Understanding the perceived role of mobile media in relation to development in a South African rural area.

A thesis submitted in partial fulfilment of the requirements of the Master of Arts Degree in Journalism and Media Studies

Rhodes University

By

Tatenda Chatikobo

Supervisor: Professor Lorenzo Dalvit

January 2019

For my parents Fungai and Nyaradzai Chauruka,
and the love of my life, Bella Boqo.

FOREWORD

My background is in the field of Information Systems. I have always been interested in doing research that looks at the interdisciplinary nature of Information and Communication Technology (ICT), specifically aimed at solving problems in developing communities. During my Masters, I have been involved in a variety of projects in this field. The most prominent and relevant to the current research is the Human and Social Dynamics Project, that was funded by the National Research Foundation, of which my thesis supervisor was the Principal Investigator. Apart from research, the project consisted of mobile and computer training workshops in the Dwesa community. My involvement also included facilitating training workshops, as well as organising trips and other research activities for the project. It is through exposure to this social context, facilitated by this project, that I developed an interest in investigating the perceptions of development within the Dwesa community. I have been in contact with some of the teachers from Dwesa through the Rhodes University Education Department, where they studied towards a Bachelor of Education in Information and Communication Technology (BED ICT). In this programme, I taught some of the technical courses aimed at developing their ICT skills, enabling them to use technologies in schools effectively. Some of the teachers became my initial contacts for the current research.

ACKNOWLEDGEMENTS

ABSTRACT

This study explores the different perceptions of mobile media in relation to development within Dwesa, a marginalised rural community in South Africa. The proliferation of mobile phones and increasing access to the internet in Africa, and South Africa in particular, is extensively documented and attempts have been made to explore its impact on development. Drawing on adapted aspects of the Diffusion of innovation theory (DoI), the study seeks to understand the relative advantage, compatibility with needs and values, and observable benefits of using mobile media for a rural community. I provide a critical discussion of the concept of development and its relationship with digital technologies and innovation. I reflect on the Diffusion of innovation theory, highlighting its critiques, adaptations and modifications in studies, particularly in the Global South. The present study employs a qualitative methodology and relies on focus groups, semi-structured interviews and observation as methods of data collection. Participants were divided into three focus groups based on Rogers classification of innovativeness (early adopters, majority adopters and late/non-adopters) and I conducted two follow-up interviews with participants of each focus group. I analysed the data thematically. Research participants identified several areas where mobile media contributed to development and positive change, such as lowering the cost of access to information and communication, staying in touch with distant relatives, increasing access to services and providing entertainment, especially among young people. The participants noted that despite these positive changes, that mobile media on its own cannot be expected to address challenges of infrastructure and public service delivery. Research findings also revealed that mobile media might interfere with socio-cultural values of respect, human dignity and privacy. I conclude that, while mobile media is generally considered as beneficial, its critical role in improving the socio-economic conditions of people in Dwesa still remains in doubt. The study provides an opportunity to further investigate the compatibility of mobile media with socio-cultural values along the lines of age and gender, and address issues of digital skills and digital marginalisation.

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CHAPTER 1: INTRODUCTION AND CONTEXT

In this chapter, I outline the context of the research. I provide background information about the nature of mobile media in Southern Africa, paying particular attention to the South African mobile technologies landscape. I provide a description of Dwesa, the site of the research. I outline the aims and objectives of the research and provide a brief discussion of the research design and methodologies adopted. I conclude the chapter by providing an outline of each chapter in this thesis.

1.1 Background

Definitions of mobile media emphasise the internet capability of modern mobile devices. Mobile media has the potential to provide ubiquitous connectivity and greater interactivity (Featherstone, 2009; Heeks, 2010). Mobile media is a personal, interactive, internet-enabled and user-controlled portable platform that enables the exchange and sharing of personal and non-personal information among users who are interconnected (Wei, 2013). In most developing countries, mobile phones are the primary means of accessing the Internet (Goldstuck, 2010). Donner and Gitau (2009) point out that in Africa, and South Africa in particular, internet access is often mobile first, mobile only and mobile-centric. A significant number of people in marginalised communities access the internet through mobile devices (Stork et al., 2013). Over a decade since mobile phones started to spread in Africa, they have become popular even in the continent's poorest regions. Researchers have speculated that because of the absence of fixed-line telephony infrastructure and the explosion of new wireless technologies, Africa will be able to leapfrog the development trajectory into an ICT revolution through the adoption of the newest, cutting-edge technologies (Hosman and Fife, 2012). The continent is indeed experiencing a mobile technology expansion and is the world's fastest-growing mobile technology market (Shezi, 2016; World Bank, 2018). Across the region, mobile phones are more than a communication device; they are the primary channel of connecting and accessing life-enhancing services which aid digital and financial inclusion and innovation. This is particularly the case in rural areas, where half of the continent's population live with limited economic opportunities, skills and infrastructure gaps (GSMA, 2018). Bukenya (2016) highlights that, through mobile media technologies, rural farmers in Uganda access important agriculture information and can communicate instantly with district agriculture extension officers. Rono (2018) documents how mobile phones are used to identify children with correctable visual impairments in rural schools in Kenya using an eye scanning technology. Similarly, mobile phone-based money transfers and

microfinancing services like M-Pesa (M for mobile, Pesa for money in Swahili) have enabled people in rural areas to withdraw, deposit and pay for goods and services with their mobile devices (Kim, 2018; Donavan, 2012).

In Sub-Saharan Africa, 444 million people have access to a mobile phone (this accounts for 44% of the total population) (GSMA, 2018). Due to some people using more than one SIM card, it is estimated that there are 747 million active connections in Sub-Saharan Africa (GSMA, 2018). Subscriber growth has slowed down in recent years due to challenges, such as affordability (World Bank, 2018, GSMA, 2018). World Bank data shows that about 40% of the people in the region are under the age of 16, well above the global average. This segment of the population has comparatively little access to mobile devices as they do not have purchasing power (GSMA, 2018). In 2017, mobile technologies and services contributed about $110 billion and generated about 7.1% of GDP in Sub-Saharan Africa alone (GSMA, 2018). This figure is estimated to increase to $150 billion (7.9% of GDP) in 2022. Despite the rapid growth of mobile technology around the world, it is estimated that around 800 million people will remain unconnected and the vast majority are rural, women, youth and poor (World Bank, 2018).

South Africa is regarded as the most developed society in the Sub-Saharan region. With a population of 57,06 million, 67% of the population has access to a mobile phone (QWERTY, 2018). There are about 87 million active mobile connections in South Africa, which would account for 153% of the total population (QWERTY, 2018). Research has shown that some people have more than one mobile phone and rely on different carriers to take advantage of promotions and favourable tariff plans. Approximately 54% of the connected mobile phones in South Africa are internet enabled, which accounts for 30.8 million users (QWERTY, 2018). It is estimated that 78% of all internet traffic in South Africa is through mobile devices (GSMA, 2018). Despite having the most mature mobile industry on the continent, South Africa is behind other nations when it comes to access to broadband because of the cost of connectivity and mobile telephony in general. Data tariffs are among the highest in the region, affecting especially the 31 million South Africans living below the poverty line (Stats SA, 2018).

Internet access in South Africa is influenced by race, age, gender, income and level of education. Goldstuck (2017) notes that the clearest divide is shown in income inequality, with internet penetration at 82.4% for those earning more than R30 000 a month and only 27% for

those earning below R 2 500 a month. Data from the *Internet Access in South Africa* study shows that the Eastern Cape province, which is largely rural, has the lowest internet penetration in the country with only 25.2% of its population connected (DFA, 2017). This suggests that most people in rural areas cannot be active digital participants. As in other parts of the country, the rural/urban divide (see Odendaal et al., 2008) is compounded by the time span (approximately five years on average) from being online for the first time to being sufficiently familiar and comfortable with technology to be able to perform online activities/tasks and use cloud-based services (Goldstuck, 2010). This implies that mobile penetration and subscriptions are not accurate determinants of active digital participation as many people in marginalised communities are relatively recent mobile media users.

Dwesa is a rural community in the Mbashe Municipality, is situated along the Wild Coast of the Eastern Cape Province of South Africa. Dwesa is representative of the realities of many South African rural areas in terms of the lack of services and infrastructure, and high levels of unemployment and poverty. The total population of approximately 20 000 people consists mainly of old people, single mothers and young children, while most of the young men and a few women migrate to the towns and cities seeking a better life and employment opportunities (Dalvit, 2015; Cristoferi, 2015; Buthelezi; 2015). As a source of income, most of the households rely on subsistence farming, as well as government social security grants and remittances from family members working in urban areas see (Dalvit, 2015). Dwesa experiences various forms of underdevelopment, which range from poor infrastructure (transport, health clinics, schools and local government administration) to poor public service delivery. The community members must travel about 60km to the nearest town to access services such as banks, post offices, police stations, government office etc. Travelling to and from the nearest town costs R 90 and a full day of travel as transport options are limited.

ICT could, however, contribute to addressing local infrastructure and public service issues in Dwesa. Since 2005, Dwesa has been the site of the Siyakhula Living Lab (SLL). The SLL is a multidisciplinary project seeking to contribute to the socio-economic development of the area through the free provision and maintenance of ICT infrastructure, ICT and mobile training, and the co-creation of e-services (Gumbo et al., 2012). The ICT project was initiated in 2005 in collaboration with various stakeholders in corporate sector, government and local community, and is headed by the Telkom Centres of Excellence based in the Departments of Computer Science at Rhodes University and the University of Fort Hare. Five local schools were chosen as initial access sites because of their secure building infrastructure and reliable

electricity supply. Schools are regarded as natural centres of knowledge, and members of the community can access the internet through a computer lab and can connect via Wi-Fi using their mobile phones near school premises (Thinyane et al., 2008). Educators with an interest in ICT became the primary drivers of the project at the local level, and the model of train-the-trainer was adopted as a way of passing down skills to the community (Dalvit et al., 2010). Funding by the local Department of Education enabled close to 100 local teachers to attend professional development courses focusing on ICT at Rhodes University. The SLL provides a platform where government, research institutions and industry partners can explore possibilities in the development and deployment of telecommunications infrastructure and services for rural communities (Dalvit et al., 2010). Several proof-of-concept mobile applications have been developed through a collaboration between Rhodes University and Fondazione Bruno Kessler (FBK) to address some of the challenges that the Dwesa community faces and which were identified in consultation with community representatives, local researchers and potential users of the mobile applications (Ciaghi et al., 2016). Examples include a prototype mobile application to warn drivers of dangers on the road such as veld fires, sharp curves, flooding and potholes, and an app to organise shared transport to Willowvale, the nearest town.

