A Phenomenological Study of the Lived Experiences of Social Housing Residents in Relation to their Digital Exclusion

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ABSTRACT

There is no more significant threat to a prosperous South Africa than the persistent socioeconomic exclusion and continuous spatial segregation of South African society. Social housing and digital inclusion both play a critical role as inclusionary interventions for the socioeconomic advancement of the previously disenfranchised and the reintegration of apartheid-era segregated communities. Access to ICTs provides marginalised communities with platforms and tools to amplify their voices, gain access to information and reaffirm their citizenship, thereby allowing for more vigorous participation in the national discourse.

> "The goal of ICTs is not to necessarily solve the digital divide but rather to further the process of social inclusion."
>
> (Warschauer, 2003)

Furthermore, these technological platforms provide access to life chances, capital enhancing activities, information and the possibility of building networks outside of individuals' modest social networks. This study seeks to understand how digital exclusion influences the experience of overall inclusion in South African social housing. This dissertation is a qualitative study employing a mixture of phenomenological and ethnographic methods to document and make sense of the lived experiences of participants in relation to their exclusion. The study uses of semi-structured interviews, focus groups and surveys to explore participants' adaptation and integration into local formal institutions and the host community of Blue View Terraces, a mostly white, middle-income neighbourhood located in Cape Town.

The study discovered the coexistence of many different and competing forms of exclusion. Firstly, a key finding during the process of residential desegregation or spatial inclusion was participants' pervasive experiences of power dynamics. These power dynamics manifested as discrimination and marginalisation that was partly caused by the absence of relocation support, public awareness programs about social housing and a failure by the social housing institution to adequately address more forms of inclusion than just spatial. Secondly, the findings showed the design of the housing development to be hopelessly inadequate to support newcomers' actual lives. Necessary infrastructure was omitted in favour of a lower build cost. This led to a

higher cost of living that is unaffordable for social housing residents and negates the benefits of lower cost rental accommodation. Lastly, findings showed that digital exclusion negatively influences the adjustment of low-socioeconomic status children into high-socioeconomic schools and leads to forced assimilation when learners come into daily contact with schools in their locality.

The findings signify that social and economic inclusion efforts and even building projects can and should not be considered in isolation. Each form of exclusion competes with another, often exacerbating its effects. Also, of significance is the default approach to integration in South African schools of assimilation rather than multiculturalism. The outcomes of this study highlight the importance of considering multiple forms of exclusion together rather than in isolation, especially in the context of social inclusion projects.

CHAPTER 1: INTRODUCTION

1.1 Introduction

It is the crack of dawn and Mdebi, 29 years old, is on her way to work in Cape Town's central business district. It is a well-orchestrated but cumbersome routine, which starts at four AM and takes various dilapidated taxi busses and trains that seldom arrive on time. The journey takes her two hours from her home in Mfuleni into Cape Town in the morning and again in the evening. Mdebi's hardships are far from unique – many of Cape Town's residents still live in far-flung areas dominated by historical apartheid city planning. Fast-forward two years to November 20th, 2012. Cavalcades of cars arrive at a huge white marquee tent where drinks and agendas are handed out to delegates from government, the private sector and civil society. Outside onlookers try to gain a sneak peak of the hustle and bustle of the ceremony. It is the grand opening of a new R55 million, 2.5 ha social housing development and Mdebi's new home: a public-private funding venture touted as the new standard for integrated human settlements.

> Social Housing Provider: "It's a means of improving and upgrading entire communities and creating opportunities that complement long-term socioeconomic integration, a focus on diversity, and the promotion of social cohesion and transformation."

Social housing has been proposed as a means to address historical structural inequalities and to ensure people of different races, socioeconomic backgrounds and cultures live together. It provides historically marginalised families and individuals with safe, secure and affordable homes close to economic opportunities. The South African Social Housing Act (No. 16 of 2008) was promulgated in an attempt to overcome these historical spatial inequalities and to provide the Mdebi's of South African society with economic opportunities and an equal footing in contemporary South Africa. Social housing aim to achieve this through the provision of subsidised rental accommodation to families with low incomes. A low-income family is defined as "those with a household income below R7,500 per month" (Social Housing Regulating Authority of South Africa, 2005). The regulatory body describes social housing as:

> "A rental or co-operative housing option for low to medium income households at a level and which is provided by social housing institutions or other delivery agents in approved projects in designated restructuring zones with the benefit of public funding."
>
> (South African Government Gazette, 2008:5)

Today, urban renewal and transformation remain at the top of South African government's agenda for recalibrating economic growth, urban regeneration of historically disadvantaged communities and the desegregation of previously whites-only suburbs. This legislation has given rise to the social housing sector, which today works in unison with civil society and government to operationalise its plans and policies pertaining to housing. Through its many community programmes social housing also provides a springboard for social and digital inclusion and consequently higher levels of economic engagement (Housing Development Agency, 2013).

1.2 Background and Conceptual Framework

To put this study into context, it begins with the macro view of building an inclusive society, characterised by active citizenship and participation in economic, social and civic norms. South Africa's National Development Plan (NDP) is deeply rooted in the concept of social inclusion. The NDP's goal in terms of Section 9 (2) of the Constitution is for redress by broadening opportunities and pursuing substantive equality, thereby creating a non-racial and inclusive society. More importantly is the goal for full and equal members of society, with a view to active citizenship. This will in part be addressed by the concept of social cohesion, which refers to "the extent to which a society is coherent, united and functional, providing an environment within which its citizens can flourish" (Evaluation of Public Opinion Programme, 1999). The social housing sector aims to provide such an environment through spatial inclusion and other programmes to realise the goals of equality and full citizenship of all residents living there.

There are, however, many other factors in need of consideration, such as the successful integration of residents from other socioeconomic backgrounds into a more often than not higher socioeconomic context. Berry (1997) describes some environmental factors that need to be present in the host community for a positive acculturation outcome such as integration. These factors are a supportive environment that does not discriminate or prejudice newcomers,

and one that provides some type of social support to reduce the stress involved with such relocation. The attitude of Blue View's community towards newcomers is a determining factor of how well they will adapt or are allowed to adapt to this new environment and the long-term acculturation outcomes. Other factors that moderate the acculturation process are attitudes towards ICTs and the coping strategies employed (such as the use of their personal/social networks or social capital). Other moderating factors pertain to their level of access (for example the speed of internet access and hardware being mobile-only or PC-primary) (Donner & Gitau, 2009). Lastly, acculturation can be aided or hindered by the institutional support available in schools, such as homework and ICT support, or school policies that support the diversity and integration of low-income groups.

One often forgotten form of exclusion is digital exclusion, and this is felt strongly when the digitally excluded have to coexist with the digitally included, as is the case in social housing developments. This is an area where the social, economic and institutional processes through which disadvantage is produced can be observed, as can the outcomes or consequences of those processes on individuals, groups or communities.

It is crucial for all citizens who wish to make sense of 21st century life to have a degree of digital engagement in order to be part of the omnipresent digital dialogue. ICTs (information and communication technologies) have been recognised as a fundamental part of 21st century citizenship (Murdoch, 2002; Warren, 2007), with countries such as France and Finland already declaring broadband internet access a basic human right (Walton, 2012). South Africa, although having made great strides, is still battling with the infrastructure basics and, due to the spatial legacies of apartheid, has significant catching up to do. This backlog and the prohibitive cost of ICTs are fundamental drivers behind the mammoth adoption of mobile devices as a means to access the internet and information, and connect with friends, family and networks. Unfortunately, mobile-centric uses of ICTs have inherent limitations when compared to PC-centric ICT practices (Donner & Gitau, 2009). This is especially evident when mobile-only users from low socioeconomic backgrounds come into prolonged contact with PC-centric middle- to high-income communities, such as is the case with residents living in the social housing community of Blue View.

The aims of social housing also dovetail those of digital inclusion in that both address a form of spatial divide: one offline and the other online. It should make sense then to combine the two to provide additional mechanisms for social and economic inclusion. Digital inclusion is a dynamic and fluid concept, rapidly evolving as technology advances. What may have been

considered advances three years ago are today considered basic (Helsper, 2013). Digital inclusion is about addressing inequalities for persons that are unable to access the normal affordances of ICTs and who are as a result disadvantaged and marginalised (Seale & Dutton, 2012). It also refers to:

> "Inequalities of opportunities to access and use technologies and inequalities of outcome resulting either directly or indirectly from engagement with these technologies."
>
> (Selwyn, 2004b)

There is already huge investment by government in infrastructure in the low-income urban areas of South Africa with free public Wi-Fi rollouts currently under way in historically disadvantaged public spaces such as Khayelitsha, Atlantis and Mitchells Plain. These rollouts have been planned for low-income areas or those that have historic spatial and socioeconomic dysfunctions as a means of providing citizens with access to information and tools for social and economic mobility. Free internet is, however, only concentrated in public spaces and does not provide blanket coverage to an entire community. Citizens still have to travel to public access spaces, such as nearby clinics and government offices, to access online services. All these measures are commendable for solving poor internet access but do not address the limitations of mobile-only internet browsing and mobile content generation from an entry-level mobile device.

This pervasive inequality and lack of access to resources has also contributed to the velocious adoption of mobile phones in the low-SES (socioeconomic status) market. This adoption of mobile phones in South Africa and Africa can be seen as an indication of the demand for telecommunications services and a means of overcoming the prohibitively expensive cost of ICTs that for many are a roadblock to richer online engagement. This mobile-only use of the internet also means that the experience for these users is quite different to that of the middle class PC-centric use of ICTs. Most online content today is still designed for a PC-centric world, with mobile browsing still only having a subset of the functionality of PC-based browsing. These mobile centric users typically live at the fringes of the information society and experience great difficulty when needing to use their mobile phone as a research or information-producing tool for educational purposes.

1.3 Problem

The problem for residents of the Blue View social housing community is that their recent relocation and integration is with multiple race groups and a community that is higher than them on the socioeconomic ladder. Participants faced many challenges, such as the desegregation of a previously whites-only suburb and their consequent integration into a social housing development made up of different cultures, races and practices. The surrounding community was still a largely 'white' middle-income community.

Furthermore, the policies and practices of local schools are accustomed to educating students of a higher SES and digital exclusion exerts an influence on the lives of Blue View's learners. This research aims to investigate their everyday lived experiences, both individually and as a group unit, and what the possible long-term effects may be if digital inclusion is not considered as important as spatial inclusion and desegregation.

Hindman (2000) mentions, "In the era of digital convergence, non-use and non-access to information technologies may lead to perceived non-existence". In line with this thinking, this study aims to explore the integration of Blue View learners into local schools from an ICT perspective. Currently, learners use the internet to conduct extensive research online and to produce homework assignments; however, learners from low socioeconomic backgrounds are often expected to operate within the same time limits as their PC-centric middle-class peers. Having only a mobile phone to conduct extensive school research and complete written assignments is incredibly challenging as the very nature of mobile phone use lends itself better to brief online engagements. This became a weekly stress in the lives of participants, as they had to employ a variety of coping strategies to complete homework and assignments. There is typically a lack of available homework and assignment support for learners from low-SES backgrounds attending these local middle-SES schools. Previous discourse on digital inclusion has primarily focused on the benefits and obstacles to digital inclusion (access, skills and attitudes towards ICTs but little is known about the forced assimilation and marginalisation of mobile-only users to conform to PC-primary practices found in middle income South African schools (Gitau, Marsden, & Donner, 2010).

1.4 Purpose Statement

The purpose statement is a declaration of how the dissertation attempts to address the problem(s) posed (Lunenburg, Fred C. and Irby, 2008). The first purpose of this study is to analyse the data collected and focus attention on the influence that digital exclusion may or may not have on social housing residents and especially those who have been part of the process of desegregation. Secondly, there is the potential to use the learnings from this study to influence future social housing build programmes and to shape targeted solutions and interventions to not only solve spatial inclusion but to also provide scaffolding for solving other forms of exclusion. The data collected and analysed in this study contributes to the larger body of knowledge on digital exclusion and inclusion through social housing. Some researchers and educators may find value in knowing more about how digital exclusion influences and manifests in such a diverse environment. Most importantly, the data collected and analysed in this study has potential ramifications for decision-making and classroom instruction at much broader levels.

1.5 Research Questions

This study therefore seeks to understand:

> How does digital exclusion influence the broader experience of inclusion in South African social housing?

1.6 Research Aim

The aim of this research is firstly, to understand the role digital exclusion plays in social inclusion within social housing developments and secondly, to raise awareness amongst policy makers, social housing institutions and broader society about the ramifications of not considering digital exclusion in social housing planning as well as the potential influence digital exclusion exerts on education and economic inclusion efforts in society.

1.7 Context of the Study

The research took place in Blue View Terraces, a social housing development situated approximately fifteen kilometres from Cape Town's central business district. Blue View

Terraces was established in 2012 and is therefore a relatively 'young' community. The social housing development made provision for families from diverse backgrounds and races and showed preference toward single-female-headed households. The complex is divided into sections, namely a section for seniors and a section for families. The social housing development comprises more than 100 families and approximately 120 children of all ages. The total number of rental units in the complex is 285 with the section for families comprising 120 rental units and the remainder reserved for senior citizens. It is located within a middle- to high-income neighbourhood in the northern suburbs of Cape Town. This suburb was in pre-apartheid times classified as 'whites only' as can be seen from a 2011 census, at which time the population of Blue View consisted of 6.23% black Africans, 14.13% coloured, 76.73% white and 1.63% other (Census 2011, City of Cape Town). Of the families that now reside in this social housing development, several originate from informal settlements or other low-income regions around Cape Town. The section for seniors comprises eighty-six percent English-speaking residents and fourteen percent Afrikaans-speaking, compared to that of the family section where fifty-nine percent of residents speak English, thirty percent isiXhosa, one percent isiZulu and ten percent Afrikaans. Most of the families residing in the development are from previously disadvantaged backgrounds characterised by social, economic and/or educational exclusion and marginalisation. Blue View is unlike the townships or backyard dwellings where they originate from, which were marred by social problems, crime and often inadequate infrastructure.

The community surrounding the social housing development in Blue View is of middle to high income (City of Cape Town, 2013) so it can be reasonably assumed that a large proportion of neighbouring households have access to ICTs and are active online. Local primary and secondary schools are former Model-C schools – a now defunct form of semi-private school that was, prior to 1994, reserved for whites only. As expected, learners from the local community attend the schools in the Blue View area. These learners typically have internet access at home and access to multiple devices and computers. This is in sharp contrast to their mobile-only peers from the local social housing complex, who in many instances have only an entry-level smartphone and access to very limited data.

1.8 Research Significance and Limitations

Since the inception of social housing in South Africa, no research has yet investigated the influence of digital exclusion on the individuals and families living in these areas. This is in

part due to the fact that the concept of social housing is a fairly new one in South Africa. It is a neglected phenomenon that deserves closer attention both from a theoretical and practical standpoint.

> "The goal of ICTs is not to necessarily solve the digital divide but rather to further the process of social inclusion."
>
> (Warschauer, 2003)

This research is intended as a departure point for further research into digital exclusion in South African social housing and an attempt to elevate digital exclusion as a priority for social housing providers. Furthermore, it is targeted at mobilising funding for digital inclusion as part of new social housing developments that do not currently include funding for ICT infrastructure. A large proportion of the new social housing developments are built without even the most basic broadband infrastructure. This dissertation aims to emphasise the plight of digitally excluded families in coping with PC-primary educational practices in local middle-income schools. It furthermore aims to demonstrate the need for ICTs in these spaces and in so doing shed light on how ICT use in social housing may benefit social cohesion and community building.

The study will focus on the forced assimilation of families living in the Blue View Terraces social housing development in Cape Town and will use a small sample due to the limited available time. Participant availability was limited, and interviews could only be conducted in the evening or, in exceptional cases, over a weekend. Households in the sample were single-parent households and interview time allocation was limited. The size of the sample does not offer a generalisability of this study and is limited to the participants living in this social housing development.

1.9 Definition of Terms

Assimilation: The process whereby a minority group gradually adopts the customs and attitudes of the dominant/prevailing culture.

Desegregation: The process of formally ending racial segregation.

Digital Exclusion: Economic and social inequality with regard to access to, use of, or the influence of information and communication technologies (ICT).

Digitally Included: Although many scholars agree that there is no general definition of what it means to be digitally engaged, in this context it means the nature of individual's ICT engagements or the number of things people do using ICTs (Helsper, 2013). Helsper further argues that the following skills will allow people to engage more fully with ICTs: general life skills, such as critical evaluation of sources; self-efficacy; social skills; and creative skills.

Digital Inequality: In the context of this study digital inequality refers to internet access, use of different devices, extent of usage or non-usage, and engagement in different internet activities. In addition, it also refers to more than mere gradations of access to ICTs, but takes into consideration the influence that the disadvantage of marginalised communities has on ICT diffusion, use and uptake and, as a consequence, the value of ICTs in individuals' lives (Kvasny, 2006).

Digitally Engaged: The nature of an individual's ICT engagements or the number of things people do using ICTs (Helsper, 2013).

Integration: The bringing of people of different racial or ethnic groups into unrestricted and equal association in society or in an organisation.

Multiculturalism: A term often used to describe the cultural and ethnic diversity of a nation that argues for diversity as a positive force for a society's nationhood.

Resegregation: When intrusive, race-based, federally imposed controls are removed (most frequently through lawsuits). At this time, school admissions, employer hiring, and housing patterns are once again freely determined by democratic citizen choice.

Segregation: The legal separation of different races in daily life.

Social Exclusion: Originally devised by Rene Lenoir in France in 1974, social exclusion remains largely an unsolved phenomenon for many developed and developing countries. It is classified a process by which individuals or groups are wholly or partially excluded from full participation in the society within which they live (Silver & Miller, 2003).

Social Housing: A rental or co-operative housing option that requires institutionalised management. It is provided by accredited SHIs (social housing institutions) or in accredited social housing projects in designated restructuring zones.

1.10 Definition of Acronyms

Wi-Fi: Is technology for radio wireless local area networking of devices based on the IEEE 802.11 standards.

ICT: Information and Communication Technology is used as a collective term for a variety of digital information and communication technologies.

ICT4D: Information and Communications Technologies for Social Development is an initiative aimed at bridging the digital divide.

PC: Personal Computer

NGO: A non-profit organisation that operates independently of any government, typically one whose purpose is to address a social or political issue.

TAC: Tenant advisory committees provides advice and information to residential tenants and landlords in addition to addressing tenancy issues and concerns.

ADSL: Asymmetric digital subscriber line, a technology for transmitting digital information over standard telephone lines which allows high-speed transmission of signals from the telephone network to an individual subscriber.

FTTH: Fibre-to-the-home is a high-speed fibre connectivity product for homes within South Africa.

VoIP: Is a methodology and group of technologies for the delivery of voice communications and multimedia sessions over Internet Protocol (IP) networks, such as the Internet.

1.11 Overview of the Methodology

This exploratory case study draws on some of the techniques from phenomenology and rapid ethnography in order to document and make sense of the lived experiences of participants in relation to their digital exclusion and the influence this phenomenon may have on their lives in their new setting of Blue View Terraces. The data used for this study was collected from semi-structured interviews, focus group meetings, informal interviews, surveys and observations. The semi-structured interviews collected participant responses to a variety of questions regarding their lived experiences in relation to life in their new home, access to various technologies and challenges faced through their mobile-only use of ICTs. Results were

quantitatively analysed using chi-squared tests of independence and chi-squared tests of equal percentages.

Focus groups, semi-structured interviews and surveys were used as the preferred techniques and formats for gathering data that would uncover lived experiences. Attendance at standing focus group meetings served as the starting point for understanding collective experiences and their environment, whilst interviews were better for understanding the individual experiences of residents living in this space. Surveys were used to gain a cross-sectional view of demographics and ICT penetration. Both methods were used as a means of triangulating the data from the semi-structured interviews.

1.12 Delimitations

Delimitations are usually determined by the researcher and are "self-imposed boundaries on the scope of the research, either in terms of time, population size or the location of the study" (Lunenburg & Irby, 2008). The boundaries for this study were limited to one social housing development in Cape Town, South Africa; and the available time for the research was both within and outside of work hours for both the participants and the researcher. The selected social housing development provided fertile ground for the research and possessed various factors that could add to the discourse about digital exclusion. The research provides an opportunity to draw attention to the plight of social housing residents and to improve the lives of the residents living there.

1.13 Organisation of the Study

Chapter one of this study presents an introduction to the research problem and defines the scope, context and purpose of the study. Chapter two is a critical review of predominantly published literature on the potential influence of digital exclusion on low-income social housing communities and their social and economic inclusion. In addition, it delves into existing literature and a deconstruction of the digital divide beginning with the advent of the internet and its mainstream use followed by a debate on digital inclusion and how it first emerged as an issue of access only. It explores the benefits that digital inclusion holds for civic participation, increasing social connectedness and strengthening social ties, and it makes a strong correlation between increased online interaction and the economic and social aspects of

tenants' lives. The literature provides insight into most aspects of digital inclusion and exclusion but does so in a disconnected manner with no mention of the unique conditions that exist in social housing in South Africa and how digital exclusion influences residents' acculturation and adaptation. This led to the research question and the methods used to extract the data in the search for answers.

Chapter three contains a detailed and in-depth description of the research design, touching on the overall approach, followed by the methods and sampling technique in order to answer the research question. Chapter four provides a descriptive account of the findings for the study, presented in an overview of the research context as it relates to their new location. It describes the interviewee demographic profiles, selection process and the key themes followed by three parts. Part one prefaces the discussion as a reminder of the context within which the research took place. This is followed by a description of residents' lives before relocation and their subsequent arrival in the social housing development and their new neighbourhood. Part two shows how digital exclusion is not a homogenous experience for individuals and groups and that it is strongly influenced by other forms of exclusion. Furthermore, it details the levels of digital exclusion and levels of motivation for using ICTs amongst newcomers. Part three illustrates their integration journey as a series of intersections that they encountered as they experienced life in their new home, community and neighbourhood. It describes the tensions when Blue View community members and newcomers come into contact for the first time, the daily challenges they face and the coping strategies they employ when confronted with issues of discrimination, lack of relocation support and middle-class cost of living. The final chapter, chapter five, offers an analysis and summary of the study, as well as recommendations for further research and implications for further action.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

This chapter is a critical review of predominantly published literature on the potential influence of digital inclusion on low-income social housing communities and on their social and economic inclusion. Of importance is the potential of ICTs for empowerment, social cohesion, social capital and improving employability for residents, and in addition introducing alternative life choices to the current ones that dictate their reality. Social housing institutions play a vital role in the housing sectors of many developed and developing countries. These institutions aim to "provide suitable interventions to market failures and to provide dignified accommodation and affordable rentals that are priced below market that low-income households are able afford" (Hills, 2007). In addition, South African social housing institutions carry with them a mandate to address historical structural and spatial inequalities and to ensure people from different races, socioeconomic backgrounds and cultures live together. Social housing institutions have been providing quality affordable housing along with community development programmes to address the issues of social exclusion, economic regeneration and social mobility with mixed results. It does, however, appear that many community development programmes or professionals have yet to recognise the contribution that ICTs can make to their arsenal of tools for fighting poverty and social and economic exclusion.

