

**Enhancing livelihoods in Mhlakulo village in Eastern Cape through digital
technology**

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ABSTRACT

In the rural expanse of the Eastern Cape, where prevailing socio-economic challenges include poverty, inadequate infrastructure, and unemployment, this study delves into the impact of digital technology access on livelihoods. Focused on the village of Mhlakulo, the research identifies a significant problem: the unequal opportunities for rural residents in business, visibility, and commerce due to limited digital access.

The conceptual framework centres on the transformative potential of a proposed digital platform designed to offer crucial information on employment, SMME opportunities, and local services. This platform aims to foster connections among stakeholders, addressing disparities and instigating transformative changes in rural communities.

The methodological approach involved a meticulous process of data collection through interviews and surveys tailored to the specific population and sample in Mhlakulo. Insights gathered through this approach comprehensively examined the impact of digital technology on livelihoods in the village.

Key findings highlighted the pronounced influence of digital access on economic activities, showcasing the potential for improved employment opportunities, enhanced SMME engagement, and more efficient local service provision. The community's reliance on personal devices for digital access underscores the importance of reliable internet connectivity. Participants recognised the potential of digital access in supplementing traditional methods, indicating a potential coexistence rather than absolute replacement of traditional practices.

Diverse levels of knowledge and skills in utilising digital technologies for businesses emerged as a key finding, reflecting the need for tailored support and training programs. Some participants actively integrate digital tools for daily planning and farm management, showcasing a proactive approach to leveraging technology. However, challenges related to data costs and unreliable internet

suggested the necessity for infrastructure development and affordable data initiatives to enhance the effectiveness of digital technologies.

In conclusion, the study advocates for the strategic integration of digital solutions to catalyse comprehensive development in rural areas. The key message emphasizes the importance of addressing challenges and fostering a supportive ecosystem for sustained digital adoption. The research concludes by highlighting the transformative potential of digital platforms in bridging socio-economic gaps in rural communities.

PLAGIARISM DECLARATION

I, **Yollanda Majokweni**, declare that this research report entitled “**Access to digital technology to improve livelihoods in Mhlakulo village, Eastern Cape**” is my own unaided work. I have given credit to, acknowledged, and cited all ideas that were taken from other sources. I'm submitting it here in part to fulfil the criteria for the University of the Witwatersrand's Master of Business Administration degree in Johannesburg. I have never submitted this report to another university for a degree or test.

Y Majokweni

Yollanda Majokweni

Signed at Johannesburg on the 29th May 2024

DEDICATION

This degree is dedicated to my mother, Zolelwa Songca. She believes in education, and her determination to provide all her children with the gift of education led her to make sacrifices despite unfavourable circumstances at the time. Mama, you are always willing to support my goals and have more faith in me than I had. I'm so grateful to have you!

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KEYWORDS

Digital technology; Market opportunities; Rural entrepreneurship; Digital inequality; Mhlakulo village

LIST OF ACRONYMS

ICT- Information and Communication Technologies

NDP- National Development Plan

SDGs- Sustainable Development Goals

DTP-Digital Technology Platform

CHAPTER 1: INTRODUCTION

1.1 Introduction

The development of digital design and technology has provided entrepreneurs with a larger market share both locally and abroad. To achieve this, digital technology has significantly increased economic potential (Ayandibu & Houghton, 2017). Additionally, urban businesses are empowered by digital technology, making it easy to conduct business online. In both industrialised and developing nations, digital technology has contributed to greater rural wealth (Bocconcelli et al., 2017).

There are challenges to consider in the 'digitalisation' of agriculture and the food value chain. The transformation must be done carefully to avoid an increase in the 'digital divide' between economies and sectors and between those with differing abilities to adopt new technologies (Rolandi et al., 2021). In emerging economies and rural areas, weak technological infrastructure, high costs of technology, low levels of e-literacy and digital skills, a weak regulatory framework, and limited access to services mean these areas risk being left behind in the digitisation process. Yet, developing economies may also have the advantage of being able to 'leapfrog' older agrifood technologies and models in favour of a digital agriculture revolution. This new scenario will require radical rethinking by policymakers, international organisations, business leaders, and individuals: 'business as usual is not the solution (Ben et al., 2017).

However, despite these successes, digital technology needs to go much further in developing countries, such as South African rural Mhlakulo village in Tsolo (Aruleba & Jere, 2022). Despite producing top-notch products and services, entrepreneurs in rural Tsolo face limited access to markets. Access to local and regional trading markets is further aggravated by inadequate technological infrastructure and a lack of financial resources. This leads to many rural businesses shutting down or relocating to better locations like Mthatha and East London. This highlights the critical importance of exploring the function of digital design and technology in extending business outreach in rural Mhlakulo village in Tsolo (Moyo, 2020).

