainability lies in the buy-in from all stakeholders' e.g. local community, government, and business (Gil-Garcia, et al. 2019). There is still uncertainty in many marginalised communities on what influences the success and sustainability of GFA intervention. Bailey and Ngwenyama, (2009) postulate that one of the biggest challenges is the range of contexts in

which these GFA interventions are deployed. Gil-Garcia et al (2019) note that in spite of massive investment in ICT related projects in developing countries, Brazil is ranked 63rd, despite the fact that only 33% of its population has access to the internet at home. Other countries, such as Uruguay, Chile, Russia, Serbia and Bahrain are in the same bracket. Many governments in developing countries continue to invest in GFA interventions with the hope of improving citizen's capabilities and their overall well-being. As stated by Albernaz (2012) in Nemer 2015:5 "*it was believed, people living on society's "margins" would be more likely to find work, helping to break the cycle of poverty. There was a false idea that if you put enough computers and poor people in a room together, the problem would be solved.*"

To conclude, the issue of access is about much more than computer and internet accessibility: it must include access to information that can enhance the lives of users. For this reason, users need to have the ability to distinguish between reliable sources of digital information, which requires a certain level of competency. Lack of competency has been found to be the reason that many people with access to computer and internet at home still do prefer to visit GFA sites in order to receive help from trainers (Taylor et al. 2012). For example, an impact study conducted in US shows that of 75% of people visiting GFA intervention for internet use have access to internet at home or somewhere else (Taylor et al, 2012). Similarly, in Scotland, 45% of citizens using the computer or accessing internet do so at the GFA intervention so that they can seek assistance from skilful staff members (Gomez, 2012). This demonstrates that marginalised communities even when owning a computer and having access to the internet at home still seek assistance from skilled people on how to make meaningful use of technological devices. Thus the government focus should be on enhancing users' capabilities instead of increased spending on infrastructures.

2.2.1 Government Facilitated Access success factors

Clark and Gomez (2011) reveal that the success of public access is determined by helpful staff and the relevance of content available. Policy developers, strategists and stakeholders involved in the deployment of GFA intervention should therefore focus on finding ways to address the shortage of digital literacy and on motivating users (Mthoko and Khene, 2015). GFA intervention is supposed to be a place where users can be confident that their information needs and access to critical content will be met by help from skilled staff. Sharma and Mishra (2017) showed that expectancy, performance, trust and influence are strong drives for citizens using

GFA intervention and that financial subsidies play a critical role in the success of GFA intervention. Hence, only a limited number of GFA interventions are likely to succeed when not well funded (Mawela et al., 2017). Another factor that contributes to the success of GFA intervention is the ability to create strong awareness around the services that are offered at GFA intervention. Many GFA interventions, especially those in rural areas, fail to get enough users, because people simply do not know about them.

Sharma and Mishra likewise found that access to educational materials and training offered at a GFA intervention were among the lead factors contributing the success of GFA projects (Sharma & Mishra, 2017), although in isolated cases some use of GFA intervention was found to have little to do with education levels. This was seen to be the case of China where the use of internet was primarily to make use of social networks (Sey & Fellows, 2009).

Saunders (2004) showed that the amount of time allocated to the use of computers at GFA intervention sites may be another challenge hindering their successful use. Many users are not familiar with ICT yet are given very limited time to finish their task. This can cause frustration among new users, and cause further frustration when the young people, instead of offering support to old people, tend to laugh at them. Saunders (2004) further claims that there is a need for courses for seniors on how to use computers, and that classes designed for the older generation should not include young people, since their learning aptitude is not the same.

One of the perceived benefits of access to computers and the internet is the enhancement of future employability, and this contributes to motivation towards the use of computer and internet. Users tend to believe that using GFA intervention will increase their chances of employment, which is one of the primary development goals associated with public access (Uys & Pather, 2016). Sey and Fellows (2015) conclude that the contribution of GFA intervention is highly dependent on context, and therefore cannot be generalised. Context matters and it influences how GFA projects are perceived in marginalised communities: for some GFA intervention is viewed with a positive attitude, while to others, GFA projects are considered as something that must be used by students and the younger generation.

Nkwe (2012) noted that the success or failure of GFA intervention is influenced by multiple factors which can be classified into individual and organisational. Hence it is important to pay attention to factors that influence the use of technology, such as performance expectations,

effort expectations, social influence and facilitating conditions (Muriithi et al., 2016). To this end, Galperin et al. (2017) suggest that any decision taken by policymakers and practitioners that promotes further investment in ICT related projects intended for socio-economic development should be informed by empirical studies which could aid proper design and implementation of ICT intervention. The implementation of GFA interventions informed by empirical evidence could become successful, impactful and sustainable thus meeting investment promises.

2.2.2 Individual factors

Tsets & Rains (2017) state that while there was an increase in the level of internet use in United State of America (USA) from 1999, access remains an ongoing issue among lower income and less educated individuals. This resulted in lower income citizens to view smart phones as a bridge, although in spite of the shift, well-educated individuals remain well-positioned when comparing the divide between those who have access and those who do not, with the main factors at household level being income, race, education, age and language. This view is supported by Clark and Gomez (2011) and Taylor et al., (2012) who found that socio-economic status, education, geographical area, disability, language, and literacy keep many citizens underrepresented when it comes to technology access, and their knowledge of how to use this technology continues to influence how citizens in the USA use ICT. Pick, et al. (2014), noted additional factors affecting the success of GFA intervention. These included poor management of GFA intervention and the lack of demand from the user's side. Lack of user demand was attributed to poor digital skills and the inability to access relevant information. Hence, GFA venues that have well trained staff were better able to contribute to the well-being of citizens by offering training. Gomez (2014) showed that by improving training and knowledge, GFA venues can build digital literacy in communities. Students remain the lead users of GFA interventions, which may add to the perception that GFA venues are set up for students and young people in general (Gomez, 2014). Thus there is a need for policy and strategy that promotes GFA projects and its usefulness to all community members, not just the young. Community members, centre managers and other stakeholders are all supposed to take part in the promotion of GFA intervention. According to Pick et al. (2014), local trainers need to be equipped with knowledge that can foster peer learning, expanding the reach and intensity of public access.

Galperin et al, (2017) found that developing countries were faced with additional challenges beyond those of making sure that marginalised communities had access to internet. The provision of internet requires the investment in training and skills transfer. This supported Walsham's (2013) finding that the deployment of GFA intervention in a low-income country may lead to societal distress over economic benefits, because many interventions fail to improve community's capabilities. As a result, there is a continuation of uneven economy between well skilled and non-skilled community members. Under those circumstances, the hope of alleviating poverty through the use of ICT project remains uncertain. To overcome these challenges, developing countries should build citizens and organisation's capabilities, and find ways of ensuring that the decline in older adults making use of public access does not continue.

2.2.3 Organisational factors

Castells (2009) suggests that internet access is a new mechanism of engaging political leaders. Internet penetration can promote democratic practices, social engagement and other outcomes associate with institutional growth. There is evidence suggesting that internet can improve social ties with friends thus increase opportunities (Fafchamps & Minten, 1999; Kassongo et al. 2018). However, Mawela et al. (2017) show that lack of funding, shortage of skills, poor leadership and the profile of ICT at local municipalities level may contribute to the failure of ICT intervention**.** For Nambiar (2013), the achievement of capabilities has to be considered against the constraints that exist in the society. Negative factors can have significant effects on the development of organizations' capabilities to provide online services and transactions. These challenges include poor ICT infrastructure, security and privacy issues. Gollakota et al., (2012) conducted a study in rural India, where they found low usage of GFA interventions as results of weak organisation. This finding was similar to a study conducted in South Africa and Uganda (Gollakota et al. 2012) studying more than 50 GFA interventions in South Africa and Uganda, low uptake of ICT services in rural areas was due partly to poor organisation (infrastructure, provision of relevant products and services), but also to a lack of community readiness.

Nkohkwo and Islam (2013) conducted a study that explored the failure of the GFA projects in Sub-Saharan Africa (SSA). Their study identified the following challenges: ICT infrastructure, human resources, legal framework, internet connectivity and lack of political and leadership will. The study further found that there was a need for clear communication so that the vision

and values of the GFA intervention were appreciated by all stakeholders. Although lack of infrastructure is noted as a major challenge in many SSA countries, it is also interesting to note that infrastructure alone without users with relevant e-skills makes the provision of infrastructure baseless (Muriithi et al. 2016). Within the South African context, a major challenge facing the country is the lack of extensive digital literacy programmes and a lack of appropriate interventions that could address the challenges facing a community (Gillwald, 2020; Rodríguez-Castelán et al., 2021).

A UN e-government survey (2016) revealed that 82% of the population in developed countries had access to internet as compared to 35% of citizens in developing countries. This shows how deep the disparity is between the developed and the developed countries. The disparity in internet usage and access to computers is clearly seen when rural areas are compared to urban areas. Sharma and Mishra's (2017) study concluded by asserting that adoption and use of ICT in rural areas in developing countries is influenced by several factors; proximity, level of face to face communication as a promotion tool, one stop shop, quality of services, trust, and service quality. Saunders (2004) showed that members of the older generation prefer word of mouth as means for communication when informing the citizens about the availability of free computer and internet. In the case of South Africa, Joseph (2015: 130) indicated that GFA intervention is influenced by lack of good governance, which in turn determines the ability to implement a sound e-governance strategy. Infrastructure, leadership and political will and organisation and individual capabilities remain major factors influencing the success and failure of GFA intervention deployed in marginalised communities.

2.2.4 Implementation issues

Wahid (2011) demonstrates that the implementation of GFA at local government level is mostly done to comply with national government policy. GFA intervention that takes note of citizens and their contextual reality during inception may generate positive socio-economic conditions for the communities and improve the quality of public service. Language and location are considered as barriers to achieving the objectives of GFA intervention in developing countries, south Africa included (Petersen, Brown, Pather, & Tucker, 2019). Petersen et al. (2019) concluded that a lack of multilingual content may be regarded as a barrier to application usability, especially in the South African context where English is not the home language of many ICT users. For example, in the Western Cape, Afrikaans is dominant and the

majority of GFA users are Afrikaans speaking. Within the context of South Africa, the issue of location is very important because many GFA interventions are deployed in marginalized communities with a sceptical perspective on the work of the governments with many still living with the scars of racial division (Grunfeld 2011a). This is not only a South African problem: Kleine (2010) shows that marginalised communities in Peru were likely to cease using GFA interventions because of various challenges including location and the unrealistic expectations prompting Sey et al. (2013) to argue that there is a need for empirical study to pragmatically investigate the dynamics of GFA intervention on users and non-users.

In the case of South Africa, the introduction of GFA intervention is both positive and negative (Mitrovic, Thompson, Klaas & Mbhele, 2014). On one hand, GFA services promote access to information, increased community connectedness, improved conversation between citizens and government official and improved long distance learning (Mutula & Mostert, 2010). On the other hand, the introduction of GFA projects contributes to the divide in the benefits associated with the use of GFA programmes due to poverty, inequality, corruption and insecurity (Mitrovic et al., 2014). Mutula and Mostert's (2010) study of the perceptions of users at local government level revealed that many users were not satisfied with the level of success in using internet to access government services. The challenges included government inability to manage the project and weak human skills (Cloate, 2007; Mutula & Mostert, 2010).

Berryman (2004) believes South Africa has all the relevant tools in place to successfully run GFA intervention, although what is needed is accurate monitoring of GFA implementation. This view is supported by Mitrovic et al., (2014) who state that the main reason for the existence of government is to organise society, the successful delivery of services and the improvement in the well-being of its citizens. The GFA intervention makes these aims more possible by the provision of online services. However, this requires constant monitoring and evaluation of government interventions. The issue of monitoring and evaluation of GFA intervention is critical for the sustainability and for further implementation of GFA intervention. Countries that have adopted GFA intervention without well thought-out policy and implementation strategies may struggle to realise the benefits of investing in GFA interventions.

2.2.5 Individual perceptions and capabilities

In regard to the personal use of ICT services, the literature demonstrates that citizens are concerned with affordability and space. The ownership of ICT devices, access and usage is determined by the affordability among the marginalized community (Zhang & Chib, 2014; Chib, May & Barrantes, 2015). A study conducted by Gigler (2011) revealed there is no direct link between improved access to the internet and on-line government services (through the use of GFA intervention), and enhanced well-being. This is in spite of the general assumption that improved information capability like computer literacy does enhance the human capabilities of the marginalized community, and help them in deciding about what they want for their lives. The introduction of GFA interventions in low income communities can represent both an opportunity and a challenge. To a certain group of citizens' GFA interventions may represent opportunities, yet at the same time a socially disadvantaged community might not reap the benefits of ICT4D, thus deepening the socio-economic gap. This argument is supported by various scholars who found that because of their cultural, socio-economic and educational background, some communities felt that GFA interventions were somewhat restrictive (Anwar, 2019; Abrahams et al., 2022; Abubakre & Mkansi, 2022). The perceived experience of GFA programmes therefore depends on the community's ability to integrate GFA into their social, productive and cultural activities.

2.2.6 Roles of key stakeholders in successful of implementation of Government Facilitated Access

To a large extent, the success of a given GFA intervention is dependent on key stakeholders of the government. These are the government employees, the business community, citizens, and other actors with interest in seeing an effective government that is transparent and accountable to its constituency. Thus, it is clear that having online services without the full support of users, the benefits of such investment cannot be attained (Streib & Willough, 2005).

The national and provincial governments have key role in setting up a shared vision of ICT, policy, the regulation framework and setting up standards (Goel et al., 2012). Similarly, active participation from citizens and government employees is critical for the attainment of leadership vision. Citizens and employees are supposed to be part of the policy design and its implementation since they are responsible for seeing it succeed (Philip and Kanya, 2018). The success of implementation of a GFA intervention requires clearly defined roles of each stakeholder involved in the project, including the users. Basically, from the four key

stakeholders that are supposed to be involved at all stage of GFA intervention planning and execution, internal employees are very important. This is because government employees play a key role as the lead partners in the successful implementation of GFA projects because of their ability to interact with users, the provision of ICT equipment and rendering the services (Goel at al., 2012). Gomez (2014) noted that the success of GFA intervention should be evaluated on the ability to meet local needs first; secondly on training offered to its staff and users, and on community ownership of the ICT programme. This calls on government employees assigned to a GFA intervention to be well equipped and knowledgeable; and government must ensure all stakeholders support the vision.

2.3 Adoption and use of interventions in marginalised communities

To understand what is happening around the world with regard to the promotion, adoption, use and benefits of GFA, this section discusses the adoption and use of GFA projects on a global scale. Thereafter it narrows the discussion to Africa, South Africa, and then the Western Cape. The motive was to explore several views from scholars that have invested much of their time investigating the contribution of ICT interventions on the well-being of users.

2.3.1 Historical perspective of Government Facilitated Access

Countries around the world have invested substantial resources in implementing GFA intervention at various levels of government. According to Benjamin and Dahams (1999), the first form of GFA interventions was introduced in Scandinavia as a means for social experiments. Countries such as the United Kingdom (UK) and the USA also established GFA intervention in the 1980s. However, their Frameworks for GFA did not offer access to telephones (as many GFAs in emerging countries do), because 90% of households in those countries already had telephones (ITU 1998). The literature shows that some governments have managed to implement successful GFA initiatives, but others have failed (Heeks, 2008). As has been shown above, GFA intervention requires a clear understanding of the local context, taking into account the social, cultural, and economic differences during the process of developing GFA programmes (Wahid, 2011).

By 2015 it was estimated that some 500,000 GFA interventions had been implemented, serving over 1 billion users (Nemer, 2015). Rogers and Shukla (2001) found that GFA intervention helped marginalised communities to have access to education, government information,

healthcare and other services. Since GFA interventions were developed in Western countries from which their use expanded into the rest of the developing world, it is helpful to understand GFA programmes in a developed world context.

In the context of UK, GFA intervention has been used to engage citizens to participate in decision making (Kingston, 2017). The whole point of getting everyone connected is to enable stakeholders from a wide range of backgrounds to agree on what development means to all (Kingston, 2017). Zickuhr and Smith (2012) showed that Canada has experienced ongoing growth for citizens using internet from 51% to 80% of the population between 2000 and 2009. Haight, Quan-Haase and Corbett (2014) found that citizens' adoption of ICT services and access to internet was influenced by income, education, area of residence, immigration status and age. This was further confirmed with the data on ICT users in Europe which showed that 92% of individuals in Europe with high levels of education use the internet compared to 71% of those with lower levels of education (Zickuhr, & Smith, 2012). Similarly, in the case of United States of America, Zickuhr and Smith (2012) study revealed individuals earning less than $30,000 per annum and have low level education have the lowest rate of internet access and usage.

2.3.2 Government Facilitated Access investment, adoption and use in Africa

The fact that Africa remains a continent with limited access to ICT creates opportunity for global corporations to invest in Africa (World Bank, 2016). The need and opportunity for investment in ICT in Africa was highlighted at the 1999 African Connection Rally, hosted by Tunisia **(**Benjamin & Dahams, 1999). The focus of the rally was on studying the role that technology, particularly e-centres, could play in advancing the local economy. Kayisire and Wei showed that from 1998 to 2008 sub-Saharan Africa had spent an average of $5 billion per year on telecommunications (Kayisire & Wei, 2015). Duncan noted that such spending was based on the assumption that technology is a main driver of socio-economic development, and that it has the power to shape society (Duncan, 2015).

With the desire to improve the socio-economic conditions of their citizens, African countries increased their investment in GFA interventions so to improve access to and effective usage of ICT (Holmner & Britz, 2011). This led several governments to develop policies that promote investment in GFA programmes, increased communication infrastructure, and the development

of digital literacy, among other strategies (Kayisire & Wei, 2015). The World Bank subsequently found that within the African context, countries that had developed such policies and invested in ICT, showed improvements in overall socio-economic outcomes as well as in ICT network and penetration (World Bank, 2016). Kayisire and Wei's (2015) analysis showed that the penetration rate of ICT and internet access for Africa is as follow:

- North Africa 27%,
- Southern Africa 13%,
- East Africa 12%,
- West Africa 9.5%, and
- Central Africa 4.5%.

Mutimukwe (2017) examined the use of internet to access government services. In Rwanda, there was an increase in citizen use of GFA interventions as a means to access electronic opportunities. Factors that positively influenced the adoption and use of GFA interventions services in Rwanda included trust in government and a positive view of the effectiveness of such services.

Kassongo et al's study confirmed that, if used appropriately, GFA interventions can contribute to income generation and an improvement in socio-economic condition of the citizens, thereby reducing poverty (Kassongo et al. 2018). GFA can improve the delivery of public services, enhance governance and increase the participation of citizens in governance. According to Rho, Park and Choi (2017) the adoption and development of an ICT service by marginalised communities can even be used as a measure of government commitment to providing adequate ICT services. Yet research seems to neglect the assessment of social issues that influence the use and sustainability of GFA interventions (Gigler, 2004). More research is needed into the relationship between investment in GFA projects and equity in the benefits that they generate (Nemer, 2015).

In spite of extensive government spending on GFA intervention in Sub-Saharan African countries since the mid-1990s, the benefits associated with GFA investment remain uneven (Haight et al., 2014). It has been estimated that an average of $5 billion per year was spent on GFA intervention between 1998 and 2008. While this spending resulted in a decrease in the cost of accessing ICT services, the ability of many citizens to use GFA interventions remains limited by their poverty (Mark, Mayer & Minges, 2011). Many citizens in Africa live on less

than $1.25 a day, with one in every two Africans living in extreme poverty in sub-Saharan Africa (Kayisire & Wei, 2015).

Rho et al's (2017) conclusion was that while the adoption and use of internet connectivity is important for the promotion of socio-economic development and poverty alleviation, there is actually little convincing evidence demonstrating a correlation between investment in GFA and improved citizen's well-being. There remain many factors that challenge the effectiveness of GFA intervention in marginalised communities (Haight et al. 2014).

2.3.3 Government Facilitated Access in South Africa

The South African government provides broadband infrastructure to rural areas in the hope that marginalised communities will have improved access to government services. However, local literature demonstrates that the participation of such citizens in these interventions is very minimal (Benjamin, 2001, 2002; DTPS, 2013). Marginalised groups have an ongoing battle with poverty. It is not surprising that their focus tends to be on survival and the provision of basic needs of their families, rather than on spending time at GFA intervention (Asongu & Le Roux 2017). Nevertheless, DTPS (2016) continues to hold that GFA interventions have the potential to transform South Africa into an inclusive and knowledge society.

Local government Integrated Development Plans (IDPs) show that many municipalities have embarked on projects that leverage GFA interventions for the provision of services. But a lack of awareness on the part of citizens appears to affect the uptake of these e-services. One study in KwaZulu Natal involving government's employees found only one out of 11 respondents was aware of the KZN Online Portal (Thakur and Singh, 2013). There is therefore a need for extensive awareness-raising programmes to build up the demand for GFA from poor communities. Poor communication and marketing around online services at local municipality level in South Africa remains a major challenge (Gillwald & Stork, 2018). One example of a successful ICT project, actually owned by a community, is the Siyakhula Living Lab (SLL), whose success is attributed to the partnership between the academia, industry, networking companies, telecommunications companies and software development houses. The project was well funded and had participation from community as well as a school (Muriithi et al, 2016).

2.3.4 Internet penetration

By 2000, South Africa had approximately 3 million Internet users, with the majority of them being young, well-off and educated. Black South Africans were the least frequent users compared to other population groups (Bornman, 2016). Poor education levels remain a fundamental barrier to the effective use of GFA programmes across the country, and there is a need for an extensive programme that will improve ICT literacy; improve community knowledge of the benefits of GFA intervention as a source of information; and result in greater understanding of the needs of communities.

The disparity between internet users and the rest of the population was highlighted by: Uys and Pather (2016), who showed that by 2015, only 10.8% percent of South African citizens had access to the internet, of whom 41.3% used mobile devices. However, in the same year, government statistics found that 53.5% of households had at least one family member with access to the internet either at home, workplace, mobile, and or private internet café (Statistics SA, 2016). 15% of internet users accessed the internet at their workplace, 9.7% had internet access at home, and 5.1% used the internet at educational facilities. The report did not reveal the percentage of citizens accessing internet at GFA interventions. However, report indicated only 5.3% make use of broadband connections. The provincial breakdown of access by individuals to the internet showed the following:

- Gauteng 72.2%;
- Western Cape 68.5%;
- Mpumalanga 58.1%;
- Limpopo 42.4%;
- Eastern Cape 49.2% (Statistics SA, 2016).

Comparing the use of internet between rural and urban dwellers, Gillwald, Mothobi and Rademan, (2018) show that those living in the cities and earning less than R1 583 per month are more likely to use the internet than peoples living in rural areas. The gap between urban and rural internet users is wide, with almost half of the rural population remaining offline (Gillwald, Milek & Stork, 2018). Research ICT Africa (RIA) study found (61%) of South African urban dwellers have access to internet. This is in contrast with the figure of (53%) noted in Stats SA (Gillwald et al., 2018:118; Gillwald, 2020). For example, by the end of 2019 only (6.3%) of household in rural areas had access to internet compared with (28%) of urban

households and a widening gender gap (ITU, 2021). In 2019, only (20.2%) of women used the Internet, compared with (37.1%) of men with a (16.9%) point difference between women's and men's Internet use; with most users of Internet being young people from 15 to 24-year-old age group, (39.6%). The most noted divide is that of capabilities, which demonstrates a significant skills gap exists in the South Africa region across all skills categories. Rodríguez-Castelán et al. (2021) noted that rural areas and poorer households in South Africa exhibit a lower Internet access rate. For example, by 2017 only a relatively small proportion of the South African population had good ICT infrastructure such as internet access (22%), against more developed countries such as the United Kingdom (92%) and United States (89%) (ITU, 2017). Nevertheless, a report by the Independent Communication Authority of South Africa (2022) shows that by 2020, Internet access penetration was at (74.1%); the increase was a result of increased ownership of smart phones and laptops. Notwithstanding this increase on a national level, rural areas were lagging behind (52.9%) when looking at proportion of households using mobile devices to access Internet as compared to metros at (66.8%) and urban (71.6%). Growth in ICT investment on the African continent has attracted a large amount of investment capital from both the public and the private sectors (Niebel, 2018; Adedonkum & Zulu, 2022). To minimize the effect of gender digital divide, the South African government introduced digital training aimed at empowering woman with digital skills, as government desire is to promote and grow the national ICT industry (ITU Digital 2017). It is believed that ICT access and working skills have a positive impact on the socio-economic development of any society. Citizens use of GFA can improve trust in the government services along with user satisfaction (Santa et al., 2019). Matli and Ngoepe (2020) opinionated that ICT skills can increase digital competency and improve job searching skills. Therefore, citizens' engagement in ICT training programs can increase the success of government online services promoted at GFA.

South African ICT policy claims that the use of ICT will improve government efficiency and effectiveness, and facilitate citizen access to government services. Therefore, concluded that there was a need to improve ICT policy if government is to effectively address the disparity in digital divide.

While there appears to be consensus that development is influenced by the ability of a community to interact with technology for improving their socio-economic condition, and for enhancing their cultural and educational development, government's desire to close the digital

divides still has long way to go (Gillwald et al. 2018). Uys and Pather (2016) showed that the majority of community members were unable to realise the benefits of ICT in spite of the SA government prioritising economic development, and that the use of the internet was growing at a rate that was slower than government's expectation, despite increased spending on ICT. Figure 2.1 shows the use of internet in South Africa between 2000 and 2014.

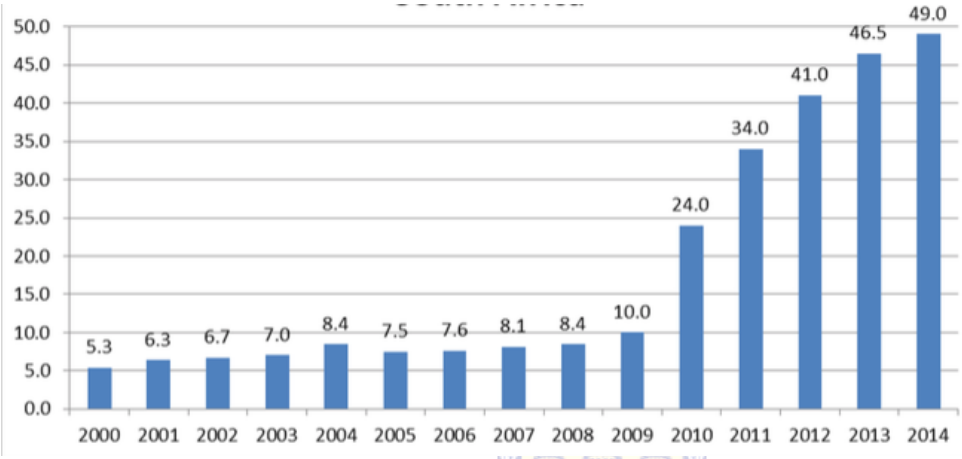

Figure 2-1 Percentage of individual using the internet in South Africa
Source: ITU (2014).

2.3.5 The promotion of inclusive development through Government Facilitated Access

GFA programmes can contribute to process that transform digital inclusion into social and economic impact. Notwithstanding the fact that it remains difficult to identify individual developmental benefits for those interacting with GFA interventions, studies suggests that there are some links (Sey, et al., 2015). The whole point of investing in GFA interventions is to enable marginalised community members to have access to income generation; learning opportunities; access to government information; participation in democratic practices; and to enjoy a variety of cultural and educational opportunities to help them reach their individual goals. All of this is affected and influenced by an individual's ability to manoeuvre in the broader social, economic, and political context (Rashid, 2017). Uys and Pather, (2016) were of the opinion that GFA would be an appropriate vehicle to help marginalised citizens with this, and to facilitate their inclusion in the knowledge economy. Digital inclusion refers to access to and the ability to use ICT (Rashid, 2017), and some scholars have concluded that GFA interventions should be introduced at elementary or primary school level (De Carvalho, Feinber, Klarsfeld, Lepicard & Posthumus, 2012).

South Africa has experienced ongoing citizen protests against poor service delivery in both urban and rural areas. GFA programmes offer the opportunity for such citizens to access government services and express their views. For instance, a study by Mushongera et al. (2018) show that there are poor townships where residents hardly have the basics needs. It is difficult for the cities to balance and address the digital divide where other citizens nothing to put on the table, ongoing protests resulting from poor service delivery, and rising unemployment (Mushongera et al., 2018). In this way, GFA interventions may help the country strengthen its democratic institutions.

Development is a "major phenomenon" as is the rapid spread of ICT throughout the developing world (Ho, Smyth, Kam & Dearden, 2009). According to Ho et al. (2009), defining development is far more contentious; thus development studies practitioners and researchers have different positions, with the focus on economic growth; the millennium development goals, livelihoods, and as well as development as freedom (Sen, 1999). The discourse of development is broad and diverse since it now includes studies of the social impacts of ICT in developing countries (Heeks, 2010; Kleine 2013). The South African historical context makes South Africa a special case study. This is because the leadership of South Africa demonstrated early commitment to the application of GFA interventions for social development, as discussed in SA Connect (DPTS, 2013).

2.4 Evaluation of Government Facilitated Access interventions and their effects on the well-being of marginalized communities

The reasoning behind the role of GFA interventions in the development process is the proposition that technology enhances the functioning of State because it makes easy for government to interact with key stakeholders. It is designed to facilitate the government's sharing of relevant information with citizens and business communities. GFA interventions therefore have the potential to play a substantial role in developing the economy; however, the contribution of GFA interventions is largely influenced by the level of infrastructure, social conditions, and citizens and communities' capabilities.

2.4.1 The role of Government Facilitated Access in enhancing individual well-being

As mentioned earlier in chapter one, this study is framed around a Well-being Achieved Framework which is made out of the element of Capability Approach and Choices framework. This section will discuss some of Capability Approach concepts.

Thapa and Sæbø (2014) demonstrate that, at moment, ICT evaluation is increasingly becoming socially inclined as researchers seek to understand the influence that ICT may have on development; specifically change in the quality of life by improved capabilities. Gomez and Pather (2012) indicate that the evaluation of ICT for development purposes has been in existence for decade with the focus on economic development. However, to effectively see the benefits of ICT for development, the evaluation should not focus only on exploring the contribution of ICT in monetary means (Heeks, 2008). As one of the scholars that has invested much of his time examining development and implementation of ICT interventions, Heeks is not convinced by the success of ICT interventions in developing countries. He claims that many countries continue to experience growing levels of inequality in spite of having access to ICT and that ICT policies that promote GFA have failed to address the existing disparities in income (Heeks, 2010).

The Capability Approach believes that evaluation of ICT should be on how ICT influences an individual's capabilities to do and to be. It thus focusses on the quality of human life, and whether ICT contributes to increased user's freedom to live and choose the kind of life that they have reason to value (Sen, 1999). In this case, what an individual value, matters. However, value without the ability to convert opportunities embedded in a GFA intervention will only result in frustration (Gigler, 2011). Large-scale investment in ICT in low income countries or communities may result in increased economic strain instead of improving community capabilities if the investments do not match community needs. This would result in a situation where well-skilled citizens continue to enjoy the benefits of the digital revolution at the expense of the ICT illiterate (World Bank, 2016:4). In addition, this process can aggravate the existing socio-economic challenges faced by poor communities. Those with ICT skills will continue to benefit, while the none-skilled community members are increasingly left behind (Mpogole, Usanga & Tedre, 2008; Avgerou, 2008; Zheng & Walsham, 2008; Heeks 2010).

Basu (2004) indicates that to achieve the same level of efficiency and flexibility as the developed world, governments in developing countries must transform how they engage their communities. Governments in developing countries need to decentralize governance, and improve citizens' capability to access and consume information. The desire to develop an information society in places where access to the most basic needs is limited, makes any ICT intervention questionable (Basu, 2004). Nevertheless, the widening economic gap between the haves and have not in most developing countries contribute to how citizens use ICT. Those with critical skills do benefit more compared with those with low ICT skills. GFA services provision thereby favours urban citizens; and even in the so-called developed world, the use of ICT in urban areas is far greater compared to citizens in rural areas (Basu, 2004; EU Commission 2016, World Bank, 2016). Therefore, the provision of GFA intervention with the aim of alleviating economic inequality remains questionable. Citizens should be informed about the benefits embedded in ICT and why they should make good use of them. Government should provide content that is relevant and essential to meet community needs (Basu, 2004; World Bank, 2016).

Additionally, Parthasarathy and Srinivasan (2006) assert that in spite of the excessive spending on GFA interventions by governments around the world, researchers are still yet to come up with practical ways of truly assessing the contribution of ICT, especially individual and community well-being. Most studies, especially in Africa, focus on quantitative data which mainly put emphasis on digital divide, access to information and usage; instead of exploring how accessed information is being used and what benefits users have attained. Parthasarathy and Srinivasan (2006) state the process of evaluating the contribution of GFA intervention is not that easy; well-defined indicators can still fail in time of change in socio-economic environment in which evaluation is taking place. The challenge in evaluating the contribution of GFA interventions on the well-being of users is beyond the design of the simple indicators, and the ability to collect empirical data.

Therefore, evaluation of the effect of GFA services on citizens' well-being should similarly be viewed from intangible aspects. Gomez and Pather (2012) suggest a list of intangible impacts that could be studied starting with empowerment, self-esteem, and sense of self-worth at the individual level, and social cohesion at community level. Grimsley, Meehan and Gupta (2006) note that evaluating ICT projects based on infrastructure and performance is important, though

such evaluation hardly addresses socio-economic and public participation goals that characterise the strategic context of ICT interventions. For example, in the case of South Africa, Brown, Licker, Knol and Vincent (2003) state that South Africa has characteristics of both developed and developing world, where certain classes of society enjoy the benefits of ICT in contrast to other parts still experiencing an excessive digital divide.

In addition, the role of technology keeps changing as new developments are made, e.g. since the arrival of internet in 1990s, the focus of evaluation of technology is on assessing how technology is improving economic and social development (Sein & Harindranath, 2004). Most ICT interventions aim to improve access to information and communication services, which in turn can be helpful in creating social and human capital in remote communities (Thapa & Sæbø, 2014). Krauss (2012) believes researchers in ICT should work with a local community in the evaluation process. Community members are generally aware of the challenges faced by their community, but can be relatively unaware of what GFA can do to achieve development. Hence there is need to involve all parties in discussions about what can GFA intervention and cannot achieve.

Kaisara and Pather (2011) showed that ICT evaluation has been on various research agendas since the 1980s, with researchers focussing on both the financial and social benefits of ICT. In spite of South Africa being classified as middle income country, it remains one of the most inequitable societies, with extensive disparities between rich and poor people (Langa, Conradie, & Roberts, 2006). Kaisara and Pather (2011) likewise noted the persistence of economic and social inequalities in the country, and this includes the digital divide, even though the South African ICT policy framework is intended to address users' needs and improve measurable ICT service delivery (Kaisara & Pather, 2011).

It has been shown in the literature that only users with capability will reap the benefits of GFA interventions. Therefore, human capabilities are an important means for achieving the benefits entrenched in technological innovation (Korpela et al., 2003). Castells et al. (2014: 138) demonstrates that there is some kind of similarity between personal happiness and intense use of internet, as users feels empowered and increased level of confidence as a result of using GFA intervention. This shows that the use of GFA services contributes to users developing hope for a better future (Uys & Pather, 2016). Nevertheless, users who are not fluent in English

and do not know how to use the computer can become discouraged and disappointed. For most users, GFA interventions are the only place where they can access the internet; the majority are unemployed or are learners (Whalley & Anderson 2015; Mothobi & Gillwald, 2018).

2.4.2 The benefits of adopting Government Facilitated Access

Uys and Pather's (2016) investigation into the benefits of GFA projects in the Western Cape found that amongst users of e-centres were between the age of 15 and 70, with an average age of 56.5 for male and 43.5 for female. Of those using the GFA services, 39% were unemployed, while 67.7% of users had a grade 12 certificate. Their findings indicate that most users' prime reason for visiting the GFA projects was not to access government services; which contrasts with the stated main reason for the government's investment in GFA. Most users stated that they came to the GFA facility to conduct job searches or for educational purposes (see Figure 2.2).

Figure 2.2 would seem to justify investment in community GFA projects, since for many it is their only means of accessing the internet. Correspondingly, when government vision is creating an information society, GFA intervention is very important in the achievement of such vision (Sey, Coward, Bar, Sciadas, Rothschild & Koepke, 2013). Access to internet contributes to enhancing people's feeling of security, increased freedom, happiness and personal well-being, particularly for citizens living in low income community, e.g. less qualified and women (Castells et al., 2014: 14). Yet despite the ability of GFA programmes in bridging the digital, economic and social gaps, criticism persists; some authors believe the benefits of GFA interventions need to be better articulated and more convincing (Chigona, Lekwane, Westcott & Chigona, 2011:2).

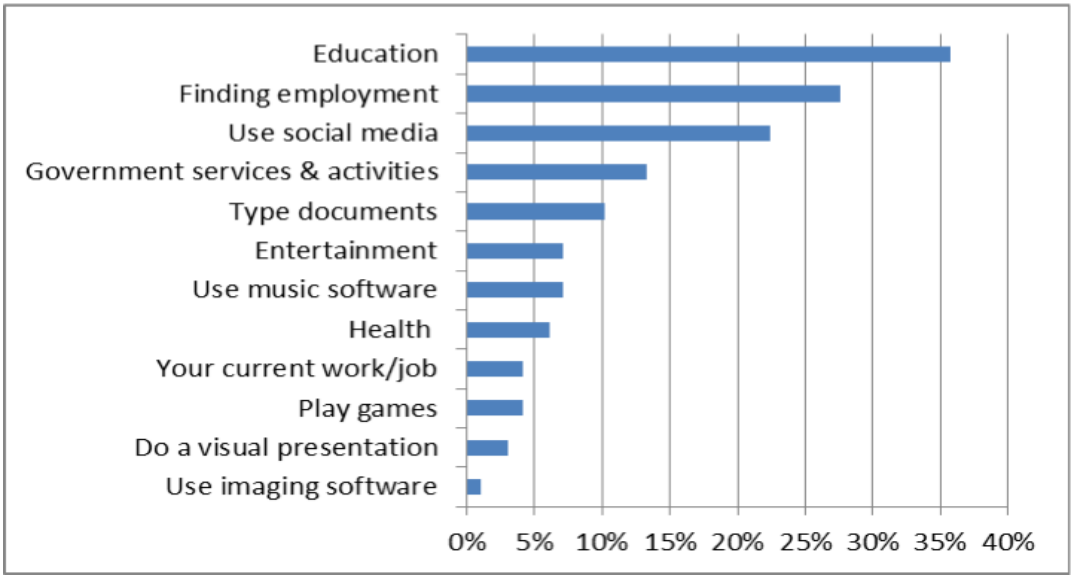

Figure 2-2 Most important use of Government Facilitated Access programmes
Source: Uys & Pather. 2016

Whalley and Anderson (2015) found strong evidence that GFA interventions contribute to building up individual capabilities and empowerment, relationship building and an increased sense of belonging in local and global communities. While Baron and Gomez (2013) acknowledged that it was difficult to measure the socio-economic effects of ICT, provision, they noted that users appeared to benefit from opportunities to build social connections, and that their self-confidence and sense of independence were enhanced.

In contrast to these studies, however, a World Bank (2016) study concluded that it was difficult to measure the benefits of ICT investment on poor citizens, because ICT provision may contribute to economic polarisation. Investing in ICT without accountable institutions may reinforce the benefits to those with ICT skills or of elites, which can lead to policy and programme capture. Indeed, (Heeks, 2010) noted that most ICT programme evaluations emphasise the measurement of activities, processes, outputs and outcomes, rather than the less tangible benefits to marginalised users, which has led to those evaluating GFA interventions to focus on both tangible (quantitative) and less tangible (qualitative) outcomes (Whalley and Anderson 2015).

2.4.3 The evaluation of tangible and intangible benefits of Government Facilitated Access

To realise improved socio-economic conditions, it is assumed that citizens will participate in productive economic activity that can be measured in terms of tangible results, such as income.

But the measurement of the effects of development on well-being is more complex. (Roztocki & Weistroffer, 2016), and calls for the use of qualitative indicators such as changes to health, education, employment opportunity and citizen's participation in decision making (Singh, 2017).

Various studies on GFA interventions have investigated mechanisms that can be used to improve their operation, some have explored the effect of GFA interventions on economic growth and prosperity, but fewer have placed emphasis on studying the enhancement of individual well-being (Gomez, 2012; Sey et al. 2013), especially in rural areas (Sey & Fellows, 2009).

Tabassum et al, (2019) were clear in their conclusion that the assessment of GFA interventions should take note of both tangible and intangible benefits, despite the difficulties of measurement noted by others (Gomez, 2008; Gomez & Pather, 2012; Gomez et al., 2013; Mthoko & Khene, 2015, 2017; Tabassum & Yeo, 2015; Mthoko & Khene, 2017). Tabassum et al. maintained that when evaluation was focussed only on enhancing tangible practice issues, studies tended to ignore the less tangible benefits to individual and community well-being, and thereby an opportunity was lost for producing new knowledge in this field. They found that members of poor communities were able to benefit directly and indirectly, tangibly and intangibly from the use of GFA interventions, including improved social relationships.

Finally, Gollakota et al. (2012) found that perceived benefits of GFA interventions were determined by the quality, reliability and relevance of information that users were able to obtain through the use of internet. They concluded that policymakers and strategists should develop strategies to keep users engaged and motivated and to continually promote the benefits associated with the use of public access to GFA projects, since such access can bring both qualitative and quantitative benefits to users.