While television and radio signals are relatively weak in Dwesa, mobile network coverage by either of the two main mobile service providers is well established. It is estimated that 98% of the population in Dwesa has access to a mobile phone and recent studies have shown that each household has access to at least one internet-enabled mobile device (Collopen, 2015; Cristoferi and Dalvit, 2015). Apart from creating and consuming multimedia content, members of the Dwesa community share such content with their family, friends and neighbours. Collopen (2015) states that approximately 80% of mobile users share multimedia, stories and news locally, and 69% share these with people outside Dwesa. Cristoferi and Dalvit (2015) found that a significant portion of the population (26%) transfer airtime and this sometimes serves as a method to send money to friends and family. The study revealed that about 21% of mobile phone owners claim to browse the internet, 10% use their devices to send and receive emails, and about 8% do some form of online shopping with their phones. The authors found that of the 99% of the population with access to a bank account, 40% interact with their accounts online either through mobile browsers or mobile banking applications. Buthelezi (2015) notes that about 80% of the community that receives a government social welfare grant access their South Africa Social Security Agency (SASSA)

accounts using mobile devices, and purchase airtime and electricity using Unstructured Supplementary Service Data (USSD) codes. Purchasing airtime is difficult in the area as there are few resellers and they often charge an additional fee. A baseline study by Pade-Khene, Palmer and Kavhai in 2010 indicated that a considerable portion of a household's disposable income is spent on purchasing airtime. The researchers estimate the figure to be as high as R 160 per month against an average combined household income of about R 1 000 (see also Cristoferi and Dalvit, 2015). Relatively little is known about the actual or perceived benefits derived from such comparatively onerous costs.

1.2 Research design

The study seeks to contribute knowledge on the relationship between mobile media and development. The inquiry is based on the fact that although there is extensive research on the adoption of mobile phones in developing communities, there is still a lack of evidence that demonstrates the effectiveness of mobile phones in solving developmental problems. Sen (2001) adds that development is subjective, meaning different things to different people according to their individual values and needs. Implementing solutions for development requires context-informed engagement which facilitates social interactions as well as cultural and economic exchanges. The different perceptions of mobile media in relation to development within the Dwesa community were explored by adapting selected aspects of Rogers' 1976 diffusion of innovation theory. Although the diffusion of innovation theory has been extensively critiqued and modified (see Zhang et al., 2013; Avgerou et al., 2016; Matthews, 2017), it still informs much research on the role of ICT and mobile in development (see Van der Boor et al., 2014; Ashraf & Hoque, 2016; Sabu & Shaijumon, 2016). The following questions set out the basis of this inquiry:

1. How do different people in Dwesa understand the relative advantage of mobile media?
2. How do different people regard mobile media as compatible with, (a) previously introduced innovative ideas, (b) their values and beliefs, and (c) their needs?
3. How do different people observe and communicate the results of using mobile media?

The focus of the study is the subjective understanding of the role of mobile media in relation to development and not the quantitative assessment of its impact. This research is situated within an interpretive paradigm and is informed by a qualitative methodology. I used focus groups, overt observation and in-depth individual semi-structured interviews as methods of

data collection. I employed focus groups in this study as they enabled me to generate a rich understanding of the participants' shared meanings and perceptions (Gill et al., 2008). Follow-up interviews with focus group participants provided an in-depth understanding of emerging issues from the focus groups. I also used observation to complement my data collection. I identified the participants through contacts I made during mobile training workshops in Dwesa. The participants, in turn, pointed me towards other representative categories of participants through snowball sampling. Categorisation of participants is based on Rogers (1983) categorisation of members of a social system according to their innovativeness. As such, I grouped participants into early adopters, majority and late/non-adopters. I analysed the data thematically, contrasting the views of different categories of respondents in terms of relative advantage, compatibility and observability.

1.3 Chapters Outline

This thesis consists of five Chapters. Chapter One provides an introduction to the study. I started by providing the background to the study, positioning it within the wider context of mobile penetration on the African continent and in South Africa. I provided an overview of the research site, including some relevant findings from past research. I discussed the research design adopted in this study, with a brief outline of the methods of data collection, highlighting the research aims and objectives.

In Chapter two, I review my theoretical framework and link it to a discussion of the relevant literature. I define and problematise the concept of development and outline a working definition. I then elaborate on Rogers' diffusion of innovation theory, and specifically, the characteristics of innovations most directly related to development, i.e. relative advantage, compatibility and observability. I conclude by discussing some of the critiques and adaptations of the diffusion of innovation theory.

In Chapter three, I discuss the methodological aspects of the study. I justify the use of focus groups, observation and semi-structured follow-up interviews as data collection methods. I outline the sampling techniques used to identify the research participants. I discuss how the data was organised and sorted in order to answer the research questions. I conclude with some reflections on issues of reliability, validity and ethics.

In Chapter four, I present the findings of the research. I outline the discussions from each focus group and the relevant individual follow-up interviews, categorised in terms of 1) early

adopters, 2) majority and 3) late/non-adopters. I conclude by discussing emerging themes that are consistent in all adopter categories.

In Chapter five, I provide a reflection on the findings based on my research questions. I reflect on the research design and methodology. I conclude by providing recommendations for future research based on the present study.

CHAPTER 2: THEORETICAL FRAMEWORK AND LITERATURE REVIEW

In this chapter I outline the theoretical framework and discuss literature that informs the current research. I discuss and problematise the concept of development from the technological deterministic to the social constructivist perspectives, linking development to Rogers' 1976 diffusion of innovation theory. I expand on Rogers' characteristics of an innovation and the categories of the members of a social system. I discuss some of the criticisms and adaptations of Rogers diffusion of innovation theory, focusing specifically on research and technological projects in developing communities.

2.1 Development

The notion of development has several meanings, which makes it ambiguous, contested and complex. Kleine (2010) emphasises that development raises issues about power, and is largely a political term that has a range of meanings depending on the context in which it is used. Rogers (1976) states that the concept of development gained momentum from many historical events such as the industrial revolution in Europe and the United States; colonialism in Latin America, Africa and Asia; quantitative empiricism in North American social sciences; as well as from capitalist, economic and political philosophy. Definitions of development in the 1960s, as stated by Rogers, focused on economic growth with gross national product (the total value of goods and services produced in a country in one year by its nationals) and per capita income (the average income earned per person in a given year) as indices for measuring development. Criticisms were levelled at the use of economic data as the main index for development, especially among non-economists but there were relatively few proposed alternatives. The current consensus is that development is dynamic, changing from one state or condition to the other, and can be both progressive and regressive. As an example of the latter, Information and Communication Technology for Development (ICT4D) projects have been criticised for reinforcing the dependency of developing communities on external funders (Gomez and Pather, 2012).

The definition of development that I have adopted for this study is influenced by the participatory approach and by Amartya Sen's capability approach. The participatory approach to development communication calls for the sharing of culturally and socially relevant knowledge that takes into account the needs, interests and ideas of those involved (Servaes, 2008). MacBride (1980: 254) points out that: "..this calls for a new attitude for

overcoming stereotyped thinking and to promote more understanding of diversity and plurality, with full respect for the dignity and equality of people living in different conditions and acting in different ways".

Servaes (2008) stresses that the participatory approach goes beyond the mutual exchange of information and experiences to include exploration, discovery and the generation of new forms of knowledge within development attempts. Kleine (2010) states that setting developmental priorities through a participatory approach yields a number of benefits. Firstly, it is morally the right thing to engage the people whose livelihoods are directly impacted by the decisions being made. Early and active involvement of the community in development initiatives minimises poor political buy-in and ensures that the development initiatives are locally and culturally appropriate. Secondly, by engaging people in a participatory way, there is a greater opportunity for them to take ownership of the projects and initiatives, which substantially increases the success of current and future agreements. Thirdly, Kleine (2010) argues that the participatory process encourages the scope of development work to be broadened to include dimensions such as economic, social, environmental, cultural, etc. This offers an opportunity to recognise the diversity of contributions by individuals of a social system. Tufte and Mefalopulos (2009) argue that this approach facilitates empowerment, with its effects going beyond project boundaries into wider social, economic and political aspects.

Within the capability approach, development is defined as 'a process of expanding the real freedoms that people enjoy [to] lead the lives they have reason to value' (Sen, 1999: 3). This approach centres on the belief that development is about actual freedom of choice in the personal, social and political domain. It recognises the need to remove major sources of oppression like poverty, tyranny, poor economic opportunities, mismanagement of resources, as well as systematic social deprivation (Sen, 1999). The emphasis on active creation of life opportunities, as well as the removal of structural barriers, makes this approach particularly relevant in a South African rural context, which is characterised by marginalisation and by the legacy of Apartheid's social injustice. The working definition of development for the purposes of this study sees it as a positive change in one's condition which responds to one's values and needs, and brings about observable benefits. Different understandings of what constitutes positive change necessarily depend on individual perceptions.

Over the past two decades, the importance of ICT4D in areas such as education, health, environment, human rights and socio-economic growth has been increasingly acknowledged

(Avgerou et al., 2016). The claim that has been put forward in these discussions is that ICTs have the potential to change people's lives for the better. The belief that technology is an autonomous force that changes society and alters the way we think and act, the way we engage with others in our interpersonal relationships, our attitudes and cultural values, and the way we learn, underpins a technologically deterministic view (Rashid and Elder, 2009). The idea that the internet has completely revolutionised society and the economy features prominently in political rhetoric. The technological deterministic view contains an implicit threat to "get connected, or else", because even though the costs of establishing and using ICTs are high, the costs of not doing so may be even higher (Gomez and Pather, 2012). The discourse around digital access leads to the classification of people on a binary opposite of information rich and information poor; developed and underdeveloped/less developed (Wilson, 2002). This simplistic binary understanding constructs those considered underdeveloped as passive recipients in the development discourse and projects (Heeks, 2010).

The social constructivist perspective emphasises that human action shapes technology and individuals decide which technologies are useful, profitable, comfortable and meaningful. Consistent with an emphasis on human agency in technology and development, domestication and appropriation focus on the individual, the household and its surroundings. Silverstone et al. (1992) use the metaphor of 'domestication' of wild animals to describe the process in which new technologies and services - which are familiar or unfamiliar, exciting but also threatening - are brought into the home space. The process of making something domestic involves appropriation, objectification, incorporation and conversion of the technology. These terms define how the entry of ICTs in the home are managed, how these technologies are physically and symbolically located, how they are fitted into daily routines and procedures, and how they are displayed and communicated to others. Despite the fact that the domestication theory is almost three decades old, it still offers an opportunity to interrogate current social relationships and family dynamics surrounding the use of ICTs. Such investigations offer in-depth revelations about the politics of domestic life and provide insights on why people choose (or reject) technology and how they control its impact in their everyday lived experiences (Haddon, 2007).