Moreover, as of 2023, the rapid evolution of digital technologies continues to reshape global business landscapes, emphasizing the need for rural areas like Mhlakulo to harness the full potential of these advancements (Gómez-Carmona et al., 2023). The latest developments in digital agriculture, e-literacy programs, and regulatory frameworks need careful consideration to address the unique challenges faced by rural entrepreneurs. Additionally, the ongoing digital revolution prompts policymakers, organisations, and business leaders to revisit strategies and ensure inclusive and equitable digital access for sustainable rural development (Osmani, 2023).

1.2 Background of the study

In the context of the UNDP's Sustainable Development Goals (SDGs) business prospects, the technology and telecommunications sectors are identified as cross-cutting industries, playing crucial roles in addressing a variety of economic challenges (Aruleba & Jere, 2022). Aruleba and Jere (2022), emphasise the digital divide as a current economic and sociological issue receiving significant attention. The term "digital divide" denotes global disparities in Internet and other Information and Communication Technologies (ICT) access, impacting households, individuals, and businesses engaged in globalisation (Aruleba & Jere, 2022).

Recent challenges, such as slow economic growth, rising unemployment, inequalities, and poverty in the Eastern Cape province and South Africa, underscore the need for promoting economic inclusion through sustainable growth and the creation of decent jobs (Anyikwa, 2021; Kavesé & Mbali, 2021). Over the past decade, the Eastern Cape has grappled with economic challenges, experiencing a declining growth rate from 2.4% in 2010 to 0.3% in 2019, with an average annual increase of 1.4%. Concurrently, the unemployment rate surged from 24.2% to 39.7% in the second quarter of 2023. Notably, employment in the agriculture sector increased significantly by 34.4%. The youth unemployment rate (15 - 34 years) rose from 51.4% in 2023Q3 to 52.4% in 2023Q2. Moreover, among those not economically active, 56.5% have not completed secondary education. The female unemployment rate (40.5%) exceeded that of males,

recorded at 39.0% in 2023Q2, highlighting ongoing challenges in the Eastern Cape labour market (Statistics South Africa, 2023).

Rural communities face limited opportunities to initiate businesses and showcase their skills, unlike urban areas with access to digital technology. The National Development Plan (NDP) emphasises the need to bridge these gaps (South African National Government, 2024), aiming to uplift village communities. Empirical evidence indicates that ICT offers substantial potential for rural development in various industries (Rumata & Sakinah, 2020). Moreover, it facilitates the enhancement of community economics, online communities, and digital literacy. With the advent of COVID-19, remedial tasks are increasingly performed using Information and Communications Technologies (ICTs), making it imperative for human functioning in contemporary society.

In 2018, Aruleba and Jere (2022) reported that only about 1.7% of rural households in the country had internet connectivity, compared to at least 17.3% of households in urban areas and cities with internet access at home. In these remote regions, the majority of ICT infrastructure users are novices, primarily utilising phones for voice calls, SMS, and social media. According to the authors, rural areas face three key categories of obstacles: socio-economic, technological, and political.

Since the advent of democracy, South Africans have confronted various socio-economic challenges, grappling with issues such as a shortage of quality education, social isolation, and economic inequality (Choung & Manamela, 2018). In the realm of education, the impact of digital inequality is particularly pronounced, significantly affecting the overall quality of education. South Africa faces a notable deficiency in access to ICTs, particularly in distant rural areas (Choung & Manamela, 2018; Ntolwana, 2013).

ICTs have transformed shopping, banking, communication, and learning, becoming integral to our economic, political, and social life (Mphahlele et al., 2021). Existing inequalities that are heightened in rural areas, hinder rural communities from keeping pace with these advancements, further limiting their economic, political, and social participation (Langmia, 2006). Low internet

penetration poses a complex, multifaceted problem that impedes social, economic, and political progress (Oyedemi, 2012). Economic factors, weak policy frameworks, infrastructure problems, and various social ills exacerbate this issue and these societal inequalities remain a significant challenge in South Africa (Oyedemi, 2012).

In South Africa, the telecommunications sector is designed to provide essential services that promote economic expansion, productivity, and competitiveness. Nevertheless, persistent challenges, such as ineffective economic regulation, outdated and poorly maintained infrastructure, a shortage of high-quality services, and mismanagement of state-owned enterprises, continue to plague the network sectors (Manana, 2019). Despite having robust inclusive development policies, (Munyoka (2022) argues that South Africa, akin to many emerging nations, grapples with the poor alignment of these policies. The implementation, monitoring, and evaluation of these policies present ongoing hurdles, jeopardising their effective diffusion and adoption. High levels of the digital divide, shortages in ICT skills, poverty, and the exorbitant cost of internet bandwidth pose substantial challenges to South African programs (Munyoka, 2022).