2.4.4 Social and economic impact of Government Facilitated Access intervention

Gigler (2011) noted that choice and agency[5] was critical in taking the advantage of opportunities presented by GFA intervention. Garnham (2000) had previously concluded that

[5] Kabeer defines agency —*as the ability to define one's own goals and act upon them"* (Kabeer, 1999a: 438). She points out that agency is usually being operationalized as decision making however in terms of empowerment it

the evaluation of GFA interventions on well-being should go beyond focusing on the development of ICT skills, to examining the ability of users to convert opportunities to improve their well-being, Garnham noted that Capability Approach might provide a framework to help researchers unpack factors hindering marginalised communities from deriving maximum benefits associated with the use of GFA interventions.

The effect of GFA interventions on the lives of poor people has thus been shown to depend on various factors, including the socio-economic, political and cultural contexts and their impact on technology usage. Therefore, the improvement of individual well-being resulting from GFA intervention may have more to do with individual agency and their ability to overcome barriers such as income, education level and perceptions of (Sey & Fellows, 2011). Indeed, Philip and Kanya (2018) question attempts to measure the impact of ICT investment on improvements to users' well-being, arguing that there is a need to engage stakeholders in order to better understand the value of ICT interventions. They argued that better understanding of the relationship between GFA interventions and users in relation to their socio-economic condition could result improved strategies that can help policymaker and practitioners deploy technology more wisely.

The adoption of GFA could help communities address socio-economic challenges. Hence, to effectively evaluate community-based GFA programmes, researchers must work with community members. The emphasis should be on paying attention to both socio-economic and democratic participation of the GFA interventions. Uys and Pather (2016) showed that an expansion of information and communication technology on African soil should align with development needs of the targeted community. This is because, notwithstanding lack of concrete evidence on how ICT contributes to the lives of poor citizens living in rural areas in developing regions, South Africa continues to invest in GFA programmes hoping to increase community e-literacy and create communities that are capable accessing government services remotely.

is more important to see it within the context of the poor's ability to negotiate or bargain with the formal institutions of the market, civil society and the state.

In terms of GFA contribution to socio-economic development, Bhatnagar and Singh (2010) claim that time saved through the use of ICT has helped users avoid loss of income that could have been incurred when traveling from one place to another in search of services. GFA interventions thereby contributed to socio-economic well-being of users. This finding was supported by Uys and Pather (2016) who showed how GFA interventions helped citizens living in the City of Cape Town to cut traveling costs. Therefore, the evaluation of GFA interventions has shifted from evaluating physical facilities to examining the effect of using such facilities on the lives of those interacting with services provided at GFA intervention. However, much work is still needed, as Gomez (2012) noted in calling for more studies to be done to learn how improved access to information and connectedness contribute to development and well-being, agency and choice.

2.5 Chapter summary

The reviewed literature demonstrates that access to computers and the internet is less critical than access in terms of ability to effectively make use of information retrieved from the use of computer and internet. Users' agency and their ability to make use of such information for individual growth is an area of study that requires attention by ICT researchers.

In regard to the adoption and use of GFA interventions in South Africa, there is some hope as citizens are increasingly realising the benefits that can be generated through the use of GFA interventions. However, the literature demonstrated that rural dwellers lag behind in terms of ICT use. Also, work is still needed to promote inclusive development through GFA programmes, and that education, income, location, and age remain factors influencing the success of GFA deployed in rural areas.

The literature showed that citizens and small businesses making use of GFA projects can improve their socio-economic outlook and thus their well-being. Notable benefits associated with the use of GFA interventions included increased opportunity for employment, access to educational material, and sustaining existing and building new relationships. Lastly, if GFA interventions are to deliver on expectations of enhancing individual well-being, decision makers need to establish a clear vision and set attainable goals for their programmes. The process of planning and commissioning GFA interventions should include all key stakeholders, specifically users of the intended intervention (Ramon, Gil-Garcıa & Pardo, 2005).

Chapter 3: DEVELOPING THE CITIZEN WELL-BEING FRAMEWORK

Chapter overview

Literature reviewed in chapter two demonstrated the need for measuring tangible and intangible benefits of Government Facilitated Access (GFA) projects led to the examination of Citizens Well-being Framework (CWF). The elements of Capability Approach and Choice Framework discussed in this chapter inform the development of Citizens Well-being Framework (CWF) presented in this chapter. The Citizens Well-being Framework provides a foundation to evaluate the outcomes of GFA interventions and the contribution of GFA programmes on the well-being of marginalised community.

According to Banker, et al. (2013) the measurement of individual or community well-being is not something that is new, as it can be traced way back as far as the Greek philosophers. A United Nations report noted that "the difference between a good political arrangement and a bad one is seen in terms of its success and failures in facilitating people's ability to lead flourishing lives" referring to Aristotle (UNDP 1990). In attempting to measure such success or failure, a number of countries have established different methods of determining the well-being of their populations. One such is the Human Development Index (HDI), which measures the well-being of citizens through variables such as psychological well-being, time use, community liveliness, culture, health, education, environment, living standards and governance (Banker et al., 2013; Govender et al., 2019).

3.1 Theory informing well-being assessment

In terms of evaluation of well-being, Klausen (2018) posits that well-being is distinguished in three main types of theories. Firstly, the *Hedonism philosophy* considers well-being as subjective because it takes a person's own experience to determine his/her well-being. But it is also objective in that it does not take well-being to depend on the person's own attitudes. The *preference satisfaction philosophy* is similar to Hedonism in that it can be both subjective and objective, since what satisfies a preference will most often be an objective state of affairs. Thirdly, the *objectivist philosophy* holds that individual subjective experience and evaluative attitude determine what is good, and that the notion of achieving well-being is complex, involving individual preference instead of just having a certain bundle of capabilities (Melanie

& Anya, 2017). These philosophies have been termed *eudemonic*[6], because they focus on the satisfaction of basic human needs, measured through consumption. They have been linked to the Gross Development Product (GDP) theory, the Theory of Human Need (THN), Human Scale Development (HSD) theory and Human Development Index (HDI) which have dominated the measurement of individual or community well-being for decades. Guillén-Royo shows that the indices of THN are met by culturally specific needs that fulfil a set of universal criteria, while the HSD outlines nine fundamental human needs including survival, protection, affection, understanding, creation, identity and freedom (Guillén-Royo, 2016).

The Capability Approach and the Choice Framework (2013) are new evaluative approaches that contrasts with these eudomonic theories, because they emphasise freedom, choice and agency, rather than gross national products (GNP) and gross domestic products (GDP) (Brand-Correa, Martin-Ortega, Steinberger, 2018).

ICT related development has been traditionally measured in terms of the growth in the infrastructure, number of Internet service providers (ISPs) and number of computers per capita. However, the evaluation of how GFA interventions influence an individual's well-being is centered on individual's experiences of GFA interventions, taking into account the importance of e-skills and knowledge as key components. Alampay (2006) is of the opinion that the existence of GFA interventions in a marginalised community can assist in poverty alleviation and increase chances for economic development. This is evident in the policy statements for GFA interventions such as Cape Access. There is a need to show evidence of how GFA interventions contribute to national economic development, but the true contribution of GFA interventions on socio-economic well-being of the individuals or communities remains hard to measure. The gap between the rich and poor in many developing countries is on the rise in spite of citizens having access to GFA (World Bank, 2016).

3.2 Conceptualising well-being evaluation and human development

Community well-being can be viewed as the sum of individual well-being, and relationships and social capital are important components of both. Evaluation of well-being must therefore include relationships as a core variable of human development Appandurai (2004) observed

[6] *Eudemonic* is defined as "conducive to happiness" in the Oxford English Reference Dictionary

that individuals aspire for a better life, often in spite of their living context. Inquiries about individual or community dreams may thus be important in providing a set of indicators for intervention evaluation and monitoring.

In operationalising a measure of human well-being in rural areas this study opted to develop indices suitable for well-being assessment for rural areas with the intention of measuring the human development experience of ICT intervention, providing enough description of life domains into tangible factors that policymakers could target for further policy development and intervention rollout.

Nussbaum (2011) demonstrates that in spite of the significance of promoting freedom of choice, it remains important to also understand that individual freedom is also influenced by the choices of others. This implies that an evaluation of a GFA intervention should focus on how social groups influence an individual's use of his choice. Within the Southern African context, studies on measuring individual well-being remain focussed on assessing economic development and poverty eradication, factors influencing well-being in multicultural societies and on people with different economic status (Higgs, 2007; Rousuw and Naude, 2008). Clark's investigation on perceptions of well-being among the urban and rural poor in South Africa found that most South Africans believe that to attain a good life one needs a job, housing, education, family and friends, religion, health, food, good clothes, safety and economic security (Clark, 2008). The weights of well-being assessment have been on health, wealth, education, economic, political empowerment, natural environment, access to public service and infrastructure (Higgs, 2007).

This study aimed to explore the resources available in Overberg District and how targeted beneficiaries. It aimed to look at how beneficiaries used what was provided, and what benefits were generated through the use of GFA programmes. In addition, it sought to identify the reasons that motivate beneficiaries to make use of GFA interventions, and what they hope to achieve by making use of the resources. GFA interventions should be focused on attaining outcomes such as expanding individual freedom, improving well-being and quality of life. If improvement of an individual's well-being is the objective of development, then economic growth is not the end itself but the means to ends. Similarly, in applying the elements of

Capability Approach and Choice Framework in GFA studies, access to GFA intervention is seen as something that can increase individual's choices, be it an end or means to another end.

For example, the use of ICT is influenced by the type of well-being that an individual wishes to accomplish, and the level of agency that should be activated. Therefore, an individual interested in improving his career, but who does not have access to a higher education institution might be interested to take online course using GFA intervention, although it depends on user individual characteristics (Mazzanti et al., 2020).

In regard to the application of the elements of Choice Framework to this study, the focus was on identifying whether GFA users in the Overberg District were capable of identifying a variety of agency-based resources that were available within their communities, and whether they make use of their agency to pursue the perceived well-being.

This study focused not on measuring the capability or opportunity, or on whether the individuals interviewed were making use of those opportunities, but was interested in whether the intervention had enabled users to meet certain functionings that they deemed important to them. The process was informed by several other scholars who have made the use of Capability Approach while focusing on functionings instead of capabilities and agency. Hatakka and De' (2011) showed that the Capability Approach could enable researchers to learn what resources the internet makes available for users. The internet plays a key role in expanding information, and with relevant information at hand, people's capabilities can be expanded in the process enabling them to make new choices about the lives they want to lead (Hatakka & De', 2011). This study therefore argues that development cannot take place in the absence of freedom and choice. Thus, increased freedom of choice is both a means and the end of development. This view then supports the idea that ICT intervention should be evaluated on its ability to increase user's freedom, opportunity and choice.

3.3 Access to technology and its effects on individual well-being

This section discusses the effects of technology advancement on individual well-being, taking the constructs and their inter-relationships within development studies, capturing subjective and objective well-being components with the aim of establishing how they influence individual attainment of capability and functioning. So, this section reviewed how the use of

ICT related intervention affects psychological, economic, social and economic well-being of users. According to Govender et al. (2019), despite of several evaluation studies investigating poverty eradication interventions in South Africa, none of the studies has addressed the development needs of citizens. Maslow's 1970 theory of hierarchical human needs shows that resource accumulation could satisfy individual's basic needs, in the process benefiting subjective well-being. The achievement of a basic need may prompt an individual to seek the attainment of higher-level needs such as social belonging, identity and self-realisation, from which individuals could feel socially and psychologically well (Ganju, Pavlou & Rajiv, 2016; Castellacci & Tveito, 2017). A social well-being dimension consists of access to public goods, social networking, social and welfare services, and the quality of physical environment. According to Burchi and Gnesi (2016), the concept of well-being is perceived in various ways, as some see the concept as a phenomenon composed of two attributes, equity and sustainability. However, Dolan, Peasgood and White, (2008) showed that well-being was more to do with how an individual perceived the world in which he/she lives to be impacted by a mix of priorities, influences, strategies and outcomes. For Dolan et al., well-being was more to do with a person's intention as opposed to some external factors. From a subjective viewpoint, doing well and feeling good are central keys of well-being as they suggest the level of person's satisfaction with his life condition. This subjective well-being is an individual assessment of how good one's life is and as such presents a measure of overall well-being. It is measured through various indicators based on the needs of the investigations (Diener & Diener, 2002).

In regard to the contribution of ICT4D on individual well-being, the World Development Report on Digital Dividends (World Bank Group, 2016) postulated that technology can advance human capabilities through facilitating active participation in economic, social, psychological and political life of a society, as well as through economic growth via productivity gains. This view is further supported by following authors (Ganju, Pavlou & Rajiv, 2016; Castellacci & Tveito, 2018; Leng, 2020).

Regarding the impact of technology on social life, an individual's well-being may be influenced by the growth of social networks, and social capital, and improved social connectedness (Banker, Ganju and Pavlou, 2013). Gomez and Fisher (2005) showed that social well-being was concerned with how individuals assess the quality of their relationships with others, their living environment and their social functions. They focussed on five key

dimensions: social integration, social contribution, social harmony, social identity and social realisations. Each of the social functions contributes to the others and the whole function of the society (Castellacci & Tveito, 2017). From the psychologist's views, psychological well-being focusses on an individual's psychological satisfaction and their realisation of self-value (Opree, Buijzen, & van Reijmersdal, 2016). Hence, the use of technology can either cause a positive or negative effect on the psychological well-being of users when perceived self-values are either achieved or not. On one hand, when perceived self-value are achieved, desired psychological sentiment is triggered in the minds of users, and on the other hands, failure to achieve perceived self-value via technology can cause a negative sentiment towards the use of technology as a tool that can facilitated positive psychological well-being (Castellacci & Tveito, 2017).

The evaluation of ICTs involves a question of whether an increase of investment in GFA interventions enables citizens to improve their perceived well-being (Greyling, 2018). Ganju et al. (2013) posit that ICT can improve individual well-being by creating access to various opportunities, and developing his social capital, achieving community equality and facilitating access to public facilitated capabilities that are important for improving self-satisfaction (Greyling, 2018). Further, the use of technology can influence the well-being of the society as whole because the use of ICT related intervention can contribute in interlinking the society (Ma, et al., 2020). The assumption is that citizens who are not interacting with ICT will be less satisfied with their lives than those who have access to the internet (Samarakoon, 2019). Yet only those who are aware of the benefits of technology, but who lack access to it, would feel the negative impact on their lives.

The World Bank Group (2016) found that citizens in countries with good internet penetration showed improved well-being, when compared with those from countries with less access to the internet. Therefore, South Africa policy to provide internet access to all citizens should therefore result in improvements to the subjective well-being of those who access the GFA programmes.

A study by Yang (2018) found that financial resources available to an individual was positively related to life satisfaction, demonstrating that a subjective measure can capture a different sentiment from what an objective measure can do. Measuring well-being using only objective metrics will thus deny an individual the opportunity to assess their own subjective self-

satisfaction. Bartikowski, Laroche, Jamal and Yang (2018) claimed that there was a correlation between education levels and life satisfaction. He found however, that those with higher degree qualifications, but who failed to secure their desired employment, may experience a reduced life satisfaction. Using education as a variable in subjective well-being assessment must therefore be done with care, despite the fact that it is regularly listed as a dimension of well-being on many policy agendas. This finding was supported by Govender et al. (2019) who argued that self-reported happiness and satisfaction increased with absolute income within and across income groups, and that education without the desired income may lead to increased stress levels and reduced well-being for well-educated individuals (Bartikowski et al., 2018). Financial insecurity is known to contribute to negative emotional, behavioural, and cognitive outcomes, making income an important variable in the assessment of well-being. As a result, stress and poor psychological well-being has long been associated with increases in poverty, while an individual's well-being improves as their economic situation improves (Govender et al., 2019).

In the context of rural areas, the assessment of well-being may facilitate the understanding of the context, then helps policymakers to take well informed policy decision. The sub-indices of subjective well-being consist of health, wealth, socio-economic and political activities, education and infrastructural (Kahneman & Krueger, 2006). The realisation of subjective well-being requires citizens to have access to natural resources, economic resources, social capital, infrastructural and political environment that contribute to individual capability (Gigler, 2011).

3.4 The Capability Approach

Conradie and Robeyns (2013) shown that the Capability Approach can be viewed as normative, constructive and predictive approach to evaluation. It is normative because the Capability Approach promotes equitable access to properties, constructive because it uses and learns from empirical studies, and predictive because it helps one to make predictions on the implication of policies on development (Robeyns, 2006).

3.4.1 The Capability Approach conceptual position

What sets the Capability Approach apart from most traditional economic theories such as the utility or commodity focused approaches is Sen's ability to distinguish between commodities, utility, functioning and capability (Clark, 2005; Mitra, 2006; Clark, 2008; Zheng, 2009).

Instead of focusing on commodities and utility (as in traditional welfare economics) in a study assessing well-being of citizens Sen (1985) posits that the evaluation should be on individual's capability to function: "the ability to being and doing" rather than putting emphases on opulence (income-based approach). Sen's view is that human well-being should not be evaluated based on utility but on human capabilities or on freedoms people value. Sen acknowledges the importance of economic growth and material prosperity noting that income is an important metric in human development, but finds that it should be seen as a means not the end (Sen, 1985), He argues against defining development solely based on income and calls on evaluators to examine other values, notably individual rights and freedoms (Sen, 1999). This might not be a serious problem in cases where utility levels reflect personal circumstances and deprivations. However, Sen indicates that utility can be easily swayed away by mental conditioning or adaptive expectation. Figure 3.1 illustrates the characteristics of Capability Approach.

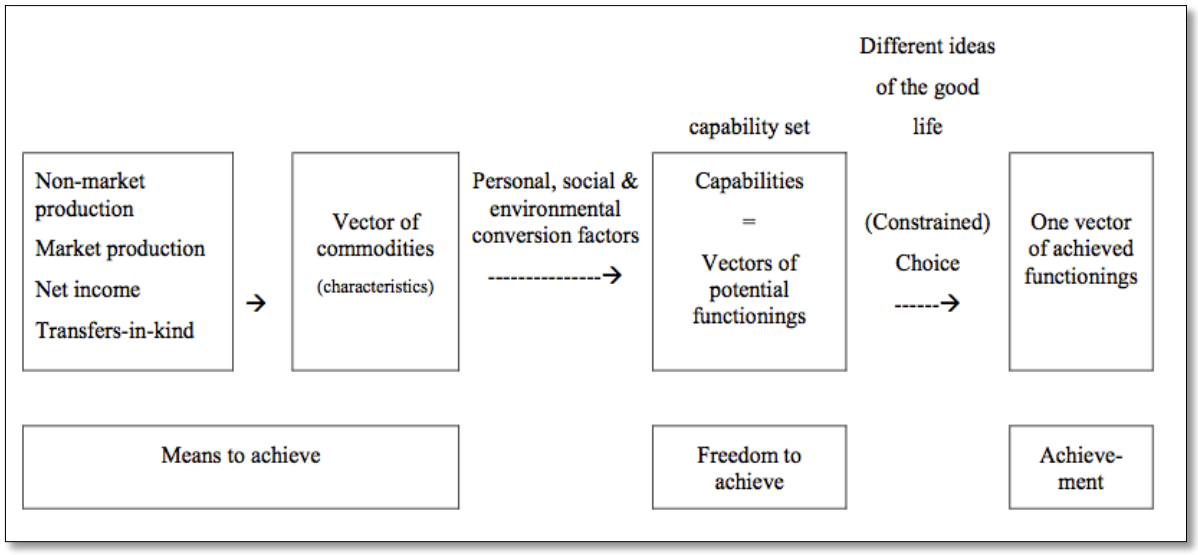

Figure 3-1Characteristics of Capability Approach
Source, Conradie and Robeyns (2013)

People cannot live, let alone live well, without goods and services (Clark, 2010). According to Clark, Sen acknowledges the link between personal growth and living standards and praised traditional development economists for identifying factors that facilitate growth in poor countries. But Sen (1983) argues that the ability to command resources (agency) is also critical for human survival. Commanding resources is similar to owning commodities, but includes the ability to exchange one bundle for another through trade and production. In terms of evaluation, Clark (2010) opined that the focus of well-being evaluation should be on what people manage to achieve with their resources, meaning that having access to resources itself is not enough.

He noted that some individuals are able to achieve more than others, despite being given the same bundle of good and services. The difference lies in people's ability to withstand and work around various factors acting in their environment including political and social institutions.

The Capability Approach thus places emphasis on expanding people's freedoms and their agency over matters that impede economic justice and their development. But this requires people to have access to relevant resources. Sen believed that enhanced living conditions must be the real reason for economic development (Sen, 1987). Therefore, the place of human beings in the development process should be clearly defined because they are the primary reason for the ends of production (Sen, 1990). The Capability Approach consists of key concepts including functionings, capability and freedom to being and doing. If any of these are left out in evaluating development, it does not do justice to the Capability Approach (Alkire, 2005).

The Capability Approach seeks to distinguish between subjective and objective well-being, which makes it useful in for the evaluation of human development programmes. A study by Diener and Biswas-Diener (2001) which investigated the subjective well-being of slum-dwellers, pavement dwellers and sex-workers in Calcutta found these objectively very poor groups to be subjectively more than satisfied with their lives. The research concluded that people could be satisfied with little, not because they want only few things, but because they have adapted to the limited choices of their surroundings (Alikre, 2005). In this way, the Capability Approach framework helps researchers undertaking evaluations to uncover what individuals count as important in their lives.

3.4.2 The selection of functioning, capabilities and evaluation space

Robeyns (2003) noted that one of the challenges when using the Capability Approach is in determining which functionings or capabilities should be included as functioning indicators. For the current research, the list of functioning indicators was developed in line with Cape Access intervention's key objectives, along with indicators suggested in the literature. This included a 1994 Italian household survey which measured well-being in the functionings and capabilities space (Martinetti, 1994). Martinetti looked at 5 indicators (health, education, knowledge, social interaction and psychological conditions). Similarly, Klasen (2000) measured and compared expenditure poverty and functioning poverty in South Africa. He looked at 14 distinctive functionings comprising: education, income, wealth, housing, water,

sanitation, energy, employment, transport, financial services, nutrition, health care, safety, perceived well-being (Klasen, 2000; Robeyns 2003:35; Hatakka and De', 2011).

In regards to evaluative space, Sen (2009) argued that there was no difference between the concepts of functionings and capabilities. His emphasis was that evaluations should go beyond assessing merely achieved functionings:

> Ideally, the capability approach should take note of the full extent of freedom to choose between different functioning bundles, but limits of practicality may often force the analysis to be confined to examining the achieved functioning bundle only (Sen, 1992:53).

It is therefore up to the researcher to decide on what is to be evaluated. For this study, an individual's functioning became an important element. For instance, the researcher reviewed government ICT4D policies documents to identify the process that led to policy formulation, selections of indicators, and the common themes across these policies documents. Further, before starting with the actual study, the searcher had an opportunity to engage with policymakers and regional projects managers. These engagements provided the researcher the opportunity to learn the reasoning behind perceived policy outcomes and how these perceived outcomes were derived. Lastly, the researcher engaged GFA users during the pilot study to learn which capabilities and functioning were relevant to them.

3.4.3 Criticism of Capability Approach

Alkire (2008a) praised the Capability Approach for its flexibility in allowing investigators to develop and apply it in different contexts. This view was supported by Clark (2008) who showed that Capability Approach helps evaluators to address levels of inequality, social justice, living standards and rights and duties.

The fact that Capability Approach is not a complete theory has invited some criticism, especially from those who expected Sen to develop a complete list of capabilities (Williams, 1987; Nussbaum, 1987; Qizilbash, 1998 in Clark, 2008a). Nussbuam (2000) was one who looked to Sen for a possible list of capabilities that took into account different cultures, social and political contexts, and which could have been endorsed by different national governments to make the list universally applicable. Clark noted the criticisms but felt that in spite of difficulties in operationalising the Capability Approach, several innovative attempts have been made to measure well-being, human functioning and capability (Clark, 2008a).

While critics wanted a concise list of capabilities, Sen's (1999) work reminds researchers applying Capability Approach of the democratic process that needs to be followed in determining which functioning or capabilities should be examined when evaluating policy development. It is the responsibility of all researchers to ensure that public participation is considered during the design, implementation and evaluation process of development initiatives. If a fixed list of functioning or capabilities emanates entirely from evaluators will open the study to criticism because in most cases, those conducting the evaluation will have cultural and historical differences from those who are the targeted beneficiaries of a government intervention. A universal or global list of indicators might not leave options open for public participation by beneficiaries on what should be included on the list of what needs to be evaluated (Clark, 2008; Sen, 2009). Such public participation would afford the individual the freedom to choose and define his/her own goals and accommodate divergent views of the good life, therefore the choice of indicators should be reserved concerned citizens (Sen, 1985; Clark, 2010).

Correspondingly, Alkire (2008a) is of the view that an evaluation should take account of the extent of freedom that people have to achieve the functionings they value. The Capability Approach can help in explaining past events, the present and predict future trends, and provide normative evaluation of states, institutions, and policies. However, to really evaluate the advantages and disadvantages of an intervention, patience is needed (Alkire, 2008a). This is because the same intervention ought to affect people differently in spite of their context which itself can be influenced by people's values, agency and conversion factors.

Criticism of Capability Approach extended beyond the issue of developing a list of capabilities, to consider the issue of ethical individualism. Robeyns (2000, 2003) noted a lack of methodology in Sen's Capability Approach. This view is supported by Alkire (2008a), who claimed that evaluations which used the Capability Approach framework and focussed on policy recommendations must equally pay attention to community dynamics, or collective capabilities. Alkire noted that by focusing on the individual, the evaluation process will inevitably enable evaluators to effectively assess the capabilities each person values and has reason to value. The Capability Approach focuses on individual's rights to define development based on their understanding of development, thus making it very difficult to apply Capability Approach more widely. The focus on individualism excludes an examination of more

collective indicators that involve public participation. Notwithstanding above-mentioned difficulties in applying the Capability Approach, Kleine (2011, 2013) operationalised it to develop the Choice Framework as she sought to understand how investments in ICT and ICT policies might enable poor rural communities to lead the lives they desired.

3.4.4 Applying the Capability Approach

Alkire (2008b) shows that the application of Capability Approach depends on the context, the level of analysis, the information available, and the kind of decisions involved. The successful use of the Capability Approach depends on specific local requirements because what contribute to the improvement of the well-being in one community might not be relevant in another setting depending on user's characteristics. For this reason, the applicability of Capability Approach across political, economic, and cultural borders is dependent on the context.

Table 3. 1Studies that have made use of CA in ICT evaluation

Authors	Conceptual adaptation of the Capability Approach
Gigler (2011)	Informational capabilities and informational capital
Grunfeld, Hak, and Pin (2011a)	Capabilities, empowerment and sustainability
Kleine (2010)	Choice framework
Johnstone (2005);	Theory of justice
Zheng and Walsham (2008)	Capability exclusion in the e-society

The introduction of Capability Approach in the development evaluation arena shifted the focus of evaluation away from purely materially-oriented to one that focused on opportunities. Gigler's (2011:3) investigation placed emphasis on information capabilities and information capital, and showed that there was a link between ICT and social economic development that can be attributed to the introduction of ICT. According to Goerne (2010:14) the Capability Approach has the ability to enable an investigation to understand which development goal is being pursued, the level of its attainment, and its contribution to a pursued objective. Goerne (2010) investigated a small number of functionings that were thought to be critical for policy analysis and used those to evaluate policies. That study followed the same approach in evaluating the effects of Cape Access projects on the well-being of a marginalised community living in Overberg District. It explored the provincial government ICT policy, in order to understand the initial purposes of the project, as well as the specific objectives of the policies. Goerne took note of Zheng's (2009) idea for understanding how the design of ICT intervention contributes to the expansion of human capabilities and improved their chances of achieving

their functionings. Within the context of Capability Approach, well-being is considered a functioning that an individual can achieve, while agency is the ability to make use of opportunities based on personal values and circumstance. However, the link between ICT intervention, economic development and individual well-being is yet to be critically examined. The Capability Approach helps to differentiate between ability to use ICT (skills, knowledge and so on) and capabilities set (opportunities embedded in these ICT applications). It also explores the level of freedom accorded to individuals and the range of options available for individuals to make informed choices that could lead to the improvement of their well-being (Kleine, 2013). The Capability Approach focusses on opportunities that can be generated as result of having access to ICT intervention, and how the use of these opportunities can improve citizens' well-being (Hatakka & De', 2011).

3.5 The Choice Framework

The Choice Framework is an ICT for development evaluative framework which was developed and introduced by Dorethea Kleine (Zeng 2017). Kleine's contribution to the development studies policy arena originated from her interest in assessing the effect of community-based ICT interventions in the rural areas of Chile. Kleine's (2011, 2013) framework relied on the Capability Approach, the livelihoods framework and development oriented perspectives on empowerment, although for the interests of this study only the capability approach is discussed. She examined telecentres, Chilecompra and the Fair Tracing project in Chile, while concentrating on the effects of ICT on the life of single female micro-entrepreneurs (Heeks, 2010). Her study concluded that for individuals to live the life they want, people's choices should be embedded in technology design and implementation. According to Kleine, the ability to convert resources (opportunities) into meaningful use differs from one individual to another. Resources can be interpreted as capability inputs which, depending on individual conversion factors and structural conditions can be converted into capabilities (Robeyns, 2003). The emphasis of the Choice Framework is built around the choice that an individual possesses and whether the individual is capable of making use of such choice, positioning the idea of choice at the centre of human development oriented evaluations.

The study using Choice Framework can focus on either the use of the internet as a tool that provides individual opportunity to realise a range of functioning, or can put it emphasis on micro-entrepreneurs, on a group of people that uses ICT for business and private purposes to

achieve a variety of functionings (Avgerou, 2008; Kleine, 2010). This demonstrates that the Choice Framework is relevant to undertaking GFA project evaluation by analysing the perceptions of users interacting with a GFA intervention. The Choice Framework has been used for analysing the effect of ICT policies on local livelihoods in rural Chile and could be similarly used in the analysis of processes as well as planning and assessment of development activities elsewhere (Kleine, 2010).

3.5.1 The Choice Framework conceptual position

In the Choice Framework, an individual's resource-based agency can operate within a given structure to achieve varying degrees of empowerment such as the existence of choice, sense of choice, use of choice and achievement of choice as shown in the Figure 3.2. The Choice Framework shows that the effects of achieving development outcomes may influence changes to structure as well as enabling individuals to effectively make use of agency as demonstrated by the sharp arrows facing structure and agency.

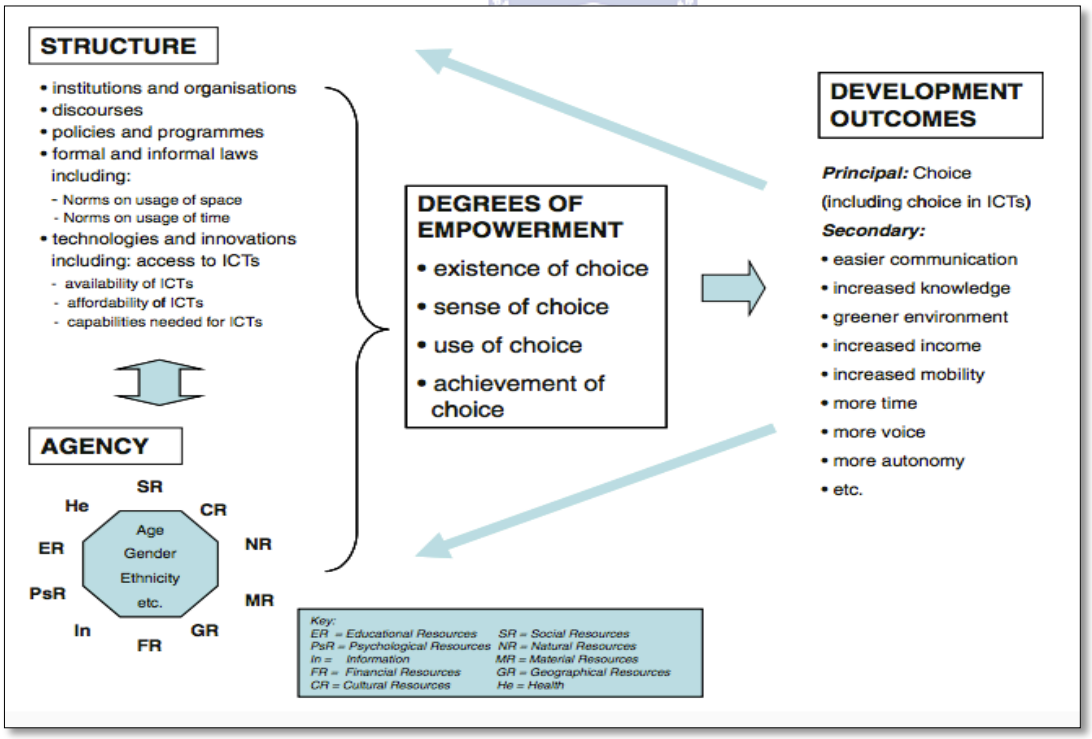

Figure 3-2 The Choice Framework
Source: Kleine (2011).

According to Kleine (2011) the first stage of evaluating a development intervention should be on analysing individuals' states of "choice". Authors that have used the Choice Framework

approach in well-being investigations, indicate that an individual's resources portfolio can be affected by the level of individual agency, the individual person's characteristics as well as external factors (Kleine (2011; Smith et al. 2011; Tabassum, at al. 2019). To realise development outcomes of an intervention, individuals need almost all of the resources discussed in Choice Framework (Kleine, 2010). However, a lack of certain resources does not mean the person will be deprived from meeting certain needs. This is because the use of resources is somewhat dependent on individual conversion factors. Thus, an individual's ability to choose and access resources is paramount in the attainment of certain functionings (Robeyns, 2003; Kleine, 2011).

3.5.2 Dimensions of choice

Individual use of choice is determined by the type of lives the individual wants to live. Individuals use their resource-based agency to negotiate the social structure. Therefore, effective use of agency depends on the individuals being aware of what they want to achieve (Alampay, 2006; Kleine, 2011; Uys and Pather, 2016). This view corresponds with Sen's (1999) notion of development which put emphases on the expansion of freedom to choose while acknowledging that individual agency as critical in improving or putting at risk one well-being. Kleine (2011:124) reveals four dimensions of choice as 'degrees of empowerment':

(a) a sense of choice;

(b) the existence of choice - whether different possibilities exist and are, in principle, attainable for an individual if the combination of their resource portfolio and the structural conditions would allow it;

(c) the 'use of choice' - whether or not an individual actually makes use the choice; and

(d) the 'achievement of choice' - whether the outcome matches the choice expressed.

This brings the discussion to the point where choice is a constantly changing factor, thereby making development a process that needs ongoing participatory planning, monitoring and evaluation (Kleine, 2011:125). Limited freedom to choose from a bundle of resources can hinder and make the decision-making process of utilising an intervention very difficult for users (Sen, 1992:53; Robeyns, 2003:16, Kivunike et al., 2014). Kleine (2011:125) pointed out that the issue of space and time in terms of ICT usage needs particular attention, as some users might avoid using GFA opportunities because of the location in which the GFA is positioned. In addition, users need education resources (literacy, IT skills), as well as health and

psychological resources in order to make use of the internet (Robeyns, 2003). This indicates that to achieve a certain level of functionings as advocated by Sen, poor people have to overcome a long list of barriers that keep them away from accessing enabling resources (Kleine, 2011).

3.5.3 Applying the Choice Framework

The Choice Framework, which was developed with an intention to operationalise the Capability Approach, suggests that the first stage of evaluating development should be to analysing individuals' state of "choice". Kleine (2011) indicated that individuals' resource portfolios may be affected by the level of individual agency-based resources, as well as an individual's ability to systematically address their personal characteristics and external factors. According to Kleine (2009), agency-based resources comprise material, financial, natural, geographical, psychological, cultural, social, and educational resources; health; and information. To effectively realise the benefits of ICT intervention, and individual needs to be able to access almost all of the listed resources. However, a lack of certain resources does not mean the person will be prevented from meeting certain perceived needs. This is because resources are somewhat dependent on an individual's conversion factors. Thus, an individual's ability to choose and access resources is critical in the attainment of certain capabilities (Kleine, 2011). As shown by Kivunike (2015:47) agency is determined by what a person values, hence the availability of resources doesn't necessarily mean that people will make use of them. Therefore, the researcher evaluating the contribution of government interventions should focus on identifying the Citizens based in rural areas might need to be encouraged to use the available resources if they are unaware of the opportunities they may provide.

Alkire (2005) likewise demonstrated the need to help citizens to decide carefully about what kind of functioning must be achieved first and through the use of which capabilities. Thus, reasoning plays an important role in expanding peoples' choice and their freedom to achieve what they desire. It is necessary to learn what makes different individuals choose to achieve different things. Alkire's assumption was that past experience may be an important factor in this.

3.6 The application of Capability Approach and the Choice Framework in the evaluation of Government Facilitated Access

This section presents the concepts on the use of both the Capability Approach and the Choice Framework in the evaluation of GFA interventions. Both frameworks, regard age, gender, ethnicity and education as conversion factors or individual characteristics which enable an individual to realise opportunities that are presented and which can contribute to an individual's ability to make use of these opportunities. Any of assessment of GFA projects should put greater weight on examining the effect of GFA interventions on users as opposed to focus on assessing the more quantifiable indicators such as expenditure, infrastructure, access and skills (Madon, 2004; Kleine, 2011; Zheng & Stahl, 2011). In addition, GFA evaluations should focus on what people can and cannot do with the use of GFA provision, and the benefits they can generate thereafter (Madon 2004; Zheng and Stahl, 2011).

The evaluation of GFA interventions using the Capability Approach requires an open ended approach. One can focus on realised functioning (what a person is actually able to do) or on capability (the bundle of real opportunities). According to Sen (1999) functioning is concerned with what a person does and capability with what the person is free (or has opportunity) to do. Access to GFA intervention can be an end itself or a means to an end, depending on user's preference and choice (Hatakka & De', 2011). Therefore, there is a need to understand the motive that marginalised community members have for using GFA interventions, in order to understand its perceived benefits. The point of focus should be on learning how the universal access policies help users to tap into new opportunities and enable them to achieve new functionings, as well as on increasing individual choices to freely act on opportunities that enable them to realise their ambitions (Alampay, 2006; Hatakka & Lagsten, 2012: 37). Capability Approach recognise that access to ICTs intervention can lead to further opportunities such as education and health, though according to Choice Framework information received by individuals through the use of GFA programmes needs to be assessed to validate whether choice is being incorporated in the decision making process (Kleine, 2013). Choice and freedom to use ICT are critical, because in spite of people having access to GFA interventions, they still have the ability to decide whether to use it or not. As results, the Choice Framework focuses on exploring whether individuals are capable of making use of their choices to determine their desired futures (Kleine, 2013).

In addition, individual's perceptions of GFA in terms of its value and utility in one personal life has its own implication on how he/she will make use of the services provided. Therefore, the value of GFA can only be realised when users have the freedom and choice to use GFA without interferences. Knowledge and experience as per table 3.2 can lead to GFA user's realise actual contribution of GFA on their lives, then improving their overall well-being and creation of new choices in the process achieving relevant functionings.

Table 3.2 shows how both frameworks examine the effects of a GFA intervention on individual well-being, taking account of both actual opportunities presented and realised functioning. Access to computers and the internet create new opportunities, however the extent to which citizens makes use of new opportunities is an unknown variable. Acquiring the relevant skills and knowledge to use ICT, as well as living in close proximity to GFA venues doesn't mean citizens will necessarily make use of GFA opportunities.

Table 3. 2 The similarity between Capability Approach and Choice Framework

Choice to use GFA interventions		**Capabilities** (actual opportunities)	**Achieved functioning (Well-being)**
Capability Approach	The ability to decide from different bundles of opportunities that are made available in the community by government, though GFA is influenced by individual freedom and choices in making informed decision	Knowledge, and Experience gained through the use of GFA	Valuable use of GFA may lead to: • Actual benefits • Improved well-being • Achieved Functionings • Creation of new choices
Choice Framework	Individual's perceptions of GFA in terms of its value in individual's personal life affect the choice on whether to use GFA or not		

In terms of applicability, Heeks (2010) found that depending on the terms of the evaluation, at least one member of policy maker and one from the beneficiary group should be involved. Community members must also be key stakeholders in the selection of indicators that need to be evaluated. Kleine (2010) found that a top-down approach to measuring GFA interventions

would be irrelevant in development studies because such an approach lacks the ability to integrate user's choices in the evaluation process. The Capability Approach acknowledges that freedom of choice must be at the centre of any development intervention. (Sen, 1999). In the same vein, the Choice Framework (Kleine, 2010) puts emphases on individual choices that enable beneficiaries to achieve qualitative benefits instead of measuring quantitative benefits only. It also assesses well-being achieved and the expansion of capabilities as result of the use of ICT (Clark, 2008b). Both frameworks put emphasis on empowerment, choice, opportunities, capabilities, agency, conversion factors, and achievement. ICT intervention is thereby viewed as an enabler of new opportunities, choices and extended freedom to bring changes in the lives of those interacting with it (Hatakka and De', 2011).

3.7 Limitations of the Capability Approach and the Choice Framework

While the Choice Framework helps to focus on the development process, further work has been done to 'fine-tune' Kleine's Choice Framework and the Capability Approach theories. In the case of the Choice Framework, Attwood and May (2015) proposed further improvements which could help in understanding the development process. They argued that the Choice Framework should be regarded as a work in progress since it failed to address various factors that resulted in different development outcomes, because they were influenced by participants' unique personal characteristics. They maintained that Kleine's Choice Framework did not take account of the complex dynamics entrenched within the context of a study area, or of community characteristics. Further, according to (Hatakka et al., 2016) the Choice Framework failed to interrogate the properties of ICTs.