The appropriation process is a contest of power and control (Bar et al., 2016). People can, through customising the devices and applications, fill in the technological spaces left out by

providers (e.g. changing the language in a phone, colour of icons and profile pictures, etc.) (Malm et al., 2006). People can reconfigure and recombine a technology's components to create something new (e.g. the practice of cell phone 'beeping' as a cost-free way to ask someone to call back) (Donner, 2007). People can innovate and create something completely new - often at odds with the technology's inventors - by breaking down an existing technology's intent (e.g. using Bluetooth to exchange copyrighted music and avoiding download expenses, and more extreme, the use of mobile phones to trigger explosions by terrorists) (Donner and Gitau, 2009; Indachaba, 2014). Appropriation practices provide an opportunity to explore who can use ICTs, at what costs, for what purpose, under what conditions, and with what consequences (Bar et al., 2016). Such appropriation is understood as a bottom-up attempt at shaping the relationship between technological and social development in response to a particular context.

2.2 Diffusion of innovation

The diffusion of technological innovations from the global north to the Global South is often expected to address developmental needs without questioning whether these technologies apply to the local contexts. Rogers is one of the world's most recognised scholars in the field of innovation research, and his Theory of Diffusion is a well-known framework for technological innovations. In his seminal work "Communication and development: the passing of the dominant paradigm", Rogers (1976) elaborates on the link between the development debate and his popular diffusion of innovation theory, and notes that a person's agency is critical to the adoption process of a development endeavour. According to Rogers (1983), the four elements in the diffusion of innovation process are the innovation itself, its communication channels, time, and the relevant social system.

Rogers defines an innovation as an idea, an object or practice that is perceived to be new by an individual or any other unit of adoption (1983). The perceived newness of an idea determines an individual's attitude or reaction to it. The newness of an innovation can be expressed in terms of persuasion, knowledge or the decision to adopt. An innovation can include something which is already known but towards which people are yet to develop a favourable (or unfavourable) attitude or perception (Rogers, 1983). Rogers' focus on individual perceptions is consistent with the goal of the present study. The diffusion and adoption of an innovation are not necessarily always desirable, and an innovation may be desirable for some adopters or in a particular context but not others. According to Rogers

(1983), the meanings and perceptions attached to an innovation are shaped by five characteristics: (1) relative advantage; (2) compatibility; (3) complexity; (4) trialability; and (5) observability. These characteristics can be adapted to explore the role of ICTs in rural development (see Kante et al., 2016).

Relative advantage can be expressed as the extent to which an innovation is perceived as being better than the idea(s) it supersedes (Rogers, 1983). In defining relative advantage, Rogers (1983) emphasises that the predictors of adoptions are both economic and social, and include sub-dimensions like economic profitability, low initial cost, a decrease in discomfort, saving of time and effort, and immediacy of the reward. In addition, relative advantage may refer to quality of outcome, convenience, as well as satisfaction. Rogers (1983) identifies and acknowledges the importance of incentives in ensuring the relative advantage of an innovation. He defines an incentive as the direct or indirect cash or in kind payment to encourage the adoption of an innovation (Rogers, 1983). Rogers points out that, the 'objective' advantage of innovation does not matter so much as the perceived advantage placed on it by an individual. In an African rural context, M-PESA provides an example of the advantages of mobile over traditional banking (Jack & Suri, 2011). The use of an instant messaging application as a cheaper alternative to both SMS and voice calls is an often-cited example of an advantage offered by new forms of mobile media in rural areas of the Eastern Cape (Dalvit et al., 2014; Dalvit, 2015).

Compatibility refers to the extent to which an innovation is perceived as consistent with existing values, past experiences and the needs of potential adopters (Rogers, 1983). Intharaksa (2009) points out that compatibility "is concerned with the agreement or lack thereof between a group's traditional patterns and the patterns required by the innovation". If any idea is not compatible with the existing values and norms of a social system, it will not be adopted as rapidly as an innovation perceived to be compatible. De Bruijn et al. (2010) explore the role of mobile phones with respect to migration in Cameroon, highlighting their compatibility with cultural aspects. For people in Dwesa, mobile phones are important to keep in touch with relatives and friends who migrated to the cities, thus sustaining the flow of remittances and maintaining or rebuilding family ties (Kavhai, 2010; Cristoferi, 2014; Dalvit, 2015). Rogers states that "The adoption of an incompatible innovation often requires the prior adoption of a new value system". He cites the use of contraception in countries where the

dominant beliefs discourage the use of birth-control techniques as an example of an incompatible innovation.

Observability is the extent to which the results of an innovation are visible and easy to communicate to other people (Rogers, 1983). The easier it is to see and communicate the results of an innovation, the more likely it is going to be adopted. Rogers states that "Such visibility stimulates peer discussion of a new idea, as friends and neighbours of an adopter ask him or her for innovation-evaluation information about it". FrontlineSMS and Ushahidi are notable examples of the observable impact of mobile phones on economic and social development, respectively (Banks & Hersman, 2009). In Dwesa, Buthelezi (2015) notes how Umoya Manje enables people to buy airtime using their social grant cards, as an observable benefit of mobile media. Rogers states that one of the most important motivations of adopting a new innovation is the desire to gain social status. The social prestige of having a mobile device is one of the main benefits to some of the members of the Dwesa community of using mobile media. Social classes even exist in a low resourced community like Dwesa, and mobile phones act as a marker of socio-economic status.

The three dimensions mentioned above are directly linked to the concept of positive change, which is central to the definition of development in the present study. The remaining two dimensions, i.e. trialability and complexity, focus on the innovation itself rather than its relationship with the context. Trialability is the extent to which an innovation can be experimented with on a limited basis. It is particularly important for early adopters, who act as a psychological or vicarious trial for late adopters. Complexity refers to the extent to which an innovation is perceived as relatively difficult to understand and use. For the purposes of the present study, I will interpret people's perceptions of mobile media based only on those characteristics most directly related to development, i.e. relative advantage, compatibility and observability.

According to Rogers, communication channels are the means by which messages move from one individual to another in a social system. Mass media channels such as TV, radio, newspapers and the Internet are effective in informing potential adopters about an innovation. Interpersonal channels are particularly effective in actually persuading an individual to adopt a new idea, and often involves face-to-face exchanges between two or more individuals. Rogers articulates this by mentioning that the essence of the diffusion process is the information exchange by which one individual communicates a new idea to one or several

others within a social system. A social system is defined as a "set of interrelated units that are engaged in joint problem solving to accomplish a common goal" (Rogers,1983:24). A social system, such as the Dwesa community which is the focus of the present study, outlines a boundary within which an innovation (e.g. mobile media) diffuses. The units or members of a social system can be individuals, informal groups, organisations or subsystems. A social system influences diffusion through norms, opinion leaders and change agents. An innovation's rate of adoption is measured by the number of individuals in a social system that adopt the innovation in a given period.

The time dimension is involved in the innovation-decision process when an individual passes from first knowledge on an innovation through to the point of adoption or rejection. Rogers further notes that the innovation-decision process includes forming an attitude about a particular innovation, the implementation of the new idea, and the confirmation of this decision. Innovativeness, according to Rogers, is the degree to which an individual adopts an innovation faster than other members of the same social system. Members of a social system can be classified into five adopter categories based on their innovativeness: 1) Innovators; 2) Early adopters; 3) early majority; 4) late majority; and 5) laggards. It should be noted that these categories are ideal types based on observations and are meant to make comparisons possible and serve as a framework to synthesise research findings. In the present study, categories have been reduced to three, i.e. early adopters, majority and late/non-adopters.

Innovators are the first to try and experiment with a new idea or innovation. They have access to mass media and usually have interpersonal networks that extend beyond the boundaries of a social system. Innovators possess the ability to understand and apply complex technical knowledge, as well as being able to cope with the high degree of uncertainty about a particular innovation. Early adopters are often respected and serve as role models for other members of the social system. Potential adopters often ask early adopters for information and advice regarding a particular innovation. For the purpose of this study, innovators and early adopters are integrated into one category (early adopters), comprising, for instance, the ICT champions who initially took part in the SLL activities (see Mapi et al., 2008). These are mainly school teachers who "importing the innovation from outside of the system's boundaries…play a gatekeeping role in the flow of new ideas into a social system" (Rogers, 1983: 248).

Early majority adopters do not take the first step in adopting an innovation but rather carefully evaluate and take their time before adopting. Late majority adopters are sceptical and only adopt an innovation long after the average member of a social system. They usually adopt an innovation after persuasion and pressure from their peers, who have adopted the innovation before them. Most people in Dwesa are already frequent and active mobile media users (see Collopan, 2016). Early and late majority adopters differ mainly in terms of perceptions (proactive and reactive respectively) towards mobile media, which are assessed as part of the research. Early and late majority adopters have been clustered into one category in the present study.

Laggards, who are the last to adopt an innovation, are likely to hold traditional values and are reluctant in adopting an innovation (Rogers, 1983). Their point of reference is the past, with decisions made in terms of what has been done in previous generations. When laggards finally decide to adopt an innovation, it may already have been superseded by a more recent innovation in the social system. Although Rogers and other diffusion researchers paint a rather negative picture of the laggards, this group may be the most interesting to investigate. In the present study, I use the term late/non-adopters to refer to people who mainly used a mobile phone for calling and text messaging or not at all. They account for between 20-30% of people in Dwesa (see Collopen, 2016). Due to the ubiquitous nature of ICTs, (see Lievrouw & Livingstone, 2006), even non-users are affected by new technological developments and can provide interesting perspectives (De Lanerolle, 2012).

2.3 Criticism and adaptation of Rogers' theory

The purpose of this section is to discuss some of the critiques levelled against Rogers diffusion of innovation theory and critically engage with its recent application in developing contexts. Mathews (2017) argues that Rogers diffusion theory is built solidly upon the independent decision-maker. Because of this, Rogers fails to recognise the importance of group decision making and collective adoption behaviours by consensus, which exists in many African communities (Mathews, 2017). In such communities, individuals seek the support of their peers when making decisions. African scholars (Mangaliso, 2001; Murray et al., 2011) recognise the need for alternative decision-making models that accurately represent an iterative, circular and non-linear process. In the present study, aspects concerning the decision-making process are downplayed in favour of an emphasis on shared attitudes and perceptions.

The assumed universality of the diffusion of innovation theory prevents the due consideration of other socio-economic groupings, as well as the way variables such as age, gender and education affect diffusion and its outcomes within a social system. Avegerou (2005) points out that despite the increasing diffusion of ICTs, the distribution of access to the ICT resources is not uniform within and between developing communities. The latest data from the International Telecommunications Union (ITU) (2018) highlights that although over 60% of internet users around the world are from developing countries, two-thirds of people from developing nations are still offline. Toyama (2011) concludes that the diffusion of ICTs may reinforce existing inequalities rather than overcoming them. The inequalities in access to and use of ICTs, mostly the Internet, are captured by the concept of the digital divide (Castells, 2002; Eastin et al., 2015). Hargittai (2002) and Van Dijk (2005) note that there is a need for a distinction between an ICTs (particularly internet) access divide and a digital skills divide, known as the second level digital divide. A focus on the beneficial outcomes of internet use has led to the development of the third level digital divide concept (Wei et al., 2011), which informs the present study.