Dlodlo (2009), emphasised that these ICTs are crucial for any country's socioeconomic progress. The deprivation of women and their families from access to these technologies not only diminishes income but also lowers the nation's skill level, productivity, and competitiveness in the global market (Dlodlo, 2009). "Knowledge poverty" stands out as a contributing factor to poor rural income, stemming from restricted access to knowledge and information that could otherwise enhance earning potential (Dlodlo, 2009). In response to this, digital platforms tailored to meet the needs of farmers in rural villages have been developed, ultimately contributing to the enhancement of rural incomes (Bhaskara & Bawa, 2021).

1.3 Purpose Statement

This qualitative study investigated the accessibility of digital technology platforms in uplifting the rural Mhlakulo community in South Africa's Eastern Cape. The focus was on gathering information related to businesses, employment

opportunities, and marketing available within the village, with the assumption that such data could be accessed through technology platforms.

As noted by Bhaskara and Bawa (2021), digital technologies present unprecedented opportunities for enhancing agricultural ecosystem sustainability, fostering innovation, and supporting livelihoods. These digital channels also serve as valuable sources of information on the local economy, health, and education. The data obtained from these platforms has the potential to facilitate the creation of local databases covering human development, mobility, and can empower the village community to establish social capital that, in turn, supports sustainable agriculture (Bhaskara and Bawa, 2021).

1.4 Research questions

The research embarked on a comprehensive exploration of the impact of digital technology in the Mhlakulo village of Tsolo, South Africa. This investigation was driven by two overarching research questions, each with its set of intricately designed sub-questions.

RQ1: How do rural businesses in Mhlakulo village in Tsolo perceive and use digital technology?

RSQ 1.1. Why do rural businesses perceive digital technology as valuable for their business operations?

RSQ 1.2. How do various factors influence rural businesses' decisions to adopt digital technologies for gaining a competitive advantage?

RQ2. How do entrepreneurs in Mhlakulo village use digital technology to enhance their entrepreneurial activities?

RSQ 2.1. How can entrepreneurs in Mhlakulo rural village improve their use of digital technologies?

RSQ 2.2. Why and how do available digital technologies in the rural village facilitate the identification of new business opportunities?

Overarching Research Questions:

RQ1: How do rural businesses in Mhlakulo village in Tsolo perceive and use digital technology?

RQ2: How do entrepreneurs in Mhlakulo village use digital technology to enhance their entrepreneurial activities?

Research Sub-Questions:

RQ1: How do rural businesses in Mhlakulo village in Tsolo perceive and use digital technology?

RSQ 1.1: Why do rural businesses perceive digital technology as valuable for their business operations?

This sub-question explores how rural businesses perceive the importance and benefits of digital technology, providing insight into their current attitudes and potential motivations for use.

RSQ 1.2: How do various factors influence rural businesses' decisions to adopt digital technologies for gaining a competitive advantage?

This sub-question identifies the various elements that influence the adoption of digital technologies, including barriers and drivers, which directly impact the extent and manner in which digital technology is used within businesses.

RQ2: How do entrepreneurs in Mhlakulo village use digital technology to enhance their entrepreneurial activities?

RSQ 2.1: How can entrepreneurs in Mhlakulo rural village improve their use of digital technologies?

This sub-question focuses on strategies and methods that entrepreneurs can employ to enhance their use of digital technologies, addressing practical steps for improvement and increasing efficiency.

RSQ 2.2: Why and how do available digital technologies in the rural village facilitate the identification of new business opportunities?

This sub-question examines the effectiveness of existing digital tools in helping entrepreneurs discover and capitalize on new business opportunities, assessing the practical outcomes of using these technologies.

Logical Flow and Alignment:

RQ1 investigates the current state of digital technology use within rural businesses:

RSQ 1.1 first looks at perceptions, setting the stage by understanding the attitudes and value placed on digital technologies by rural businesses.

RSQ 1.2 then delves into the factors affecting adoption, building on the understanding of perceptions to identify what drives or hinders the use of digital technologies.

RQ2 evaluates the efficiency of entrepreneurial activities facilitated by digital technology:

RSQ 2.1 provides actionable insights on how entrepreneurs can improve their use of digital technologies, ensuring that any identified strategies are grounded in the current context.

RSQ 2.2 assesses the effectiveness of digital technologies in identifying new opportunities, measuring the impact and practical benefits derived from digital adoption.

Table 1 provides a concise snapshot of the research framework, encapsulating the research problem, questions, sub-questions, methods, and objectives. It serves as a quick reference, offering a clear overview of the study's key

components, guiding the exploration of digital technology's impact in Mhlakulo, Tsolo.