3.8 Conceptualizing the Citizens Well-being Framework

The development of Citizens Well-being Framework is drawn from two theoretical frameworks which are highly visible in the ICT4D literature. These are the Capability Approach and Choice Framework. What sets apart the Well-being Framework from the Capability Approach and the Choice Framework is that it provides specific areas of focus in the evaluation of the effect of GFA interventions on individual well-being within the context of rural areas. This is not alluded in either the Capability Approach or the Choice Framework. In Figure 3.3 the left-hand side is a representation of how GFA facilities can influence ICT policy and intervention implementation. The central section of the figure depicts users' choices and any other thing that can influence users' ability to effectively use the GFA programme,

with the right side of the framework showing tangible or intangible benefits which users can again access to.

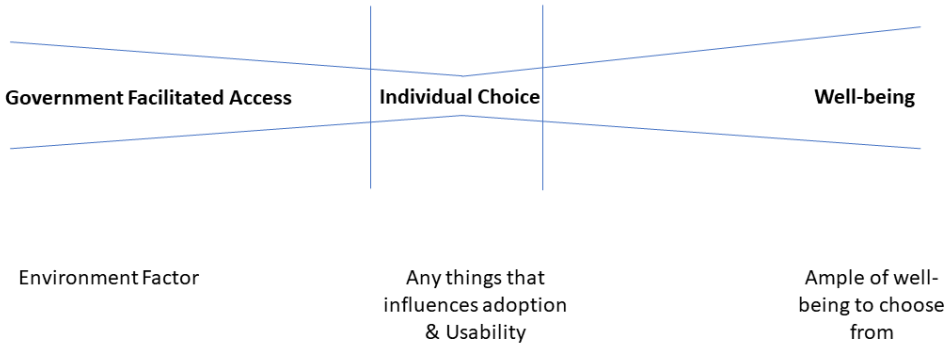

Figure 3-3 Conceptualising Citizens Well-being Framework

3.9 Proposed Citizens Well-being Framework

As indicated earlier, the Capability Approach (figure 3.1.) and the Choice Framework (figure 3.2.) helped to construct the elements that make the Citizens Well-being Framework (CWF). From the reviewed literatures, it has been shown that both frameworks recognise GFA usage as not an end for development, but the means to the end, giving weight to individual agency. Drawing from Capability Approach perspectives, the use of GFA may influence community environment factors and human agency. Conceptualising GFA from the perspective of Choice Framework, intense use of GFA may affect the dimensions of choice and may lead to an outcome that was anticipated or not, or increase the level of choice for an individual.

Well-being is therefore a function of what people do and how they live, not merely what they consume (Hanc, McAndrew and Ucci (2019). Hence studies on the effect of GFA projects on the well-being of users need to investigate the relationship between well-being and community environmental factors as well as ICT factors (Dolan, Peasgood and White, 2008, Samarakoon, 2019). Hanc, McAndrew and Ucci (2019) define well-being as the state of being healthy, prosperous; having physical, psychological, moral welfare; having a good life, in safe conditions; and the ability to flourish or prosper. Notwithstanding various perspectives of well-

being evaluations, Sen (1999) maintained that well-being should be evaluated based on understanding individuals' capabilities to 'do and be', and that individuals should be evaluated within the context of available opportunities and resources, not on their achievement. Economic growth is necessary; however, it doesn't imply life satisfaction and is therefore not a sufficient condition to improve well-being. The subjectivist sees well-being as the benefit that individuals gains from what they want, like and care about. The objectivist views well-being as detailed items such as knowledge, friendship, relations and etc. (Western and Tomaszewski, 2016). The subjective well-being plays key role in individual's ability to assess his personal life's satisfaction and overall quality of life from a variety of life perspectives, although discussion around individual well-being is very critical because there's no agreed definition of well-being, as various authors have shown (Woo, Kim & Uysal, 2015; Pan, Xu, Lu & Gursoy, 2018). This study defines well-being from the hedonism perspective, referring to well-being as how individuals perceive the quality of their lives, as a subjective evaluation of their overall life aspect and condition.

Kleine (2013) and Sen (1999) frameworks makes the need for individual choice and participation at all stages explicit. Hence the effect of GFA on well-being should not be evaluated in isolation but take the account of various factors within the design and implementation setting. Similarly, the Citizens Well-being Framework presented in figure (3.4) illustrates various factors that need to be considered during the evaluation process; including factors that may influence how an individual converts GFA opportunities into meaningful use and how individuals make use of their existing choices. The Citizens Well-being Framework is comprised of the following factors:

1. Community environment;
2. ICT Characteristics;
3. Individual conversion;
4. Other influences on decision making;
5. ICT Facilitated Opportunities;
6. Individual Choice; and
7. Functioning Achieved.

The CWF demonstrates different opportunities that an individual can make use of, although the onus of making use of these opportunities is left in the individual's conversion factor to navigate all the other factors to achieve and select functioning they want to achieve (Hatakka & De, 2011; Kivunike, 2015).

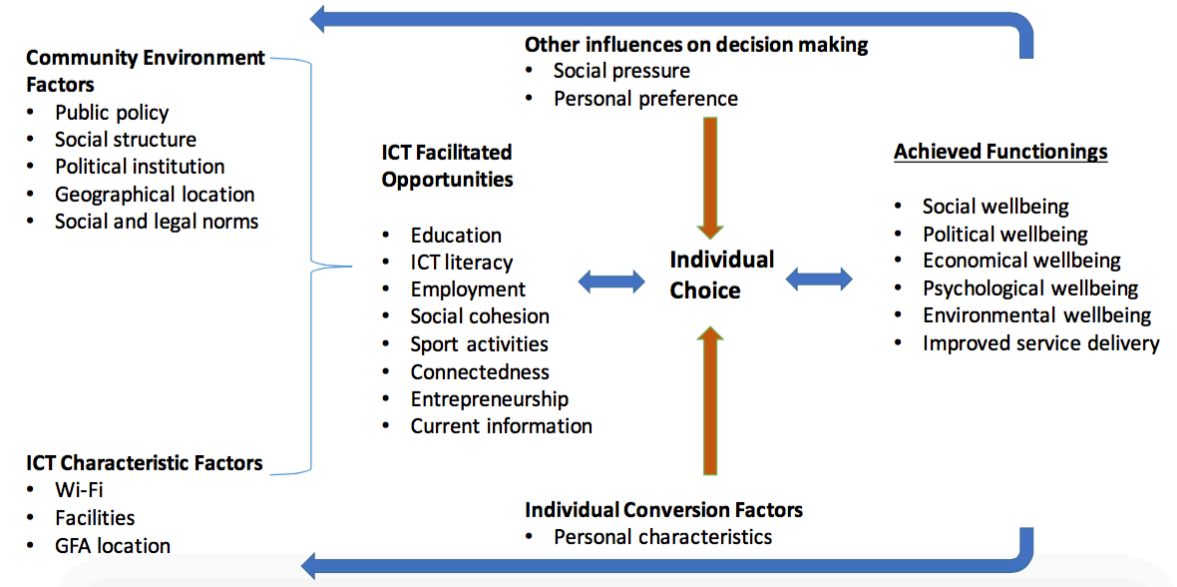

Figure 3-4 Citizens Well-being Framework

Table 3.3. presents the procedures that were adopted for the selection of relevant capabilities and functionings for this study as per guidelines provided by Robeyns (2003, 2005, 2006). These capabilities and functionings inform the design of Citizens Well-being Framework. The procedures are discussed in the table (3.3). below:

Table 3. 3 Framework development criterion

The Criterion for framework development	Meanings	Explanations
Explicit formulation:	This refers an explicit list should be presented and defended in public for a (Robeyns, 2005a: 205-206)	On this point, the list that was proposed and adopted was exposed to research rigour, including academic discussions during the development of the research proposal and its presentation. A review of literature, followed by focus group discussions reflecting on an overall assessment of impact of the intervention on well-being. Additionally, a pilot study with disadvantaged citizens and policymakers was conducted to identify which capabilities or functionings were relevant for the assessment of the GFA. Participants were advised to list on the level of importance

		the capabilities and functionings they viewed critical in relations to well-being improvement (Robeyns, 2006).
Methodological justification	This refers to the way in which the list functionings and capabilities was generated should be justified and defended (Robeyns, 2005a:205-206).	This study started with reviewing several literatures around the use of capabilities poach (Robeyns, 2003, 2006; Alkire, 2002a, 2005; 2008a, 2008b; Clark, 2005, 2008, 2010; Kleine, 2010, 2011, 2013). As a whole, this literature postulates the ideal process that should be undertaken in the selection of capabilities or functionings, and the operationalisation of Capability Approach. Therefore, the selection of capabilities and functionings for this study paid attention to the democratic process as stipulated by Sen. For instance, the researcher reviewed government ICT policy documents to identify the processes that led to ICT policy formulation, selection of policy indicators, and the common themes across these policies' documents. Further, before starting with the actual study, the researcher had an opportunity to engage with policymakers and the regional project manager. This engagement provided the researcher the opportunity to learn the reasoning behind perceived policy outcomes and how these perceived outcomes were derived. Lastly, the researcher engaged users during the pilot study to learn which capabilities and functioning were relevant to them.
The sensitivity to context	This refers to the level of abstraction at which the list is pitched should be appropriate for fulfilling the objectives for which we are seeking to use the capability approach (Robeyns, 2005a:205-206).	After developing a list of possible evaluative capabilities and functionings, the researcher presented his proposition at proposal defence whereby various Capability Approach scholars, and other scholars from different discipline who were using Capability Approach for their studies gave their scholarly opinion. This further helped the researcher to refine and produce a list of capabilities and functioning that were then adopted for this investigation.
Different levels of generality	This means there should be a list at the level of ideal theory, and a second list which would be adapted for real and empirical conditions (Robeyns, 2005a:205-206).	Firstly, a more pragmatic list was developed by the researcher in 2016 which he presented to his supervisor for comments and suggestions. The initial list was then modified, and adjusted to allow a more context derived list resulting from a broad consultation with various actors including local municipality employees, who then participated (in semi-structured interview and focus-group discussions), the latter was introduced to ensure adopted

		list of capabilities and functionings paid attention to perceived GFA policies outcomes.
Exhaustion and non-reduction	All important elements should be on the list, including market and non-market related capabilities (Robeyns, 2005a:205-206).	**S**eeing that in this evaluation the emphasis was based on a project that depict both characteristic of small-scale and large-scale ICT4D project, it calls for the needs to take note of geographical context, hence the researcher is certain that all relevant steps to the generation of capabilities and functioning list were undertaken and addressed.

To sum-up, the searcher, can fairly argue that his selection of capabilities or functionings to inform Well-bring Framework was highly influenced by reviewed literature and the consultation with various actors. For instance, Klasen 1994 study conducted in South Africa, comparing the identification of the functionings-poor with the expenditure-poor amongst other functioning, he selected education, income, transport and perceived well-being on his list of functionings (Robeyns, 2005; 2006). Secondly, the researcher subjective views in terms of the selection of capabilities and functionings couldn't manifest because (1) the researcher carried the study as an independent evaluator with no link to users and policymakers, (2) the assessment was not neither interested in feminism or pluralism view in nature thus allowing the researcher to be more objective during the selection of capabilities and functionings.

So, the study paid careful attention to procedural approach and provided some selection criteria as per Robeyns (2003:71), and thus providing more room for debate around policy-related issues and debates in the social sciences, and especially for the measurement of individual advantage and the design of socio-economic policy proposals (Robeyns, 2003:75).

The following section discusses each component of the Citizens Well-being Framework in detail, with references to the Capability Approach and the Choice Framework. The aim is to demonstrate the link between the CWF and the other frameworks.

3.9.1 The community environment factor

The community environment factors refer to public policy, social structure, political institutions, the geographical location of the community, and social and legal norms. It includes influencers, such as government agencies and GFA staff responsible for the effective implementation and use of the ICT intervention. This component links to 'structure' in the

Choice Framework, although not all of the elements that form structure in CF were adopted. Instead, new items were brought in for the purpose of designing a suitable mode for GFA based in rural South African communities. For example, in CF, geographical location was discussed under 'agency', yet in this CWF it is included under 'community environment', since the physical location of the GFA can have a positive or a negative influence on the success of an ICT intervention. Community environment factors consist of all community formal and informal structures that have influence on the lives of citizens. According to Uys (2015), an evaluation of the contribution of GFA should start by examining existing information in the community environment - information capital, communication channels, stakeholders, barriers and bottlenecks in the flow of information from national government to local communities, as well as the geographic location of the GFA intervention. The whole point is to evaluate whether development and deployment of a GFA intervention was a bottom-up approach that appreciated the participation of the local community (Gigler, 2011:13).

3.9.2 ICT characteristic factors (quality and quantity)

ICT characteristic factors include ICT facilities, Wi-Fi and services, accessibility and the availability of GFA projects (Kivunike, 2014). In this study ICT Characteristics are linked to Agency in the Choice Framework (figure 3.2.) and the Means to Achieve in the Capability Approach (figure 3.1). ICT Characteristics have an influence on the success of GFA intervention because the quality of products and services plays key role on the use of the facilities. This would include the accessibility of the services and products. ICT Characteristic factors influence outcomes, since reliable Wi-Fi and accessible facilities would encourage individuals to make use of a GFA intervention. The use of ICT facilitated projects can open up opportunities for individuals that affect their well-being in the case of Cape Access; this could be connecting with family members, doing online business, engaging with government departments. In order to assess the effectiveness of such opportunities, the evaluator would need to explore individuals' opinions of the effects of the GFA project on their individual well-being. This can be achieved by interacting with individuals and groups that are making use of the service and who may reveal the degree of capabilities accessed through the use ICT intervention.

In addition, the evaluator is supposed to consider the notion of axiology. According to Al-Ababneh, (2020) axiology refers to the role of values and ethics within the research process.

This incorporates questions about how a researcher deal with both his own values and those of participants. In this study the issue of axiology was addressed by a critical reading around the notion of axiology thus enabling the evaluator to acquire axiological skills. This process helped the evaluator to be aware of his values as a basis for making judgements about the investigation and its process. Therefore, in this study great importance was placed on data collection through a semi-structured interview and focus group discussions suggesting that personal interaction with the respondents was highly critical than the distribution of questionnaires to anonymous individuals. Accordingly, the evaluator was aware that his own values and belief could have played an important role in the research interpretation process. This is because interpretivist researchers see the truth as socially constructed; knowledge is created, not discovered and reality is subjective, investigation undertaken from this position explore actors' feelings, experience and perceptions (Gill, 2020). In this case, the evaluator was aware that research is value bound, the evaluator is part of what is being researched, cannot be separated and so to certain lengthen will be subjective (Al-Ababneh, 2020). Interpretive seeks to elicit perspectives and experiences to construct shared meaning, therefore, to understand the phenomenon of interest one must gain the perspective of those who lived it (Bush, Singh and Kooienga, 2019). So, researcher focuses should be on evaluating and understanding what is right and wrong behaviour relating to the research, paying attention to participants, and data collection process (Kivunja & Kuyini, 2017). To maintain higher standard of axiology, this study paid attention to fundamental concepts that a research using qualitative study should adopt, as discussed in Chapter 4, section 4.8.1 and 4.8.2.

3.9.3 ICT facilitated opportunities

ICT Facilitated Opportunities refer to things such as: education, ICT literacy, employment, social cohesion, sport activities, connectedness, entrepreneurship, current information and any other opportunity that a person can access as result of using ICT. They are opportunities presented to citizens by the introduction of a GFA intervention in the community. ICT facilitated opportunity are regarded as outcomes (as per the Choice Framework), but are part of the means to achieve those outcomes. This study views well-being achieved as the ultimate outcome. An example would be GFA intervention enabling users to save money as result of accessing the internet freely. The opportunity to see job adverts on the Internet, and to study both offer increased choices to the individual. Access to GFA may empower a user and improve the user's financial status, social, human, natural and physical condition. But this is possible only when that individual is capable of navigating some of the factors hindering his

achievement. The quality of ICT Characteristics and the flexibility of the components of Community Environment Factor may facilitate effective use of ICT.

3.9.4 Individual conversion factors

Personal characteristics consist of innate internal characteristics, learned, or external characteristics). Kivunike, (2014) showed that there were many factors that influence an individual's ability to make use of opportunities and choices presented to them. These factors are referred to conversion factors and are personal (internal) and external. Personal factors are individual characteristics consisting of age, education and gender. External factor consists of community environment factors, ICT characteristics and other influence on decision making, (Hatakka & De, 2011).

Uys (2015) shows that conversion factors influence how choice is used thus it has the ability to contribute to development or hinder development. It is, therefore, imperative to establish which conversion factors influence people's choices (Kivunike, 2014). According to Uys (2015) in the context of South Africa, language plays a key role in determining user's ability to make effective use of ICT intervention. Most ICT content is in English, which excludes the majority of citizens. This means that the conversion factor may become a barrier. ICT content that is in English may lead to GFA users failing to access opportunities and thus converting ICT opportunities into an achieved functioning. Achieved functionings are the actual effects that can be realised by GFA users as a result of seizing the opportunities and making good choice (Hatakka & De, 2011).

The Choice Framework doesn't explicitly discuss the personal (internal) conversion factors and other influences on decision making which both remain critical in the attainment of individual well-being. Having access to ICT facilitated opportunity doesn't mean that one has achieved well-being, although successful use of the opportunity can in return affect individual well-being. Conversion factors influence choice and may determine whether the person will make use of ICT facilities.

3.9.5 Individual choice

Individual choice is presented at the centre of the framework because it is affected by all other factors that make the Citizen Well-being Framework. Choice determines whether users will take advantages of certain opportunities or not. On one hand, individual choice is influenced

by individual conversion factors or personal characteristics, personal preferences, social pressures and social influences. On the other hand, it is influenced by achieved functionings which in turn expand choices or lead to the creation of new choices. Choice can increase a user's capabilities and their ability to make meaningful use of GFA (Gigler, 2011). The expansion of choices influences the interaction between an individual, and ICT characteristics as well as with community environment factors. The CWF adopted the individual conversion factors of the Capability Approach, as well as other influences on decision making and achieved functioning. Kleine (2011) believed that evaluation should study primary development outcomes, because choice influences every other sections of the Framework.

3.9.6 Other influences on decision making

Other influences on decision making include social pressure and personal preference. These play a key role in influencing individual decisions, because the Capability Approach showed that a person's decision is socially constructed. Individual decision making processes determines whether the person will make use of choice or not, and the achievement of choice refers to whether the outcome matches the choice expressed. This study paid attention to opportunities that the Cape Access programme offered while keeping in mind the issue of choice. The intention was to understand why some marginalised community members choose to use the GFA intervention, while others do not

3.9.7 Achieved functionings

Achieved Functioning refers to the improvement in an individual's social well-being, political well-being, economic well-being, psychological well-being, environmental well-being and on improved service delivery. The act of achieving desirable well-being empowers individuals and creates opportunity for a person to use his new capability to influence the rest of the components of the Citizens Well-being Framework. For example, improvement in psychological well-being, political well-being and economic well-being may enable a person to take a decision, and to navigate challenges caused by community environment factors, ICT Characteristics and other influences on decision making. By acquiring relevant ICT skills and knowledge, individuals may want to try new ICT devices and request advanced ICT facilities. In the process, achieved functionings can further improve social and economic opportunities, in the end improving overall well-being.

To evaluate the effects of a GFA intervention on users, the evaluation's focus should be on analysing a user's existing situation and assessing whether there is change in the user's life as result of interacting with GFA. Similarly, a change in a user's behaviours, attitudes and evidence of new aspirations may be attributed to GFA (Uys, 2015). The use of qualitative methods in a study that is evaluating the contribution of GFA interventions on the marginalised citizens' well-being is critical. Users' perceptions and experiences after the use of GFA are needed in order to comprehensively identify and understand the contribution of GFA (Gigler, 2004).

This Framework prescribes neither a specific list of functionings, nor a specific methodology, because what one user values as important might differ from another user. Therefore, the list of well-being variables to be evaluated will always need to be determined by the evaluators in collaboration with concerned stakeholders e.g. policy makers, GFA staff and GFA users and non-users.

3.10 The Citizens Well-being evaluation tool box

According to Sen, (1992; 1999) the context of the evaluation and the questions being asked determine the kind of tools that should be included in the evaluation tool box. They also influence what should be evaluated: capabilities or functionings, in spite of the study emphasis being on human well-being. At the same time, capabilities should be identified and enhanced even if the study is all about functioning (Sen, 1992; 1999). The tool box for this study consists of all opportunities that were identified in the Cape Access intervention. The objectives that led to the launch of Cape Access includes: achieving inclusive economic development; alleviating poverty; and improving the well-being of poor citizens. The main strategic objectives of Cape Access that inform the indicators of well-being in the tool box for this study are illustrated in the table 3.4.

Table 3. 4 Tool Box for evaluating Cape Access: potentials capabilities and functioning

Social Well-being	Education (primary, secondary, college/higher education, postgraduates, adult education, professional education), health, social security, improved health, social interaction, housing, water, sanitation, energy, transport, financial services, nutrition, safety, perceived well-being, membership of community organisation, community libraries.
Psychological well-being	Refers to the physical, emotional and personal development opportunities. Psychological well-being has both substantive and

	instrumental value that enables people to exploit other opportunities in pursuit of development.
Economic Well-being	Ability to run own business, or financial activities, productivity, wealth, income security, employment.
Political Well-being	Being able to participate in local elections, community development programmes, participate political decision making, freedom of speech.
Environmental well-being	Improved roads, public transport, living free of pollution, social support for people living with disabilities or physical challenged people, free movement/mobility.
Improved Service Delivery	Service transformation, enhanced e-governance, digitally enabled community, improved access to government services; access to government information, services and opportunities; existence of a platform for dialogue between citizens and the government; quality of governance in the Western Cape Government and quality of service delivery through technology.

The legacy of apartheid has deprived many South African citizens from accessing key opportunities that could have enabled them to improve their well-being. Through the lens of the Citizens Well-being Framework, informed by CA and CF, this study will explore whether and how Cape Access address the needs of improving the well-being of poor people in the selected communities.

3.11 Chapter summary

The scope of this chapter was limited to identifying objectives that an individual can achieve without questioning how many objectives were being pursued (Nussbaum & Sen, 2009). Figure (3.3) shows that the indicators included in this study comprise social well-being, economic well-being, political engagement, improved service delivery, psychological well-being and environment well-being. The achievement of any of the functionings can contribute to a change in an individual's ability to choose. In this way, choice is placed at the middle of the Framework, to demonstrate that choice is not static but something that is constantly changing depending on internal and external conversion factors.

The chapter presented an overview of Capability Approach and Choice Framework. These have in turn been critical in the development of the Citizens Well-being Framework which will be used to identify the contribution of GFA interventions and their effects on the well-being of marginalised communities in one part of South Africa.

The researcher was aware that development should be measured through a set of tangible and intangible well-being indicators instead of focusing only on material assets (Uys and Pather, 2016; Sey et al., 2013; Gomez et al., 2013; Tabassum, et al. 2019). Social policy should be motivated by the need to improve the quality of life. For this reason, the information capital entrenched in Cape Access intervention is viewed as commodities and opportunities which an individual from the Overberg District would have made use of, based on his/her personal goals, agency, and conversion ability. Robeyns (2003:14) postulates that in certain conditions evaluation research can put emphasis on achieved functionings without being concerned with opportunities. These perspectives helped this study in investigating achieved functionings of participants who were not aware of opportunities embedded in Cape Access intervention. In poor communities, many GFA users may lack knowledge of what they can do with GFA interventions in their vicinity. Lack of knowledge have negative implication on the use of choice, Robeyns, (2003:14) argued that individual choice matters and it is this choice that sets people apart from each other in spite of being afforded with similar opportunities (Kleine, 2010). The CWF Framework has been used as a lens for data collection, analysis and presentation in chapter 5 and 6. The Framework is further discussed in chapter seven as a lens on which the study bears its conclusion.

Chapter 4: RESEARCH DESIGN AND METHODOLOGY

Chapter overview

The main aim of this study is to establish whether the introduction of Government Facilitated Access programme in the Overberg District of Western Cape is having an effect on the well-being of marginalised communities, and to explore factors influencing the success or failure of these GFA interventions. In addition, the study aims to assess how the adoption and use of GFA programmes has enabled marginalised communities to realise their capabilities, and to examine the contribution of GFA interventions to the well-being of the marginalised communities. Lastly the study also examines strategies that were used during the development of GFA policy that led to the rollout of the Cape Access intervention with the aim of analysing the engagement process that was undertaken, i.e. to understand how and whether citizens were involved in the whole process.

This chapter presents a mixed methods approach and the reasons why the approach was suitable for this study. Section 4.5 presents a detailed discussion about the choice of the research approach. For example, a mixed methods approach enables the investigation to benefit from the strengths of both qualitative and quantitative methodologies (Creswell, 2003). The figures of who was interviewed, number of focus groups etc. are shown in detail in Table 5.1.

The main points that this chapter addresses are research philosophy, research design, case study, ethical considerations, and the limitation of the research. The chapter outlines all the steps that the researcher undertook in selecting case studies and participants, in undertaking sampling, data collection and analysis, including coding techniques. The important questions of validity and reliability are also discussed.

4.1 Exploration and descriptive study

Explorative studies aim to lead to insights and comprehension, though the collection of accurate and replicable data they usually involve the flexible use of in-depth interviews, the analysis of case studies and the use of informants. Babbie and Mouton, (2011:80) show that by contrast, a more descriptive research approach may include a conceptual analysis, an historical analysis, retrospective reconstructions of a small number of cases and the use of multivariate descriptive statistics (contingency tables, correlations, regression, analysis). In this study, the

researcher paid attention to some of the methodological strategies noted by Babbie and Mouton (2011) such as the use of multivariate analysis during quantitative data analysis.

4.2 Social intervention

According to Babbie and Mouton (2011:342) human action is characterised by a "social intervention" such as programmes, projects, and policies. Social intervention can be defined as structured and more permanent social action aimed at changing something in the social world for the better. Cape Access intervention has all the characteristics of a social intervention as described in Babbie and Mouton (2011). These characteristics are:

1. clearly defined goals and objectives;
2. a target group (intended beneficiaries);
3. explicit measures of success (outcome measures);
4. programme components (the means to achieve the goals);
5. a management and implementation system (programme infrastructure);
6. a human resources base (who drives the programme?);
7. stakeholders that have a direct or indirect interest in the programme; and
8. the context (or setting) of the programme (Babbie & Mouton, 2011:342).

Since the Cape Access intervention meets all of these characteristics, Babbie and Mouton's tools and strategies for data collection, analysis and interpretation can be adopted.

4.3 Research philosophy

Several researchers state that all research carried out scientifically should be based on several key fundamental philosophical assumptions such as belief regarding the object of study, belief regarding the knowledge notion and the connection between knowledge and empirical world (Myers, 2008; Tracy, 2010; Goldkuhl, 2012; Saunders et al., 2012; Rubin & Babbie, 2014; Pulla and Carter, 2018). According to Gemma, (2018) a research philosophy is what the researcher perceives to be truth, reality and knowledge. It outlines the beliefs and values that guide the design of and the collection and analysis of data in a research study. The philosophy explains how we give meaning to, explain or understand the results of research. Subjectivism asserts that reality is our own perceptions, experiences and feelings (Howell, 2013).

Saunders et al. (2009) suggests that research philosophy as a researcher thinking about the development of knowledge, and four types of the research philosophy based on researchers' views exist: positivism, interpretivism, critical realism, pragmatism (Saunders et al., 2009). However, Tracy (2010) asserts that two major research philosophies exist, the positivism and the interpretivism. For a study that seek to understand how human being adopt and use technology then an interpretivist philosophy is required. For instance, an investigation that wishes to study the interactions and build an in-depth understanding of people's lived experience of government intervention, the interpretivist research philosophy will be suitable such investigation. Often it is said that subjective information is based on a person's personal opinions, assumptions, interpretations and beliefs, therefore understanding human behaviour in context of their social (Tracy, 2010; Goldkuhl, 2012; Rubin & Babbie, 2013; Rubin & Babbie, 2014; Pulla & Carter, 2018).

Philosophy consist of ontology, epistemology, methodology, and methods; hence the methodological choice should be related to the philosophical position of the researcher when analysing social phenomenon. Therefore, the selection of research methodology depends on the philosophy that guides the research activity such as beliefs about the nature of reality and humanity (ontology), and the theory of knowledge that informs the research (epistemology), and how that knowledge may be gained (methodology). Given and Saumure (2008) defines a philosophy as a set of assumptions shared by members of a research community. Philosophy determine how these researchers view both the phenomena and the research methodology that should be employed to study the phenomena. This definition is further simplified by Kivunja and Kuyini (2017), stating that philosophies are important because they provide beliefs and influence what should be studied, how it should be studied, and how the results of the study should be interpreted. Thus, philosophy guides the researchers on the process that need to be undertaken in regards to philosophical, theoretical, instrumental, and methodological foundations (Žukauskas, Vveinhardt & Andriukaitienė, 2018).

Heeks and Wall (2018) believe that no ICT4D research should be undertaken without consideration of philosophy, in spite of the fact that researchers may not explicitly take these into account. There are a number of such philosophy, including Positivism, Critical Realism, and Interpretivism. Maxwell suggests four main sources to assist in defining a study's philosophy, namely experiential knowledge, existing theory and research, pilot and exploratory research, and thought experiments (Maxwell, 2012). The philosophy selected for a study will

determine the direction of the research by shaping research questions, researcher views of the world, methods and how findings are presented and ability to generalise (Hughes & Sharrock, 1997; Babbie and Mouton 2008).

The meta-science world consists of many research philosophy. According to Babbie and Mouton (2011:28) the phenomenological philosophy is based on a predominantly "mental" metaphor, i.e. the centrality of human consciousness. In the world of everyday life and world of theoretical inquiry, the world of everyday life is interpreted to refer the intersubjective world which all human beings share (Babbie and Mouton, 2011:28).

Notwithstanding all other philosophy that exist, interpretivist and positivist approaches are commonly used in ICT4D research (Gommez &Day, 2013; Walsham & Sahey, 2016). According to Creswell, et al. (2003) a single research philosophy might not be enough to answer some research questions, or meet all research perspectives. Bearing in mind that the main question of this study focussed on the subjective opinions of provincial government officials, in particular policymakers and local municipalities' executives and key employees at local municipality level, as well as the views of marginalised community's members making use of Cape Access intervention, it was appropriate to use more than one research philosophy in this study.

4.4 Research philosophy underpinning this investigation

Walsham (2017) noted that multiple methodologies should be used for ICT4D research. The various disciplines contributing to the field, such as anthropology, computer science, geography, development studies, and Information System (IS), could be brought together and combined in a complementary way to deal with such interdisciplinary study (Walsham, 2017). Each philosophy represents different ideas about reality (ontology) and how we gain knowledge of it (epistemology) (Maxwell, 2012:42). According to Maxwell (2012:44) the decisions about the choice of philosophies are not entirely a matter of free choice despite the researcher determining the topic of the study.

Babbie & Mouton (2011:28) show that the phenomenologist philosophy emphasises that all human beings are engaged in the process of making sense of their worlds. They continually interpret, create, give meaning to, define, justify and rationalise their actions. Seeing people are continually constructing, developing and changing every day, the phenomenologist

believes that interpretations of their worlds should be taken into account in any conceptions of social science research. For this reason, data collection should not be confined to observable behaviours only but should also include descriptions of people' intentions, meanings and reasons. Whereas the positivist excludes non-observational data as being contrary to it empiricist and behaviourist assumptions, the phenomenologist put emphases on understanding human action of the non-observable meaning, intention and values, beliefs, and self-understandings that people hold (Babbie & Mouton, 2001:32). This is the reason why this study adopted a mixed methods approach to ensure both research philosophies are given equal weighting, since both philosophies complement each other. On the one hand, the emphasis of this study was on getting close to the subject and viewing the world from the perspectives of the insider (an interpretive understanding); on the other hands paying attention to causal and nomothetic explanation in terms of universally valid laws was critical. Heeks and Bailur (2007:250) postulate that research in ICTs can be understood from both philosophies.

This study uses interpretivism as a philosophy underpinning the study. This is further elaborated below (in section 4.4.3). Therefore, it is builds on the perspectives of multiple realities that acknowledge that actors have their own experiences and perceptions of reality which is therefore, not entirely independent of the people living within this reality.

The selected philosophy necessitated the evaluation of both measurable quantities and intangible constructs to investigate the multiple perceptions of the reality. The desire to explore the contribution of GFA on the well-being of marginalised citizens meant that the patterns and possible causalities could be examined through the perceptions, views and feelings of community members interacting with GFA.

4.4.1 Positivism

The Positivist philosophy holds that a single reality, independent of the human mind exists (Wyssusek, Schwartz & Kremberg, 2002). McEvoy and Richards (2006) hold that the emphases of Positivism is on identifying generalizable laws that are based on the identification of statistical relationships between dependent and independent variables. The researcher and the object of study are viewed as two distinctive elements, and the research results must be valid, reliable and replicable. Healy and Perry (2000:121) show that internal validity is achieved by the extent to which change in a controlled variable causes changes in a dependent

variable. In evaluation studies, the focus of the Positivism philosophy is on quantifiable measurements of variables, generalisation of results, or on testing hypotheses. Attention is given to patterns, generalisations and causalities (Klein & Myers, 1999). Those criticising the Positivism philosophy argue that it ignores human influence: that growth in human knowledge influences social systems and what happens within these systems (Galliers, 1993). According to Pather and Remenyi (2005) the Positivism philosophy fails to acknowledge the subjectivity of human efforts, making it inappropriate for a study of this nature which assessed human feelings and experiences of the intervention. Therefore, the Positivism philosophy was not considered as suitable for this study because the researcher's interest was to closely interact with informants in order to explore and understand the contribution of the Cape Access intervention, based on the informant's reality or life experience instead of relying on experimental strategies promoted by Positivism philosophy. The Positivism stance is that the social world exists externally. This differs from the views of the Interpretivist philosophy, which takes the view that reality is not objective and exterior (Thorpe & Jackson, 2015). Positivist philosophy have been criticised by scholars who believe that objective empirical methods are in practice subject to social influence (Kanellis & Papadopoulos, 2009). For example, in positivist research the standards for judging research are reliability, validity, and generalisability, yet in qualitative study the focuses on dependability (reliability), credibility (validity), conformability (objectivity), and transferability (generalisability) (Bloomberg & Volpe, 2008).

4.4.2 Critical Realism

Morton (2006) shows that what distinguishes the Critical Realism philosophy from Positivism: its ability to acknowledge that knowledge is a product of the mind's interpretive activity - knowledge is socially constructed. However, those arguing against Critical Realism indicate that it ignores the role of human agency by focusing so much on social structure, process and assumption (Njihia & Merali, 2013).

Critical Realism acknowledges the importance of observation and that research should be shaped by experience and context. The Critical Realist would argue that Interpretivist fails to address the issue of bias in their study, especially methodological biases which can undermine both reliability and validity. They argue that Interpretivist tends to address respondent and research biases by embracing them as essential to the world-view but that they struggle to deal with methodological bias. Therefore, Critical Realism holds onto its introspective views about

the nature of the research process and its overall rigour, including biases of context. Scholars argue that Critical Realism is an appropriate philosophy for reflection on the value of ICT4D research (Dearden, 2013; Krauss & Turpin, 2013). Heeks (2014a) maintains that Critical Realism is values driven, not only towards understanding how structures and mechanisms constrain development, but also towards interventions that bring about emancipatory change.

According to Bhaskar, (1978) Critical Realism arose from the combination of terms "transcendental realism" and critical naturalism". Ontologically Critical Realism postulates that there exists a world that is independent of our knowledge (Bhaskar, 1978; Mir & Watson 2001), that social phenomena are intrinsically meaningful, and that this meaning cannot entirely be descriptive as they are constitutive of the element being investigated. Therefore, the meaning cannot be measured as a way of understanding social phenomena; hence there should always be an interpretive element in social science research. In spite of acknowledging the world of interpretivism, Critical Realists hold onto their views that all causes should not be assumed physical (Bhaskar, 1978). In terms of research methodologies Critical Realism shows that the choice of theory should be determined by the nature of the object of study and the reason for investigation (Sayer, 2000).

4.4.2.1 Challenges of using critical realism in ICT4D research

In spite of the fact that some scholars continue to make use of Critical Realism, this philosophy fails to critically show the process that researchers should follow when collecting and analysing empirical evidence. In addition, the Critical Realism philosophy appears to lack objectivity; it places limitations on the generalisation of findings; as well as on the nature of its explanations (Reed, 2009). The analysis of ICT4D projects has moved away from focusing on the system implementation to development effect (Heeks, 2014b), but what is still lacking in ICT4D studies is an investigation that reveals the links that exist between technology and development. Reed, believe that Critical Realism can help in identifying causality, because studies that have been commissioned using other philosophy have failed. However, Critical realism is also criticised for not paying much attention to the subjective world of social science (Reed, 2009). Reed believes that academia has paid insufficient attention to ICT4D and that, coupled with a lack of research capabilities around Critical Realism; this philosophy has not been well used in the ICT4D field.

4.4.3 Interpretivism

Interpretivism as a philosophy emerged in early and mid-twentieth-century Europe, in the work of German, French and occasionally English thinkers, and is formed of several strands, most notably hermeneutics, phenomenology and symbolic interactionism (Crotty 1998 cited in Saunders, 2016). Interpretivism assumes that reality is subjective and the meaning given to an intervention is dependent on the participants' context; hence research participants would not provide general interpretations (Scotland, 2012). Adoption of interpretivist philosophy can provide in-depth understanding for certain contexts such as cross-cultural studies, i.e. factors influencing development through collection and interpretation of qualitative data can lead to deep insight and conclusions that may differ from others (Myers, 2008; Saunders et al., 2012). Adoption of interpretivism leads to generation of high-level validity in data, as it is based on personal contributions with consideration of different variables (Myers. 2008; Alharahsheh, & Pius, 2020).

The interpretivism philosophy enables researchers to consider different factors such as behavioural aspects based on participants' experiences and feelings; thus, helping to better describe reality given the assumptions and beliefs of the interpretivist researcher. Further, the interpretivism philosophy makes it possible for researchers to treat the context of the research and its situation as unique considering the given circumstances associated, as well as the particular participants involved. Furthermore, the philosophy supports research to be more focused on a specific topic and abstains the research from heading towards more generalisation as given in the positivist paradigm (Yin, 2014; Alharahsheh, & Pius, 2020). The aim of the interpretivist tradition is to predict a theoretical understanding of the topic under examination (Yin, 1994), and generalisation is interpreted as toward a theory rather than toward the population (Carminati, 2018).

Notwithstanding, the strength associated with interpretivism such as assisting the researcher to gain a deeper understanding of the context of the study, the philosophy does have some limitations. Hammersley (2013) argues that it can be impossible to measure phenomena related to intention, attitude, and thought of a human because these concepts in totality may not be explicitly measured without evidence. Despite arguing against the limitations associated with using interpretive philosophy, Hammersley (2013) shows that methods used to understand knowledge related to human and social sciences cannot be the same as in physical sciences because humans interpret their world and then act based on such interpretation while the world

does not. To this point, the interpretivism perspective, researchers tend to gain a deeper understanding of the phenomenon and its complexity in its unique context instead of trying to generalise the base of understanding for an entire population (Creswell, 2007). In the same way, Hammersley (2013) emphasises that since multiple interpretations are developed among human relationship, interpretivist researchers should try to understand the diverse ways of seeing and experiencing the world through different contexts, and try to avoid bias in studying the events (Goldkuhl, 2012; Pham, 2018).

By adopting the interpretivist philosophy, this study focuses on the whole experience rather than considering certain parts of it; questions and problems identification development of the research were mainly influenced by the research interest. Furthermore, the study explored in depth of individual experiences through focus group discussions and interviews to obtain better understanding of adoption, usage and benefits of GFA (Myers, 2008; Scotland, 2012; Alharahsheh & Pius, 2020). Therefore, interpretivist research was well suited to gain the deep insights based on the context of this study. In comparison, the positivism philosophy and critical realism philosophy as discussed above would have not enabled the level of depth and insight that was gained through the interpretivism philosophy.

According to Saunders et al. (2012) interpretivism philosophy considers the situation in each context as unique, and differs from other situations. It develops knowledge in a different way by focusing on a subjective and descriptive method to deal with complicated situations rather than an objective and statistical method (Remenyi et al., 2005). Saunders et al. (2009) further show social research requires investigating behind law-like generalisations due to the complexity of the social sciences, and the philosophy of this research is interpretivism.

In addition, interpretivist researchers see the truth as socially constructed: knowledge is created, not discovered and reality is subjective. Investigation undertaken from this position explores actors' feelings, experience and perceptions (Gill, 2020). Consequently, interpretivists adapt a relativist ontology in which a single phenomenon may have multiple interpretations rather than a truth that can be determined by a process of measurement (Creswell, 2007; Saunders et al., 2009; Tuli, 2010; Cohen et al., 2011; Pham, 2018). Interpretivism emphasises that humans are different from physical phenomena because they create meanings.

As a philosophy, interpretivism comprises ontology, epistemology, methodology, and methods; hence the methodological choice should be related to the philosophical position of the researcher when analysing social phenomenon (Emery & Anderman, 2020). Therefore, the selection of research methodology depends on the philosophy that guides the research activity such as beliefs about the nature of reality and humanity (ontology), and the theory of knowledge that informs the research (epistemology), and how that knowledge may be gained (methodology and methods). Kivunja and Kuyini (2017) state that philosophy is important because it influences what should be studied, how it should be studied, and how the results of the study should be interpreted. Additionally, philosophy guides the researchers on the process that need to be undertaken in regards to philosophical, theoretical, instrumental, and methodological foundations (Žukauskas, Vveinhardt & Andriukaitienė, 2018).