The DoI theory is often considered to be aligned with a neoclassical economic and modernist perspective. Rogers himself, in his later works, admits to the pro-innovation bias associated with the earlier concept of the diffusion of innovation, i.e. the conviction that an innovation should be adopted by all members of a social system, that it should diffuse fast and should not be rejected. As a result, there is a tendency by diffusion researchers to overlook the importance of studying the rejection or discontinuance of innovations, as well as anti-diffusion programs designed to counter the diffusion of undesirable innovations. Many ICT4D and mobile-for-development (M4D) projects adopt an uncritical, positive regard towards the potential benefits of ICTs (Rashid and Elder, 2009). In the present study, I acknowledge that rejection or discontinuance of mobile media use may be rational and appropriate from the viewpoint of a person living in Dwesa. My task as a researcher is to understand the reasons behind such decisions.

Despite its limitations, diffusion research has made significant contributions to the study of innovations in different contexts. As an example, Zhang et al. (2015) investigate the poor adoption and usage of an e-appointment service in a primary care clinic in rural Australia. The factors that contributed to its failure include ineffective communication, lack of awareness about the application, a perceived lack of value of the service by a majority of the

patients, incompatibility of the application with the oral communication preference of the patients, as well as the patients not having enough resources to utilise the service. Ashraf and Hoque (2016) note that the perceived ability of ICT4D projects to address development issues related to income, social status and education influence how people in rural Bangladesh adopted innovations initiated by the national government. Similarly, cultural beliefs, norms and social practices also influence how innovations are adopted (Ashraf and Hoque, 2016). Van der Boor et al. (2014) researched the sources of innovations in mobile financial services worldwide, and they note that successful mobile banking solutions are increasingly originating from less-developed countries. The perceived need for inexpensive banking services and a flexibility of mobile banking innovations play a pivotal role in the adoption process (Van der Boor et al., 2014). Sabu and Shaijumon (2016) state that the observable benefits of using innovations like GPS, echo-sounders, wireless sets and beacons, and mobile phones in the marine fisheries sector in rural India resulted in increased adoption. Ibrahim and Sadiq (2012) note that mobile banking services fit well with how customers manage their finances in Saudi Arabia and that it is compatible not only with work and lifestyle but also needs and values. Their 330 participants noted the observable benefit of immediate access to transactions from anywhere, anytime. According to the authors, mobile banking provides a relative advantage in managing the customer's finances. Ibrahim and Sadiq (2012) note that perceived risk has a negative effect on mobile banking adoption. This is consistent with earlier studies and literature, confirming that banking customers fear that login information like PIN codes may get lost or stolen and as a result, their security could be compromised.

In Africa, the diffusion of innovation theory has informed research within fields as diverse as agriculture, health and education. Kante, Oboko and Chepken (2016) conducted a study to determine the factors affecting the use of ICTs on agricultural input information by farmers in several developing countries. In the study, the authors found that farmers' perceptions, such as Rogers' relative advantage, compatibility, simplicity and observability are positively affecting the use of ICTs in agricultural input information (Kante et al., 2016). In her doctoral thesis titled "Contextual motivational and deterrent factors of faculty participation in online learning at the University of Botswana", Masalela (2006) looked at the factors influencing faculty members' decisions in participating in online learning at the University of Botswana. By grouping participants into two categories of adopters and non-adopters, the qualitative inquiry showed that peer interaction was important in encouraging the participants to adopt

the innovation. Masalela found that relative advantage, compatibility, complexity and trialability were important in influencing the rate of online teaching and learning adoption at the university.

Approximately a decade ago, Mapi et al. (2008) partly relied on the diffusion of innovation theory to investigate the factors that affect the adoption of ICTs in Dwesa. Education, age and gender appear to have a significant effect on the way members of the community adopted ICTs. The study revealed that teachers adopted ICTs in order to improve their teaching skills, as well as for their own personal benefits; for example, being able to access news, online shopping and internet banking. Young people who had completed their studies or at least had some high school education showed interest in participating in the activities of the SLL. Uneducated community members, however, felt inferior to the teachers and depended on them for help, as they were considered knowledge experts. Women showed greater interest in adopting and becoming skilled in the use of ICTs than men. Mapi et al. (2008) note that although elderly men and women accepted and were interested in ICTs, they could not really adopt the technology. They perceived young people as the ones who should learn and adopt ICTs.

2.4 Conclusions

A number of approaches in technology and innovation inspire the working definition of development used in this thesis. The concept of development is contested and includes various dimensions, e.g. social, economic, cultural, environmental, etc., and refers to (generally) positive social change. Development is subjective and means different things to different people, even in the same social system. Adopters of digital technology as an innovation, can be categorised according to their innovativeness and may display different perceptions, attitudes and experiences in relation to the characteristics of a given innovation. Rogers' seminal work on the diffusion of innovations has been amply criticised, adapted and modified by foregrounding alternative forms of decision-making, the influence of demographic variables and the negative, as well as positive, aspects of innovations. Recent studies across academic disciplines in the Global South, Africa and South African rural areas draw on different aspects of the diffusion of innovation theory in relation to developmental issues. The criticisms, adaptation and modifications have provided valuable insights towards the design of the current study.

CHAPTER 3: METHODOLOGY

In this chapter I provide a discussion of the interpretive paradigm and of qualitative methodology. I outline the research process and the methods that I used in gathering and interpreting the data. I discuss how I identified the research participants and categorised them according to their innovativeness. Finally, I elaborate on the ethical, validity and reliability aspects and their implications in current research

3.1 Research approach

The present study is situated within the interpretive paradigm and is informed by a qualitative methodology. Research paradigms reflect our beliefs about the world around us. Following a correct method does not guarantee true results and as Polkinghorne (1983; 249) notes, "method does not give truths; it corrects guesses". Research should be a constructive turmoil that encourages the search for different and alternative possibilities of making sense of everyday human life (Mishler, 1979). The interpretive paradigm is part of the post-positivist tradition. Post-positivism acknowledges the need for having research design that is interactive, inclusive and contextual because it encourages the participation of researchers and participants alike in the exploration of research issues (Reason and Rowan, 191; Sabia and Wallulis, 1983). While the positivist tradition accepts only one correct answer, the post-positivist appreciates and accepts multiple viewpoints from different individuals or groups. A post-positivist paradigm is compatible with the present study's foregrounding of a variety of perspectives, ideas and understandings of mobile media by different people.

Within the interpretive paradigm, reality is believed not to be objectively determined but socially constructed. Hussey and Hussey (1997) acknowledge that the underlying assumption of the interpretive paradigm is that there is a greater opportunity to understand people's perceptions of their reality when they are in their social contexts. Interpretivism appreciates the uniqueness of each social situation, hence the pursuit of contextual depth. Kaplan and Maxwell (1994) stress that interpretive research focuses mainly on the full complexity of human sense-making as situations evolve, rather than relying on predefined, dependent and independent variables. According to Walsham (1993), in the interpretive tradition, there are no 'correct' or 'incorrect' theories. Instead, knowledge and meaning are acts of interpretation and are not independent of thinking and reasoning humans (Gephart, 1999). The interpretive paradigm consists primarily of the observation and interpretation of a social phenomenon.

Interpretivists use meaning oriented methodologies (instead of measurement), that rely on a subjective relationship between the researcher and the participants.

The focus of the present study is the subjective understanding of the role of mobile media in relation to development. Babbie and Mouton (2001) state that qualitative research aims to study the actions of people from their own viewpoint and in their natural setting. Broadly defined, qualitative research refers to any type of research of which the findings are not arrived at by means of quantification or any type of statistical procedures (Strauss and Corbin, 1990). Winter (2000) claims that while quantitative researchers attempt to distance themselves from the research context, qualitative researchers embrace their involvement in the research process, yielding a deeper understanding of social phenomena. According to Domegan and Fleming (2007: 24), "Qualitative research aims to discover issues about the problem at hand, because very little is known about [it]. There is usually uncertainty about the dimensions and characteristics of the problem". Several quantitative and qualitative studies have been conducted on the diffusion and use of mobile media in Dwesa (Gunzo and Dalvit, 2015; Cristoferi and Dalvit, 2015; Dalvit, 2015; Collopan, 2016; Buthelezi, 2016), but little is known about the perceptions of community members regarding its relationship with local development.

The current research uses the explanatory case study model as a means of exploring and understanding the Dwesa community's perception of development in relation to mobile media. Yin (1994) states that the case study model is used to describe a real-life context in which the phenomenon under investigation is located. Case studies are multi-perspectival analyses and the researcher, apart from considering the voices and perceptions of the participants, looks at the different groups of participants and their interactions (Tellis, 1997). In order to capture the full spectrum of voices within the Dwesa community, I have included respondents from different adopter categories, as identified by Rogers (1983). I have modified and reduced the adopter categories to three, namely; early adopters, majority and late/non-adopters (see Chapter 2). I will use the term late/non-adopters instead of laggards as this term may be perceived as derogatory, disrespectful and insensitive.

3.2 Data collection methods and analysis

I have employed focus groups and semi-structured interviews as the main methods of data collection, complemented by observation. Focus groups are important in generating an in-depth understanding of participants' lived experiences and beliefs. Gill et al. (2008) define

focus groups as a group discussion on a particular topic that is organised specifically for research purposes. This technique involves in-depth group interviews in which participants are selected based on being representative of a particular population, having something to say on the topic, and having similar socio-economic characteristics that make it comfortable to talk to each other and to the researcher (Rabiee, 2004). I used purposive and snowball sampling to identify the focus group participants. Purposive sampling is a non-random technique in which the researcher finds participants with the qualities required for the study (Etikan, 2016). In addition to the participants being well-informed about the phenomenon under discussion, they need to be available and willing to participate in the research. Atkinson and Flint (2001) argue that most studies require some previous 'knowledge of insiders' to identify initial respondents for the research project. In the present study, I approached three participants I knew through mobile training workshops I facilitated. I explained the research in detail and asked them to refer me to potential participants that they knew in their community who fit the criteria provided. This method of referral is known as snowball sampling. According to Spreen (1992), the snowball technique seeks to take advantage of the social networks of the identified participant who provides the researcher with an ever-increasing set of potential contacts for the research. Using this method has enabled me to access participants that I would otherwise not have been able to reach. Participants had to be adults living in Dwesa and no more than two people could belong to the same family. Focus groups had to be diverse and representative of the demographics of Dwesa, as much as possible. In order to categorise the participants into the three respective groups of early adopters, majority and late adopters, the following criteria were used:

1. Early adopters had access to an internet-enabled mobile device for five or more years.
2. Majority adopters had access to an internet-enabled mobile device for six months to four years.
3. Late adopters had access to a feature phone or to an internet-enabled mobile device for less than six months. Non-adopters made a decision not to use mobile phones at all.