Table 1: Research problem, research questions (RQs), research sub-questions (RSQs), methodology and objectives.

Research problem	Mhlakulo village in Eastern Cape is experiencing significant challenges in accessing and utilizing digital technology platforms to obtain information about business market opportunities. This deficit hampers the ability of local businesses to expand their market reach and enhance their livelihoods through digital means.	
RQ1	How do rural businesses in Mhlakulo village in Tsolo perceive and use digital technology?	
Research sub-questions	Research method(s)	Objectives
RSQ 1.1: Why do rural businesses perceive digital technology as valuable for their business operations?	Interviews by means of semi-structured questionnaires.	To determine the use of digital technology within rural businesses in Mhlakulo village in Tsolo.
RSQ 1.2: How do various factors influence rural businesses' decisions to adopt digital technologies for gaining a competitive advantage?	Interviews by means of semi-structured questionnaires.	Examine business opportunities that can be identified through the use of digital technology.
RQ2	How do entrepreneurs in Mhlakulo village use digital technology to enhance their entrepreneurial activities?	
Research sub-questions	Research method(s)	Objectives
RSQ 2.1: How can entrepreneurs in Mhlakulo rural village improve their use of digital technologies?	Interviews by means of semi-structured questionnaires	To assess the efficiency of entrepreneurial activities through digital technology in the area.
RSQ 2.2: Why and how do available digital technologies in the rural village facilitate the identification of new business opportunities?	Interviews by means of semi-structured questionnaires.	To evaluate the effectiveness of available digital technologies in the rural village in identifying new business opportunities.

*RSQ = Research sub-question

1.5 Research Aim

The primary objective of this study was to evaluate the utilisation of digital technology in fostering rural entrepreneurship within the Mhlakulo village in Tsolo. Additionally, the study aimed to propose effective strategies for the development and promotion of rural entrepreneurship through the integration of digital technology.

1.6 Assumptions of the study

This study is guided by the following assumptions:

1. **Physical Access vs. Effective Use:** The mere provision of physical access to digital technology does not automatically ensure its effective utilisation, especially in the context of poverty reduction.

Current Level of Digital Access

Limited Digital Infrastructure: It can be assumed that rural villages currently have limited or no access to digital technology infrastructure, such as internet connectivity, mobile networks, and digital devices.

Baseline Digital Literacy: The initial level of digital literacy among villagers is low, meaning many may have limited experience or knowledge of using digital technologies.

2. **Understanding Barriers:** If the barriers hindering the effective implementation of digital technology for socio-economic development and sustainable livelihoods in rural areas are comprehensively identified and articulated, it will facilitate targeted efforts to address these barriers, thereby minimising their adverse impact.

3. Perceived Value and Demand

Awareness of Benefits: Villagers may have a varying degree of awareness about the potential benefits of digital technology for improving their livelihoods, such as accessing market information, educational resources, and financial services.

4. Socio-Cultural Factors

Cultural Acceptance: The cultural acceptance of digital technology may vary, with some villagers potentially resistant to change due to traditional practices and scepticism about new technologies.

Community Dynamics: Social dynamics and relationships within the village (e.g., influence of local leaders, peer networks) play a significant role in the adoption and diffusion of digital technology.

5. Economic Constraints

Affordability Issues: Economic constraints may limit villagers' ability to afford digital devices and internet services. Subsidies or affordable payment plans might be necessary to facilitate access.

Economic Benefits: There is an assumption that access to digital technology can lead to economic benefits, such as increased market access, improved agricultural practices, and enhanced entrepreneurial opportunities.

6. External Support and Interventions

Role of Stakeholders: Successful implementation of digital technology initiatives requires support from various stakeholders, including government agencies, NGOs, private sector partners, and community leaders.

Training and Education: Effective training and educational programs are crucial to build digital literacy and empower villagers to use technology effectively.

Technological Usability

User-Friendly Technology: The digital technologies introduced should be user-friendly and tailored to the specific needs and contexts of rural villagers, minimizing complexity and maximizing usability.

Adaptability: The technology solutions should be adaptable to the local environment, considering factors like language, literacy levels, and existing infrastructure.

7. Impact Measurement

Measurable Outcomes: The study assumes that the impact of digital technology on livelihoods can be measured through specific indicators such as income levels, employment rates, productivity improvements, and access to services.

Long-Term Sustainability: There is an expectation that once adopted, the use of digital technology will be sustained by the community through continuous support and local ownership.

8. Limitations

Infrastructure Limitations: Physical and technical infrastructure limitations (e.g., electricity supply, internet bandwidth) are significant barriers to the effective use of digital technology.