In addition to targeted community development interventions, digital inclusion has the capacity to be a vehicle for delivery of such community development programmes, as well as to provide access to many other life opportunities (Rose, Seton & Tucker, 2014). Several articles argue that communities without internet access or ICTs are excluded from key parts of society that relate to information, services or anything that has a significant digital component (Haythornthwaite & Kendall, 2010; Hopkins, 2007; Lemos, 2003). There is an infusion of debates between the "economic empowerment of marginalised areas, social exclusion and the breakdown of social capital and community interactions" (Warschauer, 2003). New media, i.e. PC and internet, has become an integral part of 21st century citizenship and communities without access to these new forms of media are at great risk of lower educational attainment and reduced access to employment opportunities. With a growing emphasis on commercial and public e-services, these individuals and communities could face further economic and social exclusion. In fact, it could be argued that even fewer life choices are now available to digitally excluded communities as increasingly life choices have taken on a digital element.

The arrival of the information age has added yet another dimension to the already multifaceted issue of social exclusion. The digital world has proved to be both an equaliser and multiplier if used correctly. For the 'have-nots' the problem will only become more acute as ICTs infiltrate and permeate the DNA of modern-day society. For the 'haves' it is, and will continue to act as, a multiplier, giving those with access to the online world (and the requisite skills to use it) the ability to start a new venture in the blink of an eye and acquire skills on-demand from top universities.

There has been no shortage of attempts to theorise digital inclusion, but one that is perhaps more accurate describes it as "the use of technology, either directly or indirectly, to improve the lives and life chances of disadvantaged people and the places in which they live (Digital Inclusion Team, 2007). "Digital inclusion is a term used to describe policies and actions designed to encourage the socially inclusive use of technology and to mitigate the risks that socially disadvantaged people and communities fall behind as mainstream society increasingly uses new technology in everyday life" (Squared, 2009). Pro-digital supporters indicate a relationship, albeit perceived, between the 'information poor' and communities, which are economically and socially disengaged. Van Dijk (2004) and Castells (2005) criticise ICT for not having its intended positive outcomes, and warns instead that it may act to reinforce existing inequalities.

2.2 Purpose of the Literature Review

The literature review involves a phased approach and includes published academic and scholarly articles, books, conference papers and documented case studies. The search strategy involves a scoping exercise to identify, locate and assess research evidence from social housing digital inclusion projects in various countries. Based on the above, a more in-depth search and analysis were conducted with a sharp focus on social and economic inclusion efforts and the role digital of inclusion in social cohesion and increasing social capital. This was further distilled to include aspects such as adoption, diffusion and institutionalisation of ICT interventions.

There has been no shortage of funding for including low-income communities through ICTs, and it is fair to ask what the effectiveness of these initiatives has been in contributing to social inclusion and access to economic opportunities. It can also be asked what lessons can be learned

from the literature and which aspects could have practical applications in addressing social exclusion and economic mobility in social housing in Cape Town.

There are only a handful of interventions emerging from social housing institutions throughout the world and even fewer in South Africa. Yet social housing could serve as the perfect accelerator for growing ICT adoption and could, in the process, better equip low-income families to compete more effectively in society. The lack of interest may be due to current projects and initiatives in Cape Town such as the municipal Wi-Fi project, the free Wi-Fi in schools project and the rollout of 384 hotspots around public buildings. A key aspect of free and public Wi-Fi is the bundled firewall restrictions such as website filtering of certain content or the blocking of malicious websites. This is of course necessary in order to safeguard the service and provide reasonable levels of access to all users; however, these restrictions unfortunately act as a deterrent for new users and prevent unhindered exploration of online content because the filtering more often than not sieves out legitimate online resources, causing users to lose interest.

According to Maslow's motivational theory (Maslow, 1943) a hierarchy of needs exists, starting with the most basic needs at the bottom (physiological needs), followed by safety needs, social belonging and esteem and ending with self-actualisation at the pinnacle of human motivation. He proposes that the need for social belonging is so deeply rooted in humans that it sometimes overrides the need for safety. If digital inclusion initiatives are to be effective there must be an appreciation of the needs of communities through Maslow's lens. Social housing institutions operate primarily at the bottom of Maslow's hierarchy of needs, providing access to decent housing, security and economic mobility. One of the core values of these institutions involves the promotion of rights throughout Maslow's hierarchy. They have a wider social welfare agenda which is cognisant of the need to intervene in a failing market in order to provide housing, but it can also include a more encompassing role in tackling social inclusion, economic mobility and the digital inclusion of the communities they serve. Helsper (2013) is correct in saying that "offline inclusion should be the starting (and end) point for thinking about digital inclusion". In his seminal report, Hills (2007) states that, "Social Housing Associations have the potential to develop strategic interventions addressing digital exclusion".

2.3 The Scope of the Review

The research topic that framed the search of the academic databases was to:

Explore the factors that influence digital inclusion efforts within South African social housing.

The search strategy generated 221 research articles of varying quality. Abstracts were reviewed and categorised by examining those that specifically addressed issues of:

- ICTs in social housing;
- ICTs for community participation;
- Economic mobility;
- Social inclusion; social cohesion; and
- Adoption and diffusion in wired communities.

In total, 74 references were selected for inclusion in the review. The selection of material was based on the following criteria:

- The review was concerned with an examination of the use of ICTs for community development, social inclusion, economic mobilisation and methods of institutionalising digital inclusion.
- The review drew on empirical evidence from six wired community case studies, namely:

  1. Blacksburg Electronic Village (BEV), a mature networked community – USA.
  2. Wired Community @ Collingwood Project (Wired), one year into implementation – Australia.
  3. Williams Bay Community Intranet – Melbourne, Australia.
  4. Camfield Estates, MIT Creating Community Connections Project – New Jersey, USA.
  5. The Atherton Gardens Network – Melbourne, Australia.
  6. Netville – Toronto, Canada.

- The studies were conducted globally.
- The research was published within the last 20 years.

The literature is limited in that it fails to:

1. Adequately elaborate on issues of integration that influence ICT adoption in South African social housing.
2. Move beyond the basic digital impact indicators (namely relevance or usefulness, quality of experience or ease of use, ownership and sustainability) as a measurement for success.
3. Sufficiently theorise the negative or positive effects of digital inclusion interventions.

2.4 Observations

There is overwhelming evidence that digital inclusion has a positive effect on social capital, strengthening community attachment (including weak and strong ties), facilitating or stimulating neighbourhood conversations and generally helping build more cohesive communities. There are some positive signs of economic mobility, although further research is needed in this area.

2.5 Digital Exclusion: Is it Still Relevant?

Digital exclusion does indeed matter to the poor who live in a developing economy where unemployment rates are increasing, and social injustice abounds. A few researchers have criticised the simplistic view of digital inclusion and argued for new theories that better conceptualise this complex and ever-changing phenomenon (Helsper, 2012; Jackson et al., 2005).

Since the inception of the internet in the 90s there has been debate about digital inclusion and the effect, or lack of effect, this has on marginalised individuals and communities. Up until fairly recently most academic discussions about the internet concentrated on physical access and getting society connected. This can be clearly seen in current policy implementations, where the dominant narrative is focused on access, rather than a holistic view of inclusion (Correa, 2008).

Since early 2000 the debate has transitioned from one focused on mere physical access to one that pays closer attention to factors such as culture, social mobility, various forms of internet usage and empowerment (van Dijk, 2006, Hargittai, 2002; Newhagen & Bucy, 2004; de Haan, 2004). (Lemos, 2003) questions existing assumptions around the tenets of digital inclusion and proposes a shift to a debate on the information society and its inclusionary and exclusionary effects. Especially important are his questions: “What is this information society? Who is this included person? And what would he do with the possession of these new tools?” (Lemos, 2003) further blames technology companies and NGOs for promoting false ideologies and labels these as ‘technological toys’. This may be considered harsh as no intervention is perfect and it is more often only through trial and error that meaningful change is created.

Castells (2005) claims that three forms of digital marginalisation exist: first is the lack of access to the online world; second is the very low technical capacity of individuals despite having access; and third, which he argues is perhaps the most important form of exclusion, is having access and not knowing how and what information to seek. This is closely aligned with Lemos' (2003) view of a shift to a debate on use of information rather than a fixation on access. He warns that the emphasis should be on how information is combined for the benefit of changing lives. This is a noteworthy suggestion and one that is echoed by several researchers. Castells (2005) and van Dijk (2004) argue that this reductionist approach to digital inclusion only serves to deepen existing inequalities of education and culture as the digital world increases in size.

Perhaps more problematic are those individuals that are foreign to the digital society, who were raised in a strictly analogue culture and who still believe the information society is a passing fad. They feel alienated and are generally scared of technology, claiming they are not interested or that the digital world has nothing to offer them. For these individuals, Palacios (2005) calls for a process of familiarisation and understanding of the new digital age. They may require significant amounts of training to grasp the digital paradigm.

There appear to not be many articles that delve into the role of motivation and the presence of a clear and compelling value proposition for these communities. Akubue (2000) suggests that the technology must be suitable to the social and economic conditions of the particular locality in which it is to be applied and must promote self-sufficiency for the ones consuming the technology. In his book, Technology and social inclusion: Rethinking the digital divide, Warschauer (2003) maintains that more attention should be afforded to the human and social systems in order for technology to make a positive contribution. He continues to caution against the notion that simply providing access to ICTs will be adequate and warns that this may induce the belief that sufficient access provision over time will solve the digital divide. The adoption of this view can be especially problematic for developed countries and connected groups who may conclude that digital inequalities are dissolving (van Dijk, 2006; Hargittai & Hinnant, 2008; Peter & Valkenburg, 2006).

The 'access' view has also dominated policy debates and has become the primary focus for many policy makers (Correa, 2008). While it is true that access is a component of digital inclusion, access alone will not lead to the full realisation of desired benefits. Digital inclusion is a moving target with rules and variables and is in a constant state of flux. The over fixation on access perhaps masks a wider problem of differentiated use of ICTs (Loader & Keeble, 2004). Van Dijk (2005) refers to it as the 'usage gap' and highlights the evolving nature of the digital divide from material access to gradations of use or differentiated use as mentioned by Loader and Keeble (2004). Van Dijk and Hacker (2003) and van Dijk (2002) call this digital divide a "recursive, dynamic phenomena". Reilly (2010), as well as Schradie (2011) challenge the binary classification of technology and consider the digital divide through a 'production lens'. Internet savvy persons in the developing world are the leaders today in content production with the developing world lagging far behind. Developing countries should encourage production of more contextually relevant localised content to make the online world more attractive for its citizens. Reilly (2010) agrees that anyone today has the ability to be a content creator and that "content creation has never been simpler and more accessible". Although most practitioners agree that 'levels of engagement' has emerged as the new digital

divide, the issue of what constitutes high-quality engagement is still controversial and needs clarification.

Van Dijk (2005) makes mention of how ICTs can help society participate in important aspects of civic engagement, such as social networks, space, politics, culture and the economy. He does not, however, give guidance on the specific types of engagement. Van Dijk (2006) and West (2006) remind us that the digital divide is simply a reflection of broader social divides that pre-existed and that digital technologies will merely exacerbate existing divides and inequalities. This agrees with Helsper's (2012) 'Rich get Richer' hypothesis. Helsper (2008) cautions against making ill-considered causal links but highlights social and cultural aspects as another possible dimension of digital inclusion that may serve to help or hinder the divide.

Hache and Cullen (2009) expand on the definition of digital inclusion and call for the democratisation of ICTs as a means of including marginalised communities in the information society. According to Hache and Cullen (2009), digital inclusion should be used as a vehicle for social inclusion so the excluded are able to benefit from electronic mediated knowledge and the information society in order to afford them new social realities. Anderson, (2006) and Helsper (2012) also call for an expansion of the meaning but criticise the literature for not making distinctions between various forms of access. Home access should be the standard rather than free public Wi-Fi, allowing for use at any time of the day and, in so doing, driving increasing levels of digital engagement (Forlano, Powell, Shaffer, & Lennett, 2011). Chrisholm (2011) found that home internet usage directly correlates with a deepened relationship with the online world and believes that home use should form part of what it means to have an acceptable standard of living. Winchester (2009) goes on to classify all attempts to address digital exclusion as a social intervention and stresses the role of social influences in the deployment of ICTs. Haythornthwaite and Kendall (2010) conceptualise the internet as a contextual lever between the 'haves' and 'have-nots', providing a possible platform for social cohesion.

Livingstone and Helsper (2007) believe that the most important objective is to get non-users onto the doorstep of this new virtual world and thereafter to transition beyond basic activities, such as email, to liberating uses of information. Equally important is having the correct skillset to fully partake in the information society. (Van Dijk, 2005) "identifies four areas which one can generally be excluded from, namely access, skills, attitudes and the types of engagement". Helsper (2012) contends that the narrow focus on access, skills and attitudes is insufficient and

calls for future research and interventions to consider users' practical engagement with ICTs when designing their interventions.

Importantly, Helsper (2012) introduces the corresponding fields model and the notion of social and digital impact mediators. Her model argues that digital inclusion should be more concerned with how the nature of a person's use enhances their life rather than simply whether they use it or not. Helsper (2012) states that, "access, skills, and attitudes mediate the influence of offline social exclusion fields on digital exclusion fields, that is, they are social impact mediators. This is where the model presented differs from other frameworks which often sees the mediators as indicators of digital inclusion". Helsper (2012) proposes four digital impact mediators, namely "relevance (usefulness), quality of experience (ease of use), ownership (agency and empowerment), and sustainability (social and financial)".

None of the literature discusses awareness programmes as a means of getting uninterested persons onto the first rung of the internet ladder. Non-interest is frequently cited as reason for low adoption of ICTs, whilst lack of awareness could be a cause of low adoption rates persisting despite huge investments in infrastructure. Therefore, attention should be directed to include awareness as a precursor to skills. Castells (2005) states that perhaps one of the most important forms of exclusion may be having access to ICTs and the internet and not knowing how and what information to seek. It makes sense then that someone would first decide contextual relevance and fit before deciding to invest the effort required for learning a new skill. Jumping straight into developing skills would be premature.

The discourse has now matured from using access as a single outcome indicator, to a more complete definition wherein digital inclusion is defined as a multi-faceted concept incorporating access, skills, attitudes and varying levels of technology engagement (Helsper, 2012; van Dijk, 2005; Selwyn, 2004a, 2004b; Warschauer, 2003).

2.6 A New Citizenship, a New Literacy and the Evolution of the Social Housing Sector

Social exclusion has been described as a particularly complex problem to solve due to its multiple facets; simple interventions have been largely ineffective in making inroads. Winchester (2009) argues that the digital divide is not simply technology exclusion but is rather part of the broader social exclusion context and should be tackled as such. In fact, it could be argued that as digital citizenship merges with and expands the understanding of what it means to be a 21st century citizen, the weight assigned to digital exclusion should commensurately increase.

Countries such as France and Finland have already taken a bold first step in classifying access to the internet as a basic human right. This move recognises society and citizenship as non-static, ever-evolving concepts, which relates to Clyburn's (2010) discussion on literacy and how this allows people to participate in society or as citizens. He draws attention to the power of literacy to open doors but also challenges conventional wisdom around literacy and stresses that knowing how to read is no longer sufficient to be literate and calls for redefining literacy to include digital literacy (Clyburn, 2010). Eubanks (2011) believes that not only should we redefine citizenship but also that we should create different "technologies of citizenship". Mossberger, Tolbert and McNeal (2008) advocate for the promotion of digital citizenship as a means of encouraging digital inclusion and assert that digital citizens are regular and effective users of the internet. Bonilla and Pretto (2011) further state that "Citizenship is effective through living collectively in public space, and cyberspace is also part of the contemporary public space". They describe cyberspace as the domain "where social, economic, political, cultural and subjective processes flow and considers the right to communicate and access information a basic human right".

Worldwide the largest segment of offline groups and individuals reside in social housing communities (Chrisholm, 2011). This is despite progressive first world broadband policies and initiatives. Gaved and Mulholland (2010) describe communities of locality as possibly the best chance for sustained internet usage due to the existing network of social relationships and interactions. Social housing institutions are already well resourced to execute social strategies and understand the dynamics of the communities in which they operate. In addition they satisfy lower level 'Maslow hierarchy"' needs through their response to a failing market by providing affordable quality accommodation. Rose, Seton and Tucker (2014) suggest convening a steering group to champion the digital strategy and encourage sector-wide conversation. They

call for a participatory approach to the establishment of such a committee by including representatives from the housing sector, experienced implementers and community representation.

The social housing sector also stands to benefit from implementing policies on digital inclusion for its residents. Many first-world social landlords are already using technology for fault reporting, making online rental payments and delivery of electronic statements. An even more powerful benefit exists in the form of the internet of things (IoT), whereby social landlords could potentially leverage the existing digital infrastructure it implements for tenants as an intelligent rental asset monitor. In addition, they could reduce exorbitant security costs by utilising this infrastructure to deploy smart security solutions at a fraction of the cost. Winchester (2009) urges for digital inclusion to be encompassed in the overall social welfare agenda instead of being seen as separate. It is ultimately a human rights issue and not merely a technological one. Although decent affordable housing is an important first step to social inclusion, simply providing housing will not dissolve social challenges within these communities. Winchester (2009) stresses that digital inclusion has the potential to combat the persistent lack of social and economic mobility in these communities. Rose, Seton and Tucker (2014) affirm that social landlords are uniquely placed to steer such a digital intervention. Chrisholm (2011) agrees and calls on landlords to encourage their residents to "use their voice to shape local decision making" through online communication platforms. There is an increasing expectation on social housing landlords to intervene in advancing social mobility and access to better employment.

Mesch and Talmud (2010), in their research on digital communities, confirm the ability of online communication mediums to foster increased community attachment. A cross-sectional study reaffirmed that those who are online have a greater likelihood of being members of community forums and went on to report a greater sense of community belonging. In his book, Warschauer (2003) points to the self-reinforcing nature of social relations insofar as technology is able to shape social relationships and also how social relations determine how technology is designed and implemented. Haythornthwaite and Kendall (2010) highlight the positive influence that online interactions have on communities of locality through means of civic participation and the strengthening of weak ties. Haythornthwaite and Kendall (2010) also found in a study of advantaged and disadvantaged groups that the internet helped to strengthen "social cohesion and collective action" in unlikely circumstances. Hopkins (2007) confirms this finding of "enhanced social connectedness" in the e-ACE initiative. These findings are encouraging for the social housing sector, which struggles with persistent issues of anti-social

behaviour and rapid turnover rates of tenants. These benefits will not solve the issue of, but could assist in, building stronger and more supportive communities.

De Hann (2004), Eynon and Helsper (2011), Rose, Seton and Tucker (2014) and Zhou (1997) agree that introducing ICTs has had beneficial outcomes, such as building self-esteem, increasing levels of confidence and the formation of online communities. Furthermore, Williams (2011) touches on positive influence in the areas of employability, which itself serves to positively affect self-esteem and a sense of wellbeing. Broadbent and Papadopoulos (2012) and Papadopoulos and Broadbent (2010) found a positive correlation between increased online interaction and economic and social aspects of tenants' lives. Tenants praised the important role technology has played in enhancing feelings of connectedness, wellbeing and improved health. This may prove to be an important ally in the implementation of social housing social inclusion strategies. Wolske (2010) believes that "technologies enable self-determined media production", which in turn adds to the rich tapestry of local community stories; thereby amplifying residents' voices and building civic bonds.

Wang and Wellman (2010) object to this utopian view of ICTs and choose to rather highlight the exclusionary effects of belonging to the online world. As ICTs have taken root they have become an important part of everyday life and are now fully embedded in the 21st century communication ecosystem. Arnold (2003) and Graham and Marvin (1998) disagree and instead compare these to the telephone, stating "it's a zero-sum communications game", and that "it means more visits, not less" and does not substitute but facilitates face-to-face visits. Doheny-Farina (1996), Cleveland (1985) and Hague and Loader (1999) draw attention to the "cost of distance and time", which for low-income communities could equate to increasing disposable income as traveling is reduced.

2.7 Connections, Life Chances and Increased Employability

Online interaction has become a natural extension of existing offline interaction and should not be considered distinct (Hampton & Wellman, 2003). For several online communities there are corresponding offline formal and informal groups. These offline groups already have well-established norms of reciprocity and rules of engagement, which simply carry over into the online world (Kavanaugh, et al., 2005). Kavanaugh reveals the positive increase in both traditional forms of communication and electronic forms. In his study respondents' involvement increased markedly over the period in question (Kavanaugh, et al., 2005). This also points to education, age and extroversion as exogenous factors that influence online behaviour even though they are separate from the localised geographic groups. Community networks have created new ways of staying in touch and interfacing on key community issues. Although some may argue that these networks are a form of escapism, the results are strongly in favour of the increased connected hypothesis. Brady, DiDuca and Smith (2003) call for the development and introduction of 'social software' that will integrate offline and online spaces. Hampton and Wellman (2003) reaffirm that this is simply an extension of existing communication methods and that "online social ties are not distinct from an offline social system".

Netville, a longitudinal study of a wired community in Canada demonstrated the economic benefits of being online through reduced costs of communication and flourishing online interactions (Hampton and Wellman, 2003). Mesch and Talmud (2010) echo this finding of a "statistically significant effect on community involvement and place attachment". In studies of online communities, Hampton and Wellman (2003) and Mesch and Talmud (2010) report that neighbours who had an online presence and participated in the local online community platform knew more neighbours and formed more social ties as a consequence. Matzat (2010) and Mesch and Talmud (2010) mirror each other's findings of offline supporting online, and vice versa. The inclusionary potential of ICTs offers new paths to social inclusion and is able to counter some of the drivers of exclusion. Lack of education is one of those drivers and with the democratisation of education and plethora of online educational content available the price of admission to this world of academic privilege is the cost of an internet connection. It provides excluded citizens with increased life chances and choices, and improves quality of life for those that embrace this new paradigm (Rose, Seton & Tucker, 2014).