Focus groups are suitable for this study because they provide data about a wide range of ideas and feelings that the participants have about the relationship between mobile media and development. The focus group technique allows for differences in perceptions between the individuals and the groups of individuals to emerge. Group interaction between members of the group encourages participants to make connections to various concepts and issues, which

might not occur during individual interviews (Nagle and Williams, 2015). Meanings and responses arising from focus groups are socially constructed rather than individually created. As Rubin and Rubin (1995: 140) explain:

> In focus groups, the goal is to let people spark off one another, suggesting dimensions and nuances of the original problem that any one individual might not have thought of. Sometimes a totally different understanding of a problem emerges from the group discussion.

Non-verbal communication is useful data that can be captured through focus groups and reveals attitudes, perceptions and feelings on a particular topic or issue by the participants. Gill et al. (2008) stress that the interviewer needs to adopt skills like maintaining open and emotionally neutral body language, looking interested, smiling and nodding. The interviewer should be able to use strategic silences to get people to talk more, reflect on their responses and elaborate or clarify particular issues (Gill et al., 2008). The discussion is guided, monitored and recorded by the researcher, who works as a moderator and facilitator. My role was to ensure that the discussions were focused, ensuring that all the participants had an opportunity to contribute to the discussions, and allow different opinions and views to be discussed fairly. I sought to create an environment conducive to interaction and discussion by conducting the focus groups in two sessions. The first session, which I labelled the 'soft session', was mainly aimed at introducing myself as the researcher, the topic and purpose of the research. Participants were given an opportunity to introduce themselves and share amongst each other their reasons for participating in the research, as well as stating their expectations. The second session, which I labelled the 'hard session', was specifically for the generation of research data through the research questions prepared. Throughout these two sessions, I ensured we met in an open and comfortable venue at Mpume Primary School. I limited the soft session on the introduction to 30 minutes and the hard session on actual research to 60 minutes. I provided refreshments for the participants.

Having conducted the focus groups, I identified two participants in each focus group to take part in an individual semi-structured follow-up interview. Semi-structured interviews consist of several predetermined questions that are meant to define key themes to be explored. An interviewee can diverge in order to pursue an idea or a response. This allows the interviewer to seek clarification and follow-up on some of the responses given by the interviewee (Gill et al., 2008). Because of its flexibility, Gill et al. (2008) note that this approach enables the

discovery and exploration of information that participants might consider important but may have been overlooked by the research team. Gill et al. (2008) note that the interview process should include questions which are open-ended, neutral, sensitive, as well as understandable. The purpose of the individual interviews was to seek in-depth information regarding some of the issues and themes that emerged in the focus groups. Some people might not be comfortable to share or expand on their ideas in a group setting. Affording them the opportunity to speak on a one to one basis allowed me to probe the participant's thoughts, values, beliefs, perceptions, views, feelings and perspectives. This provided diverse ways of seeing, understanding and experiencing the participant's views on the concept of development. I selected the two interviewees based on the contributions they made in the focus group discussions. This included participants mentioning some information that needed further elaboration or showing (through verbal and non-verbal cues) that they wanted to explain a point in detail but seemed to be holding back. I did not pursue the structured interview model as it does not provide any scope for follow-up questions that need further elaboration and, therefore, makes it difficult to gather in-depth information (Gill et al., 2008). Similarly, unstructured interviews are very time-consuming and often difficult to manage as there is little to no guidance on what to talk about (Gill et al., 2008). Participants might find unstructured interviews confusing and difficult to respond to.

In addition, I used overt observation as part of the data collection methods. In an overt observation, participants are aware that they are being observed for research purposes (Kawulich, 2012). Schensul et al. (1999) state that observation is used to identify and guide relationships with participants and learn how people in a natural setting interact with each other, organise and prioritise day to day activities, and understand what is important to them. I use the method to triangulate my research data, which is, to verify the findings derived from the focus groups and individual interviews. Marchall and Rossman (1995) highlight that through observations, a researcher can learn about the activities that participants may find difficult to talk about or express in interviews. I asked permission from participants in the focus group to spend an hour with them in their daily routines. I had three volunteers in the early adopters focus group, two in the majority group and three in the late adopters' group. Kawulich (2012) argues that observation does not solely involve watching people in a natural setting, it involves asking questions to ensure that the researcher's interpretations are not biased. I ensured this by asking the participants to confirm my observations before writing my field notes. In stating the limitations of the observation method, Schensul et al. (1999)

explain that for the method to work, a researcher needs to be accepted in the participants' community. This acceptance is largely based on how well you are perceived by the community members. For this reason, I asked for volunteers who were comfortable being observed and willing to welcome me into their daily routines, which included visiting their homes. By ensuring that the process is voluntary, I tried not to make people feel 'forced'.

I used audio recordings and field notes as techniques for data recording. Audio recording provides a complete and detailed record of the oral conversations. Audio recording can reduce reactivity amongst participants as it is not disruptive to the flow of the discussions (Rabiee, 2004). Audio recordings also allow the researcher to replay the data over and over to gain clarity, query and understand a particular conversation. During the interviews and discussions, I ensured that I only documented observations of the research participants and wrote extensive notes (where necessary) only after the focus groups and interviews had been completed. Apart from notetaking being difficult to do during the interviews and discussions, it is highly disruptive and sometimes inappropriate. Rabiee (2004) states that the conduct of notetaking must be congruent with the research setting to ensure that participants do not feel threatened and uncomfortable. Part of the responses from the participants were in isiXhosa, the language most people in Dwesa speak. I made some field notes to record some of the non-verbal observations during the focus group and interview discussions.

I categorised my focus group questions around each of the three research questions. Once data had been recorded and transcribed for each of the three focus groups, I colour coded emerging themes linked to each of my research questions (i.e. green for relative advantage of mobile media; yellow for compatibility of mobile media with previous ideas, values and beliefs, and needs; pink for observable benefits of mobile media). I highlighted emerging themes in the same manner in the follow up individual interviews. I highlighted consistent topics in all the focus groups, such as infrastructure, socio-economic status, employment, communication with distant relatives, and rural to urban migration.

3.3 Validity, reliability and ethics

Interpretive research is often criticised for its over-reliance on the research participant's and the researcher's interpretations. The criticism mainly relates to the subjective nature of the approach, which can create room for bias. The interpretivists aim to gain a deep understanding of phenomena within the complexity of the context. As a consequence, the results cannot be generalised to other people and contexts, making it difficult to verify the

validity and usefulness of the research outcomes (Pham, 2018). Mark (2010) notes that the interpretive perspective unintentionally neglects the issues of power and agency. The shortcomings of the interpretive paradigm can be alleviated by employing a variety of methods, a process known as triangulation. Olsen (2004) states that triangulation is a powerful technique that ensures validation of data by employing cross verification methods from two or more sources. I used focus group discussions, individual interviews and observations as methods of cross verification of the research data. I incorporated the observation of non-verbal cues during the focus groups to document some of the dynamics at play and used this to establish questions for the individual interviews. Instead of looking at one group of participants, I employed a cross-sectional investigation (by looking at the different categories of participants from early adopters to late/non-adopters) to ensure a representative sample of the Dwesa community.

My involvement with the community prior to the research might raise some concerns about the reliability of the data collected. For instance, since I have been involved with the community in ICT training, participants might tell me information that highlights only the positive aspects of their interaction with ICTs. In any research design, dominance is inescapably at stake and power is continuously negotiated between the researcher and the participants (Mark, 2010). In this instance, I recognise power as the ability to have particular forms of knowledge which may guide the research in a specific direction. As an example, during the data collection, one of the teachers in Dwesa who introduced me to some of the community leaders referred to me as her teacher. This demonstrates the problem of having multiple roles and highlights some of the power dynamics that exist in group settings. I made an effort to encourage the participants to address me by my first name and explicitly explained the difference between this research activity and other activities that I performed in the community (facilitating training workshops and maintenance of computer labs).

I consistently interrogated my relatively privileged background to ensure that my own subjective understandings and interpretations do not negatively affect how I interact with members of the Dwesa community. The methodological approach called me to immerse myself in the lived experiences of the participants by conducting this research in their community. This carries an imperative to ensure that the social values that govern the Dwesa community member's interactions are reflected in how academic research is conducted. To achieve this, firstly, I have explained in detail what the research was about (its aims, objectives and methods) to the participants. I designed the consent forms they filled in to

declare their understanding and willingness to participate in the project. I explicitly mentioned to the participants that they had control of the information they provided and could terminate their participation whenever they felt the need. At the beginning of each discussion, I clearly stated that the discussions were being recorded (through audio and written notes) and assured the participants that pseudonyms would be used in order to protect their identity, even when I transcribed the data. Before the focus group discussions and interviews, I reiterated the participants' opportunity to withdraw from the discussion at any time should they feel uncomfortable or the need to do so. The Dwesa community is predominantly isiXhosa speaking. As a non-isiXhosa speaker, I recognise the need to be culturally sensitive and I sought the assistance of an isiXhosa speaker. Sirbu (2015) states that language as an expression of culture is a fundamental tool that conveys the traditions, beliefs, ideas and values of a community. Furu and Salo (2005) further highlight that language is a tool for collaborative meaning-making that enables us to represent, negotiate, understand and interpret the phenomenon in our world. The act of translation itself has its own linguistic problems as some of the isiXhosa words do not have an English equivalent and vice versa. Similarly, poor translation threatens the credibility and dependability of the study. Zaidi et al. (1972) argue that translation in cross-cultural research tends to modify and distort the intended communication if the tools for conveying language are not sufficient. A translator should be able to provide 'conceptual equivalence', that is, to be able to translate both the literal meaning of words as well as their relationship to the context where they are being used (Squires, 2010). To preserve the meaning of the information collected in the focus groups and individual interviews, I sought the assistance of two isiXhosa speakers in interpreting the transcriptions.

3.4 Conclusions

The interpretive paradigm emphasises the social construction of reality and acknowledges multiple viewpoints. A qualitative methodology, such as the one employed in this research, is often applied to the subjective interpretation of social phenomena by people in their natural setting. Focus groups are used in the research as they offer an opportunity to explore socially constructed meanings of mobile media. I collected data through three focus groups (one with early adopters, one with majority adopters and one with late/non-adopters), two follow up interviews from each group, and observations of volunteer members of the community. I analysed the data thematically and grouped the responses and emerging topics based on the research questions. Issues of validity, reliability and ethical concerns (e.g. language, bias,

anonymity, consent etc.) were addressed through triangulation, translation, using pseudonyms and securing informed consent. I strived to ensure that my conduct and interaction with the community of Dwesa adhered to the values of 'ubuntu'.