Resistance to Change: There might be resistance to change due to a lack of trust in technology or concerns about privacy and security.

By acknowledging and addressing these assumptions, researchers can ensure that their study is comprehensive, contextually relevant, and capable of generating actionable insights for improving livelihoods through digital technology in rural villages.

1.7 Significance of the study

This study underscored the pivotal role of digital platforms in rural communities, specifically focusing on Mhlakulo, Tsolo. It highlighted their importance in identifying business opportunities, fostering local connections, and cultivating a vibrant village ecosystem. By improving accessibility to local services and products, the study aimed to benefit both rural businesses and the informal market. Through primary data collected via interviews, the research provided valuable insights for policymakers and the Department of Rural Development, informing the formulation of policies and infrastructure that actively promoted the integration of digital technology for rural business advancement.

Recent references Gómez-Carmona et al. (2023) and Osmani (2023) reinforced the transformative potential of digital technologies in rural development. Gómez-Carmona et al. (2023) explored the evolving landscape of digital agriculture, aligning with the study's focus on rural economic growth. Osmani (2023) emphasized the need for inclusive digital access in the ongoing digital revolution, supporting the study's goal of fostering equality and connectivity in rural

communities. These references reinforced the study's foundation, offering evidence-based conclusions and strengthening the rationale for leveraging digital platforms in rural development initiatives.

This study caters to entrepreneurs, executive leadership, management, government, policymakers, the Department of Rural Development, researchers, academia, and local communities.

The table below provides a comprehensive overview of the various stakeholders who stand to gain from this study. The study is designed to deliver specific value to each audience, offering insights and recommendations that are tailored to their respective needs. The anticipated benefits span strategic decision-making, policy formulation, academic contributions, and, most importantly, tangible improvements in rural economic conditions.

Stakeholders	Value	Benefits
Entrepreneurs	Insights for leveraging digital platforms.	Increased market access and growth opportunities.
Executive leadership and management	Strategic insights for informed decision-making.	Effective policy formulation and growth strategies.
Government and Policymakers	Guidance for shaping supportive policies.	Improved regulatory frameworks and rural development.
Department of Rural Development	Actionable recommendations for digital integration.	Informed policymaking and infrastructure development.
Researchers and Academia	Insights for academic contributions.	Advancements in knowledge and potential for further research.
Local Community and Informal Market Participants	Fostered economic inclusivity.	Enhanced economic opportunities and improved socio-economic conditions.

The study aimed to deliver tangible benefits by addressing challenges, providing actionable insights, and fostering an environment conducive to rural business development.

1.8 Delimitations of the study

This study was delimited by several factors that influence the scope and focus of the research:

1. Financial Constraints:

- The primary delimitation revolves around the financial limitations faced by local Small, Medium, and Micro Enterprises (SMMEs) and local vendors within the study area.
- These financial constraints significantly impact the resources available for comprehensive marketing campaigns and digital technology adoption initiatives.
- The study acknowledges the influence of these constraints on the scope of marketing activities conducted by local businesses, particularly in terms of budget allocation, resource allocation, and technological investments.

2. Geographical Boundaries:

- Another delimitation of the study is the geographical scope, which is limited to the specific study area of Mhlakulo village in the Eastern Cape region.
- The research focuses solely on understanding the digital technology access and utilisation dynamics within this particular rural community, thereby excluding insights from other geographical locations.

3. Time Constraints:

- Time constraints also play a role in delimiting the study, as the research is conducted within a specified timeframe, limiting the depth and breadth of data collection and analysis.
- The study acknowledges the potential impact of time constraints on the depth of insights gained and the comprehensiveness of the findings presented.

4. Language and Cultural Factors:

- Language and cultural considerations serve as additional delimitations, as the research primarily operates within the linguistic and cultural context of the study area.

- The study acknowledges the potential influence of language barriers and cultural nuances on participant responses and research outcomes.

5. Scope of Marketing Activities:

- Specifically, the study delimits its focus to understanding the challenges hindering comprehensive marketing campaigns for the sale of goods or services within the local SMME network.
- By narrowing the scope to marketing activities, the research aims to provide targeted insights into the specific barriers and opportunities related to digital technology adoption for marketing purposes within the local business community.