Residents in many of these low-income communities have expressed a keen interest in learning new skills, seeking training opportunities for themselves and helping their children with

homework assignments (Meredyth, Ewing, & Thomas, 2004). This has the potential to strengthen family bonds and increase parental involvement in children's schooling. This benefit is largely lost when children have to visit public libraries to complete homework assignments or when ICTs are used through a proxy, such as a parent conducting research assignments on behalf of a child at their place of employment. Home internet access in social housing developments could assist in keeping youth who live there off the streets where they can potentially fall prey to unsavoury activities. One fundamental value proposition of South African social housing developments is to transcend historic spatial divides caused by apartheid and to relocate low-income families closer to economically active areas, amenities and infrastructure; essentially collocating higher and lower economically-active sections of the population. This very same advantage has also proven to be a disadvantage for residents that have relocated to the suburbs, because public Wi-Fi rollouts are largely concentrated in previously disadvantaged areas and not social housing developments in higher income areas. These residents will therefore not benefit from free public Wi-Fi. Furthermore, low-income youth attend surrounding schools with others that are already digital natives. This can contribute to feelings of isolation from those living in low-income households who do not have the tools to participate on digitally native communications platforms.

Jackson, et al. (2006) found that internet use positively influences grade point averages (GPAs) and test scores and asserts that frequent internet home use leads to better overall academic performance. This is an important point to note for social housing institutions that have for years attempted to advance social and economic mobility. There does, however, appear to be a contradiction in the earlier study of Jackson, et al. (2005) on the correlation between internet use and academic performance. Increasing educational attainment and employability of residents is perhaps the panacea for social housing providers who consider labour markets as fundamental to the transition from exclusion to inclusion. Very few people today would doubt the digital nature of employment and although for many the Industrial Age is something relegated to the pages of history, many in the digitally excluded population are still employed in roles that mirror this forgotten era. They are not part of the knowledge economy and until they make the journey online, they will have to be content with employment that does little to increase their livelihoods. Connecting these communities will at the very least afford them the opportunity to research skillsets that are required in the current job market, which can allow them the choice of a much needed course correction.

2.8 Social Capital and Civic Engagement

Haythornthwaite and Kendall (2010) and Hampton and Wellman (2003) suggest that online communication strengthens weak ties that are predominantly local in nature. These weak ties or bonding capital are the glue that binds communities, whereas bridging capital facilitates relationships further away or not within the same networks. Bridging capital is important for 'getting ahead'. Internet mediated interaction has been shown to increase the connectedness of persons and their participation in community organisations (Arnold, 2003). Arnold (2003) further states "Social capital is based on the idea that social relations have real value and utility of themselves, in addition to being of emotional and subjective importance to our lives". Putnam (2001) suggests that social capital is composed of two elements, namely "networks of civic engagement and norms of general reciprocity", meaning that favour trading, cooperation and information sharing is normal and expected. He further indicates that these are key elements for building social trust within communities (Putnam, 2001).

Mesch and Talmud (2010) reveal the reinforcing nature of community electronic forums as a means of fostering neighbourly relationships. Hampton and Wellman (2003), in a study on wired communities, found that on average online residents knew 25 neighbours as compared to their offline counterparts who only knew eight and that those relationships were not clustered in a single block, but were further away. The same was found in Netville where the internet provided the structural cement that resulted in more weak ties being formed and greater civic participation and community mobilisation (Hampton & Wellman, 2000). Newhagen and Bucy (2004), on the other hand, found that digitally excluded persons have a greater likelihood of being politically, economically and socially isolated. Eamon (2004) points out the empowering and discriminating nature of the information society in at least four areas: "educational advantage, future employment and earnings, opportunities for social and civic engagement and civil rights issues". These finding were confirmed in the Netville study (Hampton & Wellman, 2000), which found that internet use positively correlates with engagement in politics and participation in local voluntary organisations.

Arnold (2003) talks about networks of civic engagement and how these encourage information sharing, such as finding out about a new job, getting help from a neighbour or seeking advice about raising one's teenager. He goes further to underline the self-regulating nature of well-networked communities and how this increases the cost of anti-social behaviour, incivility and untrustworthiness (Arnold, 2003). However, Winchester (2009) cautions against people passively receiving information, instead they should be encouraged to create a presence for

themselves online in order to fully interact and participate as engaged citizens. According to Mesch and Talmud (2010), "The formation and active participation in local community electronic networks not only adds but also amplifies civic participation and elevated sense of community attachment". Perlgut (2011) claims that, "Within five years, digital exclusion will rival all other social and economic determinants and may become the major social justice challenge of our time. Digital inclusion cannot be separated from economic and social inclusion and will become a major factor in assisting (or losing) social and economic justice."

This could especially benefit tenant advisory committee (TACs) and community focus groups with mobilising collective action, information sharing and arranging meetings. Several discussions can then be allowed to evolve online with key decisions being taken at more formal offline meetings. This has the potential for shorter meetings as tenants usually attend these after a long day of work. The existing offline nature of these meetings may well be the reason why attendance by community members has shown a steady decline, many times failing to obtain a quorum for decision-making.

2.9 ICT Adoption, Diffusion and Ecosystems in Social Housing Communities

One of the most dominant aspects of the introduction of ICTs into digitally excluded communities has been difficulty with adoption and diffusion. This remains one of the foremost issues troubling digital inclusion supporters the world over. In Europe, up to forty percent of the digitally excluded population suggests 'non interest' as a reason for non-adoption, whilst Selwyn (2004b) indicates that lack of interest could be due to the individual's social circles or personality traits. This could well be true but there are perhaps larger issues at work, such as design and development that may not be suitable for this cohort of persons. There is certainly no shortage of poorly designed and overly complex interface designs, which only serves to heighten the technophobia for potential users. Winchester (2009) makes reference to the various age groups' varying degrees of use and the older generation in particular reports that the internet is not for them or that they have no use for it. Older persons in social housing are most at risk of suffering from exclusion from society. There is now empirical data that proves the online world reduces the effects of exclusion for older persons living in isolation (Friemel, 2014).

Servon (2002) considers content to be crucial in driving adoption. For those not yet on the first rung of the internet ladder the digital environment must have relevance for everyday life, must

hold the ability to empower them and be sustainable over time. Only then will it influence offline mobilisation (Helsper, 2012). In discussions on the relationship between the amount of offline and online social contacts, Kavanaugh, et al. (2005) point to extroversion as a possible explanation why those with more social offline resources tend to accumulate more online social contacts than those with less. In addition, digital inclusion protagonists should accentuate the 'playful' aspects of ICTs when promoting these to youth, as research has shown that focusing solely on the importance of ICTs for schoolwork may actually discourage a playful exploration of ICTs for other purposes, such as web searches and information seeking (Jackson et al., 2005).

Consider for a moment the issues of usefulness and diffusion. No one today adopts a technology or buys a product without a clear value proposition, or to put it more bluntly without asking "what's in it for me?" It can be asked why we then still develop solutions for the digitally excluded that in many cases clearly serve no obvious purpose for those it is intended to help. Mossberger, Tolbert and Stansbury (2003) suggest that those who are excluded underestimate the value and usefulness of ICTs in the labour market. Furthermore, they may have a distorted idea of what ICTs are used for and what resources are available. This perhaps highlights something more important than skills, namely creating awareness of what ICTs are really useful for and demonstrating use cases. Those early adopters that indicate cost as a barrier to entry will, when presented with access, automatically seek out the skills to use it but perhaps a targeted awareness programme would be more suitable for those that see no use for the internet at all.

When designing for adoption, diffusion and eventual ownership by the community, the importance of community participation at all stages should not be underestimated. Several externally driven ICT initiatives have introduced 'solutions' and implemented infrastructure on the assumption that "if you build it they will come" without due consideration for aspects of social inclusion (Gaved & Foth, 2006). In many cases communities see these interventions as yet another burden instead of the helpful resource they were envisioning. This has been one of the primary criticisms of ICT4D (information and communications technologies for social development), namely the over fixation on ICTs without due consideration for aspects of development. A prime example of a successful community-driven intranet deployment is Williams Bay in Melbourne, Australia, which involved community members from the beginning. In addition, residents volunteered for a range of duties, including updating intranet content, administration and promoting it to others in the community. Residents also supported each other with technical troubleshooting and training (Arnold, 2003; Rose, Seton & Tucker,

2014). Creating a sense of ownership is vital for sustainability and longevity of any project intervention (Meredyth, et al., 2004) and sustainable interventions are more than likely generated from within a community rather than imposed upon it (Winchester, 2009). Williams Bay residents have been actively involved in design decisions, ultimately cultivating a sense of ownership, which is a vital component for the success of such projects. In other similar intranet projects the residents hold weekly training sessions on how to keep content current and relevant (Forlano et al., 2011). Gaved and Foth (2006) state "Community networks that are viewed as the community's own asset are best supported and most socially sustainable in the long term".

Helsper (2012), Gaved and Foth (2006), Kavanaugh, et al. (2005) and Day and Cupidi (2004) further maintain that goal alignment and the use of a bottom-up approach matters, as many have found when attempting to introduce interventions into host communities. External or top-down initiatives have at times encountered stiff resistance where residents detect a misalignment with their context. Adoption and diffusion are two sides of the same coin and are equally important for the introduction and sustainability of a socio-technical intervention. The design aspects of socio-technical projects should be carefully considered when aiming for rapid adoption of a solution whilst usefulness or useful content will assist with rapid diffusion. Gaved and Foth (2006) state that "simple, open ended tools are the most useful" and that "highly complex solutions may be too alien to be domesticated by the community". Gaved and Foth (2006) and Kavanaugh, et al. (2005) call for strongly participative approaches, whilst (Pinkett, 2003) emphasises the use of existing community forums and using technology to strengthen existing community structures rather than adding to these.

As important as design is to the successful adoption of ICTs, so too is support for diffusion and sustainability of interventions. Support and training is of great value to long-term sustainability, as is partnering expert users with new users in addition to more formal training sessions (Gaved & Foth, 2006). Papadopoulos and Broadbent (2010), however, argue for place-based services or social workers that work closely with residents to encourage use. Once a solution has been implemented it should be properly maintained and any service reliability issues should be immediately addressed. Steps should be put in place to ensure consistency of service. Lengthy outages or unresolved technical issues may put such projects at risk and hinder diffusion (Papadopoulos & Broadbent, 2010). Kontos, Bennett and Viswanath (2007) emphasise social networks and social support as facilitators to solving technical issues and encouraging use. Jackson, et al. (2005) and Jackson, Eye and Fitzgerald (2003) posit that friends' and family's ICT proficiency could also be a determining variable when considering an individual's adoption or use of a technology as the network effect influences a user's behaviour. It could

then be argued that digital inclusion initiatives should not only be targeted at individuals but at entire groups as this increases the likelihood of the technology being absorbed into an existing communication ecosystem.

Day and Cupidi (2004) recommend that "community technologies be approached as open-ended initiatives rather than closed term projects" and that clear exit and embedding strategies exist from the start to guard against later funding cutbacks. As previously alluded to, usefulness is one aspect that has been neglected. It is commonly recognised today that content is king. This saying holds true for high-end and low-end users of the internet. Although many experts advocate for non-essential services, such as local notice boards, babysitting services and the like, to be made available via intranet and other electronic forums, Gaved and Foth (2006) acknowledge that greater consideration should be given to introducing a digital element into community development programmes instead of digital inclusion being viewed as separate. Several authors have already asserted that digital exclusion is not distinct from social exclusion.

Another useful aspect is health. Thirty percent of respondents in these wired community trials have indicated using the internet for health-related issues. This indicates a clear need for more health information and services that could be delivered into these communities via a digital platform. Arnold (2003) makes mention of the success of web portals as a method of delivering information resources. Forlano, et al. (2011), on the other hand, refers to the power of e-health and online education platforms for dramatically improving access to health and education but pinpoints lack of high-speed access as a caveat. Even though public Wi-Fi rollouts are commendable and should continue, the type of access that a public Wi-Fi infrastructure offers is limited and may not allow the consumption of high-end services, such as online education, which require video streaming. This has been underscored as a problem to adoption as many first-time internet users complain of overly strict controls that hinder exploration and use.

2.10 Conclusion

The observations from this review of the literature hold special significance for fledgling community technology initiatives in social housing. Whilst attempting to interrogate the existing body of knowledge it similarly aims at providing guidance and clarification on some of the salient topics for the implementation of social inclusion and economic mobility programmes.

With the advent of the internet and its mainstream use, the debate on digital inclusion first emerged as an issue of access but shortly thereafter morphed into differences in ICT usage or the start of the 'usage and production gap' as it was more closely studied. This debate has evolved and matured over the past thirty years from a simplistic focus on internet access starting in the nineties to issues of citizenship, human rights and social and economic inclusion. The call for the consideration and inclusion of the social and human aspects to digital inclusion arose quite early (Akubue, 2000), and was followed by debates on the information society (Lemos, 2003) with an emphasis on linkages between the offline and online worlds (Hampton, et al., 2003) (Kavanaugh, et al., 2005).

Hargittai (2002), de Haan (2004), Newhagen and Bucy (2004), van Dijk (2006) and West, (2006) remind us to pay closer attention to the deeper issues around culture, social mobility and how digital technologies may merely exacerbate existing divides and inequalities.

Livingstone and Helsper (2007) offer advice on how to grow adoption from basic to more advanced forms of activities, stating the importance of getting users onto the first rung of the internet ladder. Eamon (2004) raises awareness of the promise digital inclusion holds for "educational advantage, future employment and earnings, and opportunities for social and civic engagement and civil rights issues". Indeed, researchers cast a strong focus on the benefits digital inclusion holds for civic participation and increasing social connectedness and strengthening social ties, in addition to a strong correlation between increased online interaction and the economic and social aspects of tenants' lives (Arnold, 2003; Broadbent & Papadopoulos, 2012; Hampton & Wellman, 2003; Haythornthwaite & Kendall, 2010).

Hache and Cullen (2009) and Rose, Seton and Tucker (2014) use digital inclusion to afford the marginalised and excluded with new social realities and life chances. In spite of this, Helsper (2012) formulated her 'Rich get Richer' hypothesis and gave her first attempt at fleshing out the details of the correlation between online and offline exclusion by presenting a theoretical framework for examining digital inclusion, namely the corresponding fields model for the links between social and digital exclusion. Thinking about digital inclusion should both start and end with offline exclusion (Helsper, 2013).

It is clear from the research that digital inclusion has been a problem that many researchers have wrestled with and debated. Whilst researchers grappled with the theoretical basis for this

phenomenon, several practitioners steered projects in an attempt to create tangible benefits for those at the coalface of exclusion.

This review drew on empirical evidence from six wired community case studies that to some degree mirrored the envisaged intervention in South African social housing.

1. Blacksburg Electronic Village (BEV), a mature networked community – USA.
2. Wired Community @ Collingwood Project (Wired), one year into implementation – Australia.
3. Williams Bay Community Intranet – Melbourne, Australia.
4. Camfield Estates, MIT Creating Community Connections Project – New Jersey, USA.
5. The Atherton Gardens Network – Melbourne, Australia.
6. Netville – Toronto, Canada.

Each project produced more learnings and deepened the debate on what digital inclusion means, its benefits and how future interventions may be improved in order to bolster the effectiveness of digital inclusion efforts. Along with this, the linkages between digital, social and economic inclusion are still being debated and continue to be studied and analysed in order to most benefit the digitally excluded and society at large.

Social housing institutions in South Africa are very similar to most parts of the world in their approach. The "aim is to provide suitable interventions to market failures and to provide dignified accommodation and affordable rentals that are priced below market that low-income households are able afford" (Hills, 2007). No literature or mention was found of digital inclusion projects within South African social housing, despite the numerous benefits digital inclusion holds for promoting networks of civic engagement, social cohesion and the strengthening of community structures being well recognised in the literature (Eamon, 2004; Haythornthwaite & Kendall, 2010; Williams, 2011).

Social housing in post-apartheid South Africa has very specific challenges to overcome, such as residential integration, as well as race and class integration. Whilst Warschauer (2003) did consider the economic regeneration of marginalised areas, none of the research community considered issues of social, racial or residential integration, as is prevalent in post-apartheid South Africa. This adds several dimensions to consider when solving digital inclusion in a social housing environment in South Africa. Considering how far the debate on digital inclusion has advanced, the aspects of race and class integration and the process of residential

desegregation should be further delved into when considering such projects in a South African social housing environment. This has informed the research question of this study: How does digital exclusion influence the experience of overall inclusion in South African social housing?

CHAPTER 3: RESEARCH METHODOLOGY

3.1 Introduction

The following chapter describes the research design and specific methods and procedures used to conduct the study. The purpose of the study is to determine the ways in which digital exclusion influences inclusion efforts in social housing and the extent to which digital inclusion is able to assist with building social capital, maintaining relationships and strengthening social cohesion. The literature provided insight into most aspects of digital inclusion and exclusion with researchers theorising the links between social and digital exclusion, such as Helper (2012) with her corresponding fields model for offline and online exclusion. The literature discussed digital inclusion in a disconnected manner with no mention of the unique conditions that exist in social housing in South Africa and how digital exclusion influences residents' acculturation and adaptation. This literature review in turn led to the research question. This chapter details the methods used to extract data and to answer this question.

The chapter begins by defining the research methodologies and approaches, before highlighting the theoretical and conceptual framework guiding this research. Finally, the data-collection methods are discussed (including in-depth semi-structured interviews, i.e. 'open' interviews, and various other data sources) along with the sampling strategy, which is followed by a section on methods. The chapter concludes with a description as to how the analysis of the research data will be conducted. The methods and procedures in this chapter aim to answer the following research question:

> How does digital exclusion influence the experience of overall inclusion in South African social housing?

3.2 Research Context

The research took place in a middle-class community called Blue View, situated 15 kilometres outside of Cape Town's central business hub. The research involves seventeen participants from a social housing development situated in the greater Blue View geographic area. These seventeen participants moved to the area from various parts of the Western Cape province, but mostly come from low-income neighbourhoods. These neighbourhoods are located in areas

that are still spatially segregated and remain largely disadvantaged, far from the central business district or suburbs, and from participants' places of employment. Participants' relocation was motivated by the attractive cost of social housing or affordable rentals, access and proximity to employment, as well as better schools for their children. An analysis was conducted in order to understand participants' individual and collective lived experiences and to answer the research question or explore the factors that influence digital inclusion efforts within South African social housing. This serves to uncover the factors that play a role in their everyday lives and that could potentially hinder or assist any digital, social or economic inclusion projects for social housing institutions.

3.3 Research Methods

In this exploratory case study, I drew on some of the techniques from phenomenology and rapid ethnography in order to document and make sense of the lived experiences of participants in relation to their digital exclusion. The purpose of phenomenological research is to understand the essence of a particular phenomenon, whilst using ethnographic enquiry to understand and interpret cultural dynamics. Issues of culture are particularly important in this context, as there is a mixing and amalgamation of various socioeconomic groups, cultures and differing practices. Ethnographers usually spend an extended amount time in the setting being researched and can use observations, interviews and other methods to understand cultural interfaces. Ethnographic methods are furthermore good for gathering rich data about people's lives and for making sense of lived experiences (Baines and Cunningham, 2013). Phenomenological and ethnographic inquiry were selected because these are considered most suitable for documenting and understanding the lived experiences of residents in social housing as it pertains to digital exclusion and the influence this phenomenon has on their lives in this new setting. This knowledge would form the basis for future digital and social inclusion projects within this and other social housing developments. The process of residential and racial desegregation in post-apartheid South Africa also presents its own set of challenges and factors that will benefit any similar inclusion efforts.

Focus groups, semi-structured interviews and surveys were used as the preferred techniques and formats for gathering data that will uncover lived experiences. Attendance at standing focus group meetings served as the starting point for understanding collective experiences and their environment, whilst interviews were better for understanding the individual experiences of residents living in this space. Surveys were used to gain a cross-sectional view of demographics

and ICT penetration. Both methods were used as a means of triangulating the data from the semi-structured interviews.

This study advocates a return to the concrete or going "back to the things themselves!" (Eagleton, 1983; Kruger, 1988; Moustakas, 1994). The phenomenological method of enquiry is rooted in "the intent to understand the phenomena in their own terms — to provide a description of human experience as it is experienced by the person herself" (Bentz, Shapiro, 1998) and "allowing the essence to emerge" (Cameron, Schaffer and Hyeoun, 2001). It can be traced back to, Vandenberg (1997), although Husserl is considered "the fountainhead of phenomenology in the twentieth century". Ley (1988) suggests that such ethnographic research "is concerned with making sense of the actions and intentions of people as knowledgeable agents; indeed, more properly it attempts to make sense of their making sense of the events and opportunities confronting them in everyday life". It is furthermore a methodology for participant observation in which the researcher closely observes and interacts with a chosen social setting. These observations and interactions often reveal the cultural constructions and mesh of relations and how they interlink (Herbert, 2000). Similarly, Terre Blanche, Durrheim and Painter (2006) classify ethnography as the "study of cultures and subcultures, usually by immersing oneself in the culture studied over a period of time". This full immersion means that some researchers have taken on the role of a police officer or factory worker in an attempt to comprehend the worldviews of those they studied, whilst other researchers prefer a more detached approach (Herbert, 2000). This level of interaction with a chosen social context is inevitable when adopting an ethnographic approach and remains the best method for appraising oneself of the lived experiences of a particular community.

Rapid ethnography will be used due to time constraints and available access to the research site. Rapid ethnography is a condensed version of traditional ethnography, which involves a multi-method approach including data collection from various sources in a very short space of time. It includes interviews, document reviews, participant observations, surveys and occasionally focus groups. Millen (2000) describes rapid ethnography as "a collection of field methods intended to provide a reasonable understanding of users and their activities given significant time pressures and limited time in the field". Rapid ethnography lends itself well to social science research because of its inherent ability to gather complex descriptions of a social context thereby permitting "the exploration of surface or deeper themes" (Szebehely, 2007).

"The goal of this method is to produce a multi-layered, textured analysis of a slice of life in an organisation, environment or some part of society, intertwining the structure and consciousness

with the larger socio-political context shaping social relations" (Handwerker, 2001; Szebehely, 2007). Rapid ethnography still employs all the same aspects of ethnography and phenomenology, such as interviews and cultural or group immersion, with an understanding that people in themselves are knowledgeable about their own lives. Immersion in a social context can take a considerable period as a researcher sees life unfolding over a period of time. This was not possible in this study due to time constraints and instead semi-structured interviews were used to obtain both a sense of participants' lives whilst they were in their homes and to probe thinking through a series of semi-structured interviews.

Information was collected through semi-structured interviews, focus groups and surveys. A semi-structured interview is a qualitative method that makes use of open-ended questions (questions that prompt discussion). It is flexible, allowing for new questions to emerge based on answers already received from an interviewee and is focussed on understanding and exploring particular themes rather than making generalisations (Sowby, 2011). It also allows a respondent a significant degree of freedom in answering a particular question, as respondents are not restricted by the rigidity of closed questions (Oppenheim, 1992). It may also raise issues that may not have been previously considered.