CHAPTER 4: FINDINGS

In this chapter I present the findings organised according to the three different adopter categories, i.e. early adopters, majority and late/non-adopters. The data was collected in one focus group discussion and two individual follow up semi-structured interviews for each category. In the rest of the chapter, I consistently refer to participants in relation to focus groups and interviewees in relation to individual interviews. Research participants were asked what they consider to be the relative advantage of mobile media over voice calls, SMS and other mediums of communication like radio, televisions and the traditional telephone. The participants were asked how compatible mobile media is with, (a) previously introduced innovative ideas like computers, television and radio; (b) their norms, values and beliefs; and (c) their needs. The participants were further asked about the observability of mobile media and how they communicate the benefits or challenges of using mobile media with other people in the community. The names of the participants in this chapter have been pseudonymised in order to protect their identity.

4.1 Early adopters

The early adopters group comprised of seven participants. Akhona is a 35-year-old female teacher at Mpume Primary School. Busisiwe is a 27-year-old female who had finished an undergraduate degree and was looking for a bursary to pursue a post-graduate qualification. Caroline is a 22-year-old female who completed matric and came from a relatively well-off family and manages one of the family businesses. Dineka is a 20-year-old female who is staying with her grandmother. Esther is a 19-year-old female who completed matric but is unemployed. Fundile is a 40-year-old male teacher at Mpume Primary School. Gerard is a 27-year-old male who was in the process of completing a diploma in agriculture and worked on a part-time basis at the Dwesa nature reserve. Akhona and Caroline were chosen for the individual interviews. Most of the participants in the early adopters group declared that they had at least two mobile headsets with two different providers (MTN and Vodacom). They stated that they use the one phone in areas where the other network is weaker. With the secondary phone mostly a 'tilili' (a headset which can only make voice calls, and receive and send SMS), they use the different providers to take advantage of promotions and specials (e.g. Vodacom's night shift promotion, and MTN to MTN free minutes). This is consistent with the figure of 153% for active SIM cards in South Africa, implying that some people have more than one active sim card (QWERTY, 2018).

When asked to list things that people in Dwesa need, the group unanimously agreed that there was need for a good transport network (both infrastructure and vehicles). The participants stressed that because of the bad conditions of the road, a round trip to the nearest town 60 km away is long, uncomfortable and would take almost the whole day. This takes away precious time that could otherwise be used for other activities. Gerald stated that:

> You see, Willovale (the nearest town) is about 50-60km from here. If the roads were good, this would take us 45minutes. However, because the road is bad and most people do not want to start their transport business here and we end up struggling to find transport. There are few reliable options but there are not flexible. You would need to wake up early and when you get to town, you will have to wait until the transport has enough people.

The participants noted that with a good transport network, the socio-economic status of the area would improve as more businesses and services could be established. During an individual interview, Caroline explained how mobile devices have greatly improved their family business. She stated that by converting her mobile phone into a hotspot, she can use her computer to perform various business transactions which she would otherwise have to travel to the nearest town for, thus saving time and money. She explained that:

> I used to battle every week as I needed to arrange for supplies. I would travel to iDutywa and it costs a lot of money. Now I can manage everything from the comfort of [our] house. No need to travel. It has improved [our] business and thanks to Akhona for teaching me how to share my 3G with my laptop. I have now taught four other people how to do this. The only challenge that we have here is that mobile data is expensive so what I need to do on the internet has to be quick so that I can disconnect my phone otherwise the data just disappears.

The participants mentioned that because of the limited socio-economic activities in Dwesa, there is a high rate of unemployment, which forces most young people to migrate to urban areas. The participants stated that they would like to see more employment opportunities for skilled, semi-skilled and unskilled personnel. Some of the participants in this group argued that because of unemployment, some of the young people resort to drugs and alcohol as there is not much to do. Other participants disputed this point stating that in fact, it is because of unemployment that there are few incidents attributed to drugs and alcohol. They stated that the situation would be worse if the socio-economic conditions were better. Another point that

was mentioned as a response to the issue of drugs and alcohol abuse was that Dwesa offers few entertainment options, especially for young people. The participants agreed that entertainment was an important component of their social life in Dwesa but was often overlooked. Busisiwe emphasised that:

> For us here, there is not really much to do like people in towns can go to clubs and other [social] activities. These gadgets [mobile phones] provide us with entertainment because I can listen to music with my friends. People do not think that music is important, but it is for us here.

Participants in the group agreed that Dwesa needs government support in order to have up-to-date infrastructure, specifically in schools and hospitals. Fundile, who is part of the School Governing Body (SGB) of one of the local schools, confessed that all the schools in the area still use pit latrine toilets. Some of the pit latrine toilets, because of their poor conditions and lack of proper sanitation, have been identified as dangerous. There have been several incidents in the Eastern Cape province of pupils drowning in school toilets (Mail & Guardian, 2018; The Citizen, 2019). He stated that the government needs to intervene by providing adequate funding to improve the sanitation systems in the schools. Other participants highlighted that the schools do not have sufficient teaching and learning materials like books and often the pupils would have to share some of the resources. The participants stated that because of the poor infrastructure in schools, there are not adequate incentives to attract new teachers to the area. Consequently, some teachers end up teaching more than one class and at times the classes a combined. Esther added that some of the local schools and hospitals have poorly maintained buildings, with broken windows and loose or missing doors. She added that the clinic in the area is poorly resourced and people would need to travel to the nearest town to access medication that they could otherwise have accessed locally.

The participants mentioned that a social development officer visits the area frequently and often provides information about job opportunities in and around the Dwesa community. The jobs range from skilled to semi-skilled in public offices, non-governmental organisations, as well as private businesses. Using WhatsApp, he contacts them when there are opportunities, and a number of young people have been employed this way. The participants stated that whenever there is a job opportunity in and around the area, people circulate the message using instant messaging applications like WhatsApp. However, the participants stated the

need for basic skills like writing a curriculum vitae, required for most of the job opportunities which are circulated.

Akhona explained that she uses mobile media in the teaching and learning process. Mobile media, as she states, enables learners to interact in class discussions and tasks, which improves the learner's interest in Geography and Science. She discussed how she used Google Maps in a Geography class by asking students to look up the map of Dwesa using mobile devices connected to the school Wi-Fi. However, the use of mobile devices in classrooms is subject to criticism, with the participants citing that it causes a disparity in knowledge. Learners come from different socio-economic backgrounds and some do not have access to mobile phones at their homes.

Participants in this group agreed that communication is very important for people in Dwesa, especially in maintaining and strengthening family relationships. They viewed mobile phones as reinforcing cultural values. Mobile media enabled people to communicate with neighbours, friends and family. Since most of the active segment of the population migrates to the urban centres for employment opportunities, they keep in touch with their family in Dwesa through mobile phones. Dineka stated that:

> My brother left three years ago to look for a job in East London. He now works as security personnel. Because his job is demanding, he rarely gets enough days off to come visit us. However, we now talk every day on WhatsApp, and sometimes he even calls us. It almost feels like he is just here with these technologies. It is funny you know…because my relationship with my brother is actually better than what it was like when he was around.

In a follow-up interview, Akhona stated that instant messaging applications like WhatsApp have reduced the cost of communication and possessed an advantage over SMS and voice calls, which require a significant portion of airtime. She stated that:

> Basically, with WhatsApp, all I need is data bundles which are way cheaper than buying airtime. With airtime, you can only call and send a text, and it is expensive…but with WhatsApp, I can send voice notes, I can send pictures and videos and if I'm on Wi-Fi, I can even call. But I think voice notes are the best because we have long discussions through this and it does not use a lot of data. I now only use airtime to call if there is anything urgent or in an emergency.

A point that was highlighted in this and other groups was the importance of respecting one another, linked to the concept of 'ubuntu'. Participants cited that mobile media can both reinforce and destroy a sense of ubuntu. The group noted that mobile phones can be used to spread rumours and circulate inappropriate content, which degrades the social and cultural values that people subscribe to. The participants provided a few personal examples of incidents, where relationships were destroyed because of rumours that were being circulated through WhatsApp. However, they noted that mobile devices could positively reinforce social relationships, as people can share useful information like important notices and communication that would otherwise be difficult to circulate through word of mouth.

All participants in this group stated that they have a bank account and they do some form of internet banking using their mobile devices. When I asked them what banking service they usually perform on their devices, most of them said that they buy airtime and electricity vouchers. Caroline stated that she uses the mobile banking service to transfer money to her relatives as well as pay for her local stokvel commitment. The participants agreed that this development had saved them time and money, as it eliminated the need to travel to the nearest bank branch or ATM to perform these transactions.

Akhona said that in school, the teachers use WhatsApp to communicate in real time. Using WhatsApp, they can manage urgent matters that develop through the course of the day at the school like exchanging teaching materials, important communication from district offices, etc. Instead of waiting for break-times and meeting slots, some matters can be addressed and actioned remotely. She, however, that this sometimes causes distractions and to a certain extent, interferes with her class activities.

The participants in this and other groups stated that WhatsApp enabled people to recreate family groups and communicate with their relatives that are far away. Family WhatsApp groups are considered important for communicating information like contributions for a family ceremony and announcing celebratory news like birthdays, graduations, etc. within the family. This sense of community is an important social value which can be compromised by mobile media. Dineka highlighted that most of the community members were not aware of the privacy issues around mobile media. The participants stated that local women who are part of local Stokvel use WhatsApp groups to manage their contributions and facilitate communication and transparency.

Young people, especially those with access to money to buy mobile devices, are considered to have social prestige because of the type of mobile devices they use and the applications they can use on their phones. Many of the young people who participated in the research used tablets instead of cell-phones. They cited that tablets were fashionable because of their bigger screen size, as Esther confessed 'this is the trend nowadays, a bigger screen is better'. Most of the early adopters stated that they use the Bluetooth capability of their devices to share music, videos and pictures, as a way of bypassing the data costs that come with sharing or downloading content via the internet. I noticed that some of the young people had Bluetooth capable speakers that they connect to their mobile devices and listen to music with friends and family. Although the speakers are not an immediate component of mobile devices, they are an essential component of mobile media and can be seen as fashionable or prestigious. Rogers describes this as a technology cluster, as these elements of technology are considered to be closely interrelated. This ultimately makes the perceived benefits of mobile media observable to other people in the community. Dineka, Caroline and Esther acknowledged that they participate in some form of mobile data exchanges (lending and borrowing), where one would borrow airtime and return it topped with an 'admin fee' airtime, usually around R5-R10 depending on the initial amount borrowed.