The use of an interpretivist philosophy requires a methodology which emphases unstructured observation and open-ended interviews; qualitative data collection and analysis; ideographic description, and objectivity understood as the inter-subjective attitude of the insider (Babbie and Mouton, 2011). This is because, the aim of interpretivist research is to "understand how members of a social group, through their participation in social processes gives meaning to realities and to show how these meanings, beliefs and intentions of the members help to constitute their social action" (Babbie & Mouton, 2008:28). Epistemologically, the interpretivism philosophy is characterized by a need to understand the world as it is from a subjective point of view and to seek an explanation within the frame of reference of the participant, rather than the objective observation of the action. The purpose of interpretivist research is to create new, richer understandings and interpretations of social worlds and contexts. In an ICT4D study, interpretivist researchers try to take account of this complexity by collecting what is meaningful to their research participants.

The interpretivism philosophy argues that the world is understood through the multiple social realities of the actors (Henning et al., 2004:20). It places emphasis on the way in which the world is socially constructed and understood by various actors (Blaikie, 2000; McEvoy and Richards, 2006). Therefore, according to interpretivism, the knowledge of reality is obtained through social constructions such as language, consciousness, shared meaning, documents, tools, and other artefacts (Klein and Myers, 1999). The interaction between the researcher and the participants in an interpretivist study is seen as an integral part of the research process.

Informants are selected by using purposive sampling techniques and are selected based on their level of awareness of the programme being investigated (Goering & Streiner, 1996; Strauss & Corbin, 1998). Henning et al. (2004) demonstrate that the interpretivist philosophy enables researchers to gain access to participant's views, perceptions, feelings and realities. Interpretivism focuses on understanding the lived experiences of participants through their perceptions of the phenomena (Walsham & Sahay, 2006). Studies in ICT4D have long been making use of interpretivism as a scientific research paradigm in the quest for understanding the lived experience of participants (Gomez, 2013:11).

The emphasis of this study was on understanding the phenomena from the views of informants, by describing how they make individual and collective meaning of GFA interventions. Interpretivism is built on a philosophical assumption that makes it possible for the researcher to gain insight into informants' lived experiences of a government development intervention. So, the use of the interpretivism philosophy can help researchers to learn how developmental policies and strategies are designed, communicated, implemented, and understand the context in which these policies are implemented in. The main focus of interpretivism is on understanding the lived experience of informants. So, when interacting with participant's views whilst working with raw data, the researcher is capable of learning the lived experiences of participants (Alao, Lwoga & Chigona, 2017).

To investigate the influence of social constructs in the ICT4D deployment context, this study made use of interviews and focus group discussions to establish and understand how users perceived the effect of GFA interventions on their lives. The assumptions that technology can contribute to development remains unquestioned. However, access to information and knowledge as a means to create development should not be conceived as an end in itself but rather, as part of a process that enables people to participate in the governance of their own lives. One of the challenges in ICT4D studies is understanding the link between ICT4D and social change. Interpretivism can assist in uncovering this (Avgerou, 2010). Reilly (2011) shows that in dealing with the question of how ICT4D contributes to development, ICT4D researchers need an epistemological framework that moves beyond the standoff between Realism and Deconstruction in development studies. George & Bennett, 2005 in Reilly (2011:52) are of the view that Interpretivism offers a variety of avenues for moving ahead. He advocates the use of process tracing, which is the practice of "generating and analysing data based on processes, events, actions, expectations, and other intervening variables, that link

assumed causes to observed effects". Reilly notes that it is important to recognise that individuals may respond to and construct the same intervention differently.

Kim (2014) found that the interpretivist understanding can be characterized as the contribution of human subjectivity to gaining knowledge about objects in an objective manner. Unlike objectivist understanding, which requires the researcher to separate himself from the object of the study, the interpretivists believe that knowledge is negotiated through acts of interpretation. In the same way, knowledge is constructed and interpreted in terms of the social, cultural, and historical dimensions of understanding in order to make sense of human experience. Hence, the most relevant design in discovering meaning and understanding is by collecting qualitative data, and through the researcher's active involvement of the construction of meaning. For example, Târziu (2017) indicates that if gender is a social construct it means that our society constructed the concept of gender. In the same way, community members interacting with GFA interventions construct meaning of the intervention and are capable of sharing this meaning through social interaction. Further, the meaning and its interpretation determines how individuals will make use of the interventions (Târziu, 2017).

In a complex and multicultural society, truth takes many forms, where different contexts and different subcultures support different ways of constructing knowledge, and different ways of understanding what it means to "know" something. In simple terms, what is regarded as truth in one society may not be the case in another. Individuals have their own ways of sharing meaning and agreed ways of interpreting their ever-changing reality (ibid: 60). This reality has certain implications for those interacting with the social environment and constructivist maintains that there are many ways to structure the world. Knowledge, at any level, is generated by the interaction between the individuals and their environment. Hence, what one society calls knowledge does not represent absolute truth, but is simply the most viable interpretation of their world. So, people's experience and interpretation of a social setting has an implication on how they approach ICT4D intervention, its adoption and its uses.

In this study Interpretative would apply to the process whereby a Cape Access user constructs and interpret his/her own understanding of reality and knowledge of the world they live in, through the reflection of their individual experience and interaction with social structure. According to Heeks and Bailur (2007) ICT4D researchers using the Interpretivism perspective

however posit that what matters about any variable is the particular meaning given to that variable by each individual. Those meanings are subjective creations constructed through interactions with others; therefore, interpretivism would assume that the researcher's own constructions and interests cannot be detached from the research study (Heeks & Bailur 2007). The influence of culture is created through social interaction, but the meaning is ultimately subjective specific to each individual involved.

To investigate the influence of constructs in the ICT4D deployment context, this study made use of interviews and focus group discussions to establish and understand how users perceived the effect of GFA interventions on their lives. The use of Interpretivism helps us understand how actors interacting with ICT4D experience these government interventions.

The assumptions that technology can contribute to development remains unquestioned. However, access to information and knowledge as a means to create development should not be conceived as an end in itself but rather, as part of a process that enables people to participate in the governance of their own lives. One of the challenges in ICT4D studies understands the link between ICT4D and social change. Reilly (2011) shows that in dealing with the question of how ICT4D contributes to development, ICT4D researchers need an epistemological framework that moves beyond the standoff between Realism and Deconstruction in development studies. George & Bennett, 2005 in Reilly (2011:52) are of the view that Interpretivism offers a variety of avenues for moving ahead. He advocates the use of process tracing, which is the practice of "generating and analysing data based on processes, events, actions, expectations, and other intervening variables, that link assumed causes to observed effects". Reilly notes that it is important to recognise that individuals may respond to and construct the same intervention differently.

Kim (2014) found that the Interpretivist understanding can be characterized as the contribution of human subjectivity to gaining knowledge about objects in an objective manner. Unlike the Objectivist understanding, which requires the researcher to separate himself from the object of the study, the Interpretivist believe knowledge is negotiated through act of interpretation. In the same way, Interpretivism focuses on the construction and interpretation of meaning in terms of the social, cultural, and historical dimensions of understanding in order to make sense of human experience. Hence, the most relevant design in discovering meaning and understanding is by collecting qualitative data, and through the researcher's active involvement of the construction of meaning. For example, Târziu (2017) indicates that, if gender is a social

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4.5 Mixed methods research process

Social science focuses on studying multiple sources of inquiry that influence a given situation. Creswell, et al. (2009) define mixed method research as an investigation that includes real-life contextual understandings, multi-level perspectives, and cultural influences. While the emphasis of quantitative research is on measuring the number and frequency of constructs, the emphasis of qualitative research is on exploring the meaning and understanding of constructs through the use of various data collection techniques (Creswell, 2014).

In this study, mixed methods enable the investigation to benefit from the strengths of both qualitative and quantitative methodologies (Creswell, 2003). Qualitative methods were used to gain access to more in-depth information, as well as to understand participants' experiences of the GFA interventions, policy design and implementation strategies. They were also used to explore participants' behaviours in relationship to decision-making processes (Mouton, 2006; 2007). Quantitative data was used to generate statistical evidence in order to strengthen findings (Mouton, 2006:177; Antonio, 2009:43).

To effectively make sense of the context (politics and power relations complexities) in which the GFA was implemented in within the Overberg Region, this study adopted a research design and methodology that would make possible for the investigation to explore, analyse, contrast, cross-validate and evaluate the evidence presented as well as describe the processes involved. Hence the mixed method approach was deemed appropriate as it permits the researcher to enter "the everyday social world in order to grasp the socially constructed meanings, and then reconstructs these meanings in a social scientific language" (Blaikie, 1993:96). Similarly, the research design and methodology made possible for the researcher to capture interpret and give a detailed account of the lived social realities in Overberg District with the view of understanding the reason behind the use of GFA by indigents citizens.

The use of two methods enables the study to alleviate the weakness of using a single approach and enable triangulation (Yin 2003; Dunn, 2010). Both methods provided multiple sources of

evidence which were required for answering the research questions. Mixed methods were used under the case study strategy (Yin 2003), whereas, empirical data from the two cases is used to specify different conditions under which the theory may or may not be applicable.

From a Transformative perspective, mixed methods research is useful in collecting historical and contextual factors with a focus on issues of power that can influence the achievement of social justice and avoidance of oppression (Johnson et al. 2007). In a study of ICT4D in the Overberg District, the issue of power in relation to critical decision making is important. Qualitative methods enable the researcher to uncover how power is shared within the district, its effects on the GFA policy development and its influences on the use of GFA by community members. In most cases, the purpose of evaluation studies is to promote equity and justice for policies and practices so as to create a personal, social and organisational benefit (Creswell 2014).

The strengths of a mixed methods approach lie in its ability to collect quantitative and qualitative data concurrently as means to confirm (or not confirm), cross validate, corroborate and/ or verify findings within a single study while keeping the conceptual framework in mind. In most cases quantitative data are discussed first followed by qualitative data quotes that support or disconfirm the quantitative results (Creswell, Gutmann & Hanson, 2003; Creswell 2009). This study made use of concurrent triangulation during data collection and analysis. The purpose of this design strategy was on integrating data during the interpretation phase in order to explain convergences that were identified (Creswell 2014).

4.6 Research design

A research design is defined as is described as a framework that guides the collection, interpretation and analysis of data (Creswell 2014). Neither the Capability Approach nor Choice Framework discussed in chapter 4 prescribes research philosophy or methodologies. This leaves the onus on the researcher to select the methods and design that will be important to answering the research question (Grunfeld, 2011a).

4.6.1 Qualitative method

Epistemologically, Interpretivist researchers believe there is no independence of the object from the construct. Therefore, the investigator and the object of study are interactively linked,

and the study findings are mutually created within the context of the situation which shapes the inquiry (Denzin & Lincoln, 1994; Sale et al., 2002). The combination helps researchers to understand the context in which the intervention is operating.

Qualitative philosophy is based on interpretivism (Denzin & Lincoln, 1994). Ontologically, the method concedes there are multiple realities which are socially constructed and constantly changing as the society changes (Berger & Luckmann, 1966). The significance of the qualitative methods is its ability to enable the researcher to gain deeper understanding of the phenomenon and participants perspectives, similarly its ability to gather empirical data (Denzin, 2005:95; Mouton, 2006).

The strengths of the qualitative method lie in its flexibility and adaptability that allows single or multiple methods of data collection to be used to investigate a research problem (Cavaye, 1996). Qualitative research has the capacity to give rich information about the informants, to provide in-depth information on individual case and unrevealed complex phenomena embedded in the local context. A wide variety of data collection methods can be used including direct observation, participant observation, interviews, focus groups, documentary sources, archival records, and physical artefacts (Mouton, 2001, Myers, 2009). The use of multiple participants and sources of inquiry is encouraged in order to triangulate data and to allow significant insights to emerge (Yin, 2014). In this study, the objective of the assessment was to establish how the use of Cape Access has enabled them to realise their perceived capabilities and functionings.

4.6.2 Information and communication technology for development in a qualitative study

The planning of ICT4D policy involves different stakeholders thus making it a social activity aimed at shaping the practices of how community-based interventions are planned. These stakeholders have the power and ability to set the agenda of attention and facilitate the development of communities of action. Due to the lack of a link between ICT4D and socio-economic development, researchers continue to argue for more empirical studies that assess the link and to discover the complexity of digital divide (Toyama, 2011; Walsham, 2013).

Gigler, (2011) examined the condition under which improved access to ICT facilitated intervention could enhance human capabilities of the poor to better achieve their functioning. The analysis examines the role of improved access to information and new knowledge in

expanding the human and social capabilities of the poor. Gigler's study examined whether the appropriation of ICT as an instrument for economic and social development is really adding value to the lives of users. Gigler found that there was no causal relationship between improving access to resources and the acquisition of knowledge/information, or between access to ICT projects and empowerment. However, despite this lack of direct links, human agency still regarded as something that plays key role in determining whether or not the increase in resources can be transformed into the expansion of the individual realisation of freedom and well-being. Heeks (2001) states that human agency is at the centre of planning for the implementation of ICT4D projects because it implementation involves various stakeholders with a variety levels of power and interest. To really establish user's experience of Cape Access intervention, data was gathered from different stakeholders, allowing for multiple perspectives and intersubjective insight into actual events.

4.6.3 Sampling techniques

According to Marshall et al. (2013:20) there is no ideal number of interviews that is supposed to be undertaken. Considering the main aim and objective of the current study, 21 participants were purposefully sampled for this examination. The sample for the semi-structured interviews included local councillors (2), GFA centre managers (6), DFA development managers (6), provincial directors (2), the provincial Chief Information Strategist (1), the Community Work Programme officer (1), the Local Economic Development official (1), a local municipality officer responsible for the Integrated Development Plan (1). Two Focus Group Discussions (FDG) with 7 participants in each were also conducted (14 participants)

The study adopted both probability and nonprobability sampling techniques. Purposive sampling allows the researcher to select participants objectively with emphasis on informants who are well informed of the subject under investigation (Mouton 2006). A purposive data sampling technique was used for the selection of focus group participants as well as interviewees, in consultation with relevant stakeholders in order to ensure rigor and the collection of empirical evidence in real-time data. Informants were selected on the basis of their knowledge of Cape Access and why the intervention was initiated, or those whose well-being might be affected by the intervention.

4.6.4 Data collection process and instruments

The qualitative data were gathered through the use of a semi-structured interview schedule, focus group discussions, literature reviews and document reviews. The researcher started with the first phase of exploratory pilot in November 2016 which was aimed at testing the research questions and understanding the context of the study. The pilot study was qualitative in nature and only government officials were involved. Important variables were identified which led to the use of mixed methods approach. Therefore, the findings from the pilot study pointed to the need for conducting a household survey to assess users' experiences and their views of the Cape Access intervention. The researcher developed survey questionnaires that consisted of both closed and open ended questions to assist with data collection. Data were collected in the following sequences: documentary reviews; semi-structured interviews; questionnaires; participant observation, and finally focus group discussion.

The study reviewed several publications on ICT4D to establish whether there is correlation between ICT4D interventions and human capability development, in particular in marginalised communities. The interviewees were asked about the effect of Cape Access on their well-being, and further questions investigated informant perceptions of the process that led to the inception of Cape Access and to it implementation. Questions were asked about the process that led to the selections of Cape Access sites and its effect on adoption and uses. The questions on the above-mentioned themes were used to compile the questionnaires in order to triangulate the data that were obtained from the semi-structured interviews.

Themes were generated from the theoretical framework guiding this study and the reading of literature relevant to the study. The interviews were face-to-face and the participants were allowed to participate in the study by reading the participation information sheet and signing the consent form. The questionnaires were administered solely by the researcher with a 100% response rate. The method of inquiry and the researcher's underlying philosophical assumptions support the application of an interpretivist philosophy because the aim was to produce an understanding of the phenomena through the meanings that people assign to Cape Access intervention. In this context there was a strong focus on human sense making throughout the duration of the study (Kaplan & Maxwell, 1994). The researcher was actively involved in the data gathering in order to keep the data as close as possible to the actual events.

4.6.5 Documentation review

This study reviewed policy and documents in relation to the GFA intervention. The focus was on ICT policy, research reports, and the Integrated Development Plan (IDP) draft and final documents. Much emphasis was given to the Department of the Premier's e-Governance Policy and Strategy 2019/2020, Broadband Distribution Framework 2030, and IDP documents. The study examined the Department of Local Government IDP, the Department of Tourism and Rural Economic Development Policy and the IDP at the local municipality level.

4.6.6 Semi-structured interviews

The researcher made use of field notes and recorded all the interviews with tape recorder, having first obtained consent of the interviewees. The recording process did not interrupt the researcher attention from engaging the interviewees and for observing interviewees behaviours (Walsham, 1993). The interviews were design to help the researcher to discover the perceptions held by marginalised citizens of Cape Access, the policy development process and the leadership. Also, to explore how their lives has been impacted by the use with Cape Access.

The use of semi-structured interviews and an open-ended questioning format in this research enabled respondents to engage freely and express their opinions in relation to the contribution of Cape Access on their individual well-being. This was in accordance with informant's personal experiences and attitudes. The rationale underlying semi-structured interviews in this study is that it enables the researcher to have an open discussion with the participants. Seven themes were explored:

- broad based benefits to individual well-beings;
- personal use of ICT;
- barriers to adoption and effective use of Cape Access;
- self-esteem;
- tangible benefits;
- functioning (broad achievement) and
- essential functioning (real goal achieved).

4.6.7 Participant observation

Wagner, Kawulich and Garner (2012) shows that observation methods are useful research techniques, as they enable for the researcher to explore nonverbal expressions of feeling,

determine how informants interact with the subject of the study, check how participants communicate with each other, observe how they spend time on various activities, and what they do. Wagner et al., (2012) suggests that observation should be used to increase a study's validity and help the researcher to have better understanding of the context and phenomenon under study. Participant observation was done by visiting Cape Access sites to explore how citizens used the computers and internet. This was done by spending a few days at each centre while observing citizens' use of GFA. The researcher documented participant's activities. To deal with ethical issue, GFA managers and development managers were informed in advanced about the use of observation techniques through an information sheet and letter of consent.

4.6.8 Focus group discussion

The benefits of focus group discussion are significant, because the perceptions and the socio-cultural situation of participants was critical for decision making aimed at improving the lives of marginalised citizens. Nyumba, Wilson, Christina and Mukherjee (2018) claim that there are no guidelines on best practice in applying focus group discussion (FGD). Generally, the facilitator of the FGD starts by identifying the main aim and defining key research objectives, followed by a list of research questions that is developed based on the study objectives (Nyumba et al., 2018). As shown by Kahneman and Krueger, (2006) the researchers can use a variety of methods to recruit participants with door to door canvassing included. The researcher followed all the steps discussed by Krueger (1994) about the use of FGD. Some of Krueger's suggestions are to ensure there is necessary equipment and refreshments, a tidy room, that the researcher gives a warm welcome to participants, takes notes throughout the GFD, records the FGD, plays a facilitation role, debriefs moderators and asks question only when is necessary (Mouton 2006).

4.6.9 Data capturing process in focus group discussion

Generally, scholars show that a FGD can consist of 4 to 6 or up to 15 participants (Yin, 2014). This study made use of 4 to 6 participants per FGD. Participants included Local Government officials, Community Development Workers, Ward Community Representatives, Municipal employee and citizens making use of the facilities. Each session was allocated 90 to 120 minutes. Nyumba et al. (2018) indicates that homogeneity is very critical in order for participants to engage freely and reveal as much information as possible. Therefore, this study ensured all participants had similar characteristic including socio-economic status. There was also a balance of gender representation. Purposive sampling is widely recommended since

successful FGDs rely on the ability and capacity of participants to provide relevant information (Kahneman & Krueger, 2006). The moderator of the FGD was a person who was well-informed about the project and who could relate well to the participants. Nyumba et al. (2018) found that the use of an informant to lead or moderate the FGD could yield important information, since the person selected could initiate discussion that could influence participant responses, thereby increasing chances of wide-ranging and open feedback.

4.6.10 The strength and limitation of using focus group discussion

The strength lies in the ability to provide large amount of information from relatively small group of respondents in a very short time; to generate important insights in a little understood topic; to explore complex behaviours and motives of participant in taking or not taking certain actions; to observe and gain an understanding of the community dynamic and to directly observation participant interaction. FGDs help the investigator to uncover collective views of participants. This is critical for future decision making in the development studies context, since future planning need to be informed by community needs (Krueger, 2002; Nyumba et al., 2018). Further, the facilitator or moderator is central to the FGD, not only by managing the process but also by creating a relaxed and comfortable environment for participants who might be unfamiliar with the research process (Nyumba et al., 2018). There are limitations to FGD. These include the risk of biased interpretation, the need for a well skilled moderator, the risk of one informant dominating proceedings, and the difficulty of generalising FGD data (Nyumba et al., 2018).

Participants who were recruited for the FGD were informed of their rights to participate or withdraw from participating at any given time. They were also warned not to disclose any information discussed during the sessions, and to respect fellow participant's views. The discussion format helped in generating new ideas which enabled participants to express their thoughts, perceptions and experiences freely (Creswell, 2003; Mouton, 2006).

4.6.11 Data analysis instruments

According to Creswell, 2003 a research method might be classified as Constructivist to the extent that it (a) explains 'local' as opposed to 'universal' meanings and practices, (b) focuses upon provisional rather than 'essential' patterns of meaning construction, (c) considers knowledge to be the production of social and personal processes of meaning making, and (d) is more concerned with the pragmatic utility of its application than with its validity *per se*. The

constructs can then be interpreted and coded using any of reliable systems of content analysis, be it manually or using available computer programs (Creswell, 2003). The research captured data by the use of note taking and tape recording (Kahneman & Krueger, 2006). The FGD and interview data were transcribed and the data scripts were manually coded and analysed.

After coding, the data were analysed using a mixture of techniques depending on the sources and nature of data. The analytical techniques consisted of pattern matching and logical model creation. Pattern matching involved identifying salient themes, meanings, ideas and patterns of beliefs based on respondent views and theoretical propositions.

In a case study approach the themes and categories are constructed through coding. The main approaches that exist are the emergent approach and the a priori directed approach. In the emergent approach the emphasis is on establishing themes through scrutiny and comparison of the data. In a priori, themes are identified based on literature and then themes are assigned to specific data. This study made use of both techniques, there where themes that emerged from the theoretical frameworks and those which were identified during data analysing. Explanations were then built by writing notes based on the established themes and patterns, and by making interpretation of the message learnt from the themes. Logical models were created by critically engaging with data and searching for reasonable explanations and linkages among them (Creswell, 2014). The study selected key concepts from the theories that were important in the evaluation of ICT4D intervention by identifying themes that were similar (or not), then grouping them based on their similarity (Creswell, 2014).

4.6.12 Summary of analysis techniques

The table 4.1 below collates the various data collection and data analysis techniques and interpretation processes that were used in this study.

Table 4. 1 Data collection and analysis process

	Data Collection/ Method	Data Analysis/ Procedure	Data Interpretation
Quantitative	Survey questionnaires	SPSS was used for: • Frequencies and percentages analysis • Factor analysis The chi-square test	Generalization Prediction based on Interpretation of theory

Qualitative	Interviews Documents Reviews Observations Focus groups discussions	Thematic content analysis used to: • Identify patterns, themes/categories • Look for interconnected-ness among categories/ themes	Meanings were drawn after carefully doing several rounds of analysing data (multiple readings of content to find similarities and discrepancies in data).

Source: Author own work (2018)

The following paragraphs summarises the data collection methods and data analysis and interpretation techniques which were used to answer each research question independently.

1) Establishing whether marginalised community were involved in the process of developing ICT policy.

This question was answered through the use of both qualitative and quantitative data collection methods. Firstly, the study started answering this question by the use of face to face interviews, followed with focus group discussions and thereafter quantitative data from a household survey were integrated. A total of 385 questionnaires were distributed and administered. Face to face interviews with 21 participants were undertaken. Data were analysed using thematic technics and The chi-square test for quantitative data.

2) Identifying factors influencing the success or failure of GFA programme deployed in marginalised communities in order to inform better ICT policy decision.

A literature review was deployed to answer this question. A number of documents and academic publications were used to shed light on the main factors that influence the success and failure of ICT interventions in developing countries. The questionnaires also helped to identify the relevant factors and gain insight into the perceptions of marginalised community members interacting with Cape Access. Data were analysed using thematic techniques and The chi-square test for quantitative data.

3) Establishing whether the adoption and use of GFA marginalised community contribute towards the improvement of interaction between marginalised communities and stakeholders.

The questionnaire survey was the main method of data collection for this. Data were analysed using The chi-square test.

4) Evaluate to which extent Government Facilitated Access interventions affect the well-being of marginalised communities living in rural areas.

The questionnaires and focus group discussion were used to gather data on users' opinions of the contribution of Cape Access on their individual's well-being. Data were analysed using thematic techniques and The chi-square test for quantitative data.

4.6.13 Validity and credibility

Merriam notes that research informants' world views will reflect the multiple realities that people have in their minds (Yin, 2014). Therefore, to acquire valid and reliable multiple and diverse realities, multiple methods of gathering data are then given priority. Yin, (2014) states that validity and reliability are two factors which any qualitative researcher should be concerned about while designing a study, analysing results and judging the quality of the study. In qualitative studies, terms that are associated with the principles of validity and reliability are credibility, neutrality, consistency (or dependability) and applicability (or transferability) (Denzin & Lincoln, 2000). Validity and reliability can be contributed to through the selection of more than one case, if the themes and categories that are identified apply across all the cases (credibility, consistency). Triangulation, in which data are collected through different data collection techniques and from a range of stakeholders, helps to neutralise any possible biases in qualitative approaches to evaluation (neutrality, consistency, applicability), and is therefore also a strategy for contributing to the validity and reliability of research (Yin, (2014). As results, the use of triangulation in the Interpretivism philosophy is common, method and data triangulation to record the construction of reality is appropriate (Johnson, Onwuegbuzie & Tuner, 2007).

When it came to data interpretation, issues of credibility, transferability and dependability are the key (Riege, 2003). The raw data was examined, transcripts and recordings of interviews were studied and fieldwork notes were used to determine convergence between the multiple sources of inquiries (triangulation) that this study adopted in order to form themes. These multiple readings of the content helped to find similarities and discrepancies in the data and aided in ascribing meanings to the responses.

In summary, to maximise the validity and credibility of this research, the focus in data analysis was on triangulation, cross-matching data from different sources of inquiry to contribute to internal coherence (Yin, 1994). To increase external validity, the study relied on defining the scope and boundaries in the research design phase, which was intended to help achieve reasonable analytical generalisations instead of statistical generational (Marshall and Rossman, 1999).

4.6.14 Quantitative methods

Babbie and Mouton (2001; 2011) noted that quantitative research involves the use of numerical measurement tools to gather information in order to uncover laws of relationships or causality. Unlike qualitative (inductive) methods which allow for identification of previously unknown processes, explanations of why and how phenomena occur, the range of their effects and way research and the subject of study may interact (Creswell, et al. 2010), Quantitative (deductive) methods hold to the view that there should always be a proximity between the researcher and the subject under examination. Babbie & Mouton (2011) demonstrate that in quantitative studies, the researcher and the subject being investigated are two independent entities, and the researcher has the ability to examine phenomena without influencing or being influenced by it. Finally, Quantitative methods are known for deductive focus on phenomena and central patterns of association, which include inferences of causality.

4.6.15 Information and communication technology for development in quantitative study

Several scholars have made use of quantitative methods in establishing the role and contribution of ICT4D on the lives of the people. According to Heeks and Bailur (2007), quantitative methods have been used by several scholars examining the effect of ICTs or ICT4D on the lives of the users as compared to qualitative method or a combination of both. Sen (1999) noted the role of social factors and institutional arrangements in shaping development opportunities for the individual. As a result, the assessment of ICT4D interventions should go beyond inventories of ICT infrastructures, to examining actor's behaviours, their interest, the broad social, political, institutions, and investigating the impacts of ICT on social group (Thompson & Walsham, 2010). Sigh (2018) noted that society's cultural capital manifests itself through an internalized ability to interpret cultural artefacts, and ICT4D interventions can therefore be seen to create a social space where individual interact and developed social capital.

4.6.16 Sampling techniques

According to the 2016 Western Cape Integrated Development Plan (IDP), a total of 10,385 marginalised citizens were living in the area. According to the formula[7], required the total sample size for a survey would be 385, and the selection was done randomly.

The survey instrument – the questionnaire - was randomly distributed to informants found in government facilitated access venues. A second distribution was by trained fieldworkers to randomly selected households. Participant were both male and female, aged between 13 and 84 years old with the majority falling into the under 30 cohort. In this study age was not used as a stratification variable in order to allow the real age to emerge from random selection. Also the instrument paid attention to individual and community characteristics including individual socioeconomic and household characteristics such as income and education level.

For the purpose of this study, 6 GFA centres out of 70 were selected and 385 users and non-user participants. The study took into consideration the fact that collecting data randomly could have made the survey data irrelevant as a result case were selected carefully to ensure the robustness. The use of multiple cases in the case study approach contributed to drawing a broad pattern (generalisability), and triangulation from the qualitative data sources meant that the benefited from both qualitative and quantitative methods. Finally, the questionnaires were designed to enable the researcher to understand how the six cases had been designed and implemented, how they could be better planed for relevance and sustainability, and what improvements could be made in the Cape Access programme.

4.6.17 Quantitative data collection

To collect quantitative data, this study made use of questionnaires using closed-ended questions. The design of the survey questionnaires paid attention to principles guiding ethics as per the recommendation of Rule & John (2011), and ensured the confidentiality of the respondents. The questionnaires targeted 385 participants using a simple random sampling method (as discussed above) to select respondents.

[7] The sampling formula $n = \frac{N}{1+N(e)2}$ whereby n= sample size, N= population size and e= to level of precision. The calculation was based on 95% or (0.0025) level of confidence because the research will benefit from a variety source of evidences.

4.6.18 Quantitative data analysis instruments

Quantitative data generated from questionnaires completed by household participants were cleaned, coded and the data was captured using IBM SPSS Statistics 25 software. This software facilitates quantitative data analysis and management, and statistical calculations can also be made. The chi-square test was utilized whenever the researcher needed to determine if there were statistically significant differences in the data. Data were then statistically analysed based on bivariate (comparing two variables), multivariate (comparing multiple variables) and descriptive analyses as appropriate (Babbie and Mouton, 2009).

4.6.19 Validity and reliability in quantitative analysis

The use of multiple cases in the research design helped to ensure external validity. Random selection of participating households contributed to neutrality. Therefore, the findings of this study are both internal and external valid. Validity was ensured by drawing from multiple evidence sources, so that triangulation and cross-checking of data could be done. At the same time, the findings are generalized based on the propositions of the Well-being Framework, which ensures external validity.

In the same way, document reviews were used in the triangulation to complement the analysis of survey data from the six cases studies that were selected. According to Babbie and Mouton (2009) reliability and research confidence can be increased by using multiple sources of evidence. The reliability of this research was grounded on using mixed methods in the research design. Triangulation was used in this research to cross-check the answers where both strands of quantitative and qualitative data were used to address the same topic. Apart from this, comparative analysis and cross-case synthesis was conducted based on the variables of local realities (Yin, 2014). Cross-case combination was conducted to understand real world conditions in which the GFA is implemented and establish how it is being used and its impacts on the users.

4.6.20 Unit of analysis for both research designs

As shown by Babbie and Mouton, (2009) the unit of analysis is based on the element of examined for describing social phenomena. This study involved embedded multiple cases and multiple units of analysis (Yin, 2014). The use of a variety of units of analysis makes possible

to understand the problem in totality, including influence of external dealing as unit of analysis. In this study, three level of units of analysis existed, including households survey, policymakers and local municipality employees. Multiple levels of units of analyses provided multiple levels of analysis, establishing the socio-economic condition of Overberg District.

4.7 Case study as research design

Yin (2014) identified three categories of case studies, namely exploratory, descriptive and explanatory case studies. Exploratory case studies are investigations designed to explore any phenomenon. Descriptive case studies set out to describe the natural phenomena. Explanatory case study examines the data closely both at a surface and deep level in order to explain the phenomena.

Case studies by definition explore (or describe, or explain) a phenomenon by selecting a small geographical area or a limited number of individuals as the subjects of in-depth study (Zainal, 2007).Yin has written extensively on the subject of the case study, and defined it as "A research method that investigate a contemporary phenomenon within its real-life context; when the boundaries between phenomenon and context are not clearly evident; and in which multiple sources of evidence are used" (Yin, 1984:23).

Case study investigation allows the exploration and understanding of complex community issues. The method was used in this research to complement the more quantitative methods described above and to provide holistic and in-depth detail of the social and behavioural problems in question (Yin, 2009; 2014). Through case study methods, researcher can go beyond the quantitative statistical results to understand the behavioural conditions of users (Zainal, 2007). Yin (1984) indicates that the use of case study helps the investigator to critically examine a number of subjects of interest in detail, unlike quantitative analysis. Quantitative methods emphasise the patterns in data at the macro level on the basis of the frequency of occurrence of the phenomena being observed, yet case studies enable the researcher to examine the data at the micro level.

The case study method does, however, have its limitations. Most notable is that of generalisability: the researcher can hardly generalize the results to a whole population when studying only a single case (Creswell, et al. 2010). The solution is to have a multiple-case design, which provides multiple sources of evidence. Yin (1994) stated that to generalise the

results from case, researchers should locate their research within a theoretical framework, and apply the technique of pattern-matching to make generalisations from the case study and the theoretical proposition (Yin, 2013).

Creswell, et al. (2010) categorised case studies according to whether they were interpretive or evaluative in nature. In interpretive case studies, the researcher aims to interpret the data by developing conceptual categories, supporting or challenging the assumptions made regarding them. By contrast, in evaluative case studies, the researcher makes judgments after studying the data found in the phenomena (Yin, 2014).

Data collection in case study research can be by participant observation, document analysis, surveys, questionnaires, and interviews, among others (Dooley 2002:338). The use of multiple sources of data helps the investigator to understand the subject in it totality, including the influence of external factors. This can be done by comparing data within and across cases for research validity. The unit of analysis may be an individual, a group, an organisation, an event or some other phenomenon (Yin, 1994). According to Dooley (2002) researchers that undertake case study research should be concerned with issues such as methodological rigor, validity, and reliability, which can easily be done by carefully addressing the following six elements:

- Determine and define the research questions;
- Select the cases and determine data-gathering and analysis techniques;
- Prepare to collect data;
- Collect data in the field;
- Evaluate and analyse the data;
- Prepare the report.

A study that is concerned with answering the how, what and why questions must be able to tell and discuss a concise story about a specific situation, describing who, what, where, when, and how (Dooley, 2002).

This research used the case study method because of its ability to examine data from real-life situations (Yin, 1984), in this case how the selected communities made use of ICT by examining what and how and why they use Cape Access projects. Secondly, case studies enable the researcher to collect and analyse both the quantitative and qualitative data simultaneously

(Yin, 1984), and describe the complexities of situations which may not be captured through purely quantitative survey research.

In spite of case study being viewed as weak in rigour Yin answers those who maintain that case study research lacks rigour, by arguing that the use of triangulation makes case studies one of the most useful research designs (Yin, 1994:14). Johnson and Onwuegbuzie (2004) further noted that case study investigation can lead to the discovery of ways that can help in dealing with social and economic crisis in a given community. This can be achieved by understanding the effect of phenomena on the lives of the citizens in the given areas with emphases on the values and the life they desired to lead. So, case study is critical in this research because the results of this study will help in establishing mechanisms to better improve GFA intervention.

4.7.1 Case selection and description: Overberg District Municipality

The South African Constitution provides for three categories of municipality. In total there are 278 municipalities in South Africa, consisting of 8 metropolitans, 44 district municipalities and 226 local municipalities. The Municipality Structures Act, 1998 (Act 117 of 1998) contains criteria determining the categorisation of municipalities.

4.7.2 Local municipalities

Within the South African context, local municipalities are referred to as Category B municipalities. Local Municipalities may include rural areas as well as one or more towns or small cities. There are a total of 24 local municipalities in the Western Cape. They have the responsibility of seeing community needs are being met, ensuring the provision of basic service to improve peoples' lives, providing accountable and democratic local government, promoting social and economic development, and encouraging the involvement of communities in decision making process. The Local Municipal Structures Act of 1998 provides for the establishment of Ward committees tasked with preparing and implementing IDPs, establishing, implementing and reviewing the municipalities' performance-management systems, monitoring and reviewing municipalities' performances, preparing municipalities' budgets, and participating in decisions about the provision of municipal services (Western Cape Government, 2021),

4.7.3 District municipalities

District municipalities, are refereed to category C municipalities. They are tasked to administer and make rules for a District, which includes more than one local Municipality, and may consist of four to six Local Municipalities that come together in a District Council. In the context of Western Cape, there are 5 rural Districts Municipalities. District Municipalities and Local Municipalities share the responsibility for local government in their areas in order to ensure that all communities, particularly disadvantaged communities, have equal access to resources and services (Western Cape Government, 2021).

The Western Cape Province comprises of 30 Municipalities, one Metropolitan Municipality, five rural Districts Municipalities and 24 Local Municipalities. The Overberg District Municipality is situated on east side of Cape Town. The Overberg comprises of Cape Agulhas, Theewaterskloof, Overstrand and Swellendam Local Municipalities.

The purposive selection of the Overberg District Municipality for this study was based on a number of reasons. Firstly, the District Municipality was one of those that benefited from the Provincial ICT4D programmes (in spite of a dearth of investigation that was conducted at the time by the Provincial government to determine the potential effects of this type of investment on the well-being of the marginalised community.) Secondly, unemployment is a major problem in the Overberg District Municipality with many residents living in excessive poverty, dependent on social grants to survive. There is a high rate of illiteracy and a lingering sense of discrimination as a result of the apartheid regime. Thirdly, the Provincial Government assumed that the promotion of GFA in the Overberg District would address these challenges faced by the local community. So studying the Cape Access programme in this District provided an opportunity:

- to establish if and whether the adoption and use of GFA programmes by this marginalised community contributed towards the improvement of interaction between them and the stakeholders;
- to ascertain the extent to which the GFA intervention impacted the well-being of marginalised community living in rural areas;
- to assess whether and how the marginalised community was involved in the process of developing ICT policy; and lastly

- identifying factors influencing the success or failure of GFA programme deployed in marginalised community in order to inform better ICT policy decision.

The area of study covers small rural towns located in three Local Municipalities: Cape Agulhas, Overstrand and Theewaterskloof. Six rural towns hosted the Cape Access programme: Bredasdorp, Elim, Struibaai, Hawston, Greyton and Genadendal. These communities were selected not only because they hosted a Cape Access intervention, but also because the majority of citizens earn less R2500 per month therefore are living in extreme poverty.

Figure 4-1 Overberg District Municipality
Overberg District Municipality. (2021).

4.7.4 Cape Agulhas local municipality

Cape Agulhas Municipality is the southernmost municipality in Africa with Bredasdorp as it administrative seat. According to Stats SA (2016), Cape Agulhas Municipality has a total population of 36000. The Cape Access project is located in the towns of Bredasdorp, Struisbaai and Elim.

Figure 4-2 Map of Cape Agulhas municipality
Source: Revised IDP 2016-2017: 4th review of 2012-2016

4.7.5 Overstrand local municipality

Overstrand Municipality is located along the south-western coastline of the Overberg District Municipal area bordering the City of Cape Town in the west and Cape Agulhas Municipality in the east. The Municipality is a home to 93 407 people (Stats SA, 2016). The municipality has its administrative office in Hermanus (Overstrand IDP, 2017:31). The study was conducted in Hermanus and Hawston.

Figure 4-3 Overstrand Municipality
Source: Overstrand municipality IDP 2012 – 2017.

4.7.6 Theewaterskloof local municipality

Theewaterskloof Municipality is the largest local authority in the Overberg District with an area of approximately 3231km2. It is a home to 42% of the total district population with 108790 people, with Caledon as its administrative town (SASts Census, 2011). Cape Access centres are located in Greyton and Genadendal..

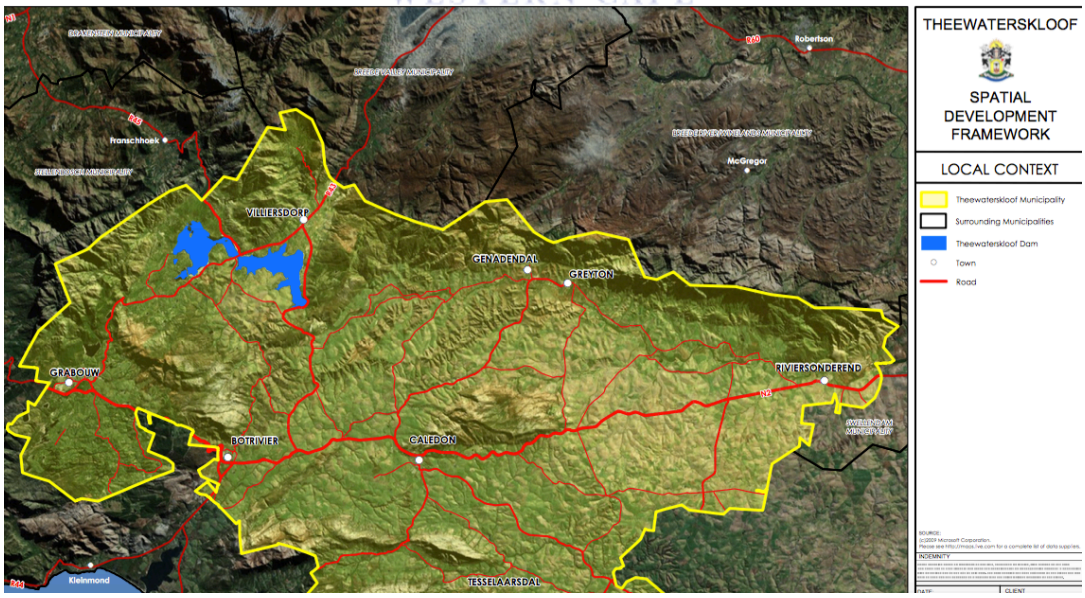

Figure 4-4 Theewaterskloof Municipality
Western Cape Government (2021).