3.4 Data Collection

The data corpus consists of interview transcripts, audio recordings, a tenant database, survey results, census data, focus group notes and meeting minutes. In order to provide a clear and descriptive background of the site I draw on survey census data to provide context. This census data is therefore a quantitative summary background to give a sense of the context of the case study.

This data comes from four distinct sources:

1. The landlord's most current tenant (customer) database for Blue View Terraces.
2. Transcripts and data from semi-structured interviews.
3. The landlord's most recent tenant (customer) survey.
4. Census data obtained from the websites of Statistics South Africa the Western Cape province.

An exploration was done to understand and conceptualise the lived experiences of participants with a focus on ICTs, levels and forms of ICT access and engagement, participants' digital

proficiency and daily challenges with digital exclusion in the social housing community. In order to explore their lived experiences, participants were asked a series of questions about life prior to relocating to Blue View, experiences in their new home and general question that would reveal their lived experiences. The list of questions covers the following areas:

Family	Searching for employment	Relationships	PC use and proficiency
Children	Educational attainment	Assess online activity	Perceptions of ICTs
School	Tenure in their new home	Mobile phone use	Data use habits
Employment	Life before the relocation	Locations of access	Importance of access

Table 1: List of questions for participants

3.5 Ethical Considerations

All interview data was obtained through informed consent, where interview participants were made fully aware of the purpose of the research, and what the data would be used for. Furthermore, they were made informed that they have the prerogative to participate or not, and that they were able to stop the interview should they feel the need to. Participants were asked for permission to record the audio for the interview session for the purposes of transcribing the date afterwards.

All participant identifiable data have been anonymised by replacing the names and surnames with fictitious ones. The name of the social housing development has also been changed to protect confidentiality. Where children were present their parents' consent was requested. Finally, research participants were made aware that I was employed by the landlord for the social housing development.

3.6 Sampling Strategy

In order to obtain a rich exemplar that is likely to have a lot of data for the question, a combination of a purposive and convenience sampling technique was selected (Battaglia,

2008). Convenience sampling and purposive sampling are non-probability sampling techniques commonly used to select a sample of participants from a population. Although non-probability sampling does come with a caveat of being subjective, it was selected as it is especially useful when the researcher has limited time and resources, such is the case in this study, and has the advantage of being implemented more quickly than other techniques. The purposive sampling technique, also called judgment sampling, is the deliberate choice of a participant due to the qualities the participant possesses (Welman and Kruger, 1999). It is a non-random technique that does require a set number of participants. In cases such as these "the researcher decides what needs to be known and sets out to find people who can and are willing to provide the information by virtue of knowledge or experience" (Bernard, 2002). Purposive sampling consists of seven methods: 1) maximum variation sampling; 2) homogeneous sampling; 3) typical case sampling; 4) extreme/deviant case sampling; 5) critical case sampling; 6) total population sampling; and 7) expert sampling.

These sampling techniques are ideal as the objective is not to create generalisable results but to really understand the phenomenon. Typical case sampling was selected because it is "useful when a researcher wants to study a phenomenon or trend as it relates to what are considered 'typical' or 'average' members of the effected population" (Patton, 1990). There are, however, two levels of sampling that took place prior to the commencement of the data-gathering exercise. The first level of sampling was convenience sampling because the area of Blue View is spatially and administratively well located and participants were willing to participate in the study, especially for the purposes of after-hours interviews and attending focus group meetings, which usually ended at 10:30 in the evenings. The age and size of the social housing development and coexistence of differing races and demographics made it a good fit for this study. Access to the social housing development was also afforded by the landlord in order to conduct research.

The second level of sampling was purposive and used typical case sampling due to the richness of data present in the Blue View Terraces' social housing development and the presence the phenomenon of interest. Typical case sampling helps to reveal the common core dynamics that people would be experiencing in this situation. The study possessed all of the aspects of a complex socioeconomic intervention and represented a very typical case that would reflect the dynamics of racial integration, spatial inclusion, digital exclusion and the types of structural issues that the research was interested in. Despite hopes for a diverse distribution across the social housing development, the sampling exercise delivered a slightly more limited sample because of who responded and was able to participate. Even though is not a fully representative

sample, the sample does have representatives from the various categories, such as age, racial, gender and socioeconomic differentiation. As this is not a statistical, quantitative study, black women's experiences were adequately represented, albeit slightly skewed due to an overrepresentation of white women.

A complete database of individuals living in this social housing complex was used in producing the sample. Contact details in the landlord's database were out of date and many persons in the selected sample could not be reached for an interview, which contributed to the uneven representation of white females in the sample. Microsoft Excel was used to produce the sample. The landlord's entire data set was used, producing 121 participants with the name and surname of each person listed. An additional column was created in order to assign a random number to each leaseholder. This ensured that each leaseholder had an equal chance of being selected. Next, all the random values were sorted and a selection of 40 leaseholders were obtained. This now constituted the complete sample to be used.

3.6.1 Sampling frame

The data source comprised the demographic data of 121 participants, including their address, education, internet access, income levels and data related to their tenure.

3.6.2 Sampling criteria

The sample considered age, race, gender, location in the complex, parents with children attending local schools and duration of occupancy.

3.6.3 Recruitment method and interview schedule

Participants were contacted on their mobile phones over a period of two weeks using the contact details listed in the landlord's database. Contact was made mostly in the late afternoon or when residents arrived home from work. The response to email invitations was very low with only one participant responding out of nearly forty emails sent. In the event that a participant was available for an interview it was be scheduled with a few days' notice. Interviews took place after participants' working hours and over weekends. Very few

participants were available for any interview during the day. The sample consisted of English, Afrikaans and Xhosa speakers. All interviewees were comfortable being interviewed in English even when this was not their home language. The table below lists the interviewees, where w, a or c represent white, African or coloured respectively; and m or f represent male or female.

Table 2: List of interviewees

Interviews	Participant	Female-Headed	Gender	Age	Race	Stay in Complex
Lynne (w, f, 36)	I1	Y	F	36	White	3 years
Mdebi (a, f, 29)	I2	Y	F	29	African	3 years
Keith (w, m, 65)	I3	N	M	65	White	3 years
Chantel (c, f, 25)	I4	N	F	25	Coloured	3 years
Ricardo (c, m, 28)	I5	N	M	28	Coloured	3 years
Uviwe (a, m, 36)	I6	N	M	36	African	3 years
Nonthlanla (a, f, 35)	I7	N	F	35	African	3 years
Anita (c, f, 42)	I8	N	F	42	Coloured	3 years
Cathy (w, f, 37)	I9	N	F	37	White	3 years
Alicia (a, f, 34)	I10	Y	F	34	African	3 years
Mariaan (w, f, 44)	I11	Y	F	44	White	3 years
Stacy	I12	N	F	19	White	3 years

(w, f, 19)						
Jacky (w, f, 10)	I13	N	F	10	White	3 years
Stephanie (w, f, 16)	I14	N	F	16	White	3 years
Joanne (w, f, 51)	I15	Y	F	51	White	3 years
Ricky (w, m, 24)	I16	N	M	24	White	2 years
Mary (w, f, 59)	I17	Y	F	59	White	2 years

Table 3: Breakdown of participant by race and sex

Total female-headed households	6
Total white females interviewed	8
Total white males interviewed	2
Total African females interviewed	3
Total African males interviewed	1
Total Coloured Females Interviewed	2
Total Coloured Males Interviewed	1

3.7 Methods

The following section details the various data sources and methods used in the study in order to answer the research question. Furthermore, this section discusses the methods of data collection, such as surveys, focus groups, participant observation, semi-structured interviews

and informal encounters and conversations. The sequence of events prior to the interviews entailed conducting an initial survey (survey 1) to gauge the levels of ICT adoption and usage patterns. Survey 2 was conducted by an external agency on behalf of the landlord and was used as a secondary data source together with learnings from the focus group engagements in order to understand climate, cultures and family structures. The data from these surveys informed the construction of the interview questions. This was followed by a range of 17 interviews and observations through rapid ethnography.

Total Semi-Structured Interviews	17
Total Focus Group Meetings Attended	3
Total Surveys	2

Table 4: Total of interviews and meetings

3.7.1 Surveys

A survey is "a form of descriptive research that involves collecting information about research participants' beliefs, attitudes, interests, or behaviour through questionnaires, interviews, or paper-and-pencil tests" (Gall, Gall & Borg, 2005). During the study, there were two surveys in total. Survey 1 is a primary data source, whilst survey 2 is a secondary data source. Survey 1, entitled Tenant Survey 2015, consisted of 12 questions. Each question had between two and five answer choices, including multiple choice and yes/no questions. The survey was designed to be short in order to obtain the maximum possible number of respondents. The 12 survey questions contained a few categories, namely access and ownership of ICTs, locations of use, usage purposes, which families had children and which of those children were attending nearby schools. The questions asked were as follows:

1. Do you have access to the internet?
    a. Yes, at work.
    b. Yes, at home.
    c. Yes, on my phone.

d. Other

2. What type of mobile phone do you use?

e. Make

f. Model

3. On average how much do you spend on cell phone data per week?
4. How much data or airtime do you buy?
5. How do you access the internet?

g. From a computer at work.

h. From a computer at home.

i. From a tablet device.

j. From the library.

k. From your mobile phone.

l. From school.

6. What do you use the internet for?

m. Downloads

n. School

o. Work purposes

p. Tertiary studies

q. Social media

r. Online banking

7. Do you use email?
8. Is having access to the internet important to you?
9. Are you considering purchasing a computer or tablet now or in the future?
10. Do you know who the Blue View Focus Group members are in the complex?
11. How old is/are your child/ren?
12. Do they attend school in the area?

The paper-based survey was distributed via the landlord's community development officer and it took approximately two weeks to return all responses. The survey produced 48 respondents out of a total of 239 possible households. These results were then collated and summarised in Microsoft Excel and the results were as follows:

Do you have access to the internet?	**Yes, at home**	**Yes, at work**	**Yes, on phone**				
	5	18	47				
What type of mobile phone do you use?	**Smart phone**	**Cell Phone**	**Make**				
How much do you spend on data per week?	**Amount 1/week**	**Amount 2/week**	**Amount 3/month**	**Amount 4/month**	**Amount 5/month**	**Amount 6/month**	**Can't Afford**
	R20.00	R30.00	R60.00	R100.00	R150.00	R180.00	
Would you use Wi-Fi it was available @ R40/GB in the complex?	**Yes**	**No**					
	46	2					
How do you access the internet?	**PC @ work**	**PC @ home**	**Tablet Device**	**Library**	**Mobile Phone**	**@ School**	**No Access**
	23	8	6	9	42	3	1
What will you use the internet for?	**School home work**	**Downloads**	**Work purposes**	**Tertiary Studies**	**Social Media**	**Online Banking**	**Online Games**

	30	31	25	21	31	23	1
Do you have an email address?	**Yes**	**No**					
	39	7					
Is having the internet important to you?	**Yes**	**No**					
	47	1					
Are you considering buying a computer/tablet now or in the future?	**Yes**	**No**	**Have a PC/ laptop**				
	37	5	9				
Children attending school	**Primary School**	**High School**					
	20	14					

Table 5: Results of survey 1

The second survey (2016) covered a multitude of facets of both residents' lives and that of life in the Blue View Terraces social housing development. The survey data was used to gain an understanding of the levels of education in the complex, income, demographics and internet access.

3.7.2 Attendance at pre-existing focus groups

In addition to the two surveys, the researcher attended three focus group meetings throughout the year in order to build rapport with the community, to understand their issues and challenges and to gain a group or community perspective on, firstly, their experiences living in the social

housing development, followed by communication habits, levels and forms of ICT, internet access and other challenges. These were pre-arranged structured meetings usually occurring every second month. Focus groups took place in the evenings after work in the local clubhouse situated within the social housing development and were attended by two representatives from the landlord and representatives from the social housing development called block representatives.

The social housing development was subdivided into sections called blocks, which were named alphabetically, for example block A, block, B, and so forth. Each block representative was responsible for knowing, gathering and providing feedback on the issues of residents in their respective block. These issues were presented at the focus groups and minuted for collective discussion or resolution by the landlord. A key person in attendance was the community development officer responsible for the particular social housing development. These focus group meetings were invaluable for gaining a glimpse into their collective lived experiences. Standing items for discussion were matters such as anti-social behaviour, issues of security and maintenance, youth programmes and complaints. Other items included report backs from the:

- Safety and security group
- Youth and children's group
- Social and recreational group
- Neighbourhood watch
- Financial report
- Community development report
- Area manager's report

Digital inclusion was introduced as an agenda item for discussion and to make the community aware of anticipated interviews. No additional focus group meetings were needed as originally anticipated.

3.7.3 Interviews

Semi-structured interviews were used to gain an understanding of participants' lived experiences in relation to their new home and community of settlement and included an evaluation of their level of digital exclusion, the influence this has on their daily lives and their

strategies for dealing with such exclusion. Open-ended questions were used as a guide to elicit wider discussion. The open-ended question format proved to be a useful avenue of inquiry for the purpose of the research. All interviews were conducted in English and no Afrikaans or isiXhosa translators were required.

As mentioned, semi-structured interviews were the preferred format due to the flexibility and emergent nature of this method. The goal was to guide the conversation through a predetermined set of questions without directing or suggesting answers, whilst encouraging interviewees to share a full description of their experience, including their thoughts, feelings, images, sensations, memories, along with a description of the situation in which the experience occurred. Interviews were initially planned for thirty minutes but in most instances extended much longer, sometimes up to one and a half hours per interview.

Interviews took place in participants' homes. This was chosen because it was where they felt most comfortable. In order to establish rapport participants were allowed to first talk about themselves, their life in general terms and any other experiences they were willing to share. The reasons for the research were discussed, as was the researcher's interest in studying this area of concern. Participants were asked if they felt comfortable and would allow the use of an audio recorder for transcription purposes. Conversations were allowed to veer off topic, in order to allow for other aspects of their experiences to emanate. This often resulted in new clarifying and exploratory questions with the ultimate aim of documenting the rich tapestry of their life events and experiences. On completion of the interviewees participants were thanked and asked if they would feel comfortable with some minor follow-up questions should these arise. Participants were always given the option to decline such requests.

Interviews were also held with the community social worker assigned to the complex. The social worker contributed to the understanding of the community and knew many of their challenges, but did not divulge confidential or sensitive information. Being respectful of time constraints, interviews were arranged at the most convenient times for interviewees. This was generally in the evening after work or over weekends. The social worker interview was scheduled during normal work hours. The following equipment was used for the interviews: an audio recorder, notebook, stationery and a laptop. The only costs incurred were for travel to and from interviews. A contribution was made to the Blue View Terraces' local birthday event to thank participants for their valuable time and contribution.

3.7.4 Interview protocol

This interview guide lists the questions or issues that the researcher aimed to explore during the course of the interviews. The guide was prepared to ensure that the same basic lines of inquiry were pursued with each interview participant. The guide provides subject areas within which the researcher was free to explore, probe and ask questions that would elucidate and illuminate that particular subject. Therefore, a conversation could be built within the below subject areas, to word questions spontaneously and establish a conversational style but with the focus on a particular predetermined subject. This guide served as a checklist during the interviews to ensure that all relevant topics were covered.

- Explore family life
- Explore relationships and connections in the complex. Engagement in the complex.
- Assess level of educational attainment.
- Assess familiarity with technology and lingo.
- Assess online habits.
- Children
- School
- Employment
- Searching for employment.
- Educational attainment
- Social relations
- Tenure in their new home.
- Life before the relocation.
- Assess online activity.
- Assess mobile phone use.
- Assess locations of access.
- Assess PC use and proficiency.
- Assess the importance of internet access/levels of attachment.
- Perceptions of ICTs.
- Data use habits.
- Everyday challenges
- Aspirations

3.7.5 Interview questions

1. How big is your family? Tell me more about your family. Where do they live? Do you visit them often?
2. Where do you work? What you do there? How long have you worked there? What do you actually want to do?
3. Are you computer literate?
4. What did you study? Did you complete matric/schooling?
5. How long have you lived in this social housing complex?
6. Where did you live before? Do you go back there often?
7. Do you know your neighbours next door or in the complex? How many 'close' neighbours do you know. Only in the next block or further down in the complex?
8. Do you know any other people in the social housing complex?
9. What hobbies do you have? What do you enjoy doing?
10. Assess online activity. What do you do online? How good are your technology skills?
11. Do you use WhatsApp? Do you belong to any WhatsApp groups?
12. Do you have internet access at work? What would you use the internet for at work?
13. What school does/do your child/ren attend?
14. Where do your children complete their homework assignments when there is an internet research component?
15. What were the difficulties you experienced when conducting internet research and homework assignments on a mobile phone?
16. Did you frequently print things/homework at work for your children?
17. What do you do if you have issues in the complex?
18. Do you use the internet on your phone or computer? What else do you do on your phone? Do you know if it is an Android or iOS device?
19. Where is the closest internet café?
20. What do you do online?
21. Have you tried online education before?
22. Do you use Microsoft Office?
23. Do you do online banking? From your mobile phone or laptop?
24. What type of smartphone do you own?
25. Do you own a tablet device?
26. Do you use mobile apps? If so, which ones?
27. What would you do if you did not have access to the internet? Or it was cut off.

28. What do you do for entertainment?
29. Are you employed? When was the last time you were employed?
30. Is having access to the internet important to you?
31. If the complex had Wi-Fi available would you make use of it? What kind of information would you like to be available?
32. If you had an information website for Blue View Terraces, what would you want to see on there?
33. Do you think you would know more neighbours if there was a platform to interact and share ideas? Shared online space.
34. Where/how do you top up your electricity?
35. How do you do your banking? Mobile or online banking?
36. How much do you spend on internet every month?
37. Does your child have their own mobile phone and data? Who purchases their airtime?
38. How many calls do you make a month?
39. What do you do on your phone?
40. Do your friends have their own Wi-Fi?
41. Do you use any government services online? For example, to apply for services.
42. Do you receive a grant from government?
43. Where do your children go to school?
44. How is your health? Do you search for health info online?
45. Do you use email? How do you receive your statements? Are these emailed to you?
46. Was it fine reviewing the statement on your mobile phone?
47. How often do you use Facebook? Is your family on Facebook?
48. How are your typing and MS Office skills? If I handed you a laptop would you be able to write me a letter?
49. What are your future goals and ambitions?
50. What hobbies, interests do you have?
51. Do you read?
52. Have you used a tablet device before?
53. When you search for employment, where do you search? What do you search for?
54. If you want to know anything do you go online? What do you search for?
55. If you were to take part in online education would you want to receive a certificate of completion?
56. Would you prefer employment in the area/nearby?
57. Do you use online classified ads such as Gumtree?

58. What are your partner's online habits?
59. If you were able to upgrade now, which phone would you upgrade to? What would your next upgrade be?

3.8 Explicitation of the Data

The heading of 'data analysis' is deliberately avoided here as Hycner (1999) cautions that 'analysis' has dangerous connotations for phenomenology. Analysis usually means a 'breaking into parts' and may lead to loss of certain material parts of the data, thereby losing the whole phenomenon. "Explicitation on the other hand is rather an investigation of the constituents of a phenomenon, whereby ensuring context is preserved" (Hycner, 1999). Coffey and Atkinson (1996) regard analysis as the "systematic procedures to identify essential features and relationships". This explicitation process has five steps:

1. Bracketing and phenomenological reduction.
2. Delineating units of meaning.
3. Clustering of units of meaning to form themes.
4. Summarising each interview, validating it and, where necessary, modifying it.
5. Extracting general and unique themes from all the interviews and making a composite summary.

The chosen coding or data discovery process employed thematic content analysis for identifying pertinent information. Interview transcripts, text, focus group minutes, field notes and survey data provided a descriptive account of the study. The aforementioned research artefacts were analysed by hand for candidate themes that were interesting or unusual or that displayed signs of a pattern. This involved discovering candidate themes from interview transcripts, focus group meeting minutes, notes and informal interviews and attempting to verify, confirm and qualify them by searching through the data and repeating the process to identify further themes. Candidate themes were reviewed and distilled to ensure internal coherence and strong distinctions between themes.

First level coding was done from the audio transcripts, focus group meeting minutes, as well as notes from informal interviews and recorded/noted in Microsoft OneNote with the exact audio timestamp location or page number where each code appeared. Notes were then made in

the margins of Microsoft OneNote, including theories or short phrases that summed up what was being said in the audio transcript relating to each code. Mind-mapping software was used to make grouping easier and to provide a helicopter view of discussions. Deviations or off-topic discussions with the interview participants were not included for coding.

A second shorter list of sub-themes was then compiled by searching for overlapping or similar candidate themes. These were reduced and grouped together after further distillation. Data triangulation was used in order to ensure a reasonable degree of 'truth'. Data triangulation involves using different sources of information in order to increase the validity of a study, thereby increasing the validity and utility of the findings (Patton, 2002). Focus group and survey data were used to triangulate or search for inconsistencies in the interview data. Simple mind-mapping software was then used to categorise and organise codes in relation to the corresponding participant responses. This produced a multidimensional mind map with the relationships between categories clearly drawn in. This mind map was then further overlaid with the theory from the literature leading to the selection of section titles for the findings below.

The following steps outline the procedure that was followed (Saldana, 2009):

1. Audio interview recordings were transcribed.
2. Notes were made when interesting or relevant information was found that pertained to the aspects under exploration.
3. Further notes were made listing the different categories of information or themes.
4. Minor themes were categorised, linked and further distilled to produce overarching themes or major categories.
5. The various major and minor categories were compared and contrasted.
6. Steps 1-5 were repeated for each interview transcript.
7. After the coding and theming of transcripts, all categories or themes were examined in detail, considering fit and relevance to the study.
8. A further review was conducted of all of the categories to determine whether some categories could be merged or if some could be sub-categorised.
9. Finally, transcripts were checked to ensure that all the information had been coded.

3.9 Theoretical Interpretation

To make sense of this intersection and the overlap between residents' relocation and their ICT experiences in their new context, the research draws on Berry (1990), Soudien (2010) and Helsper (2012). Berry's (1997) work on cultural adaptation and acculturation will help with an understanding of residents' experiences when moving between old and new spaces, whereas Soudien (2010) will help us to makes sense of the South African context of the intermixing of various classes in local South African middle class schools. Lastly, Helsper (2012) will be used to understand the various nuances of internet access and use through the use of her corresponding fields model for understanding the links between digital and social exclusion. These are complicated models and only key aspects are drawn from them to make sense of the data and phenomenon in this study. The first essential concept integral for the methods used for this project is that of acculturation.