4.2 Majority adopters

The majority group comprised of five participants. Helen is a 28-year-old female who attended school up to matric and has worked as a fruit and vegetable vendor in Willovale. At the time of data collection, she was attending a fire training course at the Dwesa nature reserve. Innoka is 32 years old, and Jess is 39 years old, and the two are sisters who are staying with their parents. Innoka is currently unemployed, while Jess works as a cashier at the local grocery store and has a daughter who is attending the University in Cape Town through a government bursary. Kathrine is 45 years old and has a local vegetable business and stays with her 17-year-old son and has a daughter who is 24 years old, who is working in East London. Lionel is a 30-year-old male who is employed as a caretaker at the local clinic and lives with his grandparents who rely on government grants as a source of income. Kathrine and Lionel were chosen for individual interviews. Helen and Kathrine stated that they had two mobile headsets, with the secondary phone being a 'tilili'.

I asked the participants in the group to list the things they believe Dwesa needs. The points mentioned were quite similar to the ones mentioned in the early adopters' group. The group

agreed that there was an urgent need to address the poor public infrastructure issues that the community faces. This includes the road network, hospitals and school infrastructure. The participants argued that the municipality is aware of the problems they face but very little is being done in order to address the issues. Lionel cited that road grading and maintenance (civil engineering work to ensure a level surface of the road) is not consistent. He states that the grading is only done when local councillors complain about the conditions of the road to the local transport and public works authorities. Innoka stated that because of the poor infrastructure, it is very difficult for people to establish local businesses because goods and services cost so much more because of the conditions of the road. She pointed out that:

> I have a friend of mine who wanted to start a poultry business here. The business failed because it cost so much to get the feed and other things from Willovale. She ended up having to close down because it did not make any sense. For you to have a successful business here, you would need to have money for your own transport, and the like…that does not help for most of us who want to improve our livelihoods. That is why you find most things are more expensive here than in towns.

The participants believed that poor service delivery, especially in fixing the road conditions, was exacerbated by decisions made by public works officials not living in the community and therefore not experiencing the problems first hand.

I asked the group if mobile devices assisted in solving some of the problems they face. Helen stated that mobile devices are only as effective as other components in the ecosystem and further argued that in case of a medical emergency where there is a need for an ambulance, mobile phones assist in making contact with relevant authorities for the request. However, because of the bad conditions of the road, the ambulance service takes long to reach the patient. She states that:

> My grandmother was unwell, and we called the ambulance, and it only arrived after 9 hours and by that time her condition had worsened. Phones alone cannot solve all our problems. Yes, they help because we can call and the like…but we need good roads.

Jess cited that mobile devices have assisted in improving communication with their family members who migrated to the towns and cities. They cited that mobile phones are now cheaper with each household having at least one smartphone. She stated that:

> I used to get really worried and you know... it was not good for my heart. When your daughter is far away, and you are not there to see for yourself if they are fine, it bothers you. Now I can talk to her on WhatsApp and it has reduced my blood pressure…

In an individual interview, Kathrine explained that mobile media enabled her to communicate frequently with her daughter in East London, a city about 250km from the area. She stated that because of poor road conditions which make the trip long and expensive, she would communicate with her daughter through letters and sometimes using the telephone when she had managed to visit the nearby town. However, some of the participants in the group stated that mobile devices bring about some negative developments which have degraded their social and cultural values, such as people sharing and spreading inappropriate media. Kathrine narrated an incident where she discovered that her son was sharing images of a sexual nature with his friends. She argued that:

> These phones cause a lot of problems for us now. People can share your pictures, and the whole world will know even if those pictures were not meant to be shared. You will see some young people sharing nudes and viewing inappropriate images and videos, and it is all in these phones.

Kathrine highlighted the need for awareness programs to teach people the importance of protecting private information and provide tips on how to safely navigate the internet. She urged that the awareness programmes needed to be initiated in schools even to lower grade pupils.

Some of the participants highlighted the positive developments that mobile devices have brought about in the community. They stated that instant messaging applications like WhatsApp enabled people to share useful information with the community members with ease. The participants argued that mobile applications like WhatsApp enabled people to create groups, which support and align with physical groups that do exist in the community. This enables people to communicate remotely eliminating the need to meet and discuss issues relevant to the group physically. They cited that public meetings are often poorly attended because people are usually not aware or are informed at short notice, and a significant portion of the population is old and has difficulty in walking to meetings. They talked about a WhatsApp group created by parents of pupils at a local school. The parents use WhatsApp to communicate instantly with the school governing structures about important issues relating to

the school and parents. Before, the school administration would send some of the communication through the pupils, who often forgot or delivered incorrect information. They also stated that a significant segment of the parents are illiterate and find it difficult to read. Through WhatsApp voice notes, the teachers can overcome this challenge in communication with the parents. Lionel testified that he found out about a job opportunity through a community WhatsApp group.

Mobile phones enable people to create and share media like pictures and videos. The group highlighted that this capability of mobile devices has made it easier and cheaper for people to document important functions in the community like weddings, religious and other cultural ceremonies. In an individual interview, Lionel stated that:

> Pictures and videos are very important for functions because you can show those that could not come and you can even revisit them later to bring back memories. Hiring [photographers and videographers] is very expensive for us, and I think at times they take advantage that we are far away and we do not know much. All I need now is a person with a phone with a good camera, and we can share [pictures and videos] right away and cost us nothing.

People can then share the media with family, friends and neighbours through instant messaging applications and via Bluetooth. This has bypassed the traditional methods of having the pictures and videos in print and on DVDs, respectively, which is expensive and the materials can be easily damaged or lost.

Jess, Kathrine and Lionel had access to a bank account, and only Lionel stated that he used his mobile phone to perform bank transactions through the bank application. The other two participants stated that they use USSD to perform bank transactions, as it does not need airtime or data to work. They stated that the mobile banking application was useless, especially for people in Dwesa who still use feature phones.

4.3 Late/non-adopters

The late/non-adopters group included five participants, who were generally older than those in the other groups. Mandisa is a 36-year-old female school teacher at a primary school in the area. Nandipha is a 50-year-old female who is unemployed and lives with two of her sons. Olivia is a 63-year-old female who is now retired and relies on government social grants as a source of income. Petso is a 24-year-old male who is a university graduate and currently

managing his poultry business in Dwesa and lives with his parents who are now on a pension. Raymond is a 46-year-old male who works at the Dwesa nature reserve as a tour guide. Petso and Olivia were chosen for the individual interviews. Surprisingly, Petso was the odd one out by being relatively young, educated and generally better off than most people in Dwesa. This challenged an assumption that all late/non-adopters would be less educated, old and poor. Three of the participants had feature phones ('tilili') and only one participant (Mandisa) had a smartphone which she had started using a month before the research interviews and discussion. Olivia had recently purchased a feature phone, though she used to have one about three years before the time of the research.

The points about what are considered important and the needs of the people in Dwesa were similar to those noted in previous groups (infrastructure and public service). The participants and interviewees confessed that the conditions of the road had been deteriorating with some community members having to fix some sections of the road themselves. They stated that the schools and hospitals are poorly maintained and are not equipped with basic and essential resources that they need to function effectively. They stated that the local clinic sometimes does not have essential medicine. Although the participants cited the poor road conditions as part of the problem, they also blamed public officials for poor service delivery. They further highlighted that maladministration has made the rural community less attractive to critical public service personnel like teachers and nurses. They stated that corruption and misuse of public funds have contributed to the deterioration of some of the public infrastructure. Raymond further explained that the community needed a lot of governmental, non-governmental and private youth development initiatives. The initiatives would then assist in equipping young people with the skills they need to establish local businesses and be involved in advancing the socio-economic status of the community. During the focus groups, Petso stated that after graduating from University, he came back to Dwesa to start a poultry business. Although his business is up and running, he had not received any support from the local governing structures with training or finance, even though he has sought their support on several occasions. He believes that most young people leave Dwesa even though they desire to stay because there are not a lot of opportunities for young people to get involved in community development initiatives.

Olivia testified that ICT training initiatives are important in advancing literacy and equipping people with the everyday skills required to use mobile technologies. Although she was not involved with the training workshops offered through the Siyakhula Living Lab and other

initiatives by Rhodes University and the University of Fort Hare because of health complications, she encouraged members of her household to attend. She further stated that:

> I'm old now, but I think [ICT training workshops] are important in improving the use of [mobile phones]. When you go to town, you just buy [mobile phones] without understanding how they work, so the workshops helped a lot here. Even though I did not attend, but my grandchildren have shown me how to use them and if I do not know anything, I ask them. We need more of them [training workshops].

I asked the participants what they consider to be important for the people of Dwesa and some of the participants stated that cultural practises and values are important for them and they wanted them to be respected and preserved for future generations. They stated that the demographics of the community consisted mainly of an older generation and they expressed their concern regarding the continuity of some of the cultural practices, as the younger generation continues to migrate to the towns and cities. They stated that the young people who are still in the community generally do not have an interest in some of the cultural ceremonies. Raymond stated that "We have lost most of our young people to these towns and cities and we are concerned that in 20 to 30 years, some of our cultural practices will have died with us." Raymond emphasised that the environment, and specifically the ocean, is important for the people of Dwesa. Other participants supported this point, stating that the ocean encourages tourism which helps the economy of the community to a certain extent. Raymond further stated that through working at the reserve, he had been exposed to knowledge about the environment and the ocean that he hopes to share with the community through environmental workshops. He states that:

> You see, our ancestors always had an interesting relationship with water. Water is life as they say. I think it is important to protect our waters, our rivers and our oceans. If you ask around, very few people know anything about [the ocean]. Why is that? I think people need to be educated so that even our grandchildren can also say our ancestors protected the waters…I will talk with the reserve and the elders here so we can have some classes and lesson about water and the trees…You see, tourist come from around South Africa to watch birds…I think that should say something.

The participants stressed that they like the peaceful and communal environment in Dwesa that is unique compared to other parts of the country. They considered this to be one reason why some of the people opt to stay in Dwesa. The participants testified that there are very

few cases of crime because people generally respect each other. They consider this to be important for the people of Dwesa and some even argued that this is a reason why the Dwesa nature reserve is largely successful, as tourists enjoy the 'peace and quiet' of the area.

Although most people only had a feature phone, only Olivia cited initial purchase cost as the reason for not having an internet-enabled mobile device. Most of the participants in this group stated that even though they could afford to buy a smartphone, the cost of using the devices was beyond their monthly budgets. Nandipha elaborated that:

> These phones are a trap. Today you buy R20 airtime and tomorrow it is finished. Next day you buy more airtime, and by the time it is month end, people have spent their food budget on these phones…things were simpler and cheaper back then…yes, it was difficult, but now we are just wasting.

Some in the group stated that mobile phones have negatively impacted on the cultural values of respect. They explained that mobile devices do not encourage interpersonal communication, especially amongst family members, as well as the community. Mandisa stated that:

> More and more people are busy on their phones either chatting with other people on instant messaging applications, listening to music and sometimes doing nothing so that they avoid talking to people.

Olivia added that:

> Young people have destroyed our cultural values with [mobile devices]. I cannot even send my grandchild to buy things from the grocery store because they will not come back. Even if they are still in the house, they have [earphones] plugged in and I have to shout at the top of my voice for her to hear me. This is not good for us. Young people need to respect their elders. If they did that, I would not have a problem with them using [mobile devices].