4.8 Ethical considerations

In terms of Axiology, this concept refers to ethical issues that need to be considered during research planning, researcher focuses on evaluating and understanding what is right and wrong behaviour relating to the research, paying attention to participants, and data collection process (Kivunja & Kuyini, 2017). This section discusses literature and process that the researcher undertook to ensure the issue of axiology is fully addressed.

In a scientific research, quality is utmost requirement for ethically sound research, hence the researcher is required to protect, and respect perspectives and privacy of informants (Flick 2009; 1999). This study paid attention to the matters of ethics by being aware of the recognised rules and norms of agreed behaviour when conducting scientific examination (Rule & John, 2011:111). These calls on the researcher to refrain from doing anything that could cause harm to participants. The researcher must inform all participants their rights in advance and the participants should give their consent to participation without any undue influence. Hence informants must be aware that their participation is voluntarily and can withdraw from the study at their own prerogative and chosen time. In this research, the ethics principles are guided by Rule and John (2011:112) and are outlined as follows:

4.8.1 Confidentiality and anonymity of respondents

A research certificate was obtained from the University of Western Cape Ethics Committee to authorize the study. This was followed by correspondence with various government authorities at provincial, region and local municipalities' level requesting their approval. Upon receiving the approval from all spheres of governments involved in the study, I proceeded by searching for the participants. The process was done in consultation with leaders representing various stakeholders at all levels of governments. All participants were provided with an information sheet, and assistance was offered to participants who needed more explanation due to language barrier and thereafter, requested to sign the participants consent form. They were assured that the data collected would be treated as confidential, and their anonymity protected. Before starting focus group discussions, and semi-structured interviews, the aims, purpose and objectives of the study were explicitly explained to the participant and they also were informed of their rights, including the option of withdrawing at any time. All participants were informed of and their permission was sought to record the interview or FGD (See, Appendix A).

4.8.2 No provision of incentive to participants

The researcher informed the participants of the main aim and objective of the study in advance. They were told that their participation was voluntarily, and no form of payment was offered.

4.9 Chapter summary

The chapter has outlined the research design and methodology as well as the methods for data collection. It has provided a motivation for selecting a particular research design and approach. Furthermore, it has described the entire research journey, sampling techniques, the data collection and analysis process, the case study method and the sampling of participants. Finally, it has addressed ethical considerations when undertaking research of this nature. In the next chapter, the researcher tries to make meanings from empirical data and bring the meanings to bear on the research objectives. The analysis of data will be supported by theoretical conceptions from the literature.

Chapter 5: THE DESCRIPTION OF THE OVERBERG DISTRICT AND GOVERNMENT FACILITATED ACCESS

Chapter overview

The Overberg District Municipality is among the District Municipalities that have benefited out of Western Cape Government ICT for development projects. The district hosts a number of Government Facilitated Access (GFA) interventions, but in spite of many households having access to GFA interventions; the well-being of citizens has been poor. As such, this chapter is concerned with uncovering the socio-economic condition of the users of GFA, and how their livelihood is impacting the adoption and use of GFA. The chapter further establishes whether marginalised communities were involved in the processes of developing GFA policy and programme implementation. The main reason that led to deployment of GFA in poor communities of Overberg District Municipality was to improve individuals' and communities' well-being, which justifies this investigation. In addition, the chapter examines empirical data to identify factors influencing the success or failure of GFA intervention, and lastly it establishes whether GFA interventions contribute towards the improvement of interaction between marginalised communities and stakeholders. To this end, the chapter presents the findings that respond to the main research question. The findings are presented using the Citizens Well-being Framework, (discussed in Chapter 3) as a lens. The effect of GFA on well-being is broadly discussed in Chapter 6. The findings draw on data that was obtained from household survey questionnaires, focus group discussions, key informant interviews, and participant observation.

The rest of chapter is structured accordingly. Starting with section 5.1 an overview of the study area's socio-economic condition is presented. The chapter then shifts to discuss the community environment's factors in section 5.2 focusing on the influence of ICT policy on the implementation of GFA intervention in marginalised communities, and factors influencing the success or failure of GFA intervention deployed in marginalised communities. In section 5.3 the study presents ICT Characteristics (quality and quantity), followed by ICT Facilitated Opportunities discussed in section 5.4; in section 5.5 the chapter discuss the effect of influences on decision making. Social pressure and personal preferences, and individual choices (on adoption and use) are presented in section 5.6. The chapter ends by presenting Individual's conversion factors (personal characteristics) in section 5.7.

Table 5.1 present the description of semi-structured interview participants.

Table 5. 1 Semi-structured interview participants

	Participants	
	Area/ Institution	**Participant's Position**
3	Western Cape Government / Office of the premier	Chief Information Officer
		IT Officer
		Tourism & Rural Economic Development Director
1	Overberg District	GFA (Cape Access) Region Coordinator
9	Overstrand Municipality	Counsellor – Overstrand Municipality
		GFA Manager - Hawston
		Social Economic Director -
		Independent Development Planning (IDP) Manager
		ICT & Infrastructure Manager
		Business Owner
8	Cape Agulhas	GFA GFA Manager - Bredasdorp
		GFA GFA Manager - Elim
		GFA GFA Manager - Struisbaai
		Municipal Counsellor – Cape Agulhas
		Independent Development Planning (IDP) Manager
		Rural & Economic Development Manager
		ICT & Infrastructure Manager
		Local Tourism & Economic Development Manager
4	Theewaterskloof	GFA GFA Manager - Genadendal
		GFA Centre Manager
		GFA GFA Manager – Greyton
		Business Owner

5.1 The Socioeconomic condition of the Overberg District

5.1.1 Demographics

This study was conducted in Overberg District which comprises of the towns of Bredasdorp, Elim, Struisbaai, Hermanus, Hawston, Genadendal, and Greyton. In 2018 the total population of the Overberg District Municipality was estimated to be at 308 010 with the number of households standing at 91 835 (IDP, 2018). However, this study only covered findings from six towns which were purposefully selected. According to the Integrated Development Plan (IDP) reports for the covered areas published in 2016, a total of 10385 "indigent citizens" were living in the areas. Out of the 10385 "indigent citizens", 385 were contacted and responded to survey questionnaires that formed part of this research (See, Appendix F). Other selected

respondents participated in additional data collection activities such as the focus group discussions, observation and key informant interviews. The respondents per household and their demographics were relatively easier to determine in the household survey, which was administered by trained fieldworkers.

5.1.2 Residential areas

The study participants were residents of six rural communities where the Western Cape Government has implemented the GFA. The number of participants per community was based on the information drawn from Integrated Development Plan (IDP). As shown in table 5.2, most participants (n=184; 48%) were from Hawston while Elim had the least participants (3%).

Table 5. 2 Residential areas

Location	Participants	
	Total n=385	**100 %**
Bredasdorp	57	15%
Elim	13	3%
Struisbaai	30	8%
Hawston	184	48%
Greyton	51	13%
Genadendal	50	13%

Table 5.2 illustrates the number of citizens that participated in the study per town. The GFA located in Hawston serves citizens from Hawston, Hermanus, and Gansbaai, making it the GFA that is covers a large population. Based on collected data and interaction with respondents, it was evident that in spite of Hawston GFA covering an extended area, many citizens from the surrounding town were not making use of the GFA intervention for several reasons (including lack of taxi fare).

5.1.3 Age group of respondents

It is critical to explore the age groups of participants since age is believed to be among the factors influencing the adoption and use of GFA in rural communities. As indicated in Table 5.3, the leading age group that makes use of GFA intervention is age 19+ (32%), followed by age 26-31 (18%). The 3rd largest group was 32 – 37 age group (17%), whilst the age 50 group represented 6% and the 44-49 group (5%). The younger participants made use of GFA for school work, job hunting and social networking, which is an indication that GFA is meeting

one of its objectives. The other groups were mostly making GFA for job search and social networking. Among other objectives of GFA programme is taking the youth off the street by keeping them busy through the use of internet access provided at GFA.

Table 5. 3 Age groups of respondents

Age groups	Participants	
	Total n=385	%
18 and below	56	15%
19 - 25	125	32%
26 - 31	70	18%
32 - 37	67	17%
38 – 43	28	7%
44- 49	16	5%
50 plus	23	6%

5.1.4 Education levels

This section examines an element of agency viz. education level. It explores whether this is a factor in relation to the adoption and effective use of GFA. This was imperative since education is believed to have the power to influence user's ability to make use of GFA intervention (Loh & Chib, 2018). Education plays a major role influencing human behaviour and attitude as well as decision making choices. Hence this study explored whether individuals from studied areas had access to education, and if so to examine the education status of participants and whether this influenced the use of GFA.

Data reveals that most individuals making use of GFA interventions in the research area had attained some formal education. Table 5.4 shows that 4% of participants never studied beyond Primary School, 87.5% of participants went to High School, 6.3% of participants held Further Education diplomas, 1.8% had completed undergraduate studies, and less than 1% had completed postgraduate studies. This is an indication that many individuals that participated in this investigation did not have access to higher education. Education deficiency has a negative effect on an individual's ability to successfully make use GFA. Table 5.4 indicates that those with secondary education level (87.5%) were the most regular users of GFA, an indication perhaps that GFA was used for educational purposes. Education facilities, including primary and secondary schools, libraries and Further Education and Training (FET) colleges were present in most of the towns. However, in Elim GFA located in Cape Agulhas municipality and Greyton GFA located in Theewaterskloof municipality, learners relied on these GFA to do

most of their school-related activities. More on the importance of education in the use of GFA is discussed under individual conversion factor in section 5.7.

Table 5. 4 Highest education level

Highest Education Level	Participants	
	Total n=385	**%**
Primary education (Level 1)	16	4%
Secondary education (Level 2)	330	87%
Diploma (Level 3)	24	6%
Undergraduate (Level 4)	7	2%
Postgraduate (Level 5)	1	0.3%
Total	**378**	**98%**
System missing	7	2%

5.1.5 Employment

The state of unemployment is a huge challenge in South Africa, and has a negative effect on community cohesion and the ability of local government to meet the needs of citizens, especially those depending on government grants. Gillwald, Mothobi & Rademan, (2019) acknowledge that employment plays key role in influencing individual decision-making processes in regard to taking certain actions. Hence it was important to investigate the socio-economic conditions of the citizens living in the Overberg District Municipality. In terms of employment, many households had at least two people working, with the percentage of households with 2 workers standing at 40% (Table 5.5). Notwithstanding, the fact that 36% (n=137) of households had 2 employees, many citizens from the area still experience high level of income inequality as a result of the majority of these employees working in low income jobs.

Table 5. 5 Number of workers per household

Employed citizens per households	Participants	
	Total n=385	**%**
1	119	36%
2	137	40%
3	54	14%
4	25	7%
5	12	3%
6	1	0.3%
7	2	0.5%

8	1	0.3%
Total	351	91%
System missing	34	9%

5.1.6 ICT device ownership per household

Nowadays ICT devices have become key factors in determining community socio-economic development. ICT accessibility and usability is now an area of interest from ICT policy developers and funding agencies. This section of the study explored the level of ICT device ownership per household in order to understand the level of e-skills that exists within the area of study. Among the advantages of ownership is the ability to learn more about ICT, increased choice and improved decision making, since ownership and access gives an individual the power to decide what activities should be done, when such activities should be done and how they should do it. As revealed in table (5.6) out of 385 surveyed households, 56% of participants had access to ICT devices and access to the internet at the time of this investigation, with 44% responses showing that they had not.

Table 5. 6 ICT device ownership per household

Location of study		**Participants**		
		Yes	**No**	**Total**
Bredasdorp	Count	27	21	**48**
	%	56%	44%	**100%**
Elim	Count	7	6	**13**
	%	54%	46%	**100%**
Struisbaai	Count	19	10	**29**
	%	66%	34%	**100%**
Hawston	Count	96	73	**169**
	%	57%	43%	**100%**
Greyton	Count	26	23	**49**
	%	53%	47%	**100%**
Genadendal	Count	25	23	**48**
	%	52%	48%	**100%**
Total	Count	200	156	**n=356**
	%	**56%**	**44%**	**100%**

X-squared = 1.6035, df = 5, p-value = 0.9008

In assessing ICT programmes it is critical to know whether community members are familiar with ICT devices, and whether they make use of those devices to access government services in order to improve their living condition and improve their prospect for a better future. The

data shows 66% of citizens from Struisbaai owned ICT devices as compared to 34% who did not, which is the only place with higher number of citizens with access to ICT devices ownership as per this study. As per Table 5.6 out of 385 respondents, 356 participated, of which 29 opted not to responds to this question without giving any reasons.

Seeing that the majority of households owned ICT devices, those owning ICT devices were perceived to be familiar with the use of internet, mobile phone or computer. Thus; they would logically aspire to use the free internet facilities presented at GFA. The presence of GFA in disadvantaged communities created an opportunity for community members who had limited or no access to the internet and computers. The desire to learn new skills was indicated from individuals who owned devices but noted that they lacked the skills to make full use of those devices. However, after receiving training on e-skills offered at GFA facilities, they were capable of making use of their personal devices to engage in business activities.

In the same way, to further explore the level of e-skills that exists in the investigated area, the participants were asked to indicate the year in which they started using ICT devices. Of the 385 respondents, 53% revealed that they started interacting with ICT device between the years 2010-2017. Based on the data presented in table 5.7, 4% started using ICT devices in 2010; 3% in 2011, 2012, 2013, and 2017 respectively; 7% in 2014; 11% in 2015 and 9% in 2016. The findings show that respondents started interacting with ICT devices in the same year that GFA was being introduced in a number of local municipalities. Thus, this can be concluded that the roll-out of GFA helped them to improve their e-skills.

Table 5. 7 Year most users started interacting with ICT devices

Year most users started interacting with ICT devices	Participants	
	Count	%
2010	16	4%
2011	10	3%
2012	11	3%
2013	11	3%
2014	26	7%
2015	41	11%
2016	36	9%
2017	11	3%

5.1.7 Community resources

Furthermore, in order to address the main objective of this study, the study reviewed resources that exist in the communities by asking respondents to rank prevalent resources that exist in the community from a possible list of resources as adopted from Kleine (2011). Community resources are critical in the advancement of the socio-economic development of the community; they influence individual behaviours and attitudes, and how citizens adopt and make use of GFA. This study therefore assessed the resources that were available in the study area localities, as presented in Table 5.8. The percentage column in Table 5.8 shows the percentage of participants that ranked a particular resource that they believed was an available resource within their community. Based on the data in Table 5.8, educational resources score the highest number of positive responses (84%), while d80% of respondents agreed that their community was well positioned in terms of e-skills.

Table 5. 8 Resources available in the community

Resources available in Overberg District	**Participants**	
	n=	**%**
Educational resource	320	84%
Library resource	314	82%
E-skills resource	305	80%
ICT devices resource	301	79%
Social media resource	287	75%
Financial resource	283	74%
Connection to community leaders	259	68.%
Favourable law and policies	251	65.9%

Effective use of resources that are available in the community increases the chances for citizens to make use of GFA; hence, the focus of well-being evaluation should be on what people manage to achieve with their resources. Effective use is the capacity and opportunity to successfully integrate ICT into the accomplishment of self or collaboratively identified goals. The availability of the resources that were selected by respondents demonstrates that citizens within the areas of study stand a good chance to effectively make use of GFA. However, having resources and making use of the resources are two different things; as a result, individual's agency is critical in determining which resources should be given priority (Kivunike, 2015:47). The most pertinent resources for this investigation were financial resources, education resources, e-skill resources and ownership of ICT devices. These resources are important because they influence the doing and being of citizens, thereby influencing the person's ability

to interact with the GFA intervention. As mentioned earlier in chapter 3, Sen believe that enhanced living conditions must be the real reason for economic development (Sen, 1985). Correspondingly, the availability of resources is critical for human development, while lack of resources can deprive individuals from attaining their chosen functioning.

To conclude, the sub-sections above examined data on demographics, residential areas, participant age groups, education levels, employment status, ICT device ownership and community resources

The presentation of data was guided by the Citizens Well-being Framework discussed in Chapter 3. This study collected both quantitative and qualitative data; similarly, the analysis of data was completed using quantitative and qualitative data analysis techniques. The findings discussed below have been drawn from a different source of data, the household survey questionnaires, focus group discussions, key informant interviews, and participant observations. For quantitative data the desired precision was 95% with the desired confidence interval of 5%, which means the significance threshold was set at 0.05 with p-values < 0.05 considered significant. Discussed in section two of this chapter are community environmental factors, ICT Characteristics, and ICT Facilitated Opportunities.

5.2 Community environment factors

In order to discover if community members were making use of ICT related devices to improve their lives, it was necessary to examine policy and strategic documents to see if these created favourable environments for users, as noted by one respondent:

> *They have to develop their policies and strategies to incorporate people using their smart phone to access the service. The policy should be drafted in a way that it incorporates everybody in the sphere of the society from the poorest to the richest (OvP6, 2017)*[8].

This quote indicates that a clear policy and strategic objectives, cognisant of both the poor and the rich, need to be in place. In most cases, ICT policy tended to favour the rich whilst excluding the less advantaged, resulting in a continuation in the social and economic divide as most broadband projects in SSA focusses on urban (Evans, 2019; Roztocki, Soja & Weistroffer, 2019). Therefore, this section present data from an exploration into how GFA programme was design and implemented.

[8] Face to face interview with local municipality councillor, Cape Agulhas

5.2.1 Policy design process

This study investigated the design and implementation of the Cape Access programme, with emphases on whether community were involved in decision that led to the design and implementation of GFA in Overberg District Municipality. Citizens buy-in is critical for adoption and use of GFA, therefore a lack of adoption and accurate usage of the GFA could lead to project failure. Investigating ICT policy design included finding out the extent to which local residents were involved in the process. This was achieved through the scrutiny of official documents, data from household survey questionnaires, as well as data gleaned from interviews with citizens and other key informants.

The first step was a document analysis of ICT-related strategic documents such as the Cape Online Strategy (PGWC, 2001a), Western Cape Government White Paper entitled "Preparing the Western Cape for the Knowledge Economy of the 21st Century" (PGWC, 2001b), and a document entitled "Face of the Province Infrastructure" (2015). These documents did not specifically document the process that was followed during the conception of GFA, design and implementation. Nor did they allude to how the use of GFA interventions aimed to contribute to the improvement of the lives of poor citizens living in rural areas, specifically in the region where this study was conducted. A lack of a clear implementation process resulting from poor conceptualisation of these documents made difficult for the provincial government to conduct an evaluative study that could have provided them with scientific evidences on the success or the failure of the GFA interventions.

One policy document regarding the Digital Divide in South Africa is the 2016 National Integrated ICT Policy White Paper (DTPS, 2016). This National ICT Policy subscribes to the idea that the use of GFA interventions could contribute to addressing persistent inequality in the country; by improving the quality of lives through accessing the benefits of, and participating in, the digital society. Such aims assume that digital transformation can enhance efficiency of service delivery, ensure impartial access to public services by all, and improve citizens' participation in public policy-making; enhance stakeholder's engagement, and afford South African citizens the opportunity to access a wide range of information. On a more practical level, the National ICT Policy recommends the introduction of GFA as a way of assisting the government to address divides in society between those with resources and capabilities, and those who are marginalised from such opportunities.

During the empirical phase of the study, citizens were asked if and how they were involved in policy development processes. Directors, managers, local government employees, and ordinary citizens were asked to reflect on the process that led to the introduction of GFA in their community, and to respond to questions about their involvement in the ICT policy design and GFA implementation process.

The responses from the findings discussed in Table 5.9 illustrate that 65% of the participants stated that they were consulted during the ICT policy design and implementation, while 35% of participants said that they were not consulted. When exploring the issue of consultation as per a specific study area, the results show 72% of participants from Hawston, 79% of respondents from Genadendal and 88% of respondents from Greyton felt that they had been consulted. On the other hand, 50% of participants from Elim, 60% of respondents from Bredasdorp, and 79% of participants from Struisbaai said that they were not consulted. These three areas are located in a single municipality, which indicates that the consultation process in this municipality was perceived ineffective by citizens that participated in this study. Despite the fact that respondents from Cape Agulhas felt the consultation process was weak, aggregated data from all area of studies shows that the results were statistically significant, indicating that there is a significant difference in the opinions/perceptions about consultation between the different locations.

Individual participation in the rollout and management of the GFA seemed to increase their sense of programme ownership, thus influencing their usage of it.

With respect to engagement processes used during the design of the Cape Access policy that led to the rollout of GFA, the findings found no strong evidence that convincing engagement strategies had been put into place to ensure that the voices of poor citizens were incorporated into the process. This argument is in line with the descriptive data discussed in table 5.9 which show participants from Cape Agulhas indicating that they were not consulted and the view held by policymakers as noted below by the Chief Information Officer of the Province:

> *They will make use of it when they have it. Some among us believe that people will make use of ICTs when they have access to it. That is the reason why we decided to go ahead with the project since some were convinced that our citizens need it (PP2, 2017).*[9]

[9] Face to face interview with policy developer, Socio-economic portfolio - Office of the premier –WCG.

This view was echoed by provincial and local government members who were interviewed - that communities will make use of GFA interventions once people have access to these facilities. For example, an interviewee from the Economic Development Directorate stated:

> *Basically, in the past we had face to face engagement. It wasn't about the needs of the community but about what we communicate with the community. But I am in ICT department, face to face engagement will be good but if I listen to the needs of people they will say we want job, we want this and that (PP2, 2017).*[10]

So, the views of policy developers (discussed in the above quotes) interviewed indicated that the focus of GFA was to supply an intervention with the expectation that citizens would use it (because it was there).

Table 5. 9 Location vs citizen consultation process

ICT policy design and implementation		**Were you consulted?**		
Location		**Yes**	**No**	**Total**
Bredasdorp	Count	23	34	**57**
	%	40%	60%	100%
Elim	Count	6	6	**12**
	%	50%	50%	100%
Struisbaai	Count	6	23	**29**
	%	21%	79%	100%
Hawston	Count	128	51	**179**
	%	72%	28%	100%
Greyton	Count	43	6	**49**
	%	88%	12%	100%
Genadendal	Count	38	10	**48**
	%	79%	21%	100%
TOTAL	Count	**244**	**130**	**374**
	%	**65%**	**35%**	**100%**

X-squared = 60.341, df = 5, p-value = 1.033e-11

This evidence of a lack of sound consultation in the formulation and implementation of the policy was supported by the views of one senior official from the Department of the Premier, who said:

> *The earlier focus of the programmes was to supply interventions while expecting citizens will use it, though it is only now when we are looking at what do citizens want and how can we service their needs (PP1, 2017).*[11]

[10] Face to interview with Chief Information Officer, Office of the premier - WCG
[11] Face to face interview with policy developer, ICT Dept., Office of the premier - WCG

The data collected in this study demonstrates that due to poor engagement processes, many citizens remain unaware of the potential benefits of GFA interventions. Participants were not aware of 'public participation' which policymakers and implementers noted that some form of informal community engagement took place during the inception of the GFA. This study argues that the public participation that did take place were purely informative: "this is what we have done for you" as opposed to "what do you need us to do for you". Therefore, citizens' concerns and suggestions were not considered.

One of the key aims of the GFA was to raise awareness of, and access to, government online services. However, because of the lack of formal engagement in the planning and roll-out of the programme, users have tended to make use of GFA interventions to meet their immediate personal IT needs, without having interacted meaningfully with the government's e-services. This is because people were not properly consulted about what they needed. Secondly, even when services were provided, users were not trained on how to access government e-services. It therefore appears that what little public participation may have occurred was merely to *legitimise* the programme and not really obtain public *engagement*.

In regard to awareness of the existence of GFA in the study areas, informants (among them policy implementers, councillors and IDP coordinators) felt that those interacting with GFA were not fully aware of the services that they could access at GFAs. Residents only get to know about the services when visiting the facilities. Citizens without strong agency, who lack accurate information of what GFA can do for them, are likely to remain offline. As one informant, a Ward Councillor noted:

> *I think they are aware because of their own effort to visit the GFA. However, as Ward Councillor, I feel this issue should be discussed at our Ward meeting, like next week we are having a Ward meeting* - *(CamP5, 2017)*[12].

The view of this Ward Councillor was supported by a Local Economic Development (LED) officer stating that only a few citizens had access to services provided by local government through the GFAs. According to the LED officer, local government has responsibility to ensure citizens are well informed of the services:

[12] Face to face interview with, counselor – Cape Agulhas Municipality

Where only the youngest are the ones making the use of the GFA, what about the adult and sometimes others feel bad. I feel maybe letting the community know that those are the services provided by local government make use of them. Tell them these are the services that are available and let them have them (CamP6, 2017)[13].

It is therefore fair to conclude that ICT services were brought to the study area communities without their knowledge, but that they were expected to make use of these services. The result is that GFA programmes may not be used effectively, not because citizens lack interest, but because they were not adequately informed about the benefits that could be gained from the use of those services

5.2.2 Social structure

Community is shaped by social structure, as such it was important to explore how social links contribute or hinder the success of GFA in Overberg District. Social arrangements and perceived risk of use can influence on how residents from rural areas use GFA. In this study social structure refers to smaller-scale 'social structures,' configurations of concrete relationships among individuals without reference to a larger societal totality. The findings show that social structure plays a major role in influencing the adoption and use of the GFA.

To explore whether social structure determines who is benefiting from GFA, the study relied on survey questionnaires, face to face interviews and focus group discussions. Respondents were asked whether they agreed or disagreed with the views that only the rich and the well-educated citizens were benefiting out of GFA.

Table 5. 10 Individual status vs benefiting out of GFA

Only the rich people and the well-educated have benefited out Cape Access	**Participants**	
	Total n=383	**%**
Agree	152	40%
Disagree	155	40%
I don't know	76	20%

Table 5.10 indicates 40%% of participants believed that only rich people and the well-educated were gaining from GFA. Yet 40% of participants believed that GFA was beneficial to all. This is in contrast with literature that postulates that poor people tend to be excluded from the

[13] Face to face interview with GFA IDP manager, Cape Agulhas Municipality

benefits embedded in ICT interventions (Bornman 2016; Sey et al. 2015; Roztocki, Soja & Weistroffer, 2019). Bornman (2016) argues that in spite of increased spending on ICT projects in South Africa; they continue to predominantly serve the interest of the rich. Findings from the household data and focus group discussions show that all participants, despite their historical background, had benefited from the GFA, although what is not clear is the extent to which each group benefited. Focus group discussion participants were of the opinion that GFA interventions were beneficial to everyone, whether directly or indirectly, because in most occurrences students from poor background were the lead users of Cape Access programme. Two comments were:

> *The effect of GFA has been great for many years now. I don't think this town can function fully without the GFA; this is the nerve of economic activities in the town. Students make use of GFA to apply at universities. Business makes use of the GFA for their activities (CamP3, 2017).*[14]

> *I believe this project is very good, as I said before, where people don't have money to go study they can come here to do ICDL and through the ICDL certificate they have access to better job opportunity and that better job opportunity can lead them to study further in life (CamP7, 2017).*[15]

These respondents felt that GFA interventions had been beneficial to all users. Citizens had access to free internet which is critical for social and economic development; access to the internet increased chances for a better job; and students had better prospects for studying further because they had access to educational materials and could remotely engage with learning institutions.

Figure 5-1 Young users of GFA in Overstrand Local Municipality

[14] Face to face interview with GFA manager, Cape Agulhas Municipality
[15] Face to face interview with GFA manager, Cape Agulhas Municipality

Notwithstanding the discussed benefits, the older generation within the marginalised communities made little use of GFA. Their children, however, used it for school activities, social media, and other forms of leisure such as online gaming. Field workers observed young people aged 10 to 15 using GFA in significant numbers compared to other age groups although this age group did not participate in household survey.

In spite of the fact that this younger age cohort did not take part in the household survey, their parents did, and they tended to stress the importance of GFA interventions in relation with their children's studies. Some parents were concerned as they thought that this investigation will lead to the closure of the GFA facilities. Fieldworkers had to always inform them that the outcome of the studies will not lead to the closure of the GFA interventions but it would help policymakers to learn what can be done in order to improve GFA interventions. This development shows that while the older generation of marginalised citizens might not have been making use of GFA, they had significant interest in GFA interventions, since their children were making use of it. The finding demonstrates that non-users were indirectly benefiting out of the GFA projects since their children or relatives were directly benefiting from use of GFA. From a policy perspective, intangible benefits are significant since they help those involved in project implementation to realise the effects of GFA on the lives of users and non-users.

In studying the effect of social structure on the use of GFA, respondents were asked to indicate whether the use of GFA enabled them to improve their relationship with other citizens (Table 5.11).

Table 5. 11 Use of GFA vs improved relationship

Cape Access helped me to improve my relationship with other citizens	**Participants**	
	Total n=382	**%**
Agree	236	62%
Disagree	74	19%
I don't know	72	19%

Table 5.11 illustrates that many participants agreed that GFA has enabled them to socially connect with friends and family. The majority of users at each GFA that was visited were on Facebook or YouTube as compared to users that were busy doing other activities such as school work, business related activities or the search for employment. The study findings are

consistent with related studies that found that access to internet helps citizens improve their social interaction (Gillwald et al., 2019). Finally, of the investigated households, 62% were of the views that GFA has enabled them to meet their needs of engaging with other citizens. Thus, socially GFA is meeting citizen's relationship needs, and helping them improve their social well-being.

5.2.3 Geographical location

Geographical factors can have an influence on the success of GFA. They play a key role in an individual's ability to make use of the facility; therefore, the decision of deciding on where GFA facilities must be located should be done in consultation with the citizens in needs. The environment in which an individual lives determines whether certain valuable functionings will be realised by an individual (Kleine, 2013). During face-to-face interviews and focus group discussions, respondents suggested that some GFA facilities were located far from the citizens that needed them the most.

> *We liaise with those departments out there to communicate, especially the IDP, but based to the Ward committee meeting we had it come to the light that those staying in Ward 3 sees the GFA is very far from them (P1, 2017)*[16].

> *It is useful, it is available, it is near the community and after school is time to go home, students can go and do their research work there or maybe do their homework there (P5, 2017)*[17].

The two respondents (both from Bredasdorp) quoted above posit conflicting views in regard to location. In spite of the location of GFA intervention in Bredasdorp being far from the target audiences as per the first opinion, other participants believed the location of the GFA intervention was convenient. A lack of meaningful use of a GFA intervention as may be affected by the location if there are high costs associated with local transport. GFA interventions may be deployed within the reach of some citizens; while others who are not located close to the project might not be able to benefit from it.

The choice of location of GFA in Overberg District Municipality appeared to be negatively impacting the adoption and use of GFA. Out of the six towns that were investigated, respondents from only one town felt that the GFA was well located and servicing community

[16] Face to face interview with local municipality councillor – Cape Agulhas
[17] Face to face interview with Cape Access Regional Coordinator, Overberg Municipality.

needs effectively[18]. Local economic development managers from Bredasdorp and Hermanus felt that the uptake of the GFA facilities was lower than anticipated because some citizens perceived that the provincial and local government did not consider their views as important. To these managers, GFA facilities were strategically positioned to score political gain instead of putting emphasis on community needs. These informants were of the view that the emphasis should have been on serving the community that most needed the services, rather than those who were likely to vote for the leading political organisation within the municipality. The issues of race and political affiliation were perceived to be the main determining factors in the location of GFA facilities in the small towns.

This was strongly refuted by one policymaker who believed it was user's responsibility to take advantages of the services provided by the provincial government:

> *The facility is similarly available for everybody, so whether you are using it or not is not our responsibility. Our responsibility is to make sure that you know that the facility is there and what it can offer you. So otherwise we will have to come and change the people themselves when we have to change the circumstances that the people are living in (PP1, 2017)[19].*

> *So what else are you doing? Beside of going to GFA and make use of the facility and teach your kids, or chase them out of the house, and tell them go to GFA. I can relate that to person history when I was in school. What I did in the afternoon, I went to library, 4 to 5Km from my house, (PP1, 2017).[20]*

Users from Hermanus and surrounding towns making use of the Hawston GFA facility had to travel 10km or more to get to Hawston. In Cape Agulhas, the focus group participants citizens and former centre managers also reported having to travel long distances. They felt that the location of Bredasdorp GFA was not favourable to some community members. This raises the question of agency, an important element in the Capability and Choice Framework. Many potential beneficiaries do not have the choice (or cannot afford) to travel 15km in order to access internet or use the computer (Kleine, 2013). One GFA manager in Overstrand municipality believed that the service should be brought closer to citizens:

[18] Respondents from Elim in Cape Agulhas felt the positioning of GFA as accurate
[19] Face to face interview with Chief Information officer, Office of the premier - WCG
[20] Face to face interview with Chief Information officer, Office of the premier - WCG

> *I think it is 15km from Hawston to Hermanus. So when it comes to service delivery things are being done here from our GFA side. The people don't have to travel to Hermanus for something that will require 5min (OvP1, 2017)*[21].

The government official quoted above acknowledged that physical location was indeed a challenge for citizens who have to travel for 15km just in search of services. To her, users from Hawston did not need to travel long distances in search for services that they could access via GFA. The long distances were depriving users that could be interested in making use of GFA, since a return taxi fare might be unaffordable to those who are not well off. Many users apparently spend hours alongside the road trying to hike from their residential areas to Hawston and return.

In conclusion data demonstrates that geographical location plays an important role influencing how citizens make use of GFA. GFAs that are within the vicinity of users may experience a larger number of users as compared to GFAs that are located far from the citizens that need them most.

5.3 ICT characteristics

The Citizens Well-being Framework posits that ICT projects deployed in remote areas should display the following characteristics: connectivity; quality and quantity of equipment; staff support; and staff friendliness. These characteristics are interlinked and are all needed if users are to fully enjoy the benefits of GFA. The sub-sections presented below discuss each characteristic and evidence that was collected.

5.3.1 Connectivity

The issue of weak connectivity was noted by respondents from the Overstrand Municipality as well as centre managers from Cape Agulhas Municipality. These respondents believed that the Western Cape Government should introduce an ICT policy that promotes the introduction of Wi-Fi at each GFA. Respondents felt that Wi-Fi would help overcome problems of internet connectivity and increase accessibility, since users would be able to connect on Wi-Fi using their own devices. At the time of this investigation many potential users were being left out because of overcrowding in GFA venues, most typically after school hours. Focus group

[21] Face to face interview with GFA Manager, Overstrand Municipality

discussions respondents and respondents from face to face interviews believed that increased availability of Wi-Fi could decrease the number of on-site users who languished on the waiting list, since users could bring their ICT devices to the GFAs and connect to free Wi-Fi, thus avoiding the need to queue.

Weak connectivity was another factor that reportedly hindered effective use of the GFA interventions deployed in the Overberg district:

> *This is great project and I would like to see improvement done on this GFA. You see the things that I don't like is this offline. You see, since the time I'm sitting here the GFA is offline. If they could improve that then it could be better. I have been experiencing this for 2 years (OvP4, 2017)*[22].

> *The only challenge is the internet service because the internet is always off-line. Like the other time, we did not have internet for very long time. They need to change their service provider because now some time people don't want to come here. No one want walk, all the way then gets here, then there is not internet (OvP, 2017)*[23].

The issue of weak connectivity was also noted in Overstrand and Cape Agulhas. Respondents from these areas felt that the Western Cape Government should introduce a provision in its ICT policy that promotes the introduction of Wi-Fi at each GFA. As shown by Abrahams et al. (2022), the City of Tshwane in partnership with *Project Isizwe,* a non-profit organisation advocating free access to Wi-Fi for low income communities, rolled out one of the largest public Wi-Fi networks in Africa. The Tshwi-Fi network has more than 780 free Internet zones with 1,6 million users receiving 1GB of data daily, at speeds of up to 15 Mbps. Similarly, the Ethekwini municipality free Wi-Fi has been rolled out to 83 municipal libraries and 828 other public Wi-Fi hotspots. A good example to draw from in terms of ensuring ICT project sustainability will be replicating the buy-in concept adopted by the City of Johannesburg. The city relies on the *Vulindelele eJozi* Digital Ambassadors programme which trained 3000 young people equipped with tablets to train community members on how to use the City's web portal. Launching GFA without investing in citizens e-skills cannot produce intended policy outcomes. So, the Western Cape Government can draw some lessons from the City of Johannesburg in terms of equipping users with ICT enabler skills. Abrahams et al. (2022) postulates that the application of top-down approach during policy design and implementation continues to hinder the success of GFA interventions. Thus, a bottom-up approach which

[22] Face to face interview, an entrepreneur – Overstrand Municipality
[23] Face to face interview with a male, coloured, security company owner, Overstrand Municipality.

promote grassroots participation and the provision of e-skills is preferable. It would appear that to address the issue of power dynamics before policy design process is a must for the success of ICT related initiatives.

5.3.2 Quantity and quality of equipment

Printing facilities and a lack of enough computers was another challenge highlighted by respondents. As indicated above, GFA staff and users demonstrated their frustration in relation with the waiting time, time limits of usage and weak internet. GFAs are customarily deployed in poor communities in order to bridge the digital divide that exists between the haves and they have nots. Based on the Provincial and local Municipality policies; the selection of the location of GFA sites should have taken into consideration factors that included socio-economic conditions and population density. In this sub-section, the study examined the relation between GFA location and the level of crowding at the facilities. This research probed whether GFA facilities were crowded and explored the effects of this.

Table 5.12 shows that 26% of participants from Bredasdorp strongly agreed that their GFA facility was always crowded, while 39% responses were unsure. A similar finding was noted in Struisbaai, whereby 37% of participants agreed that facilities were always crowded, while 37% of participants opted for neutral. Across all study areas, 34% of participants agreed that the GFAs are crowded. The study results imply that there is a difference in perceptions in relation to GFA facilities being overcrowded between. The differences can be observed in the higher percentage of participants who opted to respond 'neutral' to the research question (see Table 5.12) in Genadendal,(20%), Elim (23%), Struisbaai (37%) and Bredasdorp (39%).

Table 5. 12 Location vs crowdedness

		GFA Crowded?					
Location		**Str. Agree**	**Agree**	**Neutral**	**Disagree**	**Str Disagree**	**Total**
Bredasdorp	Count	15	6	22	7	7	**57**
	%	26%	11%	39%	12%	12%	**100%**
Elim	Count	3	4	3	3	0	**13**
	%	23%	31%	23%	23%	0%	**100%**
Struisbaai	Count	5	11	11	1	2	**30**
	%	16%	37%	37%	3%	7%	**100%**
Hawston	Count	40	77	29	18	16	**180**
	%	22%	43%	16%	10%	9%	**100%**

Greyton	Count	14	12	2	15	6	**49**
	%	29%	24%	4%	31%	12%	**100%**
Genadendal	Count	11	19	10	5	4	**49**
	%	22%	39%	20%	10%	8%	**100%**
TOTAL	Count	88	129	77	49	35	**378**
	%	**23%**	**34%**	**21%**	**13%**	**9%**	**100%**

X-squared = 56.731, df = 20, p-value = 2.254e-05

The GFA located in Bredasdorp received negative ratings throughout the investigation as compared to other GFAs, especially with the level of overcrowding, customer support, friendliness, and consultations process.

Overcrowding was observed by the researcher during field work, when it was noted that users with the ability to learn computer skills faster, or those with pre-existing e-skills benefited more from using GFA than those needing assistance from GFA staff. As such, crowded GFA facilities may contribute to increasing the ICT divide.

In attempts to ensure that each person coming to the GFA could be given chance to access the computers, GFA managers from Greyton and Bredasdorp had become more creative. These managers indicated that:

> *I have decided to make few computers for adult because sometimes some people want to use the GFA for business, like submit tender, do SARS thing or send e-mail but when they come here they GFA is always full. I told most users must start coming in the morning then school children can come in the evening (OvM, 2017)*[24].

> *This GFA serves everyone, the young and the old generation, black, white and coloured community all relies on this GFA. This place is always full, if the government can increase the venue and bring more computers that will be nice. Also, they can bring WiFi so that some people can use their cell-phone or use laptop (CamP, 2017)*[25].

5.3.3 Staff support

The study examined users' perceptions of staff support in the different GFA locations/areas. This question was critical in order to evaluate whether the success or failure of a GFA was a result of the nature of support offered by the GFA staff. The findings in Table 5.13 show that 37% respondents felt that they did receive adequate support from GFA staff, while 23% of

[24] Face to face interview with training manager – Elim, Cape Agulhas

[25] Face to face interview with GFA manager, Cape Agulhas

respondents opted to remain silent on this question. This raised an alarm. The findings show that GFA staff support offered to users at different GFA facilities in Overberg District is generally considered to be the same in all locations. However, of concern was the higher percentage of users that opted for a neutral response in the two localities (30% in Bredasdorp and 40% in Struisbaai) which implies that users of GFA located in these two localities were not happy with the level of services received (see question 14 on appendix F).