A key focus here is the social housing context and its implications for relocating from lower to middle income neighbourhoods, thereby crossing traditional spatial, class and cultural boundaries. There are quite a few similarities with migration studies literature. Berry's (1997) acculturation research is applicable because it explores the lives of individuals who developed in a particular cultural context and then re-established themselves in a different one. He investigates and describes the various acculturation or adaptation mechanisms at play. In order to assist in methodically exploring acculturation Berry's (1997) acculturation framework was used to help explain the challenges residents face when acculturating or moving between dissimilar communities. This is particularly visible when class disparities exist between such communities or groups. His work helps us to make sense of the outcomes of acculturation and the contributing factors and possible future interventions required to architect a particular acculturation outcome.

Following is a detailed discussion and explanation of the acculturation process. Berry (1997) advises that in order to properly contextualise the acculturation process one must first take a step back to understand the residents' communities of origin. It is only once their originating contexts are understood, along with the conditions in their destination community, that the cultural distance they will need to traverse in order to adapt to their new surroundings can be truly comprehended. His theory will also assist us in making sense of the acculturation process and what the eventual outcome may be based on the interplay between life experiences in the community of settlement and residents' personal factors and environmental moderating factors. The main focus of the project is on the process of acculturation detailed in the middle of the model. The analysis will follow each step of this process and within each step the moderating factors prior and during acculturation will be utilised and briefly explained. It should be noted

that when Berry (1997) talks about adaptation in his acculturation model it could be either positive or negative adaptation, meaning either successful integration of various cultures and groups, or the separation and marginalisation of minority resident groups. This may very well cause the minority to adapt or in time move away altogether if they are unable to cope with any of the acculturation stresses that they experience. The key part in his model is the migration from the community of origin to the community of settlement, which is followed by the acculturation process and ends with long-term outcomes.

Helsper's (2012) work will help with understanding of the various components of ICT access, namely access platforms (PCs, laptops, smartphones) and the quality, mobility and ubiquity of access on such platforms. In her framework she hypothesises about the links between social and digital exclusion by using impact mediators: access, skills and attitudes.

3.10 Summary

This chapter described the research design used to conduct the study. This is a qualitative study, using phenomenological and ethnographic inquiry to study participants' lived experiences in the social housing development. Chapter four presents findings related to the inquiry to determine participants' degree of digital exclusion, the extent to which digital exclusion influences their daily lives and experiences in the social housing development, and how it may be used for future socioeconomic programmes. The findings start with a depiction of the residents' community of origin and then follow their path as they relocated into the community of Blue View. The acculturation process starts upon their arrival as they come into contact with the various cultures, practices and residents experiencing acculturation as a group, as well as individually.

CHAPTER 4: FINDINGS

4.1 Introduction

In the previous chapter, the methodology and methods for data collection were outlined. This is a phenomenological qualitative study with the purpose of understanding the lived experiences of social housing residents as they relate to digital exclusion. The methods have been chosen in line with the research question and insofar as these will serve to adequately understand the lived experiences of individual and groups of residents. Interviews were used as the mechanism of enquiry with individuals, whilst focus groups and surveys were used for groups. The following sections will detail the findings of residents' collective and individual lived experiences obtained from research interviews, focus groups and surveys. The research question that framed the study was:

> How does digital exclusion influence the experience of overall inclusion in South African social housing?

In order to answer the research question, the researcher attended monthly focus group meetings with all social housing block representatives before compiling the set of interview questions to assess the levels of digital exclusion in households in the Blue View social housing development. The terms of both newcomer and participant refer to a resident of this social housing development who has relocated as part of attempts at spatial inclusion and racial desegregation. The chapter is divided into the following sections based on the emerging codes and themes.

Part One: The pursuit of residential desegregation and social inclusion

Part one prefaces the discussion as a reminder of the context within which the research took place. This is followed by a description of residents' lives before relocation and their subsequent arrival in the social housing development and their new neighbourhood.

Part Two: Digital exclusion is not a homogenous experience

Part two details the levels of digital exclusion amongst newcomers and motivation for using ICTs. This is contrasted with their middle-class neighbours. In order to make sense of

participants' digital exclusion and how this influences social inclusion efforts, it is material to first understand the degree to which they are either digitally excluded or included and how this contrasts with the community within which they are being integrated. The supporting sub-themes and codes are:

- Fragmented access
  - No ADSL infrastructure in social housing development
  - Library
  - School computer centre
  - Friends
  - Family
  - Workarounds
  - Mobile
  - BlackBerry BIS
  - Internet cafe
  - Access at gym
  - Hand-me-downs
  - Public access time constraints
  - Get by
- Coping strategies
  - Visit family
  - Proxy use
  - BlackBerry BIS
  - Library
  - Parents' work internet
- Variations in use
  - News

- Job searches
- Google searches
- Social media
- Recipes
- WhatsApp
- Health info

Part Three: Acculturation intersections

Part three illustrates participants' integration journey as a series of intersections that they encounter as they experience life in their new home, community and neighbourhood. Intersections are thought of as two opposing streams of flow intersecting, which result in a break in flow similar to a traffic intersection. In order to control this flow and prevent accidents most intersections have defined rules that must be obeyed. When rules are not adhered to, catastrophic events unfold. Intersections are at times inconvenient, interrupting the flow of our daily lives. In many respects both communities experience these intersections on a daily basis, with no rules or support to safely guide them on their way.

The first intersection: Failed spatial inclusion morphs into discrimination

The process of social inclusion involved spatial and other forms of inclusion and is therefore critical for understanding the overall success of inclusion efforts. The section furthermore highlights the emerging tensions when Blue View community members and newcomers came into contact for the first time. The theme is supported by the following codes:

- "Finally, my own place!"
- "We don't interlink (interact)."
- "The cops are quick to come out."
- "They (the community) did not want us here."
- "When we first moved in here the police would have roadblocks set up close to the entrance."
- "It's apartheid, yes, definitely. They did not want us here and initially the

neighbourhood signed petitions not to have us here." "The way they speak to you, you immediately just say rather leave it."

- "They thought we were Nigerians [sic]."

The second intersection: Inclusively unaffordable

The second interaction details the start of participants' lives in the social housing development, the daily challenges they faced and the coping strategies employed when confronted with issues of discrimination, lack of relocation support and middle-class cost of living. The theme helps answer a part of the research question by drawing attention to the aspects that social housing practitioners and institutions should consider during any of their projects. The theme is supported by the following codes:

- "We can't afford the schools around here, they are way too expensive."
- "My main focus is getting by month-to-month. Life is tough and you just have to get by. Be thankful for a roof over your head at the end of the month."
- "I can't afford insurance."
- "Without my mom's help, I would not have been able to afford the internet."
- Government grant
- "Breadwinner in the family. Only parent working is tough. Had to put dreams aside, because of my two boys."
- Data is very expensive
- BlackBerry BIS is a life-saver
- Dad would pay for internet costs.
- Wishes she had money to do online banking.
- Grateful she has a job
- "We were very close to being out on the street."
- Buys airtime on credit.

The third intersection: Good schooling, forced assimilation and marginalisation

The third and final intersection details newcomers' lived experiences with local schools as they confront acute digital exclusion, forced assimilation and marginalisation. Their means and

location of access, online activities, communication, proxy use, and affordability are all discussed. This brings into view the effects of not considering digital exclusion as important as residential and spatial inclusion. The theme is supported by the following codes:

- Penalties for late submission of homework of -10% per day.
- Library closes at 4pm and parents work until 5 or 6 in the evening.
- "Before matric I will have to buy a laptop."
- Would use the library at times. Internet is quite slow.
- Most frustrating thing about not having access to internet: when she needs last minute information in order to complete a project.
- Mom reiterates how frustrating it is to rely on other people for research. Last term there were lots of projects. Mom sits at work and helps her out.
- Proxy use does not always work out because sometimes mom prints out the wrong information.
- Writes everything out instead of typing. She prefers to have a printed document as opposed to a handwritten one. Teacher gives bonus marks for visual aids.
- Prints directly from internet at R5 per black and white page. Can't print at school. Must have accompanying visual aids in assignments.
- Visits library twice a week.
- Searching on her phone takes a lot of 'bundles' (airtime).
- Teacher will refer you someone with internet if you do not have. You'll have to pay.
- Son submitted late and got a zero for his assignment. Tried to explain to the teacher but she didn't listen. She could not get the relevant information at the library. Tried and tried. Asked for extension but teacher just said no: you cannot move the due date.

4.2 Part One: The Pursuit of Residential Desegregation and Social Inclusion

Blue View Terraces is a social housing project that was developed in 2011 with occupation taking place in August 2012. The construction of this R45 million residential development is but one of many similar social housing developments aimed at correcting the historical spatial exclusion and inequalities of South Africa's apartheid past. Newcomers to Blue View Terraces took up this offering due to the favourable rental offered by social housing, often subsidised by up to thirty percent of what they would normally pay for market-related rental accommodation.

Social housing institutions provide subsidised rental accommodation to families with low incomes. A so-called low-income family is defined as "those with a household income below R7,500 per month". (SA Gazette Government, 2008). The Social Housing Act No. 16 of 2008 describes social housing as:

> "A rental or co-operative housing option for low to medium income households at a level and which is provided by social housing institutions or other delivery agents in approved projects in designated restructuring zones with the benefit of public funding."

Urban renewal and transformation remain at the top of the South African government's agenda for recalibrating economic growth, urban regeneration of historically disadvantaged communities and the desegregation of previously whites-only suburbs. This legislation has given rise to the social housing sector, which today works in unison with civil society and government at operationalising its plans and policies as pertains to housing. Through its many community programmes social housing institutions provide a springboard for social inclusion and consequently higher levels of economic engagement (Housing Development Agency and National Association of Social Housing Organisations , 2013). The mandate for social housing is not dissimilar to that of digital inclusion, in that both address a form of spatial divide, one offline and the other online. In order to appreciate the difficulties newcomers to Blue View faced, it is fitting to take a step back to understand their communities of origin.

4.2.1 A stark contrast: Communities of origin

The first step to understanding acculturation is to articulate migrants' communities of origin. Individuals residing in a certain context will develop certain cultural characteristics that will accompany them wherever they relocate. In order to understand the degree of acculturation that individuals may experience in their new host community (community of settlement), one needs to understand where they are coming from, i.e. their community of origin, as well as where they are going. Berry (1997) refers to this as the cultural distance individuals need to travel in order to acculturate to the practices of their new community. In the originating community this refers to aspects of class, economic situation, political situation and demographics. Two additional factors that have been added for the purpose of this study are the ICT infrastructure

individuals' have become accustomed to, as well as their ICT situation, for example what interactions they have had with ICTs and their predominant form of access to ICTs or the internet. One of Berry's (1997) factors, namely economic situation, describes issues of class, education and employment, which can be a contributing or motivating factor for relocation.

4.2.2 Newcomers' old reality

In Blue View there are two differing groups of people. On the one hand, there are newcomers originating from townships and other low socioeconomic areas and, on the other, is a previously whites-only suburb. The juxtaposition between the communities is quite stark. Through apartheid legislation, townships in South Africa were originally designated for African (black) occupation only and were usually situated far from whites-only suburbs and city centres. They were further characterised by makeshift housing settlements, and lack of basic services and infrastructure. Not all newcomers relocated to Blue View from township areas but all led nomadic lives characterised by instability, poor housing conditions and low socioeconomic neighbourhoods.

Figure 1: An example of the previous living conditions of participants

Eighty percent of newcomers had previously not lived in anything resembling a suburb, whilst seventeen percent of interview participants previously lived in informal settlements or

townships. In addition, as many as seventy-one percent of participants had previously led nomadic lives. For many new arrivals, Blue View Terraces was their first real home. These families' lives had been dominated by economic and social problems. Prior to moving into this new community, new arrivals were predominantly from low-SES backgrounds. Their children had attended local township schools, which were generally under-resourced. Families who moved from such township communities to Blue View Terraces were accustomed to sharing mutual support with neighbours who experienced similar economic and social challenges in the township context.

Lynne (w, f, 37) shares her elation at reaching Blue View Terraces at the end of a journey of failed relationships and divorce:

> "So eventually the day I came to see my flat I cried. My own place! Cause I was 21 when I got married. So it was from my parents' house into another house, got divorced and moved back with my parents. And then moved to Bellville with this one guy, didn't work out and I moved back in with my parents. So I was like my own place finally! Just me and my daughter."

Joanne (w, f, 51) shares:

> "We were very close to being out on the street."

4.2.3 A stark contrast: Community of settlement

For residents that are relocating there is both a historical context and attitudinal situation that may arise in their community of settlement. Some communities may be quite accepting of cultural pluralism, therefore openly inviting new cultures, practices and individuals into their community. Others, however, may fear a change in their way of life or in the status quo through such integration. Institutions or local residents may attempt to stifle diversity through programmes and policies of assimilation, whilst others may even marginalise anyone foreign to their community. In addition to understanding this host community and their cultural traditions, one must also take into account values and practices of the available ICT infrastructure. Generally, middle class communities in South Africa have access to fairly good ICT infrastructure when compared to previously disadvantaged communities, such as townships or informal settlements, which for the most part have over-the-air access through cell phone towers.

4.2.4 Newcomers' new reality

The previous section offers an understanding of the newcomers' origin. To understand the environment within which these people are now settling it is important to paint a picture of their new community and in so doing illustrate the cultural distance between the newcomers and the dominant culture present within the new community. Newcomers migrated to Blue View because of the attractiveness of the housing offering and would have considered this a foreign space during apartheid during which time it was restricted to white citizens only (The Group Areas Act, act No. 41, 1950). Previously, these newcomers would only have been permitted within the area if in possession of a 'pass'. A pass was a form of internal passport intended to keep the South African population segregated.

With seventy seven percent white, fourteen percent coloured and six percent black African citizens, the neighbourhood has still largely retained its dominant white cultural profile (City of Cape Town, 2011). This may simply be because the black middle class were excluded from home ownership in the cities and since apartheid have not had sufficient capital or income to take up housing opportunities located in historically white neighbourhoods. The Blue View Terraces community is situated in the middle of the greater Blue View suburb. It consisted of two parts, which will be referred to as Blue View Terraces (original) and Blue View (new). The original Blue View Terraces was built in 1982 (phase 1) with the new section (known as phase 2) following thirty years later in 2012. A third phase was planned but was blocked by the surrounding community during the compulsory public participation process. The original section that commenced in 1982 housed only senior citizens.

Figure 2: Map of Blue View Terraces

The demographic composition of the old section was eighty percent white, thirteen percent coloured, one percent Asian and zero percent African. This very closely resembled the demographic composition of the greater Blue View suburb. The social housing development also consisted of several hundred housing units reserved for seniors. These units were isolated from the family units as the seniors did not appreciate 'noisy' children. A very definite divide existed between these new and old sections of the social housing development and was mentioned several times by interviewees.

> Anita (c, f, 42): "We don't interlink (interact) … There's a big gap."

The demographic composition of the new section contrasts sharply with that of the old, with only fifteen percent white, forty percent African, and forty-one percent coloured residents. When comparing the household language of the two sections, the original section of the social housing development comprises eighty-six percent English-speaking residents and fourteen percent Afrikaans-speaking, compared to that of the new section where fifty-nine percent of residents speak English, thirty percent isiXhosa, one percent isiZulu and ten percent Afrikaans. By contrast, the largely white community speaks mostly English and Afrikaans. Language and

race are usually the most visible aspects of culture and are what most often differentiates one group from another. This also especially holds true in South Africa.

4.3 Part Two: Digital Exclusion is Not a Homogeneous Experience

In order to answer the research question and understand the influence that digital exclusion has on inclusion projects within social housing, the degree of digital exclusion or inclusion experienced by the newcomers must first be identified. This section focuses on the various aspects of digital exclusion in order to answer the research question. The dominant sub-themes for digital exclusion were: fragmented access, device form factor, affordability, variation in use, levels of ICT self-efficacy and skill and, lastly, attitudes towards ICTs.

4.3.1 Fragmented access

Internet access was in most cases very fragmented, with participants making use of many different means and resources to accomplish their required access goals. Although no official internet statistics were available for the suburb of Blue View, a vibrant online community existed on social media as most businesses in the vicinity were online. These ranged from carpooling and lift clubs to neighbourhood watches, hairdressers and a community policing forum, to name but a few. The latest Telkom (2015) coverage map clearly showed the availability of broadband services, such as VDSL (very-high-bit-rate digital subscriber line) and FTTH (fibre-to-the-home) available in the Blue View area. Broadband services such as these are usually only available in middle- to high-income areas where people have the disposable income to take up such service offerings. Looking at the 2011 census demographic and income data in addition to the available broadband infrastructure in Blue View, it would not be unreasonable to make certain assumptions about the pervasiveness of home internet access in the surrounding area. Only two participants had internet access in their homes. Telkom and Neotel, both local telecommunication providers, had limited to no coverage in the area. Some of the participants had on prior occasions attempted to subscribe to ADSL services due to it being a more cost-effective alternative to mobile data use but were unsuccessful. Despite the availability of broadband infrastructure in the surrounding area, the developers of this social housing development did not include the infrastructure required for landlines, which is a requirement for ADSL connectivity. Furthermore, the newcomers found that mobile phone reception and the availability of wireless access services was poor in their section of the development.

> Cathy (w, f, 37): “Reception here is really bad.”

When newcomers enquired their local telecommunications service provider, Telkom, about the installation of infrastructure they were directed to the landlord for the installation of cables within the social housing complex. They subsequently received the following response from the landlord.

> Cathy (w, f, 37): “The landlord won’t allow an aerial (antenna) to be put up. We offered to pay for it all and supply the block, but they just were not interested.”

The only alternative that remained was the use of mobile data. At the time of this research mobile data was one thousand percent more expensive than home broadband data. For instance, a mobile data bundle costs R150 for one gigabyte, whilst DSL data only costs R15 per gigabyte. Lynne (w, f, 36) did have some success in gaining access to a wireless broadband connection with 15 gigabytes of data per month, whilst all others accessing the internet do so exclusively via their mobile phones and in some cases using their mobile phone’s personal wireless hotspot in order to connect their laptops to the internet to do research for homework assignments.

Newcomers that did not have access to a computer or a printer would frequently make use of public internet access facilities, such as the local library or internet cafés. Library internet access sessions were restricted to 45 minutes per person. The library closes at 4pm on Tuesdays and Thursdays and most parents would only arrive home at six in the evening. Mdebi (a, f, 29) visited the local library twice a week to help her son with homework but criticised the out-dated software, slow connection and limited amount of time allocated to each person. Ricky (w, m, 24) said he was often unable to locate the correct information from library books alone. Whilst public internet access facilities, such as the local library (1km away), did offer a solution, the quality of internet access was poor and the equipment was old. Facilities such as the library and the computer centre at some of the schools were also only open until 4 or 5pm, allowing for less than two hours of uninterrupted access. Two of the local schools did have computer centres but few learners made use of these because schools would either restrict access to learners with computer classes as a subject choice, or these centres would only be available during lunch breaks and two hours after school.

For those parents with internet and computer access in the workplace, their place of employment frequently filled the internet access and form factor gap. Twenty-nine percent of participants had internet access at their place of work. The levels of access allowed varied between businesses with some having very restrictive internet and computer access policies,

whilst others were more lenient and provided unfettered access to staff. Several of the interview participants accessed the internet from their place of work. Only one person, Alicia 10 (a, f, 34), used the internet as part of her work duties. Others used it for personal reasons, such as browsing for miscellaneous content, as well as for their children's school assignments. Two participants had workplace internet access but did not make use of it. Both of the participants had children below the age of six and were not digitally engaged even on their mobile phones. A discussion on the effect of access limitations on homework assignments will follow in part three.

Cathy (w, f, 37) would frequently make use of her familial network to gain access to the internet. Even though her father lived 30 kilometres away they would frequently make the journey in order to complete last minute homework assignments. Joanne (w, f, 51) and Stephanie (w, f, 16) would frequently visit family and friends and in some cases even the local gym to use the internet in order to conduct research for school assignments. In many cases this introduced the use of parents as proxies for information searches. Parents would often do a portion of the assignment research on behalf of, and under instruction from, their children whilst at work. Learners would provide guidance on what to search for. The use of proxies for assistance with homework assignments will be further illustrated in part three.

4.3.2 Device form factor: Not all devices are created equal

Anita (c, f, 43) relates:

> "So one of the teachers said, but don't you have a computer at home, or don't you have a laptop? So I said where must I get a laptop if I don't have a computer. One day we were sitting here till until three am in the morning, with my BlackBerry phone looking for information. So obviously you have to keep it on charge because you have to Google this and Google that and it takes a lot of strain out of you. My eyes was watering of reading all the small text on the screen and the scroller on my blackberry actually stopped working!"

Device form factor describes the type of device from which a user would access the internet – meaning a computer, laptop, tablet device or mobile phone. Except for one participant, the newcomers were all very mobile-centric in their use of ICTs (Donner & Gitau, 2009). Mobile

centric use of ICTs is characterised by a predominant reliance on a mobile device as the primary or only device for engagement with ICTs (Donner & Gitau, 2009). Seventy-six percent of participants made use of mobile internet access. This was higher than the overall average for the complex, which measured at fifty-one percent. Mobile access was also the most affordable method of accessing the internet on a shoestring budget. Of the 17 interviewees, three owned a feature phone, 13 a smartphone and two owned tablet devices. Mobile browsing was the predominant and in some cases only mode of internet access for many participants.

The recent advent of tablet devices is good news for those less fortunate and cash strapped because it allows them to effectively leapfrog the desktop and laptop era. The core determinants for feature phone use was cost, age and attitude. For participants, cost was the first determinant of device ownership and the principal contributor to limited internet access. Four of the participants were unable to afford a smartphone. Laptop use was high considering this is social housing and residents earn between R2 500 and R7 500 combined household income per month. Six participants reported owning laptops and, of those six, three used it for work purposes. One interview explained her preference for switching between devices depending on the task that needs to be accomplished. She mentioned how she "would only use the laptop for pulling data" and her phone for social activities. She was reasonably 'tech savvy' and digitally competent as could be seen from her usage patterns. Two devices, a laptop and a tablet device were used intermittently because of a lack of data and were used mainly for playing games and writing up homework. Of the four that owned laptop computers two used these for accessing the internet, whilst one other used it for leisure activities, such as watching movies.

4.3.3 Affordability: Rationed access on a shoestring budget

> Mdebi (a, f, 29) "The internet is expensive".
>
> Lungi (a, f, 35) has stopped using SMS, as "WhatsApp is much cheaper".