Chapter Outline

The rest of the report is outlined as follows:

- **Chapter 1: Introduction** – This chapter furnishes an overview of the study, delving into the background, research problem, problem statement, and study objectives. It provides a rationale for the necessity of the study and elucidates its significance in addressing the identified research gaps and contributing valuable insights to the relevant field of inquiry.
- **Chapter 2: Literature Review** – This chapter conducts an extensive review of both national and international studies that explore the impact of digital access in alleviating socio-economic barriers within rural areas. The focus is specifically on examining objectives, key concepts, and relevant theories present in the existing literature.
- **Chapter 3: Research Methodology** – In this chapter, the research methodology is comprehensively detailed, covering the preparation of the research design, methods, and sampling techniques. The chapter delves into the strategies for data gathering and analysis, aiming to provide a robust framework that ensures the acquisition of precise, valid, and reliable insights into addressing the identified research problem.
- **Chapter 4: Data Analysis** – This chapter presents the results of the data analysis and summarises the findings in alignment with the research questions.
- **Chapter 5: Research Themes** – This section delves into study themes in connection with the research questions.
- **Chapter 6: Conclusion, recommendations and future research** – This section concludes by offering recommendations and suggesting avenues for future research.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

The chapter conducted a systematic review of literature from reputable sources to explore the role of digital technology in rural villages. The emphasis was placed on its potential impact on the identification of market opportunities, support for local SMMEs. The review encompassed various constructs, such as digital technology, design, entrepreneurship, advertising, and the theoretical frameworks guiding the study.

2.2 Definition of Concepts

2.2.1 Digital Access

The urgency for universal digital access intensified with the world's rapid digital transformation. As noted by Mphahlele et al., (2021), everyday activities, from grocery shopping to job searches and entrepreneurial services, have shifted to digital platforms. The digital divide affects a wide range of individuals and demographics, including those with low income, low levels of education, unemployment, advanced age, residing in rural regions, disabilities, women, and children (Cullen, 2001). Choung and Manamela, (2018) highlight that the lack of digital access in rural areas poses a significant barrier to addressing socio-economic challenges comprehensively, especially concerning the quality of education. This digital inequality consequently hampers the quality of education and employment prospects for the youth. Unfortunately, as emphasized by Seadira and Heuva, (2021), the digital divide is widening due to various socioeconomic factors. Market players predominantly focus their efforts on urban centres, leaving those in rural regions at a disadvantage.

In this study, the term "digital access" refers to the absence of access to technological equipment, such as cell phones, laptops, or computers, or the inability to access the internet for obtaining information.

2.2.2 Digital Inequality

Van Dijk, (2017) defines the "digital divide" as the gap in access to information and communication technologies between those who have access and those who do not. Computers and the Internet are the primary components dominating this divide (Van Dijk, 2017). Additionally, software and cell phones, especially smartphones, are also encompassed within this digital space. According to research conducted by Takavarasha et al., (2018a), ICTs have been leveraged to promote equality, inclusivity, human development, increased opportunities, and poverty alleviation in developing nations. However, despite these efforts, disparities in ICT access persist in developing countries, including post-apartheid South Africa. A study conducted at universities in the Eastern Cape by Takavarasha et al., (2018a) revealed that unequal access to ICTs, characterised by limited access at home and unrestricted access in institutional settings, is attributed to factors such as the cost of access, a shortage of devices, insufficient skills, and a lack of awareness regarding the benefits of internet access. The research concluded that these factors exacerbate poverty by restricting access to opportunities for a significant portion of the population lacking access through institutions.

Inclusion and exclusion within specific social units are key concepts in this context (Van Dijk, 2017). This study addressed digital inequality concerning unemployed women in urban and rural areas who lack internet access due to various factors that specifically affect rural communities.

2.2.3 Digital Technology Platform (DTP)

According to Bartczak, (2021), a digital technology platform (DTP) is a form of a base composed of specific parts, allowing for the continuous construction and development of a diverse range of interconnected products and services. The author suggests that any digital platform consists of various technical components, including software, hardware, standards, and related organisational processes. Its key feature lies in its flexibility, enabling the addition of new capabilities and modules at any time. Moreover, a digital platform can be viewed as a collection of online tools that facilitate user interaction and specific tasks.

In the academic literature, DTPs are interchangeably referred to as digital platforms, digital business technology platforms, IT platforms, or technology platforms. DTPs are defined as digital instruments that facilitate the development and expansion of interactions among various market participants, such as companies, customers, and administrative entities, including public administration bodies. An illustrative example of a digital technology platform is eKisaan, as mentioned by (Bhaskara & Bawa, 2021). According to these authors, eKisaan provides rural farmers with access to information related to farming, the market, and agrarian and government policies.

2.2.4 Information and Communication Technology

Information and Communication Technology (ICT) is a broad term encompassing any communication device or application, including cell phones, computer and network hardware, software, the Internet, satellite systems, and more. The utilisation of ICT holds the potential to address information inequities by better connecting impoverished individuals to markets, thereby fostering entrepreneurship among the less privileged (Cecchini & Scott, 2003). Additionally, in both developed and developing countries globally, advancements in ICT have made a significant impact on crucial societal sectors like transportation, health, business, education, and communication (Jamil, 2021).