Table 5. 13 Location/Areas vs staff support

Location		The Level of Support Offered by GFA Employees as per Location					
		St. Agree	**Agree**	**Neutral**	**Disagree**	**St. Disagreed**	**Total**
Bredasdorp	Count	13	12	17	7	8	**57**
	%	**23%**	**21%**	**30%**	**12%**	**14%**	**100%**
Elim	Count	2	4	3	1	2	**12**
	%	**17%**	**33%**	**25%**	**8%**	**17%**	**100%**
Struisbaai	Count	5	6	12	4	3	**30**
	%	**17%**	**20%**	**40%**	**13%**	**10%**	**100%**
Hawston	Count	25	77	34	31	15	**182**
	%	**14%**	**42%**	**19%**	**17%**	**8%**	**100%**
Greyton	Count	7	19	7	8	8	**49**
	%	**14%**	**39%**	**14%**	**17%**	**16%**	**100%**
Genadendal	Count	7	22	9	10	2	**50**
	%	**14%**	**44%**	**18%**	**20%**	**4%**	**100%**
TOTAL	Count	59	140	82	61	38	**380**
	%	**16%**	**37%**	**23%**	**14%**	**10%**	**100**

X-squared = 27.17, df = 20, p-value = 0.1305

5.3.4 Staff friendliness

The study further explored how respondents viewed their interactions and relationships with staff working at each GFA, as it was thought that on the success or failure of GFA might be influenced by this. The results presented in Table 5.14 show differences between the areas of study, but overall (69%) there was a positive ('strongly agreed' or 'agreed') rating of GFA staff being friendly. Users from Cape Agulhas (Bredasdorp, Elim & Struisbaai) have different experience thus not entirely in agreement. As presented in table (5.14), there was significant number of participants from three localities that remained neutral such as Bredasdorp with 30%, Elim 33% and Struisbaai 40% (see question 14 on appendix F).

Table 5. 14 Area vs GFA staff being friendly

Location		Str. Agree	Agree	Neutral	Disagree	Strong Disagreed	Total
Bredasdorp	Count	17	14	17	3	5	**56**
	%	**30%**	**25%**	**30%**	**6%**	**9%**	**100%**
Elim	Count	3	4	4	1	0	**12**
	%	**25%**	**33%**	**33%**	**9%**	**0**	**100%**
Struisbaai	Count	4	13	12	1	0	**30**
	%	**13%**	**43%**	**40%**	**4%**	**0**	**100%**
Hawston	Count	49	89	24	16	6	**184**
	%	**27%**	**48%**	**13%**	**9%**	**3%**	**100%**
Greyton	Count	12	22	8	5	2	**49**
	%	**24%**	**45%**	**16%**	**10%**	**5%**	**100%**
Genadendal	Count	9	25	8	5	2	**49**
	%	**18%**	**51%**	**16%**	**10%**	**5%**	**100%**
TOTAL	Count	94	167	73	31	15	n=380
	%	**25%**	**44%**	**19%**	**8%**	**4%**	**100%**

X-squared = 32.685, df = 25, p-value = 0.0365 significant

Table 5.15 present a summary of factors that influence the success or failures of GFA. The factors were categorised in three types and are presented in table 5.15. They are a combination of factors which were drawn from findings from household's surveys, face to face-to-face interviews and focus group discussions. Building on this summary, the study further presents opportunities that those making use of GFA have realised.

Table 5. 15 Factors that are affecting the effectiveness of the Cape Access programme

Administrative factor (Provincial Government)	Capability factor (Users & GFA facility)	Financial factor (Users & Provincial Government)
• Racial divide • Technical challenges • GFA geographical position	• Age group • Uneducated users • Limited space • Lack of awareness • Poor Connectivity	• Poverty • High level of unemployment • Limited computers • Crowded place

5.4 ICT facilitated opportunities

Several ICT scholars, policy makers believe the deployment of ICT programmes in rural communities increases the quality of life of individuals and communities (Gwaka, 2018). The Western Cape Government introduced GFA with the aim of increasing development

opportunities for its. The fundamental aim was to ensure citizens were exposed to a variety of opportunities to help them improve individual and community well-being (WCG, 2010; 2012). The basic premise was that access to opportunities and meaningful use of these opportunities would make it possible for users to create a sense of life satisfaction which would improve their well-being. This section presents a discussion on such potential opportunities for citizens from the Overberg District that were facilitated by GFA. These opportunities were: access to education; improved ICT literacy; employment opportunity; social cohesion; access to professional sport; connectedness; entrepreneurship opportunity; and access to current business and government information.

5.4.1 Access to education

This study found the introduction of GFA in Overberg District was viewed as a positive thing by citizens with a strong interest in education. Findings from face-to-face interviews and focus group discussion indicate that students were the lead GFA. In Elim, about 11 students were accepted to study at the institutions of higher learning as result of submitting their application online via the GFA. Similarly, other GFA facilities reported that a number of students had gained access to universities or colleges resulting from the use of GFA. Many of these students came from disadvantaged households. The training manager and GFA manager in Cape Agulhas were among those who were commended on the success of the GFA in the area of learning and access to university. One manager noted that:

> *Here in Elim grade 12 learners use this GFA for university application submission. We don't have internet café here so our learners rely on this GFA. It is really a good initiative because students can do their school work here (CamM, 2017).*[26]

A study conducted by Gwaka (2018) suggested that access to technology can create new opportunities for young people to explore unfamiliar places, enabling them to save time and costs. Internet use can provide citizens with information, the opportunity to learn new skills, entertainment, services, and social connections which can be beneficial for their well-being. This is what motivated the introduction of GFA in the disadvantaged communities of the study area.

[26] Face to face interview with GFA manager, Cape Agulhas Municipality

5.4.2 Improved ICT literacy

ICT literacy was listed as one of the opportunities that GFA might bring to the disadvantaged communities of the Overberg District. Based on the household survey results, more than 50% participants were in possession of ICT devices at the time of this study. This is an indication that citizens in Overberg District have gained some level of e-skill capacity. Those that participated in the focus group discussions suggested that citizens were gaining new skills. One respondent indicated that:

> *The GFA is offering free training, you just to register on time because the space is always limited due to limited space at the centre. So most of us here have learnt various skills and got certificates after attending some training at the centres (Focus G, 2017).*[27]

The findings of this study show that GFA facilities in Overberg District have become learning centres for school leavers and other community members. Each local municipality offers ICT training sessions to citizens interested in improving their e-literacy. A variety of courses was found to be available at each GFA although some informants felt that the learning structures could be improved. There was a sense that some community members were given access to critical learning courses, at the expense of other as a result of trainers demonstrating favouritism towards certain group of citizens.

5.4.3 Employment opportunities

The research explored the use of GFA for job searches, and the influence of education levels on the use of GFA. Table 5.16 shows that 39% of those who had only a basic level of school education (L1+L2) felt that GFA was not helpful for job search (18% of this group strongly agreed that GFA was useful for job searches). Of those with post-school education (L3-L5), 46.9% said that GFA was not helpful in job searches, with 6.3% stating that it was helpful.

If the GFA is going to benefit people searching for jobs, certain basic internet skills are necessary. Those whose school education did not provide them with those basic skills would find that the services provided by the GFA were helpful, while those who already had those skills would not need that help since they were capable of making use of PC and internet without guidance from GFA staff. On one hand, education level might be a determining factor in the successful use of GFA for job search, because to certain extent one needs to learn new skills to successfully search for jobs on the internet. On another hand, in terms of the

[27] Focus Group Discussion, a female participant – Cape Agulhas Municipality

relationship between level of education and usefulness of the GFA for job search, the study finding suggests here is significance relation but the actual challenge lies in the ability to secure employment as opposed to searching for employment. This finding support, previous study that show that people with higher education level are likely to use ICTs for job search as compared to those who are less educated (Kleine, 2013).

Table 5. 16 Education vs job search

Education Level		**Does education level influence your ability to use GFA for job search?**					
		St. Agree	**Agree**	**Neutral**	**Disagree**	**St. Disagreed**	**Total**
School (L1+L2)	Count	64	29	31	80	134	**338**
	%	**18.9%**	**8.6%**	**9.2%**	**23.7%**	**39.6%**	**100%**
Post School (L3-L5)	Count	3	2	3	15	9	**32**
	%	9.4%	6.3%	9.4%	46.9%	28.1%	100%
TOTAL	Count	**67**	**31**	**34**	**95**	**143**	**370**
	%	**18%**	**8%**	**10%**	**25%**	**39%**	**100%**

1. X-squared = 8.8012, df = 4, p-value =0.0663

GFA managers from Bredasdorp and Overstrand Municipalities stated that some users successfully found jobs after starting to make use of the GFA services, because users were taught ICT skills as well as skills in e-mail correspondence, job search, and CV writing and submission. The views of GFA managers were supported by the view of those who participated in focus group discussions:

> *Almost everyone here, use that place to search for jobs. Maybe only this old man is not using the GFA to search for job because his struggling with e-English. But is interested in learning computer because he said when sit in front of computer his always seeing himself like a white man (FGD, 2017)*[28].

> *The challenge we are facing is that a lot of our people don't have jobs so they are moving to Caledon or Cape Town to go search for job. Some they use this place to search for job offer then the employers will call them to go for interview (TheeP, 2017)*[29].

> *As for me, the issue is English, I cannot read and speak English properly so I am unable to search for job like the other are doing. You see I am old, and my language is Xhosa, I speak to Xhosa so English is not my language, and I don't like Afrikaans that much but I want to learn how to use computer (FGD, 2017)*[30].

[28] Focus Group Discussion, a black female. Former GFA manager, Cape Agulhas Municipality

[30] Focus Group Discussion, old black male, Cape Agulhas

The study's findings show that the use of GFA facilities increased employment opportunities for users. However, due to high levels of unemployment that exists in the study area, not all citizens are able to benefit from GFA opportunities. Some respondents argued that sitting at a GFA venue would limit their chances of finding employment while they have to put food on the table. Therefore, the study findings concur with prior studies such as Sey and Fellows, (2011) that shows the issue of unemployment remains a big challenge to ICT adoption and usage in rural areas.

5.4.4 Social cohesion

South African people continue to experience the effect of apartheid. This awful experience is most acutely felt in rural areas. GFA users of colour who were part of this study expressed their disregard of how applicants for critical ICT skills are selected and were unsatisfied with the medium of learning. In spite of this, GFAs were perceived by others as a place for improving social cohesion. GFA facilities serve all racial groups; nevertheless, in the case of Overberg District the majority were members of the coloured community. The presence of GFA can shape how citizens relate to each other. To some, GFA was helping to improve community relationships; others saw the GFA project as a continuation of apartheid policy. This was because members of the black community expressed their discomfort with the use of Afrikaans as the medium of instruction. Two participants from a focus group discussion in Cape Agulhas Municipality made mention of the following:

> *The GFA manager is a good person, his always available to help, he even helps with e-mails. However, the lady working with him at the GFA is not the right person. She always reserves spaces for coloured as opposed to black, sometime she will keep her child sit on the chair and watch stuff on the computer yet black person will be told to come back later (CamP, 2017)*[31].

> *For example, most of time they teach in Afrikaans yet is not everyone that speaks Afrikaans. In terms of training selection, there are certain courses that are reserved for coloured I think. For example, there is this course that is very expensive - ICDL. However, they always select coloured for that course yet we all want to learn the same thing (Focus Group, 2017)*[32].

[31] Focus Group Discussion, black female - Cape Agulhas.
[32] Focus Group Discussion, former GFA manager - Cape Agulhas.

5.4.5 Access to professional sport

Sport activities are among the activities that are performed by citizens interacting with GFA, especially the younger generation. The study found that several users had made use of GFA to search for sport sponsorship and placement. GFA was therefore opening opportunities for those interested in expanding their sport capability. In Cape Agulhas, one community member was selected to join Rugby team based in Gauteng; the community attributed his achievement to access to and effective use of GFA as noted by a participant:

> *This GFA is really helpful to our community. He is playing rugby in Johannesburg. It all started here, he applied at GFA and was accepted and now is now living in Gauteng, so this GFA is really important, and it has very good effect to community (CamP, 2017).*[33]

5.4.6 Connectedness

To test the level of connectedness between family and friends, two separate questions were designed. First question investigated the number of family members per household making use GFA and the second question examined the number of friends making use of GFA, and whether they use GFA to stay connected. This was achieved by asking participants how many of their family members and friends use GFA and for what purposes. The majority of the participants indicated that they use Cape Access to connect with friends.

When studying the number of users per household, this investigation found that out of 385 participants, 91% (n=353) were using GFA facilities to connect with friends or family members, 31% (n=119) had one user per household, 34% (n=131) had two users per households, and 15% (n=56) had 3 household members making use of GFA. Thus, at the time of this study, most households were making use of the GFA, with two individuals per households relying on GFA for computer and internet connectivity. However, in terms of exploring the highest number per households, the results revealed there were about nine households (2%) had five GFA participants per family and 5 (1%) had 6 individuals in one household making use of GFA.

[33] Face to face interview with GFA manager, Cape Agulhas Municipality

5.4.7 Entrepreneurship

The use of ICTs for business purposes by marginalised communities can improve the livelihoods of the poor by providing them with information they need. In this study, however, only a very limited number of respondents made use of GFA for business purposes. A few participants had started their own businesses. Two respondents were actively making use of GFA for advertising their business as well as engaging with various stakeholders, including provincial and national government officials. These respondents were based in Theewaterskloof and Overstrand Municipalities. A face-to-face interview was conducted with three entrepreneurs who were optimistic about the contribution of GFA in growing their businesses. These were novelty entrepreneurs that saw opportunities embedded in GFA and took a bold step. Among these respondents, one registered his security company by submitting all required documents via GFA. This respondent noted that:

> *I always come to use GFA for advertising. When I am stuck I always ask the GFA manager to help me out. She is very nice and always helpful. She helped me with submitting all the documents that we needed to SIRA. Also, she taught me how to use e-mail (TheeP, 2017)*[34].

> *We have a number of white people, particularly entrepreneurs that always come here to do their business activities because it is free. They don't pay, but if they were to go to internet café they were going to pay a lot of money. Also, they prefer using this internet because it helps them save on their home-based internet (TheeP, 2017).*[35]

5.4.8 Access to current business and government information

Another key objective of the Provincial Government in introducing GFA in rural communities was to enable citizens to gain access to government and business information. , ICT has changed the rules of engagement between government and citizens; changed how citizens access information; and the entire work environment. Current information is something that everyone needs in today's world. Table 5.17 shows that GFA made this possible for 64% of participants who noted that they were now easily able to access government information, compared to earlier days when they did not have GFA in their locality:

Table 5. 17 GFA vs Improved Access to Government and Business Information

Improved Access to Current Government and Business information		**Participants**	
		Total n=382	**%**
	Agree	246	64%

[34] Face to face interview with a male, coloured, security company owner, Overstrand Municipality.
[35] Face to face interview with the c-GFA manager, Greyton - Overstrand Municipality

	Disagree	51	13%
	I don't know	85	22%
	Total	382	99%

Table 5.17 show that more than two-thirds of respondents felt that GFA enabled users to access government and business information. Residents of Greyton felt that reliable access to computer and internet services was very imperative in their town, which lacked opportunities. GFA made it possible for poor citizens to access essential government and business information, such as health information and job vacancy Information about employment is an important resource that a community deserves to have access to, yet in many rural areas' employment remains a big challenge, therefore information should be brought closer to those in need (Roztocki et al., 2019).

5.5 Influence on decision making

Citizens living in remote area have their own culture and norms guiding how they live and respond to different situations, including to technology. Citizens' ability to adopt and use GFA successfully is influenced by several factors as indicated in Table 5.15. This section presents two additional variables that were found to influence the use of GFA implemented in the Overberg District. Respondents were asked to reflect on what were the reasons that led them to start using GFA. Collected data shows that most users were introduced to GFA by their friends and their decision to continue using the GFA remained influenced by their friends. At the time of this study participants indicated that they tended to visit GFA in groups. Twenty-eight (7%) participants reported that their decision to use GFA was influenced by at least one friend; 30 (8%) were influenced by at least by two friends; 29 (7%) were influenced by at least three friends; 33 (9%) 9% were influenced by about five (5) friends; while 43 respondents (11%) were influenced by about 10 friends. These descriptive findings were supported by face-to-face interviews, where one respondent said:

> *You see this place is small, people know each other here, so it is easy for us, we look after our children, so no one is alone. Even when you go to that GFA you will see children are in groups, when they finish they wait each other and after all are done they come home together (OvP, 2017).*[36]

[36] Face to face interview with GFA regional coordinator – Overberg District

The issue of safety was among the reason that determined whether one should continue making use of GFA or not. For example, in Hawston the youth are prone to joining illegal fishing of abalone (also known as perlemoen in the Afrikaans community) due to lack of formal employment opportunities, and sometimes ending up selling illegal drags hence parents are always concerned with children safety. Despite safety issues, those who decided to continue making use of GFA do walk to GFAs in a group, as that brought a sense of confidence, and security. The act of walking in group when visiting GFA venues demonstrates the strong level of influence of and support from community members.

5.5.1 Social pressure (social association)

To learn how social pressure is influencing the use of GFA this study made use of survey questionnaires and face-to-face interviews with local municipality employees. Table 5.18 shows that citizens using GFA were likely to influence others to use GFA. Sixty-one percent of participants agreed that their friends were the reasons why they had decided to make use of GFA. It was also evident that households with citizens that were making use of GFA were prone to have more members making use of the services offered at GFA as compared to households with no member that is using the GFA facilities.

Table 5. 18 The influence of friends & family on the use of GFA

The use of GFA is likely influenced by others		**Participants**	
		Total n=382	**%**
Valid	Agree	236	61%
	Disagree	74	20%
	I don't know	72	19%
	Total	382	99%

In spite of Kayisire & Wei's (2015) finding which shows imbalance in ICT funding against adoption level in many developing countries, this study demonstrates that citizens in Overberg District have adopted ICT projects as shown by table 5.18. One respondent in a face-to-face interview indicated that:

> *In my household 4 of us make use of this service, myself, my wife and two children. The last one does come here to play games; the other does come for his school project because his about to go to high school and my wife always come here to check her e-mails (OvP4, 2017)*[37].

[37] Face to face interview with a male entrepreneur, Overstrand Municipality

The respondent (Ov4, 2017)[38] identified the benefits of using GFA because he and his family member were gaining benefits from access to free computer and internet which they otherwise would not have had. The study found that 131 households (34%) had two family members making use of GFA; 119 (31%) had one member making use of GFA; and 56 (15%) had 4 members of the family that were actively using GFA further strengthened the view that citizens in the study area demonstrated interest in the use of GFA services.

The focus of this study was not on examining the number of users but on learning what do users do when they are presented with opportunities embedded in the GFA. Putting the emphasis of investigation merely on number of computers and users will not answer the questions that led to this evaluation, which seek to identify the effects of GFA on the lives of users. However, a respondent from the department of the Premier noted that:

> *We have never measured the outcome and the problem is that we have not in the past done baseline assessment of the community before we have a new GFA so before we measure the impact we have to measure the baseline first before the facility opened and after the facility has been opened we have not done that (PP1, 2017)[39].*

This study acknowledges the importance of a having a large number of individuals making use of GFA. This is because before one can evaluate the contribution of GFA on the well-being of poor people, there must be regular users who can be assessed. This view is supported by one of the provincial executives who claimed that:

> *The government is putting the GFA there; you cannot force people to go there. If the person is living on social grant, he doesn't have any other responsibility beside of ensuring his kids are using Cape Access to improve themselves, so that they don't become dependent on social grant (PP1, 2017)[40].*

Not making use of GFA doesn't mean that they have nothing else to do but indicates that they have the choice to decide what to do with their time (Kleine 2013; Sen, 1999). The results of this study indicate that an individual's use of GFA intervention may have more do with individual agency and what the user wants to achieve in life as opposed of making use of GFA merely because it has been brought to their community. Agency is determined by what a person values, hence the availability of resources does not guarantee that people will make use of them

[38] Face to face interview with a male entrepreneur, Overstrand Municipality
[39] Face to face interview with Chief Information Officer, Dept. of the premier -WCG
[40] Face to face interview with Chief Information Officer, Dept. of the premier -WCG

(Kivunike, 2015:47). The investigation further examined the estimated number of friends that were making use of the service. This was achieved by asking participants to estimate the number of friends and relatives making use of GFA. Respondents were able to show that about 7% (28 households) knew at least one (1) family friend that was using the service, 8% (30 households) knew at least two (2) that was using GFA. Table 5.19 present more details on the number of users that are aware of their friends and relating that are making use of GFA in the Overberg District.

Table 5. 19 Number of friends making use of GFA

Friends and relatives making use of GFA	**Households**	
	Total n=385	**%**
1	28	7%
2	30	8%
3	27	7%
4	29	8%
5	33	9%
6	28	7%
7	15	4%
8	6	2%
9	3	.8%
10	43	11%

The results presented in the Table 5.19 strengthens the view of the government's policy which argued that if GFA was not beneficial and changing users' lives, then people would not make use of the GFA. According to the Chief Information Office (quoted below), the original intention of the Provincial Government was to make sure GFAs were implemented in different rural communities; the issue of whether citizens made use of them or not were not their focus:

> *The earlier focus of the programmes was to supply interventions while expecting citizens will use it, though it is only now when we are looking at what do citizens want and how can we service their needs. – (PP1, 2017)*[41]

> *The project is very great, my kids and I are grateful and happy. It is also very helpful; the school kids now have the place to do their work. People can't help but makes use of the GFA. I have friends that make use of the GFA and my children do make use of it. My other friend just completed the course (OvP4, 2017)*[42].

[41] Face to face interview with Chief Information Officer. Office of Premier - WCG
[42] Face to face interview with a middle age coloured female, Hawston, Overstrand Municipality

The respondents discussed above believe GFA was making significant contributions to the lives of citizens because it is the only place people can use computers and internet for free. Nevertheless, several scholars allude to the fact that the impact of ICT interventions on the lives of users should not be evaluated based on the number of users but on how they are meeting their needs and expectations (Tabassum et al. 2019). The effects are supposed to be evaluated on the improvement of individual and community well-being. Although government officials that participated in this study argued that the success of GFA should be evaluated based on the number of users because there was no framework that can be used to measure individual well-being, stated CIO:

> *The project is making positive changes in the life of the people, but my problem is measuring impact. We have people who got jobs, internships, went overseas or started own business but the challenge we are sitting with is measuring impact of the program on the kids coming out of school, who come do his assignment (PP1, 2017).*[43]

This response illustrates that there are expectations that the community will make use of the GFA intervention as long as those GFAs exist in their communities. It assumes that citizens have some form of obligation toward improving their own lives. But the government cannot force them to make use of ICT project despite the fact that the government has a responsibility to ensure facilities that can enhance the well-being of poor people are provided. However, policymakers appear to forget that when it comes to ICT, provision alone is not enough (Heek, 1999). Citizens need to be encouraged to make use of ICT facilities because those in rural areas require an incentive to exploit ICT for their own well-being (Kivunike, 2015:84).

5.5.2 Personal preference

In human development studies there are two critical concepts that are relevant to this study, aspirations and preferences. Individual aspirations and preferences play a critical role in how people use opportunities that are available in the community to advance personal well-being. They are both mental phenomena that inform an individual's desire and wishes. Aspiration focuses on future goals, while preference focuses on solving more immediate needs. In most cases, aspiration is informed by one's social context and interaction with other (Conradie & Robeyns, 2013). Personal preference plays an important role in what should be accessed, when and how. In this evaluation, it was found that a marginal number of citizens in the Overberg District preferred using their mobile phones as opposed to making use of GFA. This was in

[43] Face to face interview with Socio and economic Director, office of the premier - WCG

line with the finding that GFA users complained of crowding and lack of computers at GFA centres, as well as the [44] lack of reliable internet in some GFAs. Relying on mobile phones also gave a perception of having control over one's time. In some GFAs, support form staff was unreliable,[45] and some users perceived that some GFA staff were unfriendly[46]. In the long run, the increased desire for using personal mobile phones to access government information and other services may have negative implications on the success of GFA deployed in rural areas.

However, with the rise of COVID-19 and the need to access updated health information, GFAs have become very important sources of government health information in regards to community health and safety. So GFAs may continue to play a significant role in closing information gaps that persist between government and citizens, despite the rising ownership of smartphones. GFA remains helpful in areas with low ownership of smart phones, and also remains relevant in terms of enabling citizens to access free Internet. Similarly, Correa et al. (2018) indicated that computers provide certain unique characteristics of which smartphones cannot offer, such as a larger screen, download and upload options and greater speed. This makes computers more attractive to poor citizens. Hence citizens using mobile phones hardly interact with government online service as compared to those who relied on both devices (Du Plessis & Mestry, 2019). Finally, GFA remains relevant in terms of enabling citizens to freely access computers and Internet as ownership of mobile phone doesn't justify access to data; yet citizens need data in order to access Internet.

5.6 Individual choice (on adoption and use of GFA)

Citizens have the right to adopt and use technology or not; they are not obligated by any law or regulation to make use of GFA facilities. Therefore, individual choice is at the centre of GFA adoption and use. The Citizens Well-being Framework positioned individual choice at the centre of GFA to indicate that increased access to opportunities could influence a citizen's decision on whether to take advantage of GFA, or not. Similarly, increased choice helps an individual to decide on which opportunity to access. The study found that some citizens in the study area were aware of the existence of GFA in their community but had opted not to use the GFA. To them, the search for employment was the main reason not to use GFA. These citizens

[44] Table (5.13) GFA are perceived to be crowded place
[45] Table (5.14) GFA Staff working at some GFA are not supportive
[46] Table (5.15) A lack of friendliness among some GFA staff

used their individual choice in their conclusion that enhanced access to ICT facilities was not a guarantee of usage.

Citizens suggested that public funding which was used to rollout GFA facilities in Overberg District should have been invested in job creation projects, since the majority of the citizens in the area are jobless. Also, the findings indicate that citizens' preferences were on searching for employment instead of making use of GFA, as noted by Local Economic Development manager:

> *The majority of our citizens live on government grant that is why old generation hardly use the GFA. They don't have time to come sit here, they prefer to go look for job. I think the money should have been invested in a job creation project. Also, they must put posters in the GFA to let know people what they can benefits out using the GFA (Camp, 2017).*[47]

Sen (1999) demonstrates that to explore an individual's freedom to lead the life he wants, the evaluation should go beyond exploring the capabilities of a person's living, to exploring other objectives (e.g. social goals not directly related to one's own life). Human capabilities constitute an important part of individual freedom. How citizens are making use of GFA depends on what an individual want to achieve in life. To conclude, two main groups emerged from the findings of this study. The first group comprised individuals that chose to make use of GFA to advance their individual well-being. The second group was made up of individuals who believed GFA is for school learners, therefore instead of spending time at GFA is better to use it on searching for employment. Here we see both users and non-users making use of their individual choice to pursue the future they want to leads.

5.7 Individual conversion factors

The freedom to lead a different type of life is determined by the personal capability set, agency and choice. Yet the individual's capability depends on a variety of factors, including personal characteristics and social arrangement. For example, this study found that the desire to achieve a certain level of functioning influences the use of GFA. In terms of how education influences citizens' usage of computer, Table 5.20 reveals that there is no significant difference between the school goers and the post-school goers. Those with education (L1+L2), had a response rate of 26.1% strong agreed and 43.1% agreed. In the same way, those with education post-school

[47] Face to face interview with a middle age female, a Local Economic Development manager – Cape Agulhas

(L3-L5), had a response rate of 37.5% strongly agreed, and 31.3% agreed, which shows that school leavers (L1+L2) were prompted to use the free services for their school activities as compared to college and university graduates. Therefore, the extent to which an individual's desire to achieve certain functioning may have major influence on the drive to use GFA deployed in rural areas. Education (L1+L2) users are largely using GFA to do school assignments, also they have strong desire to use social network via the use of GFA. The table 5.20 present data on the different usage of GFA by education level.

Table 5. 20 Education vs use of computer

Level Of Education		**Does education influence your ability to make use of computer?**					
		St. Agree	**Agree**	**Neutral**	**Disagree**	**St. Disagreed**	**Total**
School (L1 +L2)	Count	89	147	53	24	23	**325**
	%	26.1%	43.1%	15.8%	7.3%	7.6%	100%
Post-School (L3 – L5)	Count	12	10	6	1	3	**24**
	%	37.5%	31.3%	18.8%	3.1%	9.4%	100%
TOTAL	Count	**101**	**157**	**60**	**26**	**29**	**373**
	%	**27.1%**	**42.1%**	**16.1%**	**7%**	**7.8%**	**100%**

X-squared = 3.3939, df = 4, p-value = 0.4942

To conclude, the findings in Table 5.20 demonstrate that the use of GFA by respondents in this study was motivated by individual desire to achieve a certain functioning, as compared to education level. In this scenario differences in education level are not a major issue. Personal characteristics consisting of things learnt and inner knowledge, competence and creative ability, a desire to achieve more and individual agency play major differences. Individuals need some form of motivation and inspiration in order to make use of personal agency. A lack of ability to convert available resources and opportunities presented to citizens by GFA contributes to some citizens not using the GFA.

5.8 Chapter summary

This chapter, using empirical evidence from the study area obtained using mixed methods, has provided a detailed description of the study findings. It demonstrated that the socio-economic attributes of the community such as lack of employment opportunities contributed to some citizens not valuing the importance GFA. The chapter also examined GFA contributions to social cohesion, individual decision making and increased opportunities. In term of social cohesion, GFA facilities were used as places where individuals could go and relax, make friends and safe places where children could spend time after school hours. Despite of this

positive aspect of GFA in relation to social cohesion, the findings revealed that GFA might worsen racial divides that exist within the area of study, since some citizens perceived that the services offered at GFAs were accessed based on social preferences.

In terms of decision making, the study found the use of GFA had extended individual ability to decide when and how to pursue certain personal goal. GFA had exposed them to a variety of opportunities that they could take advantage of in the process achieving their goals. Therefore, GFA contributed to improving individual and community well-being. In regard to policy design and implementation, the study found that citizens' views were not incorporated in the process of designing and implementing the GFA policy. The study showed that the whole process of designing and implementing the GFA policy wasn't really about identifying what citizens wanted but what the government had believed should be done for the community. Furthermore, GFA projects, just like other Provincial ICT projects, are not exempt from technical challenges. The major factors affecting GFA were identified as internet breakdowns, administrative constraints, lack of space and lack of awareness about the existence of GFA interventions. However, the contributions of GFA towards desired effects on socio-economic condition and improved citizens' well-being need to be examined further. Therefore, in the next chapter, the study shifts to closely examine the exact effect of GFA on well-being of marginalised citizens living in the study area and demonstrate where improvement is needed.

Chapter 6: THE EFFECTS OF GOVERNMENT FACILITATED ACCESS ON CITIZEN WELL-BEING

Chapter overview

Building on the previous chapter, the emphasis of this chapter is on the last question of the study which evaluated the effect of Government Facilitate Access (GFA) intervention on the well-being of marginalised communities living in rural areas and on service delivery. Individual well-being can be improved by having more choice and opportunity, (Kleine, 2013) hence it is important to investigate whether the provision of GFA increased users' choices and opportunities. The study was systematically designed to be cognisant of the concept of well-being as discussed in the Capability Approach (Sen, 1999). This was done by identifying indicators of well-being from the literature, and then incorporating them into the research instruments to collect data in the field (See Chapter 4). The emphasis was on indicators that were simple and clearly understandable. Also, the study limited a number of indicators in order to allow the evaluation to clearly discover whether there is any progress that has been realised by users as a result of using GFA. The identification of themes took into consideration Sen's Capability Approach as a normative framework that believes social arrangements should be mainly evaluated according to the extent of freedom that people have to promote or achieve functionings they value highly (Sen, 1992; 1999).

Identified variables that demonstrated the broad-based benefits of using GFA, and which were considered for this evaluation included the following:

- "use of GFA has increased income generation opportunity for me";
- "the use of GFA intervention has increased my e-skills and competency"; and
- "the use of GFA intervention has increased mobility".

Other important variables which respondents reflected on were:

- "GFA has enabled me realise my life wishes";
- "GFA increased access to job and research information";
- "GFA increased my interaction with government"; and
- GFA enhanced my confidence level and business opportunities".

Each of these variables helped to measure whether participants in the study were enabled to realise some of their life wishes by their involvement with the GFA. The findings in relation to how GFA had an effect on citizens' well-being will be examined under the following sub-headings: Social Well-being; Political Well-being; Economic Well-being; and Psychological Well-being. Thereafter, a discussion on Environmental Well-being will be presented.

6.1 Social well-being

The World Health Organisation (WHO) (1984) identified social well-being as a central component of individuals' overall health. It is necessary to have well-functioning societies from a social, political and economic standpoint in order to effectively enjoy the effect of social well-being. In policy design for the management of human capabilities, the concept of social well-being includes environmental, social, economic and political elements, and the relationships between these. In this study the emphasis was on all aspects that contribute to enhancing individual social well-being from social to psychological, economic to political and environmental well-being. Variables representing social indicators included happiness; education; learning; employment and the quality of working life; time and leisure; command over goods and services; physical environment; social environment; and personal safety. Social well-being is further concerned with cultural values, knowledge systems and human diversity that contribute to a vibrant and thriving human community.

The study found that there was an improvement in citizens' social well-being as result of regular usage of GFA. Citizens who used GFA to remain connected to their family members and friends noted improved relationships. Baron and Gomez (2012) show that GFA gives users a stronger sense of belonging; it offers users better connections with private citizens; new opportunities for advancement and collaboration; and an increased sense of ownership of their destiny and their future. This point was reaffirmed by this respondent:

> *Socially this GFA has contributed on my confidence, and not only confidence but I have learnt a lot when Ida and Jolene always come and teach me things that I didn't know so now I can go and do secretariat kind of job because of the computer skills (OvP7, 2017).*[48]

[48] Face to face interview with female entrepreneur, Genadendal – Overstrand Municipality

When it comes to social well-being this respondent showed how the use of GFA enabled the him/her not only to benefit but it also implies that GFA was positively affecting the social life of this user. The GFA made it possible for individuals to meet and share their learning experiences together, thus enabling them to exchange ideas that could improve their socio-economic position. GFA offered free ICT training to users, enabling them to meet their educational needs. As per the lens guiding this study, social opportunities include education and social interaction as measures of well-being. For example, this respondent noted the gap between service providers and citizens, and the ability of GFA to create opportunities for citizens to support each other by exchanging knowledge, which is a positive sign of social interaction:

> *I do everything at the GFA. There is major change in my life because of the business, and not only me but other people that I do help through this business. I make food not only for the inmates but do help other people (OvP3, 2007).*[49]

The fact that citizens were capable of interacting electronically via GFA, and physically when meeting at GFA facilities, increased their ability to exercise individual preferences, leading to life satisfaction, since important information could be exchanged through this interaction. Any intervention that enables individuals to realise their aspirations, satisfy their personal needs or to help them cope with their environment in order to realise their life wishes can therefore be viewed as a positive intervention.

The emphasis in the study was not income generation. Rather, the study focussed on how the income generation processes and access to critical information enabled respondents to meet other individual well-being outcomes. For example, the fact that her business created an opportunity for her to support another community member with food parcels created for one respondent a sense of achievement and life satisfaction. Socially this participant played an important role in helping another person who was in need. Here we see that both participants had achieved several functionings comprising of emotional well-being, independence, happiness, and personal development. By contributing to the welfare of others through job creation and helping them with food brought a sense of happiness. Finally, the participants (OvP3 and OvP7) took advantage of the educational opportunities offered at the GFA to improve their ability to use ICT (after gaining relevant e-skills, knowledge and so on) which then enabled them to effectively make use of capabilities set (opportunities) presented by GFA.

[49] Face to interview with a female entrepreneur, Genadendal – Overstrand Municipality

It seems respondents' experiences of the effects of GFA on their social well-being were further expressed through increased access to information. The respondents were asked to indicate their level of agreement or disagreement in relation to GFA improving access to information. Table 6.1 shows that GFA intervention contributed to improving access to government information, including access to South Africa Revenue Services and applying for government tenders. Access to information that participants viewed as critical brought a sense of satisfaction, leading to positive emotions and reduced stress levels that can cause negative effect on one well-being. Seventy-two percent of respondents agreed that GFA had enabled them to have access to government information that was critical for their daily activities and believe that the GFA programme improved their access to services. Consequently, findings showed that the use of GFA interventions enabled citizens to cut costs related to accessing government services, since they were enabled to access information remotely.

Table 6. 1 GFA improved access to quality government information and services

GFA has improved access to quality government information and services	**Participants**	
	Total n=385	**%**
Agree	276	72%
Disagree	28	7%
I don't know	79	21%

Access to information is vital for enabling citizens to exercise their voice, improve social ties and cut down on costs associated with accessing government information. This is reaffirmed by respondents who stated that:

> *We have 3 students that have applied at university through the GFA and are now studying at UWC. So, it is not just for students, yes, it is a place where students can come and do their work but it is not a place for students, is for everyone that wants to check their e-mail, type their CV and etc. (CamP2, 2017)*[50].

> *On the level where I am, I can say that the GFA has improved my life and where I am if I don't have Wi-Fi at home or data to allow me access my e-mail. This GFA has helped me a lot because I can now come to access my e-mail, get information I need to get for my next job (OvP4, 2017).*[51]

[50] Face to face interview with the GFA manager, Cape Agulhas
[51] Face to face interview with a coloured male entrepreneur, Hawston – Overstrand Municipality

As these quotes illustrate, GFA created opportunities for students to engage remotely in academic work. GFA can certainly create opportunities for citizens and the use of those opportunities can lead to improvement in citizens' well-being. However, the issue of agency and the ability to make meaningful use of GFA facilities cannot be ignored. Individuals need agency and freedom to attain certain functionings. While participants in this study showed that the GFA facilities increased their access to government information, most of those who interacted with GFA made use of the facilities for other reasons such as communicating with family and friends via social media. This is a positive sign in terms of improving social ties (which was part of the GFA objectives):

> *We might think social media is not helping them anything yet we forget the idea of GFA is to connect people around the world. If you take the young children and teach them to start using social media, they overcome the fear of ICT (PP1, 2017).*[52]

The use of social media at GFA for communicating with family and friends, or for learning new skills through music practice on YouTube, may contribute to the improvement of an individual's social well-being. This process can lead to an individual feeling a sense of satisfaction (Wallace et al., 2016). This section has demonstrated how access to critical information contributed to enhancing individual social well-being. Participants noted that their personal and social well-being improved as a result of using GFA.

6.2 Political well-being

This study took into consideration the fact that as with other indicators of well-being, there is no unambiguous, uncontroversial measure of political and civil rights. The subjective and objective nature of political well-being can be measured by indices consisting of civil liberties, political rights, freedom of expression, voice and accountability, political stability and lack of violence, law and order, rule of law, government effectiveness, and corruption. It was hypothesised that if GFA could help citizens to achieve certain perceived standards of life, including political well-being, then those with interest in governance and accountability might view the GFA as a positive.

Citizens are individuals with aspirations, including political aspirations. This study explored whether the use of GFA enhanced the perception of political well-being among respondents.

[52] Chief Information Officer, Officer of premier - WCG

One definition of the quality of life of a society is based on whether citizens can obtain the things they desire, including public participation in decisions that affect their lives. It was therefore appropriate to examine how respondents in the study felt about their political well-being in the context of GFA. Citizens can only hold government accountable if they are part of policy design and implementation, therefore it was appropriate to explore whether individuals' views were incorporated during the policy design process and whether users making use of GFA were able to express their voice, or advance their political rights (Sen, 1999).

The study found that the only form of engagement between citizens and local or provincial government was about service delivery. There was little or no consultation about using GFA to engage in other political activities such as voting, submitting petition, or for advocacy.

Scholars have stressed the importance of education in regard to the successful use of ICT related services when these are used for engagement in political activities (Ardovino, M, 2015; Roztocki, Soja & Weistroffer, 2019). Through the use of survey questionnaires, the study explored whether the level of education influenced how citizens engage in political activities via GFA Table 6.2 shows that at the time of this study, a lack of education was not viewed as a leading reason why citizens did not interact with government via GFA. Table 6.2 shows that most participants (327) had level 2 education. In exploring if education level influenced how respondents used GFA to engage in political activities, almost half (48.8%) of responses agreed that it did, 25.6% of responses were unsure and 25.6% disagreed. This implies that statistically, education levels had no effect on the use of GFA for engagement with political activities.

Table 6. 2 Education vs engaging in political activities via GFA

Does education influence how use of GFA to engage in political activities		**Agree**	**Neutral**	**Disagree**	**Total**
Primary School	Count	7	5	4	**16**
	%	44%	31%	25%	**100%**
High School	Count	165	78	84	**327**
	%	50%	24%	26%	**100%**
More than High School	Count	11	13	8	**32**
	%	34.4%	40.6%	25.0%	**100%**
TOTAL	**Count**	**183**	**96**	**96**	**375**
	%	**48.8%**	**25.6%**	**25.6%**	**100%**

X-squared = 5.0513, df = 4, p-value = 0.2821

To conclude, the findings in this section do not provide strong evidence to support the argume nt that education influences how citizens engage in political activities via GFA. On the contra ry, individual agency (not education) remained the major factor influencing how citizens appr oached their interaction with government via GFA. Individual agency determined which actio n would be taken and which instrument would be used in helping users to improve their politi cal well-being.