When asked about their online activity it very quickly became apparent that low-income persons think differently about the internet than middle- to high-income persons. Unlike heavy users of the internet where the cost of data and technology is almost invisible and an afterthought, for low-income persons a website was frequently classed as "expensive versus not expensive". When asked if she used social media, Mdebi (a, f, 29) said "Facebook is too expensive". Operating on a shoestring budget meant most participants were acutely aware of their data use. They knew which websites were 'expensive' to use and coordinated their data

use accordingly. Mdebi only checks her Facebook every second month because it is very expensive. This factored strongly in participants' data purchasing decisions, how they navigated the internet, how long they spent their time online and which websites they visited. This is reminiscent of the days of dialup-modems where cost was based on time spent online.

At the time of this research mobile data was eight hundred percent more expensive than home broadband data. Despite this, mobile phone access was the most prevalent and affordable form of internet access for brief online engagements; it was the most affordable form of hardware; and, even though mobile data was more expensive than that of home DSL, it allowed participants to buy data in very small denominations when compared to signing up for a dedicated broadband service at home. This often meant the difference between buying R10 data versus a R400 per month home DSL service. Cathy (w, f, 37) spent R300 per month in her personal capacity, whilst her combined household of seven spent on average R1 200 on data for the month. She says her family simply must have uncapped internet because her children access the internet for everything and her teenage son belongs to the tech team at school and so she constantly needs to top up his mobile data. Cathy's parents in the UK support her financially, which is how she was able to spend much more than the rest of the interviewees. Those who were spending between R10 and R100 on data per month were less engaged online.

In addition to purchasing data bundles for their own mobile phones, parents were also expected to purchase data bundles for their children, especially those attending high school. Many used retail store accounts, such as Mr Price and others, to purchase airtime on account. Chantel (c, f, 25) would buy R10 airtime bundles and very often spent around R300 per month. She complained that this made her store account balance excessively high. Absurdly, she therefore paid interest on airtime and was not aware of it. Participants who used the internet for work had much higher data usage and were frequently not aware of exactly how much data they used per month. One of them, Uviwe (a, m, 36), received a data allowance from work as he needed to prepare sales quotes from his laptop when out on the road. This was in sharp contrast to his wife who purchased only R10 data to use WhatsApp and was not interested in any other forms of digital engagement even though she was allowed to do so at work. In most cases the primary use of data was for communicating via the popular messaging platform WhatsApp.

Seventy percent of participants did not have a cell phone contract and instead purchased prepaid airtime and data. Approximately one third of participants owned a cell phone or data contract. Of those who had a contract, two were African, three white and one coloured. When asked their reason for not owning a cell phone contract participants said they did not feel comfortable

with entering into long-term contracts and they were better able to control their expenditure through pay-as-you-go. Smartphones were sought after commodities for some participants due to the increase in available features and their ability to do more on the device or at least use the larger screen for browsing websites and helping with homework. Anita (c, f, 43) uses the BlackBerry Internet Service extensively because it the most cost-effective means of access. There was unanimous agreement that data is expensive but this did not preclude participants from accessing the internet. In some instances, participants would borrow money to purchase data in order to use WhatsApp.

Affordability was also the most frequent determinant of device form factor. The cost of ICT hardware was most certainly one of the principal contributors for the lack of advanced internet use. Four families within the sample were using second or third generation mobile phones that were passed down from family or friends. Cathy (w, f, 37) currently accesses the internet only from her mobile phone. Her mother brought her a Samsung Galaxy S6 Edge smartphone on her last visit from the United Kingdom. Her husband owns an iPhone 6 and her son an iPhone 4, which were all passed down upon renewal of her parents' mobile contracts. In certain instances, family living abroad would receive the latest mobile phone for free but would not be interested in using it, in which case they would pass it down to their children. Anita (c, f, 42) bought a tablet on her retail account three years ago but has not used it much as she is unable to afford data for the device.

> Joanne (w, f, 51): "I got my BlackBerry from a friend who upgraded her contract."
>
> Mariaan (w, f, 44): "My mom and sister upgrades once a year and then they pass on their 'old stuff' to us."

Mariaan (w, f, 44) owns an iPhone 5 and her mom in the UK has an iPhone 6. Once she receives the iPhone 6 she plans to pass her iPhone 5 down to her eldest daughter. All the participants with smartphone 'hand-me-downs' were white and had extended family members who were relatively economically well off. Many of the participants were unable to afford a smartphone, with some feeling severely 'constrained'. Chantel (c, f, 25), for example, said she hated her "stupid phone" for not having the functionality to connect her to Facebook and WhatsApp. All of her friends and family were on social media and she seemed visibly distressed at her exclusion. She expressed her embarrassment about not even having a touch screen whilst her partner owned both a smartphone and tablet, which he received as part of a promotion. She said she realises that her current spend on airtime of R300 per month may as well be spent on

purchasing a cell phone contract for which she would get a smartphone which she could use to WhatsApp.

Anita (c, f, 42): “I would upgrade my phone to a newer one if I could get another job.”

Anita’s preference was for an Android device because it has more apps than BlackBerry and the screen size is better for browsing. The lack of engagement with ICTs was by no means due to lack of interest, instead it was an issue of affordability.

The above discussion clearly shows that mobile phone affordability, data costs and the cost of ICTs are influencing factors in the ability of learners and their parents to adapt to the prevailing ICT practices in Blue View. Participants have adopted a wide range of communication practices to minimise costs. This all compounds the problem of increased cost of living in their new homes.

4.3.4 Variations in use

As could be expected of mobile-centric use, browsing practices ranged from basic Google searches to news, health and job searches. News and employment also featured prominently as online search themes. Job-hunting was a frequent activity undertaken by some of the more digitally competent participants. Websites such as Gumtree and career portals, such as Indeed and Careers24, were most frequently visited for searching employment opportunities. Some interviewees preferred visiting brick-and-mortar institutions to enquire about employment. Complexity and user interface design of the career portals were named as key frustrations when searching for employment or creating a CV, as reported by Mdebi (a, f, 29):

“It’s slow and takes times and a lot of bundles (data)”.

She further said that there were jobs but that the process to get to the contact details was too difficult. She was signed up to receive the Careers 24 website’s employment alerts and explained the complicated process of attempting to open hyperlinks from her mobile phone. These hyperlinks more often than not were broken or would lead to other hyperlinks that caused her to eventually give up on job searches. This could also have been caused by high latency on the device. Mdebi would like to have the job and contact information included in the email. Many felt disheartened as they have submitted their resumes to several online career portals and have not received any form of feedback. An estimated fifty percent of interviewees also reported not using the television anymore to stay up to date with news events. News24 was the

news channel of choice and some more digitally advanced participants had the mobile app installed on their phones.

None of the participants engaged in online shopping but some did make frequent use of online classifieds, such as Gumtree and OLX, to search for bargains. Unsurprisingly, the three most digitally astute interviewees would browse online classifieds. One couple was searching for a car whilst another mentioned how much she has saved since buying from Gumtree. Participants have as yet not actively engaged in local online community forums, although three participants confirmed using online searches for health-related information. Two of these were mothers with children under the age of five, whilst the other's children had disabilities. Several participants were unaware that they could access this type of information online and continue to consult traditional physical facilities for health-related information. Chantel (c, f, 25), a mother of two toddlers, would use her partner's tablet device to search for health-related information, even though she could be considered digitally excluded. She did not own a smartphone, did not partake in any form of social media and did not make use of the internet at work even though she was permitted.

The use of smartphone applications or 'apps' was limited. App use was, as expected, only prevalent amongst the frequent users of ICTs. This will be discussed further in the following sections.

4.3.5 Levels of ICT self-efficacy, skills and attitude

When it came to proficiency in the use of ICTs, participants' skills varied. Half of the interviewees reported a degree of computer literacy. This group contained those who exhibited the highest levels of online self-efficacy. Self-efficacy is the belief "in one's capabilities to organize and execute the courses of action required to produce given attainments" (Bandura, 1997). The review was not based on a simplistic view of access versus no access as ninety percent of interviewees were active on their mobile phones and used the internet primarily from these devices. At individual and family levels, overall levels of access to ICTs and the use thereof within the newcomer community were low. Of the participants who were employed at the time of this research only four were in employment requiring computer skills, whilst the remainder were not. Not all office workers had open access to the internet access or printing facilities. Many parents felt ICT skills were important for their children but that there was no other real reason or opportunity for them to acquire ICT skills. As will be discussed later, proxy-use (accessing the internet through others), especially for parents conducting homework

research on behalf of their children at their places of work, was an important coping mechanism in mobile centric homes.

During the evaluation of participant motivations and attitudes towards ICTs, interviewees demonstrated high degrees of interest and were motivated to advance their digital competence and acquire ICTs to experience the internet more fully. Two participants cited no interest in using the internet, whilst another was ambivalent as she has not given it much thought. Of the two, one was a sixty-five-year-old retiree and the other a thirty-five-year-old clerical worker. When asked about her feelings about the internet and ICTs in general, Lynne (w, f, 37) said she would feel lost without it. Her preferred device was her laptop whilst her phone was reserved for WhatsApp use.

> Mdebi (a, f, 29) said: “Friends are too much into technology”, but also expressed her desire to be able to do more with technology.

Several interviewees reiterated how important internet access was to them. Those that were online often likened internet access to water, whilst the mobile-only users said they would probably be better at navigating the internet if they were able to access it from larger screens.

> Alicia 10 (a, f, 34): “I’m not very good with computers, but I know that if I want something I will have to try.”

Alicia’s above response was unexpected as she had a mobile and tablet device including a 3G dongle (modem) and a laptop, yet she claimed she was not very good with computers. Her own low sense of self-efficacy could be attributed to the fact that she works at one of the top television broadcasters and compares her skill levels against those of her colleagues and not with other residents in the complex.

Levels of ICT self-efficacy were noticeably higher for male interviewees who were reasonably technically astute and outperformed their female counterparts in most spheres of ICT usage. Of the male participants only one made use of ICTs for work, although the sample did only produce a limited number of male participants. Mariaan (w, f, 44) displayed visible excitement when a notification appeared on her Apple iPhone 5 and proceeded to update it to the latest software version whilst we were still engaged in conversation. She said she always updates her phone immediately, providing she has enough data and cannot wait to test all the new features. She boasts that since getting her first smartphone she has owned all the Apple iPhone versions and described these varying models.

As mentioned in the previous section, the use of smartphone applications or 'apps' was limited. App use was, as expected, only prevalent amongst the digitally engaged, starting with messaging applications, such as WhatsApp, followed by social media and other app categories, such as games, television schedules, dating, maps and VoIP (Voice over Internet Protocol) apps for inexpensive calls to family living abroad. There were some speciality and utility apps, such as D6 for school, which will be discussed in part three of this chapter. The vast majority of interview participants have used Google search at one point or another to conduct an online search, albeit mostly from a mobile phone. Search sophistication and scope appeared to advance with online confidence and digital efficacy and competence. The majority of white participants, except for one (Joanne, w, f, 51), were comfortable with the use of ICTs. Their children were also very comfortable and proficient with a multiplicity of devices. This proficiency in the use of ICTs meant it was more frustrating working with poor connectivity. Limited data and mobile screen sizes made online access and producing assignments very cumbersome.

4.3.6 Maintaining social ties through technology

Part of the mobile centric use of ICTs was the almost ubiquitous use of messenger apps, such as WhatsApp, for the maintenance of social ties with family and friends. Ninety-five percent of interviewees made use of this popular mobile phone messenger app on a daily basis. After three years of living in Blue View Terraces, participants in the complex still largely maintained social ties with family and friends from their communities of origin through phone calls, but predominantly used WhatsApp groups and one-to-one WhatsApp text and voice communication. WhatsApp was used for maintaining vital social ties with family and friends. This was a pervasive finding amongst all participants. Participants were very enterprising in their use of this platform, using it for work and obtaining sales figures, handing out chores to children and, of course, for staying in touch. The recent introduction of WhatsApp's new call features did not take long to take root in this community with several participants making use of it. As mentioned previously, participants were very cost sensitive and this contributed to the widespread adoption of WhatsApp over SMS. Three of the white participants who had family living abroad used WhatsApp in over and above their other mediums, such as Skype and Viber, to stay in touch due to its ease of use and cost.

The residents of the social housing development, although living together for the past three years, had very limited interactions with other residents, especially those in the senior section.

When enquiring about their knowledge of any WhatsApp groups in the social housing development many were unaware of any. There was mention of a community group that has been established by a social worker assigned to the social housing development by the landlord but very few participants belonged to this or had any knowledge of it. The social worker added that they always needed to summarise the WhatsApp group discussion at the focus group meetings for those who only had feature phones. She was attempting to establish community cohesion and disseminate information via the platform.

Joanne (w, f, 51), a single mother with daughters aged sixteen and thirty-two, used the BlackBerry Internet Service (BIS) to stay connected with her daughter living in Scotland and with the rest of her friends and family. Lynne (w, f, 36), a single mother with a five-year-old daughter, was unemployed and supported by her mother who lived in the UK. The internet was an indispensable part of her life as she used it extensively to stay in touch with her mother and sister in the UK. She made use of WhatsApp calling in addition to sending photos of her five-year-old daughter to keep her mother and sister informed of events in both of their lives. She had a very close relationship with her mother and sister, and social media and the use of ICTs is the closest substitute she has to face-to-face communication and in-person visits. She explained how she would feel lost without this technology:

> "… because it's like, I can't communicate with my mom and my sister. I can't send photos of my daughter of what she's doing or videos or something. Cause if she does something cute then I'll record it and send it to my mom and my sister. Like for her birthday as well. I took lots of photos on her birthday, because they were not able to join us. And I took photos of her and the other children and I sent them all to my mom."

So extreme was the need to communicate and to participate in the conversation of family, friends and peers that Joanne (w, f, 51) told of how she had to borrow R60 from her partner the previous month to top-up her mobile data in order to use WhatsApp. Interestingly, those using email as a means of communication were also those who used it as part of their work. For the participants where digital literacy was not a job requirement, email use was either extremely low or non-existent. Forty percent of interviewees reported using email as a means of communication.

4.4 Part Three: Acculturation Intersections

4.4.1 The first intersection: You are not welcome here

> Mariaan (w, f, 44): "The cops are quick to come out when there's 'huis molles' (domestic violence), because they have to keep the rest of the community happy. When we first moved in here the police would have roadblocks set up close to the entrance and every weekend they would check all the cars coming in and out of the complex. It was heavy. They (the community) did not want us here."

It has been eighteen years since apartheid and South Africa has done very little to ease the burden of convergence and impending integration of different race and class groups. The melting pot of cultures and their respective practices still remained a huge challenge. The differing socioeconomic status of the newcomers and that of the new community also differed markedly. All of the above presented significant challenges in 2012 when many of those in the senior section, as well as the residents of the surrounding community voiced concern over the building of the new social housing development. The result was a hostile campaign against the newcomers to make them aware that they were not welcome.

Newcomers had to contend with both the surrounding neighbourhood, as well as discrimination in the same complex. There were divisions between the seniors and newcomers with certain parts of the complex, such as the clubhouse, being controlled solely by the seniors who would frequently deny access. This resulted in a less than welcoming reception and caused acculturation stress between the two groups (Berry, 1997).

Mariaan (w, f, 44) gave the following account when asked if she knew her neighbours in the senior section and what life was like when locating here in 2012:

> "It's apartheid. Yes, definitely. They did not want us here and initially the neighbourhood signed petitions not to have us here, because they thought we were 'Nigerians' [sic]."

The experience of discrimination and prejudice was widely reported and had a noteworthy and negative effect on the respondents' psyche. This presented a big risk factor to the process of integration. There were at least another four participants who made similar remarks regarding life in the new section. This resulted in separation, marginalisation and feelings of exclusion, leading to less than favourable psychological and sociocultural adaptation. Searle and Ward (1990) describe psychological and sociocultural adaptation as:

> "A set of internal psychological outcomes including a clear sense of personal and cultural identity, good mental health, and the achievement of personal satisfaction in the new cultural context; the second is a set of external psychological outcomes that link individuals to their new context, including their ability to deal with daily problems, particularly in the areas of family life, work and school."

Marginalisation was also a common occurrence when dealing with the landlord's satellite offices. When asked about their relationship with the landlord and if they received any type of support the response was as follows:

> Anita (c, f, 43): "I would phone the nearest office to tell them about the issue (broken ceiling). You phone them and they give you a reference number, but you have to just wait till they come back to you or phone you. We want feedback, but there's no feedback for us."

She recalls how she would at many times just end the call because the landlord's employees would speak to her in a derogatory manner.

> Anita (c, f, 43): "The way they speak to you, you immediately just say rather leave it. People can actually bring you down just with words you know?"

Despite this, new support and social networks had started to emerge amongst the newcomers. Their shared socioeconomic difficulties and collective experiences presented fertile ground for building a sense of friendship and solidarity.

> Chantel (c, f, 25): “We’re all close, because we are all in the same complex, in the same struggle. We have a lot in common, we’re all friends.”

This sense of friendship and solidarity led to heightened levels of reciprocity within this newly established community, from sharing Wi-Fi to looking after each other’s children which was in turn the foundation for building social capital. Lynne (w, f, 36), who subscribed to a wireless broadband connection at home, had a 15GB data package that she would never deplete. She told of how she would ask friends and family to make use of her data because she was unable to use it all despite browsing Facebook the entire day. The newcomers understood that living together harmoniously was important and consequently also started reaching out to the seniors in the social housing complex. Anita (c, f, 43) mentioned how she would encourage some senior citizens in the social housing development to make use of ICTs as it would stimulate their brains and assist with age-related exclusion and other age-related diseases.

4.4.2 The second intersection: Inclusively, unaffordable

> Joanne (w, f, 51): “My main focus is getting by month-to-month. Life is tough and you just have to get by. Be thankful for roof over your head at the end of the month.”

Part one presented findings of the newcomers’ initial relocation and encounters in their new community. The study will now move on to findings regarding the financial and economic aspects of this social housing inclusion project. For many newcomers, Blue View Terraces provided stability, dignity and a place they could finally call home. This was one of the intended benefits of such a residential inclusion project. However, this presents only one aspect of their envisaged inclusion. Other benefits involve newcomers becoming economically mobile with

the intention of owning their property and to integrate with reasonable levels of success into their new community.

Social difficulties remain but many newcomers now had choices for the first time in their lives. This account given by Chantel (c, f, 25), a mother of two daughters ages four and five, revealed a perhaps more pressing concern for the newcomers. When asked where her children attended after-care, she stated:

> "They stay with a day mother far from here, because we can't afford the schools around here, they are way too expensive."

The new arrivals now had access to better infrastructure and were closer to economic opportunities and 'better' schools. This would ultimately benefit their children's future economic and class mobility; however, at the same time they felt the financial pressure of living in the suburbs. In order to contextualise the issue of affordability the following section will outline levels of education, employment and their financial situation.

Of the interview participants two were unemployed but supported by a parent or spouse, one was a retiree and another self-employed and supported by his in-laws. About half of participants were working class 'blue collar' workers with only one participant employed in a 'white collar' profession. This was also the only participant with a university degree. Levels of educational attainment varied, with one out of the seventeen interviewees having completed a university degree and eighty-five percent of adult participants having completed Grade 12. Sixty-six percent of Blue View's residents aged 20 years and older had completed Grade 12 or higher and ninety-two percent of the labour force (aged 15 to 64) were employed vs. seventy-nine percent for the new section of Blue View Terraces (South African Census Bureau, 2012). The original section comprised only of retired pensioners and a measurement of employment is therefore not of much value.

Education levels for the new section was significantly lower with only thirty-six percent of residents having completed a Grade 12 or higher. Although none of the participants were enrolled for any tertiary qualifications at the time of the interviews, two were awaiting approval of their applications for further studies at university for the next year. One participant had a pending enrolment in office administration and the other an honours degree in communication.

Six participants completed short courses post matric. Furthermore, there were others who expressed an interest in further educational pursuits but who, due to financial and other constraints, were not able to pursue their goals at the present moment. Lynne (w, f, 37) reported not having completed her final year of schooling and was also unemployed. She was, however, supported by her mother whom lived and worked in the UK. Several of the female participants were employed as administrative and clerical type workers, whilst a further three were employed as receptionists at their places of employment.

Newcomers found it difficult to adapt economically to this new community. Despite the favourable cost of the rental accommodation they lacked economic and social support to assist with their integration. According to Berry (1997), economic adaptation is also a moderating factor in the acculturation process. The new section of the social housing development housed families that were from low SES backgrounds and circumstances. The requirement for renting in this complex was a combined household income in the range of R2 500 to R7 500 (US$160-US$500) as set down by the landlord and social housing regulating authority of South Africa (Social Housing Regulating Authority of South Africa, 2005). Income levels of the newcomers' families were made up as follows: sixty-two percent of this community earned a combined household income of below the R7 500 threshold, whilst only ten percent earned a combined household income of between R10 500 (US$700) and R25 000 (US$1 660). Another eight percent earned below R2 500 combined household income per month. When contrasting this to the greater Blue View suburb some material differences come into focus. Sixty-eight percent of the greater Blue View community earned above R7 500, whilst only ten percent of the newcomers earned above this amount. This laid bare issues of class from a community perspective and also in terms of learners who attended local schools.

Even though social housing rentals were priced at thirty percent below market rentals, newcomers were unable to afford the cost of living in this area and often had to make alternative arrangements further away. Similarly, they did not have the means to live a middle-income lifestyle. The cost of living in this middle class neighbourhood eroded what they were saving on accommodation and reduced their options for economic mobility. Instead savings were spent on employing coping strategies, such as making special travel arrangements for shuttling children to and from day care in more affordable areas. They would still continue to travel to cheaper shopping centres further away rather than shop at local shops in the area. This defeats the value of social housing as money that could have been saved towards capital enhancing activities, such as furthering their or their children's education or actually purchasing a laptop or PC that would aided their children with the process of completing homework assignments.

Transport was, however, easier than what they were used to and two of the newcomers did find employment closer to their new home.

Parents' educational attainment was an important contributor to the type of work they would be involved in and was a determining factor in their ICT proficiency. In most cases higher levels of education equated to the types of jobs that would require the use of computers or an implied proficiency with ICTs. Such households would rarely view ICTs as something foreign. Moderately- to highly-educated parents would also usually be able to assist their children with homework and assignments, including helping to overcome any technological barriers. The emphasis would ultimately be on dealing with the difficulty of the assignments and not the barrier of technology, as was the case for Blue View Terraces participants.

When asked about their familiarity with online education many participants had never heard of online training and did not know that such educational resources were so freely available. This was evident in a response from Ricky (w, m, 24), who bemoaned his school for not making them or current day learners aware of such valuable resources.

> Ricky (w, m, 24) says: "In school they never really teach you or tell you these things. They just want you to go to university. It's either you go study or you go work. There's no in-between like online education."