Petso explained that he is reluctant to adopt mobile media as he has observed some of its negative effects on some of his peers. He states that the sense of 'ubuntu' and interpersonal relationships are destroyed as more and more people are on their mobile devices instead of cultivating face to face interactions. He further explained that:

You see if you go anywhere…even here...people do not talk to each other. People are busy with their phones all the time. I do not want to be like that. I will rather have my 'tilili' and still be able to talk to others. That is Ubuntu for me…. not being a zombie.

As in other focus groups, the participants cited examples of people using mobile devices to spread rumours, gossip and sensitive information. They added that such behaviour erodes their social and cultural values of respect and dignity. The participants stated that mobile communication often bypasses the traditional protocols that exist in other forms of communication. An example that was cited of mobile media contrasting with values and beliefs relates to a message of the death of a community member in another city. The message of the passing was circulated on social media before the word had reached the family. As a way of showing respect to the bereaved family, it is an important cultural practice to wait for the family to be informed before spreading the news.

4.4 Conclusions

Participants identified several areas where mobile media has a role to play in relation to development. These include addressing challenges such as poor infrastructure, limited access to information and services, community and family disintegration due to distance, etc. Mobiles brought about positive change in the way local people work and entertain themselves, but are also perceived to pose a threat to traditional values and personal finances. While most participants converged around a number of themes and appeared to share similar positions, the research highlighted differences between various adopter categories, particularly in relation to the age of respondents. Young participants generally viewed mobile phones as reinforcers of traditional and cultural values, while the older participants viewed mobile phones as a threat to a certain extent. The inclusion of late/non-adopters added a critical perspective to the study.

CHAPTER 5: CONCLUSIONS

In this chapter I outline the key findings in relation to my research questions. I reflect on the findings in terms of relative advantage, compatibility and observability of mobile media, as well as the emerging findings. I provide a reflection on the research process by highlighting some of the methodological challenges that I encountered and discuss how I addressed them. I conclude by providing some recommendations for future research.

5.1 Key findings

5.1.1 Relative advantage

Findings in the present study confirm the advantages of mobile media in addressing the issue of distance and in relation to older mobile technology. Mobile media enables people to communicate with their relatives who live in different cities and towns, thus reinforcing and improving family ties (see Kavhai, 2015; Cristoferi and Dalvit, 2015; Dalvit, 2015). Some of the participants highlighted the use of mobile media in making important transactions as an advantage, as already noted by Cristoferi and Dalvit (2015; see also Buthelezi and Dalvit, in press). Mobiles provide a cheaper and faster way of accessing services compared to travelling to town, for example by being able to place orders for goods delivery. While the convenience of messaging applications like WhatsApp in terms of monetary costs was already noted in the literature (see Dalvit, 2015; Buthelezi and Dalvit, in press), participants noted non-monetary advantages, such as saving time and reducing effort. Teachers noted how they would communicate instantly with parents through WhatsApp, instead of holding physical meetings to announce developments at the school. Similarly, important and time-sensitive information can be circulated with ease amongst community members, eliminating the need to send messengers (for example to announce funerals and ceremonies). Furthermore, young participants in the early adopter and majority categories noted that smartphones and tablets bring social prestige, while older phones are derogatorily called 'tililis'. This finding is consistent with Rogers' (1983) observation that status as a motivation for adoption is more important for innovators, early adopters and early majority than for the late majority and laggards (late adopters).

5.1.2 Compatibility

Exploring the compatibility of mobile media with previous values, ideas and needs yielded novel and interesting results. Mobile media appeared to interfere with the cultural values of

respect and dignity. Participants blamed it for being used to circulate inappropriate content, gossip and rumours. Citing incompatibility with values and beliefs, some of the participants in the late/non-adopter category expressed their reluctance in adopting mobile media. However, participants in the early adopters and majority argued that mobile phones are compatible with the socio-cultural values of 'ubuntu' and togetherness as people use mobile devices to communicate with loved ones, thereby strengthening family ties. Mobile media is capable of reproducing and supporting traditional communication networks, making it compatible with existing group arrangements. Instant messaging, like WhatsApp, enables people to recreate groups that already exist in the community, like Stokvel groups, community leaders' group, and local school parents' group. Participants testified that this has cemented interpersonal communication. Young people often cited the use of mobile phones for entertainment (music, videos, pictures) as an important aspect of their social lives. Mobile phone features like Bluetooth, Wi-Fi and radio frequency capabilities are compatible with the social aspects of sharing (in this case, information). Mobile media is perceived as an important component of the general development of the Dwesa community. However, its effectiveness depends on aspects such as functioning infrastructure, committed personnel, good governance, etc. Employment and empowerment opportunities are part of the needs of the people of Dwesa. While mobile media is perceived to be beneficial, especially in circulating information about employment opportunities, its critical role in improving people's livelihoods remains in doubt among the participants.

5.1.3 Observability

Mobile media was perceived to have both observable benefits and drawbacks. A few of the participants stated that they started using mobile phones after they had seen their friends and family members with devices. Access to information about employment and empowerment opportunities was noted as an observable benefit of using mobile devices. The use of mobile media by some of the teachers in the classroom seems to be an observable incentive. Teachers were able to deliver illustrated and interactive lessons to their pupils, which they testified sparked curiosity and interest in the subject matter. Some participants noted overspending on mobile phones and mobile media as an observable negative consequence.

5.1.4 Other findings

Participants appear to consider human capital, through cooperation and collaboration of local communities, private and public bodies, as critical in ensuring sustainable development. They

acknowledged digital marginalisation as an issue in comparisons with other communities in South Africa, as well as within the Dwesa area itself. Unequal access to resources appears to transcend age, gender, literacy and socio-economic status. For example, teachers are seen as knowledgeable on many issues, including technology, and community members consult them on what phone to buy and how to use some of the applications. I noted that the participants considered the environment in Dwesa as an important component of their wellbeing; for example, the proximity to the ocean, the quietness of the area and consequently, the tourism opportunities.

5.2 Reflections on the process

As reflected by the size of the category sections in Chapter 4, early adopters spoke more openly and in detail in the focus groups and individual interviews. Late/non-adopters were more reserved, hence the discussions were shorter. The late/non-adopter group included a teacher, a local business owner and a Dwesa reserve officer, adding complexity to the relationship between innovativeness and socio-economic status noted by Rogers. An additional focus group, which included participants from all three adopter categories may have yielded even more interesting discussions.

In terms of language, I had to change my choice of a translator from a fellow student to a community member of Dwesa who could speak and understand the local variety of isiXhosa. This was important to build rapport with the participants and to capture linguistic nuances and contextualised meanings. Although it was not made explicit, there seemed to be some discomfort among the participants about the fact that I could not explain directly in isiXhosa some of the issues myself. Despite some language issues, I am reasonably confident my involvement in teaching and training activities built sufficient rapport to enable me to gather reliable knowledge from the participants. This is especially highlighted by the words of one of the community leaders who participated in the research. They stated:

> We would like to let you that you are always welcome here. Every time that you are here, we know that it is for a good cause. The teachers have informed us of the good work you are doing there…You see, people from the towns do not want to come here because it is far from everything, but you are here frequently and embrace our ways just like us. We appreciate that.

The statement reveals that the community welcomed and accepted me as a visitor. On the one hand, this gave me access to people and information. On the other hand, it signified that I am

not a member of the community. There is a possibility that participants filtered the information they provided me accordingly. At the same time, it helped to overcome some hurdles.

A few of the participants were slightly nervous to speak in the presence of an audio recorder, although I had reassured them about the confidentiality of their personal information. The fact that they had to fill in a consent form with their name, surname and signature might have contributed to this fear. Eventually, some of their peers in the focus groups managed to convince and assure them that their information was confidential and would be kept as safe as I declared.

5.3 Recommendations and future research

The present study suggests a complicated relationship between mobile media and socio-cultural values in Dwesa, namely respect, human dignity and privacy. Future research could further interrogate the compatibility of mobile media to socio-cultural values and needs to highlight the diversity of perceptions within the community. Dwesa is not a homogenous society (Kleine, 2010; Mapi et al., 2008). A large scale study which specifically focuses on perceptions of mobile media within different age groups would yield interesting results. For a community like Dwesa, such a study can focus on differences in a sample of about 500 households.

Late/non-adopters had interesting and strong convictions regarding mobile media and its compatibility with the needs and socio-cultural values of the community. Many late/non-adopters could afford to buy mobile phones but not necessarily to actively maintain them. An in-depth study focusing on additional reasons not to use mobile phones would represent an original contribution to the field. Participants also noted that mobile media are part of an infrastructural and public service development ecosystem. Future research could focus on investigating the relationship between mobile media and infrastructure development and public service delivery. Such research could provide crucial insights for the local authorities and the community alike in addressing rural development. Local government authorities, community leaders and ordinary members of the Dwesa community should be included.

Some of the research participants expressed the need for more digital skills and mobile training workshops. Some participants referred to the instant messaging application, WhatsApp and used the term loosely to make reference generally to mobile communication capabilities. When asked about other applications they have on their phones that they use, a

significant number of the participants could only point to Facebook. This suggests that even though people have access to mobile devices and the internet, and have sufficient skills to use them, the comprehensive beneficial outcomes of using a wide range of services are yet to be realised (Wei et al., 2011; Stern et al., 2009; Van Deursen et al., 2016). Action research can be conducted to foster the critical digital skills connected to empowering uses of mobile media.

APPENDIX

MODERATOR'S GUIDE FOR FOCUS GROUP DISCUSSIONS

Welcome everyone

Brief all participants on the purpose of the research. Inform them of their rights and ensure they all sign two duplicates of the consent form (one copy for them and one copy for the researcher) should they wish to participate in the study.

QUESTIONS

1. Do you have a mobile phone?
2. What is the type of mobile phone you use?
3. Do you use the internet with your phone? If so, what do you use the internet for?
4. Do mobile phones have an advantage for the people in Dwesa? If so, in what ways?

[Take a break]

5. Tell me things that people in Dwesa need?
6. What is important for people in Dwesa?
7. What are the (existing) solutions to the needs of people in Dwesa?
8. What are the values and beliefs that are important to people in Dwesa?
9. How is the phone related to these values, needs and beliefs?

[Take a break]

10. What are the important communication tools people in Dwesa use other than mobile phones?
11. How are mobile phones better or worse than other communication tools you identified?
12. What do you consider to be the positive and negative effects of mobile media?

[Take a break]

13. What have you noticed from other people regarding mobile phones? (positives and negatives)
14. What have you observed through your experiences and interactions about mobile media use in Dwesa?
15. What do you consider as development for people in Dwesa?
16. Is there a relationship between development and mobile phones? Is so, in what ways and if not, why is that so?

\end

Thank the participants

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