6.3 Economic well-being

From an economical perspective, well-being is viewed from the standpoint of the accumulation of wealth or material resources: higher levels of income are associated with higher levels of well-being, which means that when there is an increase in income, a greater number of needs can be satisfied and a higher standard of well-being can be attained. Economists interpret well-being in terms of economic capacity and prosperity and the growth in both individual and national economic wealth. Individuals with high income levels are more able to satisfy their basic needs and, thus attain a higher subjective well-being. Therefore, if GFA could help users to increase their income earning capacity, GFA could contribute to improving their life satisfaction. That being said, satisfaction remains a subjection concept, and it is not how low or high the income level is that determines the level of satisfaction; what matters is the individual's perception.

To examine the success of GFA as tool that might increase business opportunities for users, the study explored the extent to which citizens made use of GFA to engage in business activities, or to access employment opportunities in the process improving their individual well-being. Each GFA location was assessed independently to allow the researcher to identify locations where GFA has been instrumental in helping users start their own businesses, to engage in business activities as a result of using GFA, or to help individual households to increase their chance of poverty alleviation via business or employment.

Table 6.3 shows that in each of the case study areas, participants believed that GFA had helped them to further their business ambitions and improve their financial status. The Table shows that respondents at three locations gave high scores: in Greyton 78% of respondents agreed; in Genadendal, 74% of participants agreed, and in Hawston, 69% agreed that GFA had helped them economically. By contrast, half of the Struisbaai respondents disagreed with the notion

that GFA had helped them in regard to income generation and employment. Thus there was a difference in perceptions from one locality to another.

Table 6. 3 Location vs engaging in business activities

Location		Engage In Business Dealing via GFA?			
		Agree	**Disagree**	**I Don't Know**	**Total**
Bredasdorp	Count	16	15	24	**55**
	%	29%	27%	44%	**100%**
Elim	Count	6	4	2	**12**
	%	50%	33%	17%	**100%**
Struisbaai	Count	7	15	8	**30**
	%	23%	50%	27%	**100%**
Hawston	Count	126	20	37	**183**
	%	69%	11%	20%	**100%**
Greyton	Count	39	6	5	**50**
	%	78%	12%	10%	**100%**
Genedendal	Count	37	12	1	**50**
	%	74%	24%	2%	**100%**
Total	Count	**231**	**72**	**77**	**380**
	%	**61%**	**19%**	**20%**	**100%**

X-squared = 75.162, df = 10, p-value = 4.424e-12

GFA development managers in Cape Agulhas and Theewaterskloof were among the trainers that commented on the success of the GFA in the promotion of entrepreneurial activities. For example, in Theewaterskloof specifically Greyton the GFA manager ensured that a certain number of computers were reserved for those coming to the centre to engage in entrepreneurial activities:

> *The two computers are allocated to entrepreneurs. I saw that was the only option for them because after school hours it gets full here. Yet there are white people that always come here to do their business work, like sending e-mail, e-filing or doing the SARS thing (TheeP 2017)*[53].

The study explored user's income data by investigating the number of employees per household and thereafter examining the average and minimum household income. As postulated by Grunfeld (2011a), Sen acknowledged income as one of the freedoms that constitute functionings that can be achieved by an individual, among other freedoms that were

[53] Face to face interview with training manager – Elim, Cape Agulhas

promoted by Cape Access. Income freedom emphases the freedom to generate income, increased economic capital, the building of capacity and increased entrepreneurship opportunity.

Table 6.4 shows that the median monthly income of respondents in this study was R2500. The average was R3111.07, with most of respondents earning R1500 per month. In terms of the number employed per household, the median number of people working per household was 2, and the average was 2.12. Despite having one or two employees per household, the income levels were low, and many respondents in the study area communities were living in conditions of excessive poverty. Most of those who had jobs were farm workers, domestic workers or were in informal jobs that generally paid less compared to those working in other formal employment sector.

Table 6. 4 Household monthly income and number of employees per household

Monthly Income per household		**Household Income**	**Household workers**
N	Valid	173	351
	Missing	212	34
Mean		3111.07	2.12
Median		2500.00	2.00
Mode		1500	2

It was postulated above that what matters when evaluating economic well-being is not necessarily the number of employees per households, or the size of the household income, but whether the income satisfies the household needs and results in a sense of well-being. The acute challenges faced by many households in this study showed that is that while the majority had some form of employment, this was in the informal sector which yielded very low incomes.

The presence of GFA enabled citizens to cut costs related to access to the internet and computers, with free access now provided. This means that resources that might have been used for this activity would have been released for use elsewhere. Any cent that is saved decreases the financial burden on users and increases prosperity which is concerned with economic well-being. One respondent noted that:

> *Most of us don't have money to pay for internet Café. I will say the effect of that GFA is positive because I can go there and do my school work, print, though I cannot print a lot because there is limit (FGD, 2017)*[54]

The fact that GFA improved quality and cost-effectiveness of government services contributed to in improving individual economic well-being. The GFA increased participants' abilities to run their own businesses by bringing business information close to community at no cost. Participants can now access critical information remotely, increase income generation opportunity and employment opportunity. Based on the statement below, it is evident that if adequately used, GFA could enhance the economic well-being of marginalised communities. The respondent discussed in the following quote was capable of realising his life wish after having access to GFA, as he mentioned that:

> *When I started, I didn't know that I will survive but here I am; I have managed to run the business because of the help which I get at the centre. I have two ladies that do help me when I'm going out and this lady here is one of them. She doesn't have a job so she always helps when I need her. Now I'm capable of feeding my children, my wife and I (OvP4, 2017)*[55].

Data presented in the table 6.4 and the face to face interviews with few entrepreneurs revealed that there is notable agreement in regards to the cost-effectiveness of government services as a result of using GFA. Respondent reported a drop in expenses related to accessing government services; this meant that cash that would have been spent on traveling expenses when going to government offices was now saved. This reduced spending contributed to improving an individual's economic well-being, as demonstrated by the following:

> *They come here, register their business here and do research on the information that they need for the business, and also do the Tax clearance certificate and can have access to printer here (P6, 2017)*[56].

The focus group discussions respondent (FGD, 2017)[57] quoted above demonstrated that Cape Access intervention has been beneficial. Despite a constrained community environment, these participants were still capable of making use of their agency and informed choice so that they could meet their educational, ICT literacy, business and employment needs. Similarly, all centre managers in the study area were of the view that the availability of GFA was critical and

[54] Focus Group Discussion, middle age female. Overstrand Municipality
[55] Face to face interview with male (coloured), entrepreneur – Hawston, Overstrand Municipality
[56] Face to face interview with GFA manager, Bredasdorp - Cape Agulhas
[57] Focus group Discussion, Cape Agulhas Municipality

citizens who were capable of making use of their agency stood a chance to realise their life wishes.

GFA has enabled a few community members to realise their potential. In terms of tangible evidence, this study identified three citizens from the poor communities that acknowledged that they started their businesses after acquiring necessary training at GFA venues and the support they received from the GFA development managers. This might look like a very small result, but relevant for this study since it is an indication that if properly trained and offered on-going support, poor citizens who were able to make use of GFA, and who aspired to start and run their own business were able to realise their life wishes. The GFA was being used by former and new entrepreneurs although at the time of the study it was still premature to determine the extent to which the majority of citizens using GFA for business purpose had managed to meet their financial needs despite of two participants that claims that as result of having GFA in their vicinity are now capable of providing for their families and support friends as noted below:

> *I use the GFA to market the fish on Facebook. I also send direct personal messages to possible clients through WhatsApp where I will indicate that I have this kind fish available, and then will come and sit at the GFA (OvP4, 2017).*[58]

> *I'm just hoping to make thing bigger, because the government gave me one contract now where I need to do motivational speech where I need to go to all the Overberg and fishing community in the Overberg to share my story and I am hoping that I will register myself on the Western Cape tender process (OvP5, 2017).*[59]

These three respondents were individuals who were not computer literate but who were taught ICT skills at GFA. They applied the knowledge acquired for the attainment of their individual and societal needs. GFA changed their lives, making GFA a resource with potential to improve citizens' well-being. There was agreement from the three users in terms of improved life and development opportunities, although they viewed the contribution of GFA from different perspectives. The impact of GFA on their lives reaffirmed Ponelis & Holmner, (2015) views that investment in ICT projects can have a direct impact on trade by facilitating transactions and providing a stable economic.

[58] Face to face interview with a coloured male entrepreneur, Hawston – Overstrand Municipality
[59] Face to face interview with a coloured male entrepreneur, Hawston – Overstrand Municipality

The data continue to reveal that citizens interacting with GFA benefit in one way or another. For example, many members of the older generation did not make use of GFA, but their children do. According to one respondent (OvP4, 2017),[60] GFA has increased his mobility, his access to information and in the process built his confidence. That participant hoped to expand his business by registering it with Western Cape Government so that he could start submitting tenders. Also noted was the level of happiness and life satisfaction of this respondent. To him, GFA was the door to personal financial and social development.

In summary, citizens living in the study area stood a chance to expand their economic well-being via the use of GFA. Effective use of GFA could lead to increases in financial resources, hence improving individual prosperity and hope for a better life. Citizens who were capable of making use of their agency could grow their businesses and a better life. GFA enabled citizens from the study area to cut costs related to accessing the internet and use of computer to search for employment and do school work.

6.4 Psychological well-being

This study evaluated four dimensions of psychological well-being: self-acceptance, positive interpersonal relationships, independence, and life development. This was achieved by (1) analysing the general effects of GFA on the psychological well-being of users and (2) analysing the association between the use of GFA and citizens' life satisfaction. The research examined whether individuals in the study areas were meeting their basic level of psychological well-being, which comprised of a positive mental state, such as happiness or satisfaction, self-sufficiency, personal growth, positive relationships with others, purpose in life, and self-acceptance.

The literature showed that this psychological well-being is achieved when an individual accomplishes a certain task that he/she views critical, for example, a feeling of accomplishing a life dream (Uys, 2015). Drawn from the Capability Approach introduced in Chapter 3, the achievement of a psychological functioning involves the development of one's potential, the ability to design one's future whilst having some control over one's life, having a sense of purpose and experiencing positive relationships. Participants were asked to discuss whether GFA had enabled them to achieve any of their life expectations. A feeling of accomplishment

[60] Middle age coloured female, from Genendale - Overstrand

can result in and reinforce positive emotions. The concept of feeling good does not only contribute to positive emotion, but can also cause an individual to increase interest in personal development, engagement, confidence, and affection, which are all critical for individual psychological well-being (Sen, 1992; 1999). When life becomes an opportunity to thrive, individuals begin to value agency; whereas if they feel that they might fail, or not be able to realise opportunities that lie ahead of them, they may not take any action.

The results of the study show that the effect of GFA interventions on education was noticeable, as discussed above. In this section the focus is on the subjective experience of well-being. Psychological well-being has been reported to be an outcome of meaningful activities (Uys, 2015). Hence, effective use of GFA by citizens might lead to an improvement in psychological well-being. When psychological needs such as a sense of belonging and purpose in life are met, well-being is experienced. Life achievement may influence an individual psychological well-being, and so the study investigated how education levels might influence an individual's ability to learn new skills using GFA deployed in remote areas

Participants were asked to indicate how frequently they used the GFA project to learn new skills. The reasoning behind the question was that, if citizens make use of GFA regularly, it would imply that there were positive benefits in doing so, which provided incentive or motivation for them to continue using the GFA. Conversely, less usage might be indicative of the fact that respondents had not had a positive experience or acquired any fruitful benefits.

The findings demonstrate that there was a notable relationship between education level and the ability for individuals using GFA to gain new skills. Table 6.5 shows that 46.4% of participants used GFA to learn new skills. Thus, the GFA was helpful in terms of learning new skills, whilst 15% stated that they had not used GFA to learn new skills. Most respondents (n=326) had education level 2, which means that their education level had influenced their use of GFA to acquire new skills. Roztocki, Soja & Weistroffer (2019) argued that the ability to acquire new skills and knowledge promotes personal growth and fulfilment. When new knowledge is gained and personal development realised, a psychological well-being functioning is attained. The findings of this study show that GFA interventions enabled high school learners as well as other residents in the study area to increase their chances of learning new skills.

Table 6. 5 Education vs new skills

Education Level		How often to use GFA to learn new skills?			
		Most of Time	Sometimes	Hardly	Total
Primary School	Count	6	1	8	**15**
	%	40.0%	6.7%	53.3%	**100%**
High School	Count	157	80	89	**326**
	%	48.2%	24.5%	27.3%	**100%**
More than High School	Count	10	13	9	**32**
	%	31.3%	40.6%	28.1%	**100%**
TOTAL	Count	173	94	106	**373**
	%	**46.4%**	**25.2%**	**28.4%**	**100%**

X-squared = 10.477, df = 4, p-value = 0.0331

Participants in the study noted that the members of the community that had most benefited from the GFA, were students. This was seen as a positive effect of the GFA. The programme had helped users to meet some of their psychological functioning: free access to ICT had presented capacity-building opportunities as well as development opportunities. Two of the respondents noted that:

> *The GFA has a major effect on the well-being of the community and I see the effect of the GFA only in the quality of weight because we provide free internet access to the people who don't have internet access at home. We also provide the community with PC training [OvP2, 2017)*[61].

> *We are giving ICDL, computer training and that is big impact, now he doesn't have money to go learn they come and we give them the training and for that training they can get a better job not only for shop assistance, cashier but the can apply for an office job (P4, 2017).*[62]

Participants who previously had to pay a fee for Wi-Fi use at private internet cafés demonstrated a sense of happiness and satisfaction with the fact that such use was free at the GFA. Free access to internet had enabled poor citizens to increase their hopes for a better future. To them the GFA intervention was a positive project, and they were happy with it. Free access to internet had expanded their chances to improve their learning and in the process had increased their freedom of choice to choose the life they have the reason to value. These participants took advantage of ICT facilitated opportunities especially educational and ICT literacy courses. One centre manager noted that:

[61] Face to face interview with GFA manager, Genendale – Overstrand Municipality
[62] Face to face interview with GFA regional coordinator – Overberg District Municipality

> *We have four students at CPUT Wellington, one in another college in Wellington, one at UWC and other are in Bloemfotein, we did assist them to apply at the municipality and were accepted to go study in Bloemfontein (P7, 2017)*[63].

Geographical location can affect how citizens make use of ICT facilitated opportunities (Clark, Sey & Sullivan, 2012). Participants in the study showed that they were able to overcome these challenges and by so doing they had accessed information related to higher education institutions which in turn had enabled them to improve their psychological well-being. The GFA enabled students to access institutions of higher learning remotely. Without the GFA, students in rural areas (such as the study area) would have to travel to Cape Town or other provinces or use post office services to submit their university applications. With the availability of free internet provided at GFAs, students had taken advantage of online opportunities. GFA intervention had therefore enabled them to overcome a geographical obstacle which previously might have prevented them from achieving their psychological and educational well-being.

The training offered at GFA facility also helped disadvantaged citizens to build confidence and increase their hopes for employment. Respondents viewed the GFA training as something that was very positive, that had increased their development opportunities and made them feel a sense of achievement. This can be seen in the following expression:

> *Last year we have had the biggest number of students who wanted to study after their matric. Last year we had about 13 Gr12 learners who submitted their applications through us. After school some of them went to work directly but we had those who applied to study at various universities (CamP3, 2017).*[64]

The South African ICT policy (2016) noted that digital literacy training and skills development should become the solution to the digital literacy and awareness barrier. The process would need to inspire users to take advantage of broadband available in their communities (South Africa ICT policy, 2016:36). This study found that GFA was doing well in the area of personal skills training. A number of participants stated that they did not know how to use computer but after ICT training offered at the GFA, they were better able to make use of s, as quoted:

> *I did computer training and I got the certificate. So for me I think it is a positive project for me because if I apply for a job, then they ask computer certificate then will not have it but now I can provide it because I have done the training (FGD, 2017).*[65]

[63] Face to face to interview with a male coloured GFA manager, Elim – Cape Agulhas
[64] Face to face interview with GFA manager, Elim – Cape Agulhas
[65] Focus Group Discuss, female black , Overstrand Municipality

> *For me is good because I can go there do my CV then for job application but one thing that is always challenging for me is the time because when I still in the middle of something the time will be out (FGD, 2017).*[66]

This quote is illustrative of the finding that respondents who were not using the GFA for educational purposes were concerned that students were given more privileges at the GFA compared to other groups from the community. Venues were often fully occupied by students. Several participants also expressed the view that the time allocated to users for computer use was not long enough.

> *It was much easier when I started using the GFA earlier because they were not too many students coming there so time was not a challenge but as time goes then I heard that we only 45 minutes for us (FGD, 2017)*[67].

> *From number one to number four, those computers are reserved for kids to do whatever they want to do. Watch game or be on YouTube. People who want stuff printed we always tell them to come in the morning because in the afternoon the school kids will come in with their task (OvP2, 2017).*[68]

Furthermore, the study explored users' experiences in relation to increased confidence. The intention was to learn how the use of GFA contributed to enhancing users' confidence levels as a way of enabling them to achieve their psychological well-being. Table 6.6 shows that out of 385respondents, 243 (63%) agreed that their involvement with GFA had contributed to the improvement of confidence levels. This study therefore believes that GFA helped users towards a level of psychological well-being. Sen (1999) postulated that achieving psychological well-being was critical for the development of human beings, since it increased a sense of stability in person life. This view was supported by Kleine, (2011), who stated that psychological resources were very important for poor people interacting with ICT. Table 6.6 illustrate citizen's feelings in relation the use of GFA against their levels of confidence.

[66] Focus Group Discuss, male black, Cape Agulhas Municipality
[67] Focus Group Discussion, black male – Cape Agulhas
[68] Face to face interview with GFA manager, Greyton – Overstrand Municipality

Table 6. 6 GFA has enhanced my confidence level

The use of GFA has enhanced my confidence level		Participants	
		Total n=385	%
Valid	Agree	243	63%
	Disagree	57	15%
	I don't know	80	21%
	Total	380	99%
Missing	System	5	1%

Alkire, (2008a) stated that individual achievement of certain well-being measures such as confidence, competence, and independence contributed to their psychological well-being. In the Capability Approach, being confident was considered as a critical characteristic for an individual. Confidence can help people to face life challenges without fear and encourage the use of personal agency in determining how an individual is prepared to lead his own life.

Based on the statistical data from the study, it was evident that the improvement in individual self-esteem had an influence on participants' psychological well-being. According to Uys and Pather, (2016) the benefits of public access increases self-esteem, helps citizens meet their psychological well-being, and enables them to achieve intangible functioning.

The study probed the level of training offered by each GFA to determine the level of satisfaction in relations with user expectation. It was found that there was a noticeable relationship between GFA location and training received, and that the benefits of GFA were realised differently from one community to another. Gillwald et al. (2019) support this result as they showed that people with higher education were likely to use ICTs for personal development as compared to those with lower education levels.

Table 6.7 show that 74% of responses from Hawston agreed that they had received training. Most positive responses in regard to training received via GFA were found in two areas Greyton and Genadendal, with Greyton scoring 94% positive response, and Genadendal, 88% response from noted that they received ICT training. On the other hand, fewer respondents in Bredasdorp and Struisbaai said that they had received ICT training at their GFA facilities – 54% and 52% respectively. The disparity between the training offered at the different GFA locations means that further investigation should be undertaken.

Table 6. 7 Location vs training satisfaction

LOCATION		Are you Satisfied with the level of Received Training?		
		YES	NO	TOTAL
Bredasdorp	Count	31	26	**57**
	%	54%	46%	**100%**
Elim	Count	8	4	**12**
	%	67%	33%	**100%**
Struisbaai	Count	15	14	**29**
	%	52%	48%	**100%**
Hawston	Count	134	46	**180**
	%	74%	26%	**100%**
Greyton	Count	46	3	**49**
	%	94%	6%	**100%**
Genadendal	Count	43	6	**49**
	%	88%	12%	**100%**
Total	Count	**277**	**99**	**376**
	%	**74%**	**26%**	**100**

X-squared = 33.814, df = 5, p-value = 2.592e-06

To drive better service quality and consistency across the different GFA locations, policymakers and strategists could possibly pay attention to the following suggestions which have been put forwards by several scholars, including Iyer (2017), and Abubakre and Mkansi (2022). According to Abubakre and Mkansi (2022), GFA should consist of a digital technologist to provide digital and technical training that can upskill and expand the capabilities of those interacting with GFA. This view is further support earlier recommendation by Iyer (2017) indicating that "a high level of service quality is achieved through the presence of trained operators with required skill-sets". Training should aim to improve functional competence, effectiveness in rendering services and professional awareness of the administrators. Another area that needs government attention is the recruitment of qualified trainers working at GFA facilities across all the centres. Skills mismatch that workers might experience could affect the sustainability of GFA. Equally, GFA staff may have formal qualifications yet still lack people and soft skills that are critical for the nature of their jobs (Marais & Vannini, 2021).

In addition, Saraei and Amini, (2012) suggested the following key points to be considered for the sustainability of GFA interventions: reliability, responsiveness, empathy, assurance and tangibility of an organization including its staff. In addition, Abrahams et al. (2022) indicates

that using very low-cost engineering and economical innovation design, and advancing the skills of local communities to participate in the design process of ICT intervention could strengthen the provision of ICT service. The disparity in ICT consumption is further noticeable in terms of gender, race and skin-color (Liebenberg, Benadé & Ellis, 2018; David & Grobler, 2020). Currently the majority of high consumers buying high-ended products are white while black people pay relatively high prices for low-value products, constraining effective access to Internet and computer related resources (Ibrahim, Croxton, & Buthelezi, 2021; Adedonkum & Zulu, 2022).

South African government's inability to provide a complete universal access to all citizens, particular those in rural areas, is deepening the digital divide; characterised by class, race, gender, and rural-urban differentials (Ibrahim, Croxton, & Buthelezi, 2021; Adedonkum & Zulu, 2022). Hence poorly designed pro-poor ICT policy will continue to produce imbalanced e-commerce and the knowledge economy; at the end, excluding citizens that need such services the most (Ndevu, 2020; Abrahams et al., 2022). So as noted earlier, the Western Cape Government can draw some lessons from the City of Johannesburg in terms of equipping users with ICT enabler skills by increasing the capabilities of employees running and managing GFA facilities. In addition, the provincial government can further strengthen the capacity of GFA staff by ensuring there are ongoing skill development in the following areas:

- Leadership and managerial: leaders and managers running the facilities should be exposed to leadership and management development programmes;
- Ethical leadership: Training design to upskill leaders with ethical leadership skills, leadership responsiveness to users and racial tolerance in order to improve social cohesion;
- People Skills: Training fostering soft skills to all stuff working at GFA facilities.

6.5 Improved service delivery

One of the aims of the study was to investigate the effect of GFA deployed in Overberg District on service delivery, specifically the impact on the ability to access services electronically. Aspects examined were: improvements to service delivery, perceived benefits, and ease of access to service delivery.

Users were asked whether and how the use of GFA has enabled them to access government services remotely. In all the areas there was a strong agreement about the positive contribution of GFA to improved service delivery. Table 6.8 shows that in both Greyton and Genadendal, 80% of respondents agreed that GFA had improved their access to services. Brinkerhoff, Wetterberg, Wibbels (2016) suggest that citizen perceptions of the use of GFA for service delivery is important for several reasons: service delivery demonstrates government willingness and capacity to respond to citizens' needs and demands. However, the perceptions may depend on people's job situation and social setting, the degree to which they are expected to deal with new technologies to access services varies from one context to the other (Büchi, 2019).

Table 6. 8 Location vs people's perception of service delivery

		GFA Improve Access to Service Delivery			
Location		**Agree**	**Disagree**	**I Don't Know**	**Total**
Bredasdorp	Count	27	19	10	**56**
	%	48%	34%	18%	**100%**
Elim	Count	7	1	3	**11**
	%	64%	9%	27%	**100%**
Struisbaai	Count	14	15	1	**30**
	%	47%	50%	3%	**100%**
Hawston	Count	141	29	13	**183**
	%	77%	16%	7%	**100%**
Greyton	Count	40	3	7	**50**
	%	80%	6%	14%	**100%**
Genadendal	Count	39	6	4	**49**
	%	80%	12%	8%	**100%**
Total	Count	**268**	**73**	**38**	**379**
	%	**71%**	**19%**	**10%**	**100%**

X-squared = 47.767, df = 10, p-value = 6.846e-07

A further aim of the study was to explore whether the benefits of using GFA had been widely felt by respondents in each area. The Provincial Government had introduced GFA interventions with the aim of uplifting the livelihood of citizens living in rural areas, through the provision of access to computers and internet. Table 6.9 shows that users from three localities felts that more work needed to be done in regard to satisfying individual user's needs. In the case of Bredasdorp, 33% of users disagreed, 38% responses were unsure, with 29% responses agreeing with the question asked. Struisbaai respondents showed similar responses, while in Elim,

respondents were less positive about whether they had felt the benefits of GFA. Thus there were locational differences: in three localities, fewer than half of respondents agreed that GFA had enabled them to gain certain individual benefits (Hawston 44%; Greyton 46%, Genadendal 44%). The e-literacy had improved the livelihoods of the poor by providing them with information they needed (Gillwald et al., 2019).

Table 6. 9 Location vs benefits via GFA

Location		Accessing benefits via GFA?			
		Agree	**Disagree**	**I Don't Know**	**Total**
Bredasdorp	Count	16	18	21	**55**
	%	29%	33%	38%	**100%**
Elim	Count	1	4	8	**13**
	%	8	31%	61%	**100%**
Struisbaai	Count	8	13	9	**30**
	%	27%	43%	30%	**100%**
Hawston	Count	81	28	75	**184**
	%	44%	15%	41%	**100%**
Greyton	Count	24	5	22	**51**
	%	47%	10%	43%	**100%**
Genadendal	Count	22	8	20	**50**
	%	44%	16%	40%	**100%**
Total	Count	152	76	155	**383**
	%	**40%**	**20%**	**40%**	**100%**

X-squared = 29.072, df = 10, p-value = 0.001213

Respondents were asked whether their participation in the GFA programme had improved their access to quality government information. Table 6.10 shows that most (72%) agreed that it had. GFA interventions in the Overberg area enabled disadvantaged and marginalised communities to have access to national educational content; it provided increased opportunities for participants to contact their local authority to addressing individual grievances. The GFA intervention enabled participants to save time and money that would have been spent on an in-person visit to a distant government office, because they were able to gain access to the information they needed online. This finding supports earlier findings that ICT projects can improve service delivery, and improve the experience of citizens (Lin, Zhao, Yu & Wu, 2018).

Table 6. 10 User perception of easy access to government information

GFA has improved access to quality government information		Participants	
		Total n=385	%
Valid	Agree	276	72%
	Disagree	28	7%
	I don't know	79	21%
	Total	383	100%
Missing	System	2	.5%

The provincial government policy is for GFA to close the communication gap that exists between government and citizens. Citizens will be able to access government services and information without having to visit government offices (WPG 2010). Table 6.10 showed that most respondents thought that GFA had improved their access to government information. However, Table 6.11 shows how other elements of service delivery were rated. As per table 6.11 five items were grouped and tested together to explore participants opinion in relations with the use of GFA as a tool that can enhance service delivery, the findings shows that there is level of agreement across all the five items. Implying that participants were in agreement that GFA is enabling them to meet their individual's information needs and easy access to government services. Similarly, there is a fair agreement between those believing that GFA has improved information sharing and opportunity to participate in democratic institution. The results reaffirm the views that GFA helps users achieve some of their perceived individual well-being.

Table 6. 11 The effects of GFA on improved service delivery

	Agree		I don't know		Disagree	
	Count	%	Count	%	Count	%
GFA has improved access to quality government's information	276	72%	79	21%	28	7%
GFA has improved quality and cost-effectiveness of government services	268	70%	73	19%	38	10%
GFA has improved information sharing and communication between government and citizens	246	64%	85	22%	51	13%
GFA has improved opportunity to participate in democratic institutions	245	64%	93	24%	45	12%
GFA has enhanced my confidence level and I can engage the government through ICT	243	64%	80	21%	57	15.

The study also examined when last users made use of GFA to communicate with government officials and which medium of communication was used. The findings in Table 6.12 shows that at the time of this investigation, 57% of respondents indicated that they made use of GFA to communicate with local or provincial government. However, this means that 43% had not used GFA to interact with government.

Table 6. 12 Last time to communicate with government via GFA

Last time to communicate	Frequency	Percentage
2010	1	.3%
2012	2	1%
2013	3	1%
2014	1	.3%
2015	12	3%
2016	36	9%
2017	164	43%
Total	**219**	**57%**
	166	43%

6.6 Chapter Summary

This chapter evaluated the link between Government Facilitated Access (GFA) and Well-being; two conclusions have been drawn and discussed. The data presented show that the introduction of GFA in the study area has enhanced individual well-being for respondents. Respondents were able to meet a certain number of bundles that they viewed as significant in enabling them to improve their well-being. GFA interventions created several opportunities for community members with conversion ability and who are cable of using their agency to overcome any kind of obstacle in pursuit of their life wishes. Hence it is fair to support the general perceptions that GFA is enhancing individual well-being.

The findings show that users of GFA benefited directly and indirectly from their use of GFA facilities. Some users had realised their social, economic, and psychological well-being and had positive perceptions of GFA in terms of improved service delivery as a results of using GFA. The literature showed that citizens feel satisfied with life when they are finding purpose in life, and have a sense of mastery and autonomy in their own decisions, and other constructs that contribute to feeling whole or well (Roztocki, Soja & Weistroffer, 2019). GFA is doing that by expanding users' choices, capabilities and freedom to do things that they could not do before; hence it is contributing to their well-being.

GFA created a new platform for citizens to access services remotely, thus helping them in deciding how to access services, when to access and what kind of services should be accessed. However, the benefits of using GFA were experienced differently from one town to another and were perceived differently by users due to higher level of unemployment. For example, in almost all the study localities, users acknowledged the contribution of GFA on their individual social and psychological well-being as compared to achieving economic well-being. In regards to political well-being, there is no evidence to support that GFA had enabled users to meet their political well-being as result of using GFA. In addition, GFAs were being used for unintended uses; nevertheless, these were positive deviants which remain a positive sign. There is evidence that GFA has increased citizens' choices and opportunities to choose which type of bundles they need to access first hence improving their well-being.

Secondly, when interrogating the concept of GFA vs improving individual well-being at scientific level, the findings showed that there was a link between GFA and well-being, although this link is too insignificant to validate the level of public funds that have been invested in the ICT related interventions. The links that exist can be generalised to large community as currently the number of citizens that are directly and indirectly benefiting are notable. The lack of conversion ability continues to hinder the fullest realisation of citizen well-being; the benefits of GFA are not felt by everyone in the community. Users with necessary ICT skills had benefited; those in the community had then benefited indirectly through the sharing of personal experience and skills with individual in their households and friends. Other community members were thus enabled to feel a sense of the benefits that are imbedded in GFA even though they may have never directly made use of the facilities. The issue of improved self-esteem, increased confidence levels and reduced dependency on government by poor citizens demonstrated that those with relevant ICT skills who had access to GFA may have the ability to command the life they wish to lead. This is because increased confidence gives one hope and the courage to face the future without fear, thus making confidence and self-esteem relevant capabilities that individuals living in rural communities need to possess if they are to change the cause of their lives. Sen concluded that well-being is highly subjective and person-specific, and thus policies should focus on making well-being possible by providing the freedoms and capabilities that allow each person to achieve what will contribute to his or her own well-being.

Chapter 7: CONCLUSION

Chapter overview

The investigation started off by framing the research problem as discussed in detail in chapter one. In this chapter I come back to the problem, revisiting the extent to which the problem was addressed, and I assess the actual contribution of the study to the body of knowledge.

In spite of millions of people making use of Government Facilitated Access (GFA) facilities there is ongoing concern about the contribution of GFA in relation to improving users' well-being. These concerns are the results of higher level of public funds involved in the implementations of GFA and its sustainability. Such concerns can be addressed by examining the contribution of GFA on the lives of users. This chapter presents the results of the research study demonstrating that there are several contributions to the well-being of marginalised communities interacting with GFA interventions. However most of these contributions remain intangible. The study evaluated six indicators: social well-being, political well-being, economic well-being, psychological well-being, improved service delivery and environmental well-being. Environmental well-being which makes the number of indicators to six (6) is not discussed broadly resulting from a lack of data to support the discussion.

7.1 Overview of main findings

In conceptualising development, this study concurs with Pather (2012) that access to ICT facilities is a pathway towards development and not an end it itself. Thus, users' ability to identify and remove barriers to their own development is critical. The lens of the Citizens Well-being Framework provided this study the opportunity to explore how ICTs can be deployed to tackle societal challenges that continue to manifest as Digital Divide inequality and disparity in poor communities. This study highlighted several factors that either contributes to the success of GFA intervention or factors that derail the main objective of investing in GFA with the focus on six critical indicators. From the successful perspective, GFA intervention has helped poor citizens realise some of their aspirations, however this is restricted to a certain group of citizens, specifically the younger generation. Older citizens and those on government special programmes (such as citizens who were receiving government's social grant) are among the groups that did not benefit directly. Thus, the process of developing, implementing and identifying individual needs was explored to learn whether people were adequately

consulted during the GFA policy design and implementation. The emphases were on whether the views of poor citizens were incorporated in the decision-making process. The study found that marginalised communities from the six towns where this evaluation took place were not fully involved and their views were not incorporated in the process of design and implementation of the GFA policy. Based on the findings, two key reasons were found to contribute to a lack of participation. Firstly, there was no a scientific framework that was adopted by policymakers in terms of guiding policy development process and implementation strategies which outlines steps to be followed to ensure the views of marginalised communities are incorporated. Secondly, the government's focus was not on identifying what citizens wanted but rather on what the government had believed should be done for the community.

The current trend of developing developmental ICT policy to fit implementation has failed many citizens in developing countries due to ICT policies being developed at institutional level and implemented at grassroots level without accurate participation mechanisms. The same people for whom these ICT policies are developed are not involved in their design or implementation. The process of developing the GFA intervention was flawed because there was no empirical evidence demonstrating how the views of marginalised communities would be incorporated into the design of said policy that led to the implementation of the Cape Access intervention. Few open public meetings were organised by the provincial government to inform the citizens about new development plans that the Western Cape government was undertaking in various communities; specifically, the introduction of GFA interventions. Hence policy design and implementation are considered as the principle factor, and in this context the success of an ICT intervention is to a large extent determined by its policy design and implementation process. The study findings concur with Abrahams et al. (2022) who argue that digitalisation will not only influence the economy but will also shape how the South African society engages with the digital world, increase the existing digital divide and economic exclusion; therefore, citizens' views should be incorporated in the policy design. In general, current national digitisation strategies are not sufficiently comprehensive in relation to the economic landscape, and do not sufficiently address the multi-dimensional role of the state in digital evolution (Abrahams et al., 2022).

In a nutshell, interaction between individuals and stakeholders via GFA remained questionable due skill mismatch, and more needs to be done to validate large ICT investment seeking to

close the gap between citizens and decision makers (Matli and Ngoepe, 2020). Despite the latter, the few individuals who were using the service to access government information and interacting with government via e-mail showed that GFA can help improve citizens' and stakeholders' interaction. Therefore, to realise successful interaction between citizens and stakeholders, citizens need to acquire relevant ICT skills before being advised on how the use of GFA could assist them with accessing government service and for engaging with government for different purposes. This finding further strengthens the argument that citizens' engagement in ICT training programs can increase the success of government online services promoted at GFA, and can expand the capabilities of GFA users, as shown by (Iyer, 2017; Mattli and Ngoepe, 2020; Marais & Vannini, 2021; Abubakre & Mkansi, 2022).

This could be achieved by the recruitment of qualified trainers across all the GFA facilities. Skills mismatch that workers might experience could affect the sustainability of GFA. Equally, GFA staff may have formal qualifications but lack people and soft skills that are critical for the nature of their jobs (Marais & Vannini, 2021). The implementation programme highlights the need for the public sector to focus on "(1) building the technical skills required to operate, manage and sustain the digitally mediated processes of government and the underlying technological systems and databases; (2) the growth in digital literacy with a particular focus on data management and analytics for frontline service staff; and (3) the advancement of digital leadership skills among public service leaders and managers" (DCDT, 2021: 30).

Notwithstanding the flaw in implementation strategies, the findings suggest that GFA intervention has enabled users to challenge social structures that could constrain their developmental freedoms; although the benefits users have acquired are for the most part limited to social and psychological aspects. These benefits were in fact realised by individuals who were capable of taking advantage of ICT-facilitated capabilities presented by GFA. Economically, marginalised communities remain trapped in poverty and are not likely to fully realise the benefits of GFA interventions despite marginal financial gain, e.g. the use of GFA for entrepreneurial activities and a reduction in cost related to transport fare as users are capable of accessing certain aspects of service remotely. The intervention has improved their capabilities, increased their choice and freedom to choose the lives they want to lead. However, factors spanning community environment factors, individual conversion factors, ICT characteristics, individual choice and agency continue to contribute towards the limited number

of marginalised citizens benefiting out of GFA. Similarly, Abubakre and Mkansi (2022) findings demonstrate there are some positive indicators associated with the use of GFA: GFA contributes to emotional connectedness thus improving the level of empathy, and the creation of job opportunities for people from previously disadvantaged areas. A user's capability to exercise agency can contribute in enhancing user happiness, in the process improving general wellbeing (Abubakre and Mkansi, 2022). This group of citizens are generally poor, lack practical knowledge and live in rural areas hence they rely on GFA to search for jobs and sometimes to connect with loved ones.

For this reason, increased awareness and effective use of ICT in an intervention like GFA can lead to improved social and economic conditions of the citizens interacting with GFA programme. The evidence presented in this study shows that GFA interventions can play a productive role in enhancing people's capabilities as well as their agency to identify and uproot the structural causes of disadvantage. Citizens took advantage of opportunities embedded in the GFA intervention to meet their socio-economic needs. The GFA afforded them opportunities which in turn enabled them to lead the lives they wanted, and the freedom to choose who to help and when to help. Although a mindfully designed GFA policy for rural communities; capable of identifying and addressing the root causes of social and economic ills in communities is required in ensuring intervention effectiveness. Similarly, GFA, just like other provincial and national ICT projects, is not exempt from technical challenges. Some of the GFA facilities experienced internet breakdown and administrative constraints for years.

The following sections discuss the findings based on each sub-questions of the studies:

- How do selected ICT policies influence the implementation of GFA intervention in marginalised community?
- What are factors influencing the success or failure of GFA intervention deployed in marginalised community?
- Does the adoption and use of GFA in rural communities contribute towards the improvement of interaction between marginalised community and stakeholders?
- How do GFA interventions effect the well-being of marginalised community living in rural areas?

7.2 An overview of findings in relation to each sub-question

In this section the study presents the discussion of the findings in relations to each sub-question. The four sub-questions as presented above are chronologically summarised and results presented in details.

7.2.1 ICT Policy and its influence on GFA programmes in marginalised communities

In this section I summarise the findings in relation to the question of how do selected ICT policy influence the implementation of GFA intervention in marginalised community.

Development outcomes are determined by how ICT policies were designed and implemented. The Citizens Well-being Framework endorsed the notion of putting choice as the primary outcome of any development programme; and individual values as the second outcome. Hence the use of top-down approaches cannot respond to the needs of those at the bottom as such approach does not take note of individual values and their choices. This study found individual choices were not considered thus were not incorporated in the design of GFA. The whole process of developing the provincial ICT policy and the implementation of the GFA was done from the top – bottom approach as the leadership's focus was on providing services. A lack of an effective ICT policy was further revealed by the issue of limited space and the needs for more computers which was mentioned by all GFA managers and community members. This challenge could have been addressed during policy design process. Currently there is a lack of an appropriate framework for rural settings in developing countries which continue to hinder GFA intervention. Further revealed was the value of integrating a well-tested theoretical framework in the design of ICT policy and implementation is not well understood among the leadership and citizens. After realising that there is no a framework to effectively guide the implementation of GFA and measure its effect on the well-being of users, this study developed a framework that could be used in evaluating the contribution of GFA intervention on the well-being of users. The framework is discussed in the contribution of the study to the body of knowledge, Figure 7.1.

7.2.2 Factors influencing the success or failure of GFA programmes deployed in marginalised communities

To understand what factors, contribute or derail the success of GFA intervention, the study relied on the conceptual framework, literature reviewed, focus group discussions, face to face interviews and householder survey. This study identified several factors that contribute to the success or failure of GFA in developing countries including South Africa. However, only three main factors viewed as critical to the success or failure of GFA are discussed. Each factor is made up of up several sub-factors which influence individual choices and ability to make use of ICT facilitated capabilities.

7.2.2.1 Community environment factors

Numerous sub-factors have implications on the success or failure of GFA. This study put emphasis on three, which were found to be influential: policy design and implementation; social structure; and geographical local of the interventions.

7.2.2.1.1 Policy design and implementation

The current trend of developing developmental ICT policy to it implementation has failed many citizens in developing countries due to ICT policies being developed at institution level and implemented at grassroots level without accurate participation mechanism. The same people for whom these ICT policies are developed are not involved in their design or implementation. The process of developing GFA intervention was flawed because there was no empirical evidence demonstrating how the views of marginalised communities would be incorporated into the design of GFA policy that led to the implementation of Cape Access intervention. Few open public meetings that were organised by the Provincial Government to inform the citizens about new development plans that the Western Cape Government undertaking in various communities included the introduction of GFA interventions. Hence policy design and implementation are considered as the principle factor, in this context the success of ICT intervention is to a large extends determined by its policy design and implementation process. Nevertheless, the challenge can be alleviated by addressing existing inequalities in the real economy. Therefore, the inequality that exists in the really economy will continue to manifest in the virtual world if the gap in policy design, implementation and monitoring is not adequately addressed.