When asked if they would use online educational resources, several expressed interest. Interestingly, and perhaps unsurprisingly, participants associated online learning with distance learning such as through the institution of UNISA (University of South Africa). Mdebi (a, f, 30) was preparing to purchase a laptop pending the acceptance of her application for the coming academic year. She mentioned how she would never be able to complete her assignments or access the university's online resources via a mobile device. Anita (c, f, 42) and many others indicated they would study online if they had some form of free public Wi-Fi access. This may well be because there were previous talks of possible Wi-Fi implementation by the landlord. Of those interviewed, many were noticeably interested, with one mom urging her son to look further into "this online training thing". One recent matriculant with a learning disability, ADHD (Attention Deficit Hyperactivity Disorder), bipolar and a mild form of autism, said that the online video-based education would assist her tremendously especially because she had difficulty adjusting to formal work and study environments due to her disabilities.

Therefore, whilst many of the surface level benefits of social housing, such as dignified housing and close proximity to economic opportunities, were evident, the more complex issues of class, race and economic integration that are part of such an inclusion or desegregation project have yet to be addressed.

4.4.3 The third and final intersection (the promise of 'good schooling')

When moving into a new location it is understandable that parents would want their children to attend institutions in close proximity. For the newcomers to Blue View Terraces, schools were one of the obstacles they encountered. Amongst the families there were seven learners (five in primary and two in high school) who attended local schools in the area. Two learners, both aged 16, attended Blue View High School, while five others (aged 7, 8, 9, 10 and 12) attended Blue View Primary School. Schools in the neighbourhood were middle- to high-SES schools with one special needs school where Mariaan's (w, f, 42) youngest daughter was enrolled. Schools had a policy of accepting mostly learners from the surrounding area so it stands to reason that surrounding schools would mirror the demographics of the area and the social context. This is apparent from the Blue View Primary School's admissions policy.

> "Preference is given to learners for whom Blue View Primary School is the closest suitable school to their parental home."
>
> "Learners from families who have a historical connection to the school (e.g. mother, father, brother, sister, teacher). The parent must be able to prove/validate such a connection."
>
> (Blue View Primary Admissions Policy, 2015).

There was a promise of so-called good schooling that came with moving into an area that was higher on the socioeconomic ladder than what the families were previously used to. Parents from this social housing development now had the opportunity to send their children to 'better schools' than those in their previous areas. This, however, came with its own challenges, as teachers appeared to have no regard for struggling parents or learners without access to the internet.

> Anita (c, f, 42): “Teachers assume children have access to the internet and a computer. Assignments are often due the next day.”
>
> Cathy (w, f, 37): “Teachers absolutely do not care if children does not have access to internet.”
>
> Stephanie (w, f, 16): “Teachers will just say make a plan if you don’t have internet.”

Despite the newcomers’ best efforts to participate in their new community and local institutions, local schools did not accommodate Xhosa speaking learners in their language policy, nor did they cater for families with sparse internet access. The Western Cape province was home to 5,6 million inhabitants of which 24% spoke isiXhosa (South African Census Bureau, 2011). The following excerpt was taken from a local Blue View school’s admission policy:

> “Only learners who are proficient in English and/or Afrikaans (read, write and understand) may be admitted, as teaching only takes place through the medium of English and/or Afrikaans.”
>
> (Blue View Primary Admissions Policy, 2015).

When comparing the household languages of the social housing development, the old section comprised eighty-six percent English-speaking residents and fourteen percent Afrikaans speaking. This was in line with the language policy for local schools. In the new section a very different view emerges. Only fifty-nine percent of residents spoke English, whilst thirty percent spoke isiXhosa, one percent isiZulu and ten percent Afrikaans. By contrast, the largely white community spoke mostly English and Afrikaans. Language and race are usually the most visible aspects of culture and are what most often differentiates one group from another. This also especially holds true in South Africa. Refer to Annexure C for a table of demographics.

Despite these initial challenges, parents were determined to give their children a better education than they themselves had and continued enrolling their children in nearby schools.

It would have been a great inconvenience and cost for the children to remain at schools in their respective communities of origin. Lynne (w, f, 37), a single parent and mother of a six-year-old, soon discovered that schools in the vicinity were expensive. This echoed Chantel's (c, f, 25) comments about the cost of day-care in the area. Lynne mentioned that she receives a monthly government grant for her daughter. She was searching for a school close to home that would accept government grants but unfortunately none of the local schools accepted payments from the national government grant administrator, SASSA (South African Social Security Agency). Her only option was therefore to enrol her daughter in a school much further away. The picture was not different with local high schools. Anita's (c, f, 42) son recently completed Grade 12, but not at a local school because the fees were too high. Her son remained at a school in the Cape Flats area, even after moving to Blue View Terraces three years ago.

Newcomer parents were not exempt from prescriptive draconian school policies. They were frequently excluded from school communications due to several schools using email as their primary method of parent communication. One high school made use of Google Drive and a mobile application called D6 to disseminate and coordinate school assignments and projects to its learners. This presented a challenge for some parents and learners like Stephanie (w, f, 16) who frequently did not have data to check her own social media accounts, not to mention accessing Google Drive and D6. Although the question was not posed to her, this would make her unable to receive certain assignments. Parents were encouraged to track learner progress via the app. A small group of teachers also used WhatsApp to communicate with parents but this depended largely on the teacher's digital competence.

4.4.4 Aggressive assimilation disguised as 'good schooling'

For parents who were able to afford local schools a different and unexpected acculturation stress emerged; namely, the aggressive assimilation into the dominant ICT culture present in schools. Teachers displayed clear disregard for any practice that was not congruent with their notion of 'good schooling'. This was evident in the parents' remarks about teachers' attitudes. Just as participation in ICT practices carried a cost, so did participation in local services and institutions. Newcomers toiled with the 'on demand' digital culture because of poor internet access and the prohibitive cost of such access. Newcomers usually bought data in very small denominations. Teachers assumed that most learners had such 'on demand' access and that learners intuitively knew how to use ICTs. In many cases, newcomer learners had the

smartphones but not the money to purchase data because parents were already under financial strain.

4.4.5 Draconian homework policies

The single most significant problem for parents with children attending school was the completion of school assignments and projects. All parents, but especially those with children currently attending high school and that recently graduated from high school, reported experiencing great difficulty with completing school assignments with their children. The frequency of assignments varied between grades but on average learners in higher grades received four school projects per month. Projects usually incorporated a significant research component, requiring either library or internet access to complete. The length of assignments varied, but ranged from eight to fifteen pages per assignment. Rules surrounding submission of projects and assignments also varied, but in most cases late submission either led to a ten percent reduction in the final project mark or an outright fail. Mdebi (a, f, 29) explains how her eight-year-old son submitted his assignment late and was allocated a zero mark:

> "I tried to explain to the teacher but she didn't listen."

She goes on to explain how they tried several times to obtain the relevant information from the library and that despite several attempts they were still unable to source the correct information. Their request for an extension received a response from the teacher citing simply that they were not able to negotiate due dates. This affects learners' year marks and has in some cases had a negative effect on final results. All assignments had to be submitted in print format with extra marks being awarded for visual aids and in some instances full colour. Mdebi (a, f, 29) says her eight-year-old receives assignments twice a month and in all cases requires visual aids to accompany text. Her son is not allowed to print at school so they would either pay for printing at the library or as a last resort the local internet café. In some instance colour prints are charged at R5 per page. Parents complained bitterly about the cost of printing and the trouble with finding a location to print. Although schools provide learners with the ability to print, many times there is not sufficient time to utilise the facility. It became apparent that teachers and schools are still more comfortable with printed copies instead of electronic versions of

assignments and homework. This may speak to teachers' natural disposition or lack of proficiency in the use of ICTs, or that they simply have not considered alternatives to printed versions. This may well be the reason why they persist with their draconian approach to homework and the use of ICTs. Printing and access to rich bandwidth also makes it an exclusive practice and may ultimately lead to marginalisation of low SES learners.

Schools did not provide any homework support or after-hours access to their computer labs. Ricky (w, m, 24) explains how he was not allowed out-of-hours access to the school's computer labs because he was not enrolled for computer classes. Learners had access during the day but could only make use of the computer lab during break or between classes. This left little time to do anything meaningful in the lab other than quick searches and document formatting. Therefore, in addition to higher school fees was the cost of 'fitting in'. The completion of school assignments and projects became the single most pressing problem for parents with children attending local schools.

> Cathy (w, f, 37) agrees: "teachers absolutely do not care if children have access to internet."
>
> Stephanie (w, f, 16): "Teachers will just say make a plan if you don't have internet."

This presented strong evidence of marginalisation of those learners who did not have the resources to cope with the demands put on them by schools and teachers. For many middle SES learners these types of resources were natural and almost 'invisible'. This can be compared to low SES learners without access to these same resources who would travel almost weekly to complete homework assignments at various locations, print and submit. In fact, simply doing away with the need to print hard copies of homework or assignments would in itself be a tremendous help for parents and learners. Mobile-centric learners would often spend more time completing homework assignments requiring the internet and a computer than their 'local' counterparts whom had ready access to a computer, rich unlimited broadband and printing facilities at home.

Most parents had some form of mobile internet access. Many use the BlackBerry Internet Service (BIS) as it is very cost effective and allows for unlimited internet browsing for R60. Anita (c, f, 43) shared her story of her son's final matric year. She was retrenched and

unemployed during that time and was therefore unable to access the internet at her place of work as she usually would. She recalls how they sat browsing the internet to complete a school project until three the morning. The degree of their internet browsing was so extensive that she had to have her phone charging continuously whilst completing the project. She tells of how the scroller on her BlackBerry device stopped functioning and how badly it affected her eyes browsing for such a long amount of time on such a small screen.

4.5 Coping Strategies

> Anita (c, f, 42) says: "Teachers assume children have access to the internet and a computer. Assignments are often due the next day."

Parents frequently acted as proxies for gathering information to complete homework assignments. This was typical of several other households. Parents would regularly do some of the assignment research on behalf of, or under instruction from their children, whilst they are at work. Learners would provide instructions and guidance on what to search for whilst parents would use the internet, computers and printers at their place of employment in order to complete the assignment. Joanne (w, f, 51) elaborated on the frustration she experienced every time they had to visit family and friends to complete school assignments. She would frequently conduct research on behalf of her daughter when at work and would very often return with the incorrect information, which caused delays in submission of assignments. The permitted levels of access varied between businesses with some having very restrictive internet access policies for employees, whilst others were more lenient and provided unfettered access. When access at work was not possible, a common way of circumventing the arduous back and forth process of internet searches was to use a mobile device and then copy the selected content from their mobile browser into an email. This would involve text and visual aids. Plagiarism was of course not allowed so they would need to rewrite the content to look as if it was not copied and pasted. Finally, they would email the final content to themselves and travel to relatives, friends or public internet access locations to print. Disappointingly, all schools still required learners to submit printed versions of projects and assignments with no option to email. Parents criticised this practice and the consequent cost and disruption of printing. Although schools provided learners with the ability to print, at many times there was not sufficient time to utilise the

facility. The cost of printing varied from R1 per black and white page to R5 for a full colour printed page. Stephanie (w, f, 16) told of how she frequently had to resort to handwritten notes as an alternative. This would cause her to lose marks because she would not have her text supported by visual aids as this counted towards bonus marks. The lack of support and understanding from teachers was a very disappointing observation but appears to be the situation at many schools. Therefore there was a distributed process of research occurring and constant instructions to guide proxies to the correct information. This may well mean that learners did not receive the intended benefits from assignments.

Newcomers would go to great lengths to ensure teachers' instructions were complied with including by visiting family, friends and the local gym to gain access. Parents' personal and familial networks were important resources for accomplishing tasks. Berry (1997) suggests that social support reduces the stresses associated with assimilation and that participation in institutions, such as educational and work, reduces the stress associated with separation. Cathy (w, f, 37) says that even though they all are digitally literate and engaged they experience great difficulty with completing school assignments and projects. She often connects her phone to her laptop in order to have a decent online experience for her children. The cell phone reception is quite poor in the area and content takes long to load. At times they often became so frustrated that they would drive to her father's home several kilometres away to get decent internet access and complete assignments. Having family and friends with good internet facilities and a computer were indeed an asset for those fortunate enough to have these networks. Sadly, few of the participants had access to social networks that were able to assist. White participants appear to have access to stronger networks as coping strategies, which made access to rich bandwidth and computers easier. The social networks of white participants were situated much closer to Blue View Terraces than those of African and coloured participants whose networks resided 20 to 30 kilometres away in previously coloured and African townships.

The computer centre at the school is not of much help as it closes at four in the afternoon, leaving very little time for homework. Mdebi (a, f, 30) says that she would rather leave work early on a Tuesday or Thursday to take her son to the nearest public library. Whilst public internet access facilities such as the local library (1km away) did offer a solution, the quality of internet access was poor and the equipment was old. Facilities such as the library and the computer centre at some of the schools were also only open until 4 or 5pm, allowing for less than two hours of uninterrupted access, which was woefully inadequate for completing larger assignments. A few parents would use the local internet café, but at R15 per half and hour this was considered an absolute last resort.

A concerning finding was when one recently matriculated learner told of how learners without internet access would copy the work of those that had home access. He was not allowed out-of-hours access to the school's computer labs because he was not enrolled for computer classes. Many times he was unable to locate the correct information from books alone. In another case, a learner still attended his old school on the Cape Flats even though they had moved forty kilometres away. His mother tells of how the teacher at his school thought they were 'well off' because they now lived in Blue View and therefore did not listen to any reasoning for late submission due to internet access limitations. All parents, but especially those with children currently attending high school or who have recently graduated from high school, reported experiencing great difficulty with overseeing the completion of school assignments. This illustrates the huge conflict between a mobile-centric and sometimes mobile-only group of people who are now being marginalised in local schools that believe that all learners' and parents' ICTs engagements are PC-primary and bandwidth rich.

4.6 Experiences of Exclusion

Stephanie (w, f, 16) describes the social media habits of other learners at her school:

> "Everyone's always on their phone. It's always photo, photo, photo, upload, upload. Cause I don't have Instagram cause [sic] I don't have enough data for that actually. So I don't even bother. I got my phone quite late so when that [Instagram] came out I wasn't really into it. Everyone will be asking did you see that Instagram about so or so, but I don't really care what other people are doing. If I don't have data, then I don't know what messages have been sent and I'll only read it like a day or two later. So yah everyone's always on their phone."

Stephanie's displayed visible feelings of exclusion from the conversation of her peers, which is in keeping with Jenkins' (2006) views on participatory culture. It is also a primary example of how low economic capital can influence both social and digital exclusion and how digital exclusion affects social and educational inclusion.

4.7 Summary

This chapter provided a descriptive account of the findings for the study. It began with a reminder of the research question, followed by a description of the data analysis process. It presented an overview of the research context as it relates to participants' new location and described the interviewee demographic profiles, selection process and the key themes. Part one prefaced the discussion as a reminder of the context within which the research took place. This was followed by a description of residents' lives before relocation and their subsequent arrival in the social housing development and their new neighbourhood. Part two showed how digital exclusion is not a homogenous experience for all individuals and groups and that it is strongly influenced by other forms of exclusion. Furthermore, it detailed levels of digital exclusion and of motivation for using ICTs amongst newcomers. Part three illustrated their integration journey as a series of intersections that they encountered as they experienced life in their new home, community and neighbourhood. It described the tensions when Blue View community members and newcomers came into contact for the first time, the daily challenges they faced and the coping strategies they employed when confronted with issues of discrimination, lack of relocation support and middle-class cost of living. The chapter concludes with their lived experiences in local schools as they confronted acute digital exclusion, forced assimilation and marginalisation. Lastly, the chapter also established the framework for further analysis and recommendations in the next chapter.

CHAPTER 5: DISCUSSION

5.1 Introduction

The previous chapter detailed the findings from interviews, focus groups and surveys. Based on the current discourse in the literature, specific attention was given to digital exclusion and its influence on the lived experiences of participants. This study set out to explore the lived experiences of new residents after their arrival in the social housing community of Blue View, and to answer the following main research question:

> How does digital exclusion influence the experience of overall inclusion in South African social housing?

The aim was to explore the degree to which these newcomers were digitally excluded and what the possible influence of this digital exclusion was on their individual and collective lived experiences after their relocation. In order to answer the research question the study investigated various aspects of their daily lives both before and after the relocation, their levels of income and education, as well as their social and familial relationships and ICT practices. This research study also set out to explore digital inclusion as a potential socioeconomic development tool by examining the influence ICTs have on social relationships, social cohesion and community building. Social housing in South Africa predominantly focuses on the spatial and, to a lesser degree, economic inclusion of residents, through the breakdown of historical spatial barriers and desegregation of previously white-only suburbs. Furthermore, the study looks to highlight the contribution digital inclusion could make to future social housing build programmes and socioeconomic mobility programmes.

This study focused on digital engagement as a means of lessening social exclusion. Although many scholars agree that there is no general definition of what it means to be digitally engaged (Anderson and Tracey, 2001; Anderson, 2005; Cushman and Klecun, 2006; Haddon, 2000; Selwyn, 2004b, 2006), in this context it means the nature of individuals' ICT engagements or the number of things people do using ICTs (Helsper, 2013). Helsper further argues that the following skills allow people to engage more fully with ICTs: general life skills, such as critical evaluation of sources; self-efficacy; social skills; and creative skills. Warschauer (2003) argues

that “the goal of ICTs is not to necessarily solve the digital divide but rather to further the process of social inclusion”. Digital engagement also means all types of ICT use including those considered socially undesirable (i.e. pornography and gambling) (Livingstone & Helsper, 2007). Digital inequality and exclusion, on the other hand, can take many forms but the ones studied here are access to the internet, use of different devices, extent of usage or non-usage, and engagement in different internet activities. In addition, digital engagement also refers to more than mere gradations of access to ICTs, but takes into consideration marginalised communities in relation to ICT diffusion, use and uptake, and as a consequence the value of ICTs in individuals’ lives (Kvasny, 2006).

This chapter draws on the fields of migration studies (Berry, 1997) digital inclusion (Helsper, 2012) and integration studies (Soudien, 2010) in order to contextualise and explain the phenomenon and cultural dynamics occurring at the intersection of digital inclusion research and experiences of spatial migration and desegregation in this social housing community. In order to interpret the findings, the research draws on the work of Berry (1997), Soudien (2010) and Helsper (2012). Berry’s (1997) work on migration studies helps broaden an understanding of the issues participants face as it relates to relocation, acculturation and adaptation. Furthermore, Berry’s (1997) work on cultural adaptation and acculturation helps with an understanding of migrants’ experiences when moving between spaces, whereas Soudien (2010) makes sense of the South African context of the intermixing of various classes in local South African middle class schools. Lastly, Helsper (2012) is used to understand the various nuances of internet access through the use of her corresponding fields model for understanding the links between online and offline exclusion. Her model proposes and outlines a theoretical model for digital inclusion in the largely under-theorised field of digital inclusion research, specifically hypothesising how social and digital exclusion influence one another. Of particular relevance is what she calls impact mediators, namely access (internet and ICT), skills, attitudes and different levels of engagement with technologies. By integrating social and digital exclusion literature she takes on a holistic view of the interactions between these two fields. Using Helpser’s impact mediators in combination with Berry’s acculturation moderating factors allow for a better explanation of struggles by both parent and child when faced with competing issues of adaptation and digital exclusion in local schools.

5.2 Major Findings

One of the key findings is participants' widespread experiences of power dynamics which manifest as discrimination and marginalisation due to the absence of relocation support, public awareness programs and failure by the social housing institution to adequately address other forms of inclusion rather than just spatial. The Blue View community's attitude to other incoming groups formed the foundation for any future interaction and will determine the likelihood of successful acculturation over the coming years (Berry, 1997). The existing community was not open to change or any form of diversity, which led to an assimilationist and segregationist style of engagement, which could ultimately lead to the elimination of diversity. Correct support mechanisms and public awareness could rather encourage integrationist attitudes that lead to diversity and frequent community interaction. Power dynamics were not only present within the social housing development but also at local schools where language and admission policies only catered for English and Afrikaans and none of the other eleven official languages, including Xhosa, which is spoken by 29% of the province's citizens. Secondly, the findings showed that the design of the social housing development is hopelessly inadequate to support newcomers' actual lives. Basic infrastructure has been omitted in favour of a lower build cost. The higher cost of living is unaffordable and negates the benefits of lower cost rental accommodation. Lastly, the findings show that digital exclusion negatively influences the adjustment of low SES children into higher SES schools and leads to forced assimilation when learners come into daily contact with schools in the vicinity. Digital exclusion further influenced learners' ability to adequately complete homework assignments, resulting in daily efforts to work around such constraints as fragmented internet access, high mobile data costs and insufficient ICT form factor for information searching, processing and compilation. Participants and their children were expected to acculturate and assimilate on multiple fronts. Firstly on social, cultural and economic fronts through their relocation to Blue View and being embedded in an environment with a much higher cost of living and a cultural composition. Secondly, on the digital front where they were forced to assimilate to the digital practices of a higher socioeconomic group without the ICT and financial resources to do so.

5.3 Interpretation of the Findings

From these findings it is apparent that spatial inclusion is only part of the inclusion puzzle and that digital exclusion negatively influences other forms of exclusion and leads to forced assimilation and marginalisation when left unaddressed. This leads to the realisation that multiple forms of exclusion generally coexist with digital exclusion and that inclusion is a complex fluid phenomenon with many dimensions and nuances. Inclusion is akin to a sliding puzzle game, one in which the shifting of each puzzle piece exerts a resultant pressure on all of the other pieces, forcing one to consider each move in relation to others. One can consider inclusion as the complete puzzle or goal, with each piece representing an aspect of inclusion, namely social, economic, spatial, cultural, digital and so forth. This is in keeping with Helsper's (2012) findings on the bidirectional influences of offline and online exclusion on each other.

Although intentions might have been for socio-spatial inclusion, the reality is that Blue View Terraces did not cater for people relocating from other areas and in particular people who did not fit its entrenched community profile. The whole social housing development is designed for middle-class life and is not designed to support participants' actual lives. The less than thoughtful and suitable layout and design of the social housing development maintained a separation between senior and newcomers – from separate entrances to lack of basic telecommunications services infrastructure not being present in the newcomers' section.