2.2.5 Local Small, Medium and Micro Enterprises (SMME)

Generally, SMMEs are defined as businesses with 99 or fewer employees (Asmal et al., 2018). According to the author, these enterprises are recognised as crucial for achieving inclusive development and growth in South Africa. The successful establishment and expansion of SMMEs are viewed as contributors to accelerating inclusive growth, especially given South Africa's persistent challenges of high unemployment and poverty rates. Entrepreneurship has also been frequently advocated as a solution for the unemployed who struggle to find traditional employment (Asmal et al., 2018.)

In this study, reference has been made to local SMMEs, specifically those within the village of Mhlakulo. These are enterprises run by women striving to make a

living for themselves. Registering their services or products on the digital technology platform could not only add value to the community but also create business opportunities.

2.3 Contextualising Digital Technology

According to the United Nations Development Programme (UNDP) (2021), the UNDP is committed to supporting nations in their efforts to achieve the Sustainable Development Goals (SDGs). The UNDP Strategic Plan outlines three systemic reform avenues to assist countries, including the goal of leaving no one behind. The plan emphasizes structural transformation, encompassing green, inclusive, and digital transitions, with a focus on working collaboratively with countries to effect changes in systems and structures that shape sustainable development (*UNDP Annual Report 2021, 2021.*)

Digitalisation is identified as one of the enablers in this process, involving capabilities and methods to enhance the impact of development on national partners and within UNDP's systems. The objective of digitalisation is to aid countries in creating inclusive, ethical, and sustainable digital societies (*UNDP Annual Report 2021, 2021*). In alignment with this approach, UNDP continuously seeks and adopts existing and future digital technologies in all aspects of its work, as outlined in the Digital Strategy (*UNDP Annual Report 2019, 2019*). Furthermore, UNDP aims to transform into a more adaptable, transparent, and effective collaborator, striving to eliminate poverty, drive transformative shifts, and enhance global resilience to unforeseen challenges and crises, benefiting all individuals.

The National Development Plan (NDP) envisions a 2030 goal for the South African government to establish a vibrant, interconnected information society and a flourishing knowledge-based economy that is both inclusive and prosperous (South African National Government, 2024).

2.4 Conceptual factors of digital accessibility

The issue of digital accessibility has consistently been a concern for governments, technology providers, and civil society organisations, leading to

ongoing discussions and considerations about its significance and policy implications (Ragnedda & Mutsvairo, 2018). However, the concept of digital accessibility grapples with conceptual discrepancies and divisions, resulting in uncertainties in understanding the reasons and requirements for individuals to access the information society (Kulkarni, 2018). This has led to the development of various digital accessibility frameworks, as illustrated in Table 2.1.

For instance, BRADBROOK & FISHER, (2004) outline that the concept of digital accessibility should encompass elements related to content (information), connectivity (access), confidence (self-efficacy, i.e., the belief in one's ability to succeed), capability (skills), and continuity (sustained usage). Conversely, Helsper, (2008) asserts that factors like digital access, motivation, skills, and the degree of involvement with technologies should be considered. Meanwhile, Thomas et al., (2020) emphasize factors such as access to suitable technology, affordability of internet services, and the ability to effectively utilise digital technology in both work and daily life within their digital inclusion index.

Other notable frameworks discussed in the literature that conceptualise technology access in terms of digital inclusion include van Dijk's model, which emphasises motivational access, material access, skills access, and user access; and Roberts & Hernandez, (2019) 5 A's of technology access framework, which highlights the need to consider availability, affordability, awareness, ability, and agency.

Table 2.1: *Digital access frameworks*

Models	Description	References
5 As' of technology access	This model conceptualises technology access across five categories: 1) Availability 2) Affordability 3) Awareness 4) Ability 5) Agency	(Roberts & Hernandez, 2019, p. 4)

A cumulative and recursive model of successive kinds of access to digital technologies	This model outlines the concept of access, which consists of four distinct barriers: 1) <i>Motivational Access</i>: Involves factors like a limited adoption of ICT, a lack of interest, and negative attitudes toward technology. 2) <i>Physical Access</i>: Relates to the absence of tangible ICT resources and equipment. 3) <i>Skills Access</i>: Encompasses the deficiency in digital skills, the user-friendliness of ICT, and the absence of educational and social support networks. 4) <i>Usage Access</i>: Pertains to the dearth of opportunities for using ICT and the unequal distribution of these opportunities across different societies.	(VAN DIJK, 1999, p. 5)
Framework of digital resources	Digital resources are grouped into four broad categories: 1) ICT Access 2) Skills 3) Attitudes 4) The extent of engagement with technologies	(Helsper, 2008, p. 26)
Australian Digital Inclusion Index	The framework originating from Australia gauges digital inclusion by considering a blend of factors, including: 1) Access to suitable technology 2) Affordability of internet services 3) The capacity to effectively utilise digital technology in both work and daily life.	(Thomas et al., 2020, p. 11)
5 Cs' of digital inclusion	Known as the ladder model, this framework delineates five factors that shape digital inclusion: 1) Connectivity (access) 2) Capability (skills) 3) Content 4) Confidence (self-efficacy) 5) Continuity	(Parsons & Hick, 2008, p. 3)