7.2.2.1.2 Social structure

In the areas where this study took place there appears to be a strong social structure. The actions of individual takes place within and are influenced by this social structure. If the majority feels that their time is best spent on job searching instead of spending it at a GFA location, then many citizens will be influenced by this. Socially, citizens in the study area are poor; therefore, poverty influenced their commitment toward the use of GFA. To some, lack of employment was an opportunity for them to visit GFA venue, yet to others lack of employment might have made them shift their attention to finding employment rather than the use of GFA intervention.

Language was seen as another challenge. Citizens of colour were not happy that instruction and assistance offered at the GFA were given in Afrikaans, since not all GFA users speak Afrikaans. Language makes learning experiences more attractive therefore people tend to prefer learning in their own language, which is a positive sign in terms of how language can encourage usage. Nonetheless, based on the findings of this study many members of the black community still view Afrikaans as barrier from using the GFA effectively. Thus, language orientation continues to play key role on how these citizens view their interaction with GFA interventions.

7.2.2.1.3 Geographical location

Geographical location continues to play a major role in the success and failure of GFA intervention. The issue of racial divide continues to manifest even in the use of GFA intervention, certain grouping in the community perceive GFA intervention locations were strategically positioned to benefits certain group of citizens. This view was expressed by citizens that felt the location of GFA intervention favoured coloured (Afrikaans speaking) communities because GFA intervention facilities were located in predominantly coloured areas. Similar views are expressed by some policymakers, agreeing that the decisions that were taken to determine the right location of the GFA intervention in some areas did not follow the right procedure or failed to consider the needs of other social groups in the community. This has resulted in citizens from certain areas not making use of GFA interventions because geographically they perceive these GFA are situated far from their areas. Some argued that they have to walk for a long distance in order to access GFA intervention, the distance discourages them from making effective use of opportunities presented by GFA. The location of GFA deployed in rural communities remains a major factor contributing to a reduced usage

of GFA as a result of some users living very far from GFA venue whilst they are also financially challenged.

7.2.2.2 ICT Characteristic factors

7.2.2.2.1 Facilities

The lack of space and computers continues to contribute to ineffective use of GFA intervention. Users are impatient and not willing to wait long. The concept of positioning GFA in libraries can lead to misunderstanding among local municipality employees due to competition for space. In some localities, the location of GFA did not create opportunities for development managers and e-centre managers to freely do their duties without interruption. The staffer themselves were unhappy with the siting of this GFA, and in this context the service offered was regarded as inferior compared to user expectations.

7.2.2.2.2 Internet and Wi-Fi

Technically all GFA were experienced Internet failure. In certain instances, some GFA interventions went for days without connectivity, which discouraged users that were already making use of these GFA interventions from returning to the venue. The introduction of free Wi-Fi at each GFA could alleviate some of notated challenges as:

a) Wi-Fi will increase the number of users that will start interacting with GFA services via their own devices.
b) Wi-Fi will decrease the volume of users that are dependent on accessing services via desk top thus creating more space for new users.
c) The most important aspect of Wi-Fi is that users will have unlimited time frame when logged in because they will be accessing the services on their own private devices.

7.2.2.3 Conversion factors

Conversion factors influence how an individual is capable of converting the characteristics of certain resources into achieved functioning (Robeyns 2005). This study found many citizens in the research areas lacked the ability to convert ICT resources into functioning because they did not have ICT skills, aspiration and agency, thus limiting their interaction with GFA.

7.2.3 Does adoption and use of GFA in rural communities contribute towards the improvement of interaction between marginalised communities and stakeholders?

Socially GFA enabled users to interact among themselves, and to develop stronger communities' ties. Similarly, marginalised communities made use of GFA intervention to interact with other stakeholders. However, the nature of their interaction was more social as opposed to professional. In terms of economic interaction such as engaging government and business communities for business and services, there was no strong evidence to support the views that marginalised communities were achieving this goal. In nutshell, interaction between individuals and stakeholders via GFA remained questionable, and more needs to be done to validate large ICT investment seeking to close the gap between citizens and decision makers. Despite the latter, the few individuals who were using the service to access government information and interacting with government via e-mail showed that GFA can help improve citizens' and stakeholders' interaction. Therefore, to realise successful interaction between citizens and stakeholders, citizens need to acquire relevant ICT skills before being advised on how the use of GFA could assist them with accessing government service and for engaging with government for different purposes. This process can then be strengthened by the recruitment of qualified trainers working across all the GFA facilities. Skills mismatch that workers might experience could affect the sustainability of GFA. Equally, GFA staff may have formal qualification but lack people and soft skills that are critical for the nature of their jobs (Marais & Vannini, 2021). To this end, the findings highlights the need for the public sector to focus on "(1) building the technical skills required to operate, manage and sustain the digitally mediated processes of government and the underlying technological systems and databases; (2) the growth in digital literacy with a particular focus on data management and analytics for frontline service staff; and (3) the advancement of digital leadership skills among public service leaders and managers" (DCDT, 2021: 30).

7.2.4 The effect of GFA intervention on the well-being of marginalised communities living in rural areas

The empirical data collected between 2016 to 2018 gives insight on how GFA was impacting the lives of the marginalised community in the study area. The widely appreciated benefit of GFA in the Overberg region was the ability of GFA to close the gap between citizens and educational institutions. A number of students had been admitted at various universities in South Africa without having to physically travel to places those universities are situated – this

saved not only time but also money; therefore, economically and psychologically the GFA intervention added value to those users.

The presence of GFA permitted users to cut costs related to accessing government information including accessing Tax information. Entrepreneurs were thankful to GFA because transacting with government electronically not only saved them money and time but developed a sense of confidence and achievement.

From the theoretical perspective GFA interventions increased users' choices, opportunities and capabilities, this in turn, led to increasing self-esteem and self-efficacy. This is evident from the fact that users were now confident to do things that they were unable to do before. Generally, there is hope for better future among users of GFA and an increasing desire to continue making use of opportunities presented by GFA.

A summary of themes demonstrating the contributions of GFA on the well-being of marginalised communities is discussed.

- Increased choice – the introduction of GFA in communities contributed to individuals having more choices in terms of where to study and do business;
- Increased economic freedom – as result of the use of GFA a number of marginalised communities were now capable of saving money as they did not have to pay for services related to computer and internet use, and related to accessing information;
- Increased capabilities – more opportunities to employment, business, mobility and education;
- Increased agency – there is sense of improved self-esteem and efficacy;
- Increased ability to conduct online business and ability to transact with government;
- Increased community opportunities - ability to connect with friends, family, people and government – social capital and social ties;
- Increased ICT skills – GFA intervention offered free access to English materials, enabling citizens to learn how to read and write, which is critical for daily activities, such as employment, education and business in areas where English is their second language;
- Increased life satisfaction – a sense of achieving certain functioning;
- Increased hope – participants demonstrated increased hope for a better life after they started interacting with GFA.

To conclude on this section, this study found GFA had enabled some users in the area to realise their capabilities. The intervention was beneficial to those that were capable of taking advantage of it. GFA interventions enabled students that had no access to internet and computer to have a place where they could freely do their scholarly work. However, as it was difficult to identify common benefits of GFA due to community structure and a lack of theories aimed at evaluating the contribution of GFA on users, a framework was developed as lens for assessing the effects of GFA. The framework was then refined after data collection and final design is presented in section 7.3, Figure 7.1 as a lens that should guide future ICT4D policy design, intervention implementation and ICT programme assessment.

7.3 Contribution of the study

The following section discusses the contribution of the study to theoretical knowledge, policy and the practice.

7.3.1 Contribution of the Citizens Well-being Framework to the body of knowledge

This study drew on the academic literature to develop the Citizens Well-being Framework which was the lens used to undertake the evaluation of the selected GFA interventions. The Framework was derived through a juxtaposition of two extant theoretical models viz, Capability Approach and the Choice Framework. The Citizens Well-being Framework was subjected to empirical processes when used as a lens for data collection and analysis. It brought new insight into how to go about evaluating and assessing ICT4D interventions. It enabled this study to assess the effects of GFA interventions on the lives of those interacting with GFA, and to gain insight into how the Framework could be used by future policy makers when designing, implementing and examining the contribution of GFA on the well-being of citizens living in remote communities. The Framework was created with the aim of positioning it as tool that could be applied for the design and evaluation of ICT4D policy. Knowledge is socially constructed and GFA makes it possible for individuals from various backgrounds to meet and interact in close setting whilst learning, so the use of Citizens Well-being Framework helped to reveal how new knowledge was generated and added to the philosophical world.

Further, relying on reviewed literature and data collected for this study, there was strong evidence that policymakers working in ICT4D field in developing countries, particularly in Sub-Saharan Africa, are yet to adopt a single framework that they could rely on for their practice. This is because we have not had an appropriate lens that has brought together the

notion of ICT related development from this position and for addressing the phenomenon of evaluating this type of ICT programme. A lack of adoption continues to contribute to poor outcomes of GFA intervention that have been implemented across the region as development and implementation of these GFA policies had never pay attention to context, and the Citizen Well-Being Framework fills the gap. It might not be applied in the future evaluation of a public ICT intervention such as GFA but it will also add value in the context of addressing ICT4D types of interventions. Citizens Well-Being Framework Figure 7.1 present the concise outcomes of GFA deployed in Overberg District Municipality.

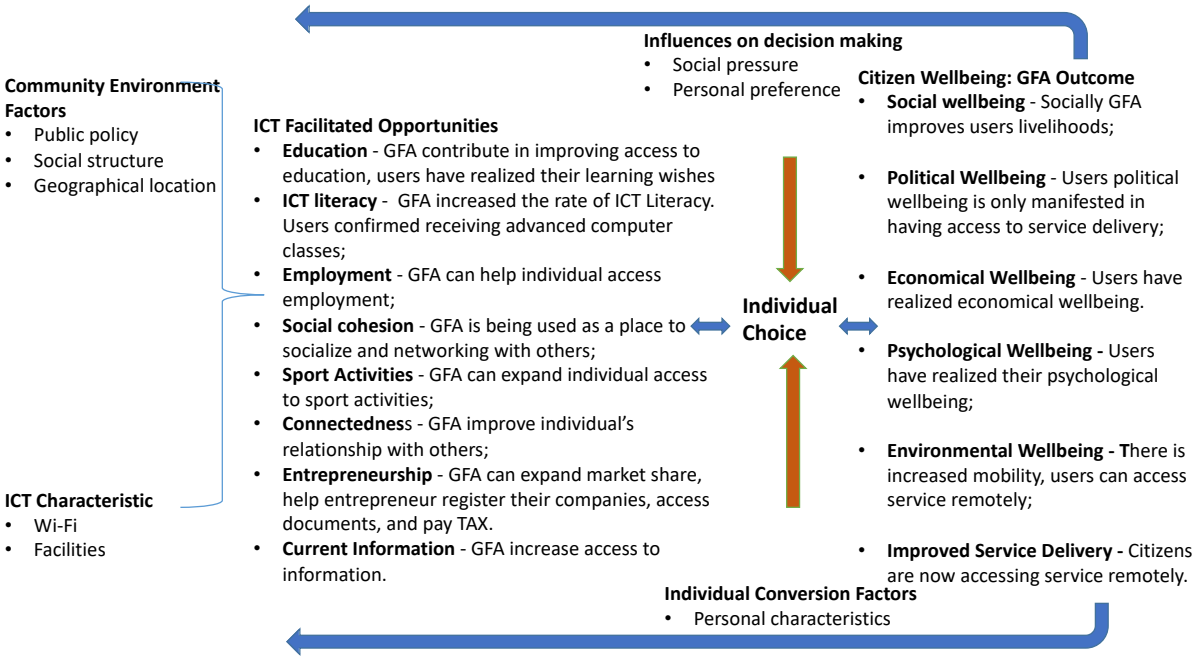

Figure 7-1 Citizens Well-being Framework

The Citizens Well-being Framework provides several tools for the evaluation tool box. The context of the evaluation and the questions being asked can determine the kind of tools that should be included in the tool box, and it also influences what should be evaluated between capabilities and functionings in spite of the study emphases being on human well-being.

The tool box of this study consists of all potentials capabilities that can be identified in the evaluation of GFA intervention.

- Social opportunities (basic education, higher education, adult education, professional education), health, social security, improved health, education, knowledge, social interaction, housing, water, sanitation, energy, transport, financial services, safety, perceived well-being, membership of community organisation, community libraries.
- Economic opportunities (owning business, income security, employment, etc.),

- Political freedoms (being able to participate in community development programmes, participate in political decision making, freedom of speech etc.),
- Psychological well-being (physical, emotional, independence, happiness, aspiration and personal development),
- Environmental well-being (mobility, living free of pollution, social support for people living with disabilities).

The Citizens Well-being Framework presents a few important indicators to assess the contribution of GFA at local communities' level. The shortcoming of the Capability Approach and Choice Framework is that Capability Approach does not place emphasis on any well-being indicator, leaving the judgment to researchers. Similarly, Choice Framework, which is now widely used for ICT4D evaluation, calls what this study believes as ICT Facilitated Capabilities as development outcomes. Therefore, this study argues that development outcomes as per Choice Framework should be seen as means that promote well-being hence a short list of distinct well-being as per Citizens Well-being Framework is critical in determining the exact contribution of GFA intervention on the users interacting with GFA at local community level. ICT Facilitated Capabilities helps researcher to easily assess what users do and what they don't when visiting GFA facilities, and how the use of these capabilities have impacted their personal and community well-being. This Framework acknowledges the importance of individual choice and individual conversion factors in influencing the kind of functioning one could achieve through the use of GFA. The more, individuals realise the contribution of ICT Facilitated Capabilities on achieving their individual's well-being the more they will likely make use of GFA interventions as tools that will enables them live their desired lives. Therefore, the achievement of certain key functioning will be determined by how these users makes new choices and converting disabling personal or social factors into enabling factors. This conclusion is drawn from the findings of this study which shows that both Capability Approach and Choice frameworks are relevant to the study that is evaluating GFA however both frameworks demonstrates some limitations. Theoretically, Citizens Well-being Framework leaves room for scholars that choose the framework for their study to adopt the six indicators or add new indicators by following guideline as per Robeyns (2003, 2005, 2006). Therefore, this could be viewed as the main limitation of the Framework since it doesn't confine scholars from adopting proposed indicators only.

7.3.2 Contribution of the study to policy design and implementation

For instance, in regards to the contribution of study to policy design and implementation, the findings points to three important issues that have bearing on the policy implementation:

1. Firstly, the study offers an understanding of how policymakers used their power to shape the views of the citizens during programme conceptualisation and implementations. Participants in all assessed areas argued that they were not involved in the design and implementation of GFA policy. Mass meetings that were held by provincial officials were asymmetrical exposing how power manifested as key actors and interest groups were not properly consulted. Policy was adopted and implemented by powerful actors thus leaving no room for integrating the views of marginalised individuals.

2. Secondly, the study uncovered a number of strategies that were adopted by competing actors to gain access to and control over specific resources, without paying much attention to the needs. This discovery has enabled this study to learn how state policies and strategies influence individual values, community dynamics, socio and economic situation yet the affected communities are hardly part of decisions that continue to affect their livelihood.

3. Thirdly, this study influenced the policy design process and decision making because it brought to light the concerns of marginalised community members whose lives were affected by decisions that were taken at provincial government level, yet its effects were experienced by the local community.

Based on these three key points, it is believed that the study makes following contributions to policy design and implementation.

It has contributed to the understanding of how GFA policy was developed and implemented, and the current social and economic condition of marginalised communities in the selected areas. The identified challenges can be addressed by ensuring that the views of marginalised communities are better integrated into policy design and implementation. Therefore, policymakers should improve the process of design and implementing ICT4D policies aimed at impacting the well-being of marginalised communities.

The study reveals the need to integrate into ICT4D praxis, modalities that align with the reality of community needs and which will address the roots of localised societal challenges. Within the South African historical context, GFA interventions will not achieve developmental outcomes without genuine bottom-up public participation. South African citizens who are struggling to meet basic needs such as providing food for their families will not be able to take advantage of GFA facilities merely because it exists. This calls on policymakers to rethink ways of engaging the poor, and to have an ongoing discussion with marginalised citizens about a framework that could be used to optimise government decision making and planning processes regarding an ICT4D intervention like GFA.

In brief, this study proposes the process of designing ICT4D policy and its implementation should:

a) Involve marginalised communities;
b) Ensure there is a regular policy analysis to determine whether its delivery is meeting the intended outcomes;
c) Ensuring regular intervention monitoring and evaluations to assess its progress and seeing that the intervention earlier outcomes have not deviated from the intent objectives
d) The process of (a), (b) and (c) should be done in consultation with all actors especially the same people whose well-being is affected by ICT4D policies and GFA interventions.

To conclude, a well thought ICT policy that takes the views of users into consideration position the GFA intervention on good chances of succeeding. When citizens' views are incorporated in the design and the implementation of ICT policy makes adoption and use of facilities more practical, thus creating hope for intervention sustainability. Equally when theirs views are left out there're great chances that citizens will not fully take ownership of GFA hence having less interest in the use.

7.3.3 Contribution of the study to practice

This section discusses what might continue to affect ICT4D implementation and offers contribution to ensure those working in ICT4D at local municipality level, particularly in remote areas, are equipped with knowledge that is relevant to their day to day administration of GFA. Firstly, the failure to deliver the intended GFA objectives anticipated by marginalised

communities and policymakers shows the influence of power dynamics in the process of implementation as a research gap. Without coordination, GFA interventions fail, because actors in policy implementation display different power. To be precise, the issues of power, the economy disparity, matters of race and cultural dynamics continue to play a challenging role in the success of GFA intervention implemented in remote areas. To alleviate this challenge, decision making for ICT4D policies should not be left at national level and provincial government alone. Local communities should be made aware of their rights to constantly question the progress of the intervention since GFA interventions are implemented to meet their needs. The sustainability of GFA interventions located in rural communities depends on perceived values and benefits that its can offer to its intended communities as main beneficiary.

In regard to participation, the study found that there was no strategic document that guided the implementation process. This study suggests that participation needs to be guided in order to produce expected outcome, and it has to start with the issue of power analysis as power dynamics set the tone at almost every level of human interaction. In terms of policy implementation process, the way GFA policy and policies activities are communicated should set right tone that will encourage collaboration to ensure all participants will fully contribute. Open communication is paramount to effectively realise the voice and identity of local communities and their participation at all levels. So, by paying attention to the effect of power, the fundamental principles of openness and inclusiveness can be upheld during public hearings. Communication is a major force for development especially at grassroots level as it facilitates attitude and behaviour changes, determines whether citizens will adopt and make use of any developmental intervention. So, successful implementation of GFA requires a clear understanding of open communication and the multiplicity of power dynamics in remote areas as in urban areas.

Furthermore, the findings reveal GFA may worsen racial divides that exist within the area of study since some citizens perceive that the service offered at GFA are based on racial preferences, thus making the space not conducive to all users. The feeling that certain group of citizens is more important than others is still prevalent in the minds of some citizens living in Western Cape. Some members of the black communities seemed to believe that GFA interventions continue to favour other citizens grouping as opposed to them. As noted in

chapter 5 some users were uncomfortable with the types of interaction taking place at GFA locations, for example some view language used for instruction is a tool to marginalise others.

To deal with the noted challenges, both layers of governments need to address the issue of space in terms of user freedom and experience vis-à-vis to implementing GFA. At the first stage of implementation, provincial government will need to spell-out different types of roles that each stakeholder should perform to permit them to balance their interests in policy implementation process. Policy implementers working with community members in GFA implementation should map and acknowledge community resources, and help to show the marginalised citizens that their resources and participation as member of communities are valuable for the successful implementation of GFA.

The deployment of staff for various GFA interventions should pay attention to users' backgrounds to ensure that no citizens should feel left out because of the medium of instruction, or some other form of discrimination. The government must become more diligent in holding regular consultation with communities at grassroots level. The role of each stakeholder within the community should be precisely discussed, recorded and disseminated to all concerned communities' members. This step can assist in alleviating the issue of power conflict since each stakeholder position will be understood hence improving implementation coordination. Notwithstanding the later, the importance of a coherent, and regular monitoring and evaluation remains critical because elements of government policy in respect of development tends to be too theoretical as a result, in practice, not enough effort is put into consultation.

In brief GFA policy implementation should:

- Focus on needs; this can be achieved through a need analysis meeting with all actors, where needs are identified and clearly communicated;
- Provide a clear vision, for example having ongoing workshops with emphases on visions and project objectives;
- Adhere to implementation guiding principles;
- Have the support of all stakeholders;
- Prioritise specific objectives to facilitate implementation;
- Regularly survey users' experiences and behaviours.

To conclude, GFA should consist of a skilled trainer equipped with necessary tools to enables them provide digital training that can expand the capabilities of GFA users (Iyer, 2017; Marais

& Vannini, 2021; Abubakre &Mkansi, 2022). Training should focus on improving effectiveness in rendering services including better administration practice. In addition, Saraei and Amini, (2012) suggested following key points to be considered for the sustainability of GFA interventions: reliability, responsiveness, empathy, assurance and tangibility. These concepts are further discussed below.

- *Reliability: The ability of service providers to fulfil their commitments continuously and accurately. For example, to ensure that, in the GFA policy, there is a well-defined clause that indicates how the actors involved in the running of GFA should approach and address the issue of internet breakdown.*
- *Responsiveness: The willingness and accountability of the service providers to support their clients. For instance, ensuring that centre manager and development managers are well trained on matters related to client services and relations.*
- *Empathy: The intimacy with the clients and understanding of their individuals' feelings and problems. In the case of GFA, people's skills are very important. The centre manager and development manager are supposed to be individuals that have a clear understanding of cultural dynamics and the ability to accommodate others.*
- *Assurance: The competence and skill of the staff of an organization to give confidence and trust to the clients. The issue of skills mismatch was noted as one of the factors challenging the survival of GFA facilities, so the process of hiring needs to be left to qualified recruiters. However, staff working at GFA centre are supposed to be individuals from the community where the GFA is operating.*
- *Tangibility: The tidiness and appearance of assets and property of an organization including its staff. For example, there is supposed to be ongoing training on organisation identity and image in order to ensure each staff member is aware of the importance of tidiness.*

7.3.4 Methodological contribution of the study

With regard to methodological contribution. the study proposes critical points which have bearing on ICT4D research:

1) For a clearer understanding of intended policy outcomes of the community-based ICT4D intervention, the researcher should seek to understand the initial objectives that led to the inception of said intervention. This stage can be identified during research design process followed by a discussion with both disadvantaged communities'

members and policymakers during a study pilot work. This proposition is drawn from the researcher's own experience. The researcher started by visiting all centres, engaged the community's leaders, communities' representatives, GFA centres managers and development managers before he could choose suitable research methods for the study.

2) The study's ontological, epistemological and philosophical stances can then be drawn after a clear understanding of the intervention policy objectives and perceived outcomes, and the meaning which communities attribute to the intervention;
3) The choice of research design, methods and data collection instruments should be influenced by both points (1) and point (2).

The interpretive component is dynamic; it provides researchers with the flexibility to trace cohesions in experiences across the entire raw data, connect those experiences within a larger literature, and ultimately expand on what is already known about the phenomenon. This study intends to demonstrates that the use of interpretivism in an ICT study that seeks to understand how users construct and interpret the meaning of their lived experience of GFA; and is sensitive to context. For example, the researcher's own lived experience of the Overberg community was an advantage in terms of being familiar with the community setting. Being cognisant of community dynamics was critical, and it assisted with deciding which methodological tools were appropriate for the study. To this end, the weight of this study was on the research question, provide details regarding the context in which the study was conducted, participants, and make clear connections to existing literature in the interpretive philosophy as per Emery & Anderman (2020).

7.4 Limitations of the study

Methodologically there is notable limitation that can be addressed in future studies. For example, data were collected in a single region of the Western Cape, therefore the small sample size is perceived as a limitation since the findings cannot be generalised to a larger population beyond the border of South Africa. However, the simple size is justifiable for a study that is looking at single or multiple case studies within a single province. Researchers interested in evaluating similar interventions could consider to expand their sample size in order to fully understand community perceptions of the impacts of GFA to their well-being and government service delivery. Secondly, lack of funding was viewed a limitation for this study. The ability

to spend more time in the field as part of observing the long-term effect of ICT intervention on the economic well-being was limited due to lack of funds. Spending more time with users would have assisted in observing the effect of GFA on the economic well-being of many users as this remains critical in terms of improving users' livelihoods and policy recommendation. On the issue of generalisability, the findings of this study can be generalized to the South African context of GFA since there is several GFA that has been implemented by the South African governments.

To conclude, in spite of the fact that e-government, digital divide and mobile phone penetration remain critical areas that require empirical investigation, they were not part of this assessment. This evaluation focuses on Government Facilitated Access to ICT, therefore; it is not about e-government, digital divide or mobile phone penetration. However, the topics were briefly discussed because government holds the view that they can contribute in improving government's services delivery.

7.5 Future study

Policy options recommended by this study necessitate further research. The study suggests improving engagement strategies to necessitate fair participation of all citizens during the conceptualisation of ICT for development designed for remote areas communities. The enhancement of policy design and its implementation should put emphasis on the importance of integrating users' views, open communication and power dynamics, thus ensuring project sustainability. This study calls for further research that would focus on findings ways for sustaining ICT for development programme aimed at rural communities since technically, most of rural areas ICT4D programmes experience a variety of challenges that have implications for their sustainability. It also recommends further study that will examine the perceptions of all stakeholders (citizens, government institutions, politician and academicians) in relation to the contribution of GFA on the well-being of marginalised communities in details. The study can explore GFA interventions located in rural areas as well as those in towns, the findings spanning from rural to urban could help decision makers, practitioners and academics to learn the causality. The findings also can necessitate the formation of a sound ICT4D policy and strategies that speak to the needs of all competing stakeholders.

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APPENDIX:

Appendix (A): Ethic certificate

UNIVERSITY of the WESTERN CAPE

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17 January 2017

Mr FR Kassongo
Institute for Social Development
Faculty of Economic and Management Sciences

Ethics Reference Number HS16/8/28

Project Title: The impact of e-governance intervention and policy on the well-being of indigent citizens in the Overberg District, South Africa.

Approval Period: 17 January 2017 – 17 January 2018

I hereby certify that the Humanities and Social Science Research Ethics Committee of the University of the Western Cape approved the methodology and ethics of the above mentioned research project.

Any amendments, extension or other modifications to the protocol must be submitted to the Ethics Committee for approval. Please remember to submit a progress report in good time for annual renewal.

The Committee must be informed of any serious adverse event and/or termination of the study.

Ms Patricia Josias
Research Ethics Committee Officer
University of the Western Cape

PROVISIONAL REC NUMBER - 130416-049

FROM HOPE TO ACTION THROUGH KNOWLEDGE.

Appendix (B): Letter of Consent for the Interviews

Letter of Consent for the Interviews: (community development workers and community ward representatives)

I, _____, agree voluntarily to take part in the research project being conducted by Francois Kassongo, with Student No. 3689225 as part of the requirements for his Doctorate Degree in development studies at UWC in the Institute of Social Development. I have read the Participant Information Sheet attached to this letter and I understand the contents thereof. Any questions which I have asked have been answered to my satisfaction.

I understand that the information which I will supply is confidential and that it will be anonymised and will only be used in the findings of the research.
I understand that I do not have to answer all the questions which may be put to me. The information which I provide will be held securely until the research has been completed after which it will be destroyed. The information which I provide will not be used for any other purpose other than primarily objective of his degree.

I understand that I am entitled to ask for a de-briefing session or a copy of the research at the end of the project. I have been informed that I may withdraw from this study at any time and that any information which I have supplied will be used for this research and any records relating to my contribution will be destroyed.

Appendix (C): Information Sheet

Information Sheet: interview (Policy developers and ICT coordinators in the department of the premier**)**

Title: The effect of e-governance intervention and policy on the well-being of indigent citizens in the Overberg District, South Africa

1. **Name of Researcher Contract details**:

   François Kassongo
   E-mail: 3689225@myuwc.co.za
   Cell No: 072340 2669

2. **Title of research**

   The effect of e-governance intervention and policy on the well-being of indigent citizens in the Overberg District, South Africa

3. **The main aim of the study**

   The main objective of this study is "to evaluate the effect of e-governance intervention and policy on the well-being of indigent citizen's in the Overberg District Municipality".

4. **Description of the study**

   Academic research for a degree which requires primary data from individuals involved or has interest in e-governance interventions.

5. **Duration of the study**: 36 months (or 3 years).

6. **What will be your involvement and how long will it take?**

Contributor will be interviewed. The time required is estimated to be approximately 60 minutes

7. **Why you have been asked to participate?**

You have been asked to partake in this study due to your experience with e-governance intervention hosted at Thusong Centre

8. **What will happen to the information which will be given for the study?**

The information will be held in a confidential manner (secured cupboard) while the interviews transcripts are being processed. Following the successful completion of the research the interviews transcripts will be destroyed.

9. **What will be done with the Results of the study?**

The results of the interviews will be reported in the findings section of the research. This will be done in a completely anonymous manner.

10. **What are the possible disadvantages?**

There are no costs to you associated with your involvement with this study. It is not envisaged that any negative consequences will accrue to you from your contributions in this research.

11. **In what way will the study be beneficial and to whom?**

It is hoped that this study will provide a useful insight on effect of e-governance on socio-economic development for all citizens then assist in developing a framework for implementing ICT4D.

1. **Who has reviewed this study to ensure that it complies with all the requirements and ethical standards of the university**?

   The Ethics Committee of the University of the Western Cape has approved this research proposal and granted permission for the research to commence.

2. **Can permission be withdrawn having previously been granted?**

   Yes, all contributors shall retain the right to have their contributions to the research withdrawn at any time.

3. **Can I refuse to answer any question?**

   Yes. The contributor has the right to refuse to answer any question during the interview.

Note: If you have any questions concerning this research, feel free to call (Frank Kassongo, +27 27 340 2669) or my supervisor, (**Professor William Tucker, +27 21 959 2516**).

Appendix (D): Interview Schedule

Interview Schedule: (Cape Agulhas/ Overstrand Municipalities' managers and employees**)**

Overall issues	**Interview questions**
1. Overall effect of e-governance intervention on the well-being of the users	What is the effect of e-governance intervention and policy on the well-being of indigent citizens in the Overberg District Municipality?
	What are the effects of e-governance intervention on good governance and service delivery in the Cape Agulhas Municipality and Overstrand Municipality?
	How does the use of e-governance projects has enabled indigent citizens to realise their capabilities, and to which extend it has contributed to their well-being?
2. E-governance policy design, implementation and identification of individual's needs	A top-down management approach has been followed by several e-governance projects which have often not worked thus has not been able to fulfil the needs of the citizens despite the cost of these projects. a) Can you please discuss the management approach that is used in the design and implementation of e-governance policy? b) Were the citizens fully consulted during the design and implementation of e-governance policy? c) What were the process followed by the local and provincial government in consulting various stakeholders about the design and implementation of e-governance?
3. Factors influencing the effectiveness of	Can you please explain the decision-making process, if any, that was used in the commissioning of ICT intervention? a) If the decision making process was uncommon, then can you describe the usual decision-making processes

e-governance at local government	involved? b) If the decision-making process was not unusual, then can you describe the decision-making processes the design and implementation? c) Please describe the management approach. d) If there is no management approach, who would take charge and ownership? How does this happen? e) Do you believe civil servants are generally not sufficiently technologically savvy to understand the consequences of their decisions on the project? f) Do you agree that civil servant's decision making processes are complex and bureaucratic?
4. Drivers of Change: State of E-governance at local government	Can you describe how senior managers give support to the implementation of Cape Access project? a) Describe the type of support that senior managers give? b) If they do not give support, how does this influence the success of the e-governance intervention (Cape Access)? Have you encountered colleagues who have not been enthusiastic about e-governance project (Cape Access) initiatives? a) In what ways did they demonstrate their lack of enthusiasm? b) In what ways is resistance to change an issue at all level of government? How do enthusiastic colleagues demonstrate their willingness to participate in the design and implementation of e-governance intervention (Cape Access)?
5. Government employee's perceptions of Cape Access intervention: E-governance progress in South	Do you believe investing in ICT will help poor citizens realise the lives want to lead? What is your preference between engaging your stakeholders face-to-face while giving a better ear to their needs or using ICT to interact with them?

Africa and obstacles to success	How can the existing strategies be improved to ensure the e-governance intervention and policies are effect driven and meet poor citizen's expectations?

Appendix (F) Householder Survey Questionnaires

Survey questionnaire: "Indigent Citizens"

Demographics

1. Income and education level

	Issue	**Response**
1	How much is your monthly income	
2	What is your education level	

Use of ICT (Cape Access services)

2. Individuals and community organisation use of Cape Access project

	Issue	Response
1	How many people in your family makes use of Cape Access services?	
2	Do you or your family member own a computer or ICT application	
3	When last did you use Cape Access to communicate with your government	
4	When was your first time to interact with a ICT application	
5	How many of your friends are making use of Cape Access services	

Resources that are prevalent in your community

3. Which of the following resources listed is/are prevalent in your community? Mark your answer with an [X].

Resources	**Prevalent**	
	YES	NO
Income		
Education		
E-skills		
Ownership of a mobile device and any Internet and Web enabled device		
Membership of an online social media		
A city library membership		
Connection to community leaders		
Laws and policies favouring the use of Cape Access in interactions with government		

Service delivery

4. Do you agree or disagree with the below statement? Mark your answer with an [X].

	Issues	**Agree**	**Disagree**	**I don't know**
1	Cape Access intervention had improved public access to quality government information and services			
2	Cape Access intervention had improved quality and cost-effectiveness of government services			
3	Cape Access intervention had improved information sharing and communication between government and citizens			
4	Cape Access intervention had improved opportunities for participation in democratic institutions			
5	Cape Access intervention had enhanced my confidence level because now I can engage the government through ICT			
7	Only the rich and the well-educated citizens have benefited out of Cape Access intervention			

8	Cape Access intervention helped me to better my relationships with private citizens.			
9	Cape Access intervention helped me to transact with business community.			
10	I now participate in governance and decision making as a result of Cape Access intervention.			

Social and Economic development

5. The use of ICT has contributed to the realisation of the live you want to lead.

	Issues	**Strongly disagree (1)**	**Disagree (2)**	**Neutral (3)**	**Agree (4)**	**Strongly agree (5)**
1	The use of Cape Access made me to meet some of the household's basics needs					
2	The use of Cape Access helped me realise my life wishes					
3	After I started using Cape Access my business turnover improved					
4	The Cape Access has increased my access to job, business and research information					
5	The use of Cape Access has increased my interaction with government					
6	The use of Cape Access has increased confidence					
7	The use of Cape Access has increased health environment					
8	The use of Cape Access has increased income generation opportunity for me (employment, entrepreneurship, etc.)					

9	The use of Cape Access as increased my e-skills and competency					
10	The use of Cape Access has increased mobility (transacting with travelling agencies, geo-information).					

Achieving or realising individuals and community functionings (achieved goals).

6. Rate the following Cape Access resources on their level of importance in terms of helping one achieving or realising individuals and community functionings **(**achieved goals)? On a scale of 1 to 5. 1 being poor and 5 Extremely Important. Mark with an [X].

Resources	Extremely important	Poor	Somewhat important	Not very important	Not at all important
Education	5	4	3	2	1
E-skills	5	4	3	2	1
Ownership of a mobile device and any Internet and Web enabled device	5	4	3	2	1
Membership of an online social media	5	4	3	2	1
A city library membership	5	4	3	2	1
Connection to community leaders	5	4	3	2	1
Laws and policies favouring the use of ICT in interactions with government	5	4	3	2	1

7. **Communication mediums.** Mark your answer with an [X] in the appropriate box. You can select more than one.

To communicate with me the government makes use of:			**To communicate with the government I make use of:**	
Call			Call	
E-mail			E-mail	
SMS			SMS	
WhatsApp			WhatsApp	

Facebook			Facebook	
None of the above			None of the above	

8. The place of indigent citizens in the ICT policy design and implementation

	Issues	YES	NO
1	When the government introduced ICT in my community I was consulted		
2	Does the municipality leadership involve you or your community in its decision making processes especially on issues that has to do with Cape Access services?		
3	Community members and I had received training on how to use Cape Access services		
4	The communication strategy that were used to inform me about the Cape Access intervention was precise?		
5	Myself and many of my friends are thankful to the government for Cape Access intervention		

9. Effect of e-governance intervention on your well-being

On a scale of 1 to 5, rate the effect of e-governance intervention on your well-being. Mark with an [X] in the appropriate box and justify your answer.

a. Your experience of Cape Access intervention situated at Thusong Centre is:

Excellent	Very good	Fair	Good	Poor	I don't now	Why?
5	4	3	2	1		

b. Based on your personal experience, Cape Access project services is?

Excellent	Very good	Fair	Good	Poor	I don't now	Why?
5	4	3	2	1		

a) Do you believe investing in ICT will help poor citizens realise the lives they want to lead?

YES	NO

b) Please justify your choice:

10. Evaluation of success or unsuccessful of e-governance (Cape Access project)

	Issue	Agree	Disagree
1	Largely successful: most stakeholder groups attained their major goals and did not experience significant undesirable outcomes		
2	Successful: most stakeholder groups attained their goals and did not experience significant undesirable outcomes,		
3	Partially successful: some major goals for Cape Access were attained but some were not and/or there were some significant undesirable outcomes,		
4	Largely unsuccessful: some goals were attained but most stakeholder groups did not attain their major goals and/or experienced significant undesirable outcomes,		
5	Totally unsuccessful: the majority of the target audience are not using Cape Access		

11. Individuals/Community/government employee's perceptions of the decision maker

	Issue	Responses	
1	Civil servants are generally not sufficiently technologically savvy to understand the consequences of their decisions on the project.	Agree	Disagree
2	Civil servants often do not know what is actually required from Cape Access	Agree	Disagree
3	Civil servants do lack interest in understanding which Cape Access needs are more needed by users	Agree	Disagree
4	Decision makers are not computer literate or knowledgeable enough to understand the technologies and its capabilities	Agree	Disagree
5	Poor IT skills base among civil servants who are supposed to manage e-government services discourage users	Agree	Disagree

The South African e-governance environment

12. South African e-governance emphasis is being placed on ICT projects, at the expense

of careful analysis and consideration of the broader economic, social, and political elements that interact to improve the lives of individuals.

Issue		**Agree**	**Disagree**
The challenge of poor government, corruption and transparency cannot be solved by the application of e-governance. They may be partially mitigated by the appropriate use of e-governance as follows:	electronic identification of citizens		
	improving financial transactions between citizens and government		
	monitoring policy, government assets and internal administration		
	data collection		
	tax collection and payments		
	improving the way that the judiciary operates and procurement.		

13. The effect of Cape Access on education – Mark with an X in the appropriate box.

	Issues	**Most of time**	**Sometimes**	**Hardly**	**I don't use**	**Never**
1	How often do use ICT located at TSCs?					
2	I use ICT intervention for sending and receiving e-mail					
3	I use Cape Access to search jobs					
4	I use Cape Access social media					
5	I use Cape Access for Learning new skills					

14. Major barrier hindering the successful use of Cape Access intervention.

1	**Issues**		**Strongly Agree**	**Agree**	**Neutral**	**Disagree**	**Strongly disagree**
		Lack of support					

2	What are the major barriers that you are facing every time you go to Thusong Centres to use Cape Access services?	Unfriendly staff					
3		I cannot use computer					
4		I don't know how to use internet					
5		The place is always crowded					

15. Self-reliance, confident and less dependent to government aid

	Issues	**Strongly Agree**	**Agree**	**Neutral**	**Disagree**	**Strongly disagree**
1	The use of ICT Intervention has enabled me to become independent					
2	ICT Intervention has enabled me to become less dependent to government aid					
3	ICT intervention has enabled me to become more confident					

16. Cape Access Support desk

	Issues	**Excellent**	**Very good**	**Good**	**Fair**	**Poor**
1	The support that I get from the ICT support desk is:	**5**	**4**	**3**	**2**	**1**

17. General

A. Are there any other issues which I have not raised but which may be important in learn how ICT intervention and policy have contributed to the live that you want to lead?

B. In general, what is your experience of the ICT intervention?

C. How does the use of ICT located at TSCs has enabled you to realise the live that you want to live?

D. What do think you would have done if you were part of the people that took the decision to implement the ICT intervention?

Appendix (G): Request for interviews

Interview request: ICT for development

Frank Kassongo <kassongof@gmail.com>
Thu, 9 Mar 2017, 11:35

to Desiree, Rochelle, Craig, Solomzi

Dear Ms Desiree,

I trust God that you and your team at Overstrand Municipality are doing well.
I took long to write to you than anticipated because I had to interview provincial leadership from the department of the premier and the department of economic development and tourism.
Hereby, I would like to request a date for face to face interviews with the directors and managers that I met last year when I come to introduce myself and my research interest. It will be great and well appreciated if I can do all the interview in one week or in less than a week. Such arrangement will help me to cut down cost on transport and accommodation.

Note: my studies focus on the effect of e-Government intervention and policy on the well-being of indigent citizens in the Overberg region.
Many thanks and I look forward to meeting you in person soon.

Kind Regards,

Frank Kassongo | DPhil Candidate

Development Studies | Institute for Social Development (ISD)
Faculty of Economic and Management Sciences
School of Government | University of Western Cape

Desiree Arrison <desiree@overstrand.gov.za>
Thu, 9 Mar 2017, 17:31
to me, Craig, Rochelle, Solomzi

Dear Frank

I am fine, thank you.
I am copying my colleagues on your request. Please liaise directly with them to schedule appointments

Kind regards

Desireé Arrison
Director: Management Services / Direkteur: Bestuursdienste
Overstrand Municipality/Munisipaliteit

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