Living in the suburbs, one can expect to have access to some form of broadband connection. In this way the infrastructure that could assist people to integrate is not there and the architects have not even considered adding any infrastructure for newcomers to access this by themselves. Access to the clubhouse as a public space has been restricted by seniors as the self-appointed gatekeepers. This is clearly structural assimilation, namely the "entrance of minorities or migrant groups into institutions in the host society" (Gordon, 1964). This contributed to an environment that was destined to increase feelings of exclusion rather than inclusion. As new housing projects mushroom, social housing providers must cast their net much wider when thinking about inclusion and, in particular, socio-spatial inclusion and the desegregation of previously whites-only areas. When integrating communities there are many more aspects at play which influence participants' daily lives and adjustment, such as affordability and living together with residents from a higher socioeconomic standing or class bracket, race and cultural dynamics in the surrounding area. It is important to understand that when a so-called migrant community comes into contact with a host community (community of settlement) both tend to undergo acculturation (Berry, 1997). The minority group or the relocating group may, however,

have more acculturation experiences than the host community because of the cultural characteristics they carry with them into their new context. The newcomers may also have become accustomed to a certain level of status in their originating community and may now find that they have lost some of that standing in the new community due to their relocation. In addition, there are cultural changes that could include changes to their values, daily practices and language, for instance adopting English or Afrikaans as their primary language (Soudien, 2010). Finally, also important is the accompanying stigma of being a social housing resident and having to share the same space. The narrow focus on spatial inclusion and desegregation has caused many other forms of exclusion to become known to participants as they may not have previously been aware of their own class and racial differences as they previously lived in a more homogenous area in terms of class or race.

Social housing providers must adopt a comprehensive and integrated approach considering all aspects of daily life for residents, such as the increased cost of living in the area within which the social housing development is situated and the increased financial pressures this can and will have on residents. The design and layout of such social housing developments should facilitate social cohesion and a sense of belonging. Lack of basic telecommunication infrastructure, poor access to broadband services and architectural design that excludes more than it includes speaks to an even larger problem, namely that of middle-class architectural design firms that are ill-equipped to design spaces and buildings that facilitate inclusion and community, but instead design only for cost efficiency and maximisation of available floor space. To correct this, future build programmes will require experts to work together across disciplinary boundaries to stimulate innovation. Lack of innovation and collaboration across disciplines and during the planning phases of such projects will only perpetuate class and race isolation, discrimination and marginalisation. In an article published in 2008 by the Commission for Architecture and the Built Environment they urge local planners, developers and architects to put people's needs first when designing such social housing developments.

> "The quality of buildings and spaces has a strong influence on the quality of people's lives. Decisions about the design, planning and management of places can enhance or restrict a sense of belonging. They can increase or reduce feelings of security, stretch or limit boundaries, promote or reduce mobility, and improve or damage health. They can remove real and imagined barriers between communities and foster understanding."
>
> (Commission for Architecture and the Built Environment, 2008)

Educational institutions and teachers appear to not have kept pace with the degree to which the process of desegregation has changed the cultural and class profile of the community they are supposed to serve, nor have they kept pace with South African society's extensive use of mobile devices as the only form of available internet access for low income families. Many families make do with only a mobile device to complete homework assignments with their children. Despite this they are not afforded more time to complete assignments even though their middle-class peers have access to ADSL and computers at home. Mobile devices can be considered an inferior resource in the context of homework assignments. Mobile-centric and mobile-only use is characterised by the use of messengers such as WhatsApp, light bandwidth use, light and brief internet searches and browsing and photography. It is also very much a consumerist technology versus PC-primary high bandwidth use, which tends to be more generative. Mobile-only internet access and mobile content generation provides a subpar experience due small screen size and limited processing power. Mobile phones are characterised by short engagements and are therefore less suitable for extended engagements, such as extensive information searches and word processing, which are often part of homework assignments. On the other hand, multi-device high bandwidth ICT practices are known to be PC, laptop, tablet and mobile device centric. Unfortunately, being 'locked' into a mobile-only ICT ecosystem makes it remarkably difficult to cope with the types of ICT practices mandated by local schools. Gitau, et al. (2010) remind us that many policy makers, curriculum designers and academics still primarily use PCs, whilst others may still be PC-only. Another interesting point to consider is that PC and mobile access may not lead to the same internet (Gitau, et al., 2010). This type of oversight in Blue View is perhaps predictable as the surrounding community is classified a multi-device type of community.

When participants' mobile devices fail to deliver on the task at hand they default to information searches by proxy, using parents and work computers to search and print information. This has negative repercussions as it turns learners into passive rather than active users of technology able to produce new information and communicate their thoughts. It furthermore affects learners' autonomous use of ICTs, which is important to grow online sophistication and develop more advanced uses of ICTs – instead, learners are reduced to glorified typewriters. If a person relies on one's social network for this online information, one is said to have low autonomy. Relying on school facilities during break time also leads to low autonomy in the use of ICTs. However, proxied use means a distributed process of research between parent and child, which could at times lead to a broken telephone effect and an over-concentration on the

search for information rather than the quality of the content. This furthermore means that what teachers receive is not the learner's actual work, but the result of a very distributed process of research. Mobile phone browsing also limits autonomy (Chrisholm, 2011), online sophistication and, in most cases, productive use (Forlano et al., 2011; Loader & Keeble, 2004). Hargittai (2010) and Robinson (2009) say that high-quality access to technologies at home is less likely for children from low SES and this leads to lower levels of autonomy over using technology and less online experience, ultimately negatively influencing their digital skills. All of these factors will diminish educational advantage, future employment and earning opportunities (Eamon, 2004; Williams, 2011). Contrast this to middle SES children for whom in most cases the presence of rich broadband, access to a computer or other forms of ICTs is a natural and expected phenomenon in daily life.

These findings resonate with Vally and Dalamba (1999) who assert that schools with even the best of intentions can attempt to integrate students and instead end up assimilating those they view as different. This aggressive assimilation, albeit unconscious, can be seen in local school language policies only making provision for two languages, as well as through their ICT practices mandating a one-size-fits-all approach and not taking into account the 'haves' and 'have nots', or richness and diversity in South African society. There is also the issue of the school not serving the society within which it operates (Gonzalez-Patino & Esteban-Guitart, 2014). Policies and practices do not cater for or consider this diversity, which ultimately ends in the marginalisation of students from Blue View Terraces. This phenomenon will continue and force these host communities and local institutions such as schools to deal with this difference and diversity. In spite of this, newcomers have displayed great resilience and resourcefulness when confronted with homework challenges.

Lastly, all of the aforementioned has the potential to perpetuate intergenerational poverty and class reproduction. Marginalisation, lack of access to fit-for-purpose ICTs and the internet may affect the performance of students in schools and thus their future employability. These technological barriers interfere with the learning process and may lead to the underdevelopment of certain executive function skills that are important once learners enter formal employment. This underdevelopment will contribute to intergenerational class reproduction and lack of class mobility. Evidence of this is the number of school leavers in the Blue View Terraces that have not yet been able to find employment and also do not have the means to further their education.

5.4 Implications of the Findings

The findings have policy implications for the Department of Social Development, Department of Human Settlements, Department of Education, the South African Social Housing Sector, education policy makers, communications authorities and mobile network operators. Lack of intergovernmental collaboration and the frequent disconnected implementation of very important development projects will lead to lacklustre outcomes and persistent intergenerational class immobility.

The Department of Human Settlements and the social housing sector has the pivotal mandate of deconstructing apartheid city planning and spatial divides and reconstructing spaces in a way that provides for spatial inclusion and ultimately socioeconomic inclusion of historically disadvantaged citizens. However, spatial inclusion does not automatically lead to socioeconomic inclusion, instead it will require collaboration with the Department of Social Development and other non-governmental organisations, such as social housing providers, to facilitate and support transition and integration. These experiences and newcomers' appraisal of such experiences will depend largely on the cultural distance between themselves and of the community of Blue View. If their appraisal of such experiences leads them to conclude that it is stressful, they will employ coping strategies to deal with such stressors. For low-income groups these coping mechanisms typically consist of social networks or access to any resources they may have. In many cases these coping strategies are short term and rarely provide a long-term solutions because they do not address root causes. When employing these coping strategies, the immediate effects may lead to further stress as newcomers may feel they are a burden to their networks. A particular example would be when newcomers are confronted with a higher cost of living, such as higher school fees or more expensive day-care, or when low income students come into contact with schools' ICT and homework practices that are very different from those they were used to in their previous community (Berry, 1997).

Support interventions will in all probability flow out of policies that facilitate and support integration. Such support could include regular community events to increase cultural contact or assistance with moving in or getting to know the community and the neighbourhood. This may reduce the cultural distance and may make the process of acculturation a less stressful experience. It is also a key determiner of the eventual long-term outcome. This may require public private partnerships and national programmes for nation building, thereby educating the public on the enormity of the task at hand of building an integrated society. It is in the end a social imperative rather than a housing one.

Another sorely needed collaboration is between the Department of Education and Department of Social Development. This is certainly required during the drafting of policy decisions that have widespread practical implications for learners' lives both during and after school. Educational institutions that previously catered exclusively for whites-only communities must recognise that these communities have undergone drastic changes in cultural, racial and class composition since the abolishment of apartheid. These changes directly affect their daily operations and should be borne in mind when determining language, admission and homework policies. Soudien's (2010) focus on former white schools argues that an asymmetry continues to exist in the contact that takes place between whites and blacks.

> "The essential impetus of this asymmetry is to produce practices of cultural assimilation in which Black people are required to give up their own aesthetics and cultural practices in favour of those of the dominant middle-class and White community into which they step."

As mobile-only learners from low-income families are marginalised in local middle-income schools, schools may be at risk of becoming irrelevant to the communities they need to serve. The communities that these schools once served are changing daily in the face of local migration and rapid technological changes in the macro-economic environment. (Gonzalez-Patino and Esteban-Guitart, 2014), in their study on the MCS (mobile centric society), caution schools against becoming irrelevant if they fail to acknowledge that the mobile centric society is a reality. Furthermore, they warn the educational sciences from idly watching from the side lines while society and the devices they use undergo dramatic changes. Schools must provide learners from different socioeconomic backgrounds with tools to cope and should weave ICTs into pedagogy in a much more thoughtful manner. Buckingham and Scanlon (2003) demonstrate how "some types of homework may have advantages for those with access to particular facilities and resources and thus disadvantage those who do not". It is therefore vital that these schools do more than simply expect newcomers to adopt their practices and in particular their ICT practices. If they wish for them to assimilate to their practices they will need to provide them with the relevant support (Berry, 1997). This support uses a combination of Helsper's (2012) work about access, skills and attitudes and is material for students attending local schools and having to comply with mandated ICT policies and practices. Additions to this could be homework support or the school and/or landlord providing internet and computer

access whilst developing the newcomers' ICT skills. Without such support mechanisms it would closer resemble marginalisation. This may very well not have been the intention but is a likely outcome. Furthermore, the findings concur with Vally and Dalamba (1999), who conclude that the dominant position of schools in post-apartheid South Africa is assimilation. Naidoo (1996) tells of how almost all previously white middle-class schools in his study unknowingly followed an assimilationist approach. In this study, it was found that when entering a community, newcomers were confronted with various new experiences or what Berry (1997) calls life events. For these participants one realisation was that life in their new location is costlier and that where they save in one sphere, namely accommodation, they now spend more in another, ultimately spending more overall. This was compounded with frequent travelling to friends and family to access a PC or the internet. Therefore, there is not only a cultural and psychological cost to assimilation but also a financial one.

There are also implications for communications authorities, mobile network operators, digital inclusion and social development practitioners. Communications authorities together with mobile network operators should firstly realise that public Wi-Fi is not sufficient for addressing widespread digital exclusion and that mobile networks have the power to drastically alter South Africa's digital exclusion narrative by lowering mobile data charges.

Other forms of exclusion very often accompany digital exclusion. This should be an important consideration when solving for digital exclusion (Helsper, 2013). The findings show the power of ICTs for building community cohesion and social capital, which are both important for upward mobility, but more importantly to foster a sense of belonging and connectedness. Following Bourdieu (1986), social capital can provide one with increased opportunities and allows for more economic capital that can be reinvested to increase social capital in society. Social capital therefore has a reinforcing effect on ones' economic or class mobility. Firstly, strong social capital and networks can be positive reinforcers as they help one to get ahead, which in turn has the potential to increase economic capital. Greater economic capital enables class mobility, which may lead to increased social capital with networks that may have access to higher economic capital and resources. Van Dijk (2005), through the use of Bourdieu's (1986) capitals stresses that

> "Economic capital is required to support Internet use (e.g. Internet provider subscriptions), social capital is needed to learn to connect to and use the Internet. Conversely, the Internet can affect an individual's access to these types of capital; for

> example, it enables users to obtain economic capital by facilitating access to profitable resources, social capital by extending physical networks to virtual ones, and educational capital by enabling learning experiences."

A very well entrenched communication network already exists among residents who use low cost tools such as WhatsApp. Social development practitioners should use such technologies, but very seldom incorporate ICTs into their repertoire of development tools. "Digital media facilitate the creation and dissemination of relationships between people" (González-Patiño and Poveda, 2015). It is a carrier of language, it stores and transmits conversations, ideas and thoughts, which become information and knowledge and form part of the collective human knowledge online or what Jenkins (2006) refers to as the new social mind. Just as fluency in language allows for self-expression so does proficiency in ICTs. It allows communities to participate in the public dialogue and enables voice. Something Jenkins (2006) refers to is participatory culture in which people take part in and collaborate, share, distribute and are members of various online groups, which leads to a collective shared identity online. In other words, this is a culture that is "characterized by affiliations" (members who form part of online communities focused on various forms of exchange, such as Facebook and Instagram). One participant, Stephanie, displayed visible feelings of exclusion from the conversation of her peers, which is in keeping with Jenkins' (2006) views on participatory culture. Here we have a primary example of her family's economic exclusion directly affecting her social inclusion and educational inclusion in school through her lack of economic capital to continuously engage in the online conversation of her friends and her lack of access to the proper ICTs, leading to her mother's frequent use of the local gym to access the internet for homework. Arnold (2003) talks about networks of civic engagement and how these encourage information sharing, such as finding out about a new job, getting help from a neighbour or seeking advice about raising one's teenager. He goes further to underline the self-regulating nature of well-networked communities and how this increases the cost of anti-social behaviour, incivility and untrustworthiness. Rose, Seton and Tucker (2014) allude to the power of ICTs in providing "excluded citizens with increased life chances and choices which will improve quality of life for those that embrace it." Participants' appetite for being online and their sheer resourcefulness offers fertile ground for the diffusion of social development interventions. Digital inclusion practitioners should bear in mind that their projects and interventions must suit people's lives rather than be a radical departure from people's existing ways of doing (Helsper, 2012).

Lastly, and more importantly, are the practical implications for social housing residents, social housing providers and their daily lives. Social housing providers need to take a comprehensive view of exclusion by involving experts from multiple disciplines during all aspects of planning social housing projects. They should know that the acculturation process ends with certain long-term outcomes, such as integration, assimilation, separation or marginalisation. If the community of Blue View or the social housing provider offers the necessary support, is welcoming and has policies and practices that facilitate integration and encourages diversity, this will usually lead to culturally plural communities that are cohesive and well integrated. If, however, the cultural distance is too vast for newcomers and attitudes of prejudice, discrimination and lack of both social and ICT support exist then the eventual long-term outcome will be the separation of these communities and the marginalisation of any minority group. The prevalence of discrimination and intolerance signals the need for greater awareness programmes amongst the public to combat the stigma that frequently accompanies such projects. This stigma has the potential to linger for years to come and threatens the successful co-existence of multiple cultures, classes and races within these new spaces. In addition, there is the influence of unaffordability for basics, such as the cost of goods in a middle-class area, attending local schools or paying for after school care where previously your neighbour would have taken on that responsibility through the reciprocity that exists within lower income communities. The findings show that participants are faced with these issues on a daily basis. There is a high probability these concerns will lead to increased financial stress and may ultimately reverse the benefits of discounted rental accommodation. Failing all of the aforementioned will lead to the maladjustment of residents and a home that does not cater for their needs. This forced acculturation is cruel as residents may be able to integrate spatially, socially and culturally but will ultimate fail from an economic perspective.

5.5 Findings Related to the Literature

The major findings of this study support the common thread in the literature that digital inclusion cannot be dealt with in isolation and that offline exclusion affects online exclusion and vice versa (Helsper, 2013). These findings, however, lay bare the negative outcomes of not paying closer attention to other forms of inclusion. This also has implications for social and economic inclusion scholars, as is echoed by Winchester (2009) who wrote “digital inclusion has the potential to combat the persistent lack of social and economic mobility in these communities”. These findings have ramifications for the field of sociological research and

demonstrates how class differences are reproduced through learning and education. Writers such as Reay (1998) and David (1993) focus on the role of the home as both a cultural and material site of class reproduction but now schools can also be seen as a place of class reproduction. The digital divide locates members of society within the stratification of social capital, and more often positions disadvantaged members of society at the bottom due to their lack of ICT access and it is this lack of access that restricts their mobility within that stratum (Harris, 2010). Theoretical analyses of the divide have shown that technology access is a replicating, if not exacerbating, factor of societal inequities (Brown, 2002; Clark & Gorski, 2002; Servon, 2002; Subramony, 2007; Warschauer, 2004).

The literature also does not sufficiently address the importance of device form factor when completing tasks that are generative in nature. This points to a possible device form factor continuum or spectrum with mobile phones on the bottom end and PC and printer use still at the top. In-between are the various coping strategies the digitally excluded employ when they only have access to a mobile device. When practical extended usage is no longer possible, people will either switch to another more suitable form factor device or alternatively resort to using a desktop computer. The findings adds another dimension to Soudien's (2010) work that was not previously considered and that is not covered in any of the international literature on digital inclusion in schools: learners from low SES regions attending schools in more affluent areas. The literature primarily focuses on poor versus well-resourced schools but does not discuss a phenomenon which is quite prevalent in South Africa, that being learners from low socioeconomic communities attending more affluent well-resourced schools much further away in the hope of a better education. There is also a noticeable lack of literature about digital inclusion in social housing projects and social housing as a whole.

5.6 Conclusion

These findings are unique examples of many different types of exclusion clustering together, each exerting an influence over the other in a constant game of tug of war. In this study digital exclusion influenced many other forms of exclusion, often increasing participants' personal sense of exclusion as they became even more aware of their differences to those they now call neighbours. The study also partially addressed some of the many questions that were raised by authors in the literature review regarding if and how well mobile devices can replace desktop computers as a primary means of accessing, using and benefiting from online content (Talley, 2012; Valadez, Duran, 2007; Warschauer & Matuchniak, 2010).

5.7 Recommendations for Praxis and Future Research

A single Masters research study is usually quite nuanced and contained in scope and therefore unable to anticipate the many pathways that certain phenomenon might uncover. Therefore, in this final section of this dissertation some of these nuances are addressed as both a limitation of this study, as well as of the literature. There is value in examining the coexistence of digital and social exclusions in other social housing developments to complement this study. Further studies should also consider the linkages between digital inclusion and its potential benefits for social inclusion programmes. For example, a follow-up study could be conducted on participants of this research study with the addition of members of the surrounding community and local institutions in order to obtain a more triangulated view. Furthermore, researchers and practitioners interested in this subject area would benefit from conducting a more in-depth study on the effects of digital exclusion in so-called Model C schools, as this study skimmed the surface in terms of the various challenges faced by participants and their children outside of the boundaries of their social housing community.

Similarly, social housing and digital inclusion practitioners should take into account the unique circumstances surrounding social housing communities in South Africa due to the engrained effects of desegregation and how this manifests in such programmes. The focus should be directed away from simply transplanting global best practices for social housing and digital inclusion towards an appreciation of the unique national climate that exists twenty-four years after the abolishment of apartheid.

Another unexpected phenomenon that emerged is when learners from low socioeconomic environments attend schools located in middle to high socioeconomic locations. Parents from low-income areas would pay a premium to send their children to schools much further away in search of a better education. The literature predominantly concentrates on the differences between resource availability in high versus low socioeconomic schools, but mentions nothing about learners from low-income communities attending so-called middle to high-income schools and how this by default translates into assimilation and marginalisation. This is evident in draconian policies that represent so-called good schooling that does not cater for the richness of South African society. Future research should investigate how education policies can ease the widespread burden of digital and language exclusion in schools.

One of the findings that were less predictable was the widespread belief that smartphones are able to sufficiently leapfrog PC use completely when it comes to information creation. The findings proved that smartphones are well suited for short engagements but less suitable for work that is generative in nature. This is especially regarding project work and document creation, where it is less about consuming information but rather about creating information through a process of information searches ultimately leading to a sea of open browser tabs and reconstituting such data to form new information or new representations of facts. Add to this copying and pasting, reordering data, inserting images, positioning, editing and typing and there exists an experience that is anything but frictionless. Whilst smartphones have become the public's default tool for media production and dissemination, tweets, and maybe at a stretch writing a blog article, it still comes in second and third place for document creation. For most people, this is the point where they will switch to either a laptop or PC to do the 'heavy lifting'. This is great for the digitally included but less possible for most households where a smartphone may be the single point of internet access. Further research into this aspect of digital exclusion will therefore add to the discourse on the digital production gap, usage gap and variations in use and possibly lead to a conceptual framework illustrating a continuum of use representing mobile-only use on the one end of the spectrum and multiple device usage on the other. This can act as a guideline for educational institutions, helping them understand the limitations of each technology and how they should incorporate this into pedagogy.

Social housing and RDP (Reconstruction and Development Programme) housing was put in place as housing interventions for the problem of township housing that was built on the periphery of cities but also to obliterate apartheid spatial design through the engineered desegregation of previously whites only suburbs. It is supposed to be a platform to reinvent South Africa, to hasten inclusive growth, address the nexus of affordability, as well as provide access to social infrastructure, economic opportunities and schools. Unfortunately, this type of housing carries with it the stigma of lowering property prices and brings with it elements of crime. Housing is an emotive issue both for those who are gaining access to housing for the first time and also for those who feel their suburbs are being 'invaded'. A study is needed to shed light on this stigma in order to accelerate integration, social cohesion and nation building.

Last but not least is the lack of imagination and innovation in planning and architecting for social inclusion. Developments and especially social housing developments should be designed to cater for people's actual lives and, more importantly, to integrate disparate communities. It must take into consideration the multiplicity of cultures and practices that will coexist and design buildings and spaces that not just provide cheap shelters but connect and lead to a sense

of belonging. These could include, for example, play areas for children, because as we know children build friendships firsts and in turn causes parents of those children to interact. People travel to work and so it is important to build entrances and pathways that are less separated and facilitate chance engagements that over time may lead to friendships and also allow residents to know more of their neighbours and to connect outside of their usual social circles. Research should be conducted into architecture and design practices and how these aid or stunt social inclusion from the perspective of spatial design by engineering happenstance meet-ups and get-togethers. Components of further study should include design and space planning and its role in facilitating economic inclusion, not only from a homework proximity perspective but also affordability and cost of living.

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