Certainly, these variations demonstrate that research on digital access and digital inclusion is part of an evolving continuum, responding to developments in digital technologies and media.

For the purposes of this study, the researcher has adopted Helsper's 2014 definition of digital inclusion. Helsper characterises digital inclusion as an individual's successful and enduring involvement with ICTs in a manner that facilitates comprehensive participation in society. This involvement encompasses economic, social, cultural, civic, and personal well-being.

2.5 The use of Digital Technology in the rural areas

As highlighted by Odoi, (2020), despite the challenge posed by the lack of industrial resources and infrastructure in developing countries, the rapid proliferation of the internet, ICTs, and digital devices has laid a digital foundation for businesses in these regions. This foundation enables them to seamlessly participate in the global economy (Odoi, 2020). Furthermore, ICT digital innovations and tools, such as the internet and smartphones, can facilitate the capture, storage, sharing, and exchange of information worldwide through digital platforms, overcoming physical obstacles (Odoi, 2020). This has the potential to level the playing field, especially in rural communities, by providing equal opportunities to individuals regardless of their geographic location (Odoi, 2020).

According to Mariscal et al. (2019), despite efforts to ensure women's participation in the transition to a digital society, which can enhance productivity and social progress, there are still numerous obstacles to overcome. Despite legislative changes that have improved broadband usage, a noticeable gender disparity persists in terms of digital device ownership, proficiency, and effective utilisation of technology. The author points out that while affordability plays a significant role in exclusion, there are substantial socio-cultural barriers hindering women's access to digital resources (Mariscal et al., 2019).

2.6 Digital design and technology and rural entrepreneurship

The field of graphic design has evolved beyond traditional print media to encompass online campaigns, animated logos, and digital artworks, all accessible to the public through digital media devices Abushawali et al. (2013). According to Punchoojit and Hongwarittorn (2017), digital information provides users with instant gratification, forming an essential element in creating

information channels for the advancement of rural entrepreneurship. The capacity of digital information to enable the creative reuse of its constituent data for societal benefits, particularly in applications like electronic commerce transactions, is crucial. This observation is evident in users' ability to obtain instant access to any information they desire at any time and at the lowest possible cost. Therefore, the significance of digital design and technology for fostering rural entrepreneurship cannot be overstated, playing a crucial role in content creation and the development of new digital systems to facilitate digital marketing.

2.7 Digital advertising and entrepreneurial opportunities

Digital advertising is widely recognised as the driving force behind advancements in mobile and internet technology (Chen et al., 2016). The same authors argue that digital marketing has succeeded conventional marketing, enabling companies to reach a much larger audience through the internet. Digital advertising involves activities and information aimed at creating awareness about a product or service. Publishers provide the platform for advertisers who pay for using the space (Chen et al., 2016). The layout and presentation of information to customers on online platforms significantly influence their impressions of websites and can be a decisive factor in subsequent online shopping. If a business organisation's website is appealing and user-friendly, the functionality of its interface design would typically attract prospective customers.

2.8 Development for Eastern Cape

According to the Eastern Cape National Development Plan, the province is grappling with spatial inequality, characterised by significant deprivations in historically designated "homelands" (Commission, 2014). Moreover, despite the already high unemployment rate in the Eastern Cape, the situation is considerably more dire in its predominantly rural areas, home to the majority of the population. The Eastern Cape National Development Plan outlines the province's commitment to fostering the growth of an equitable and inclusive economy. This involves strengthening the provincial economy to leverage the

Eastern Cape's competitive strengths, generate more employment opportunities, and reduce income and wealth disparities (Commission, 2014).

The plan acknowledges that individuals unable to afford costly data plans resort to using their mobile phones to access relatively expensive internet connections. For example, the implementation of free Wi-Fi hotspots is seen as a valuable tool for development (Commission, 2014). This approach promotes financial inclusion, introduces new service offerings, broadens access to information and education, and enhances access to essential resources. In the rural community, accessing markets poses significant challenges, primarily because many market participants lack the resources essential for successful and sustainable livelihoods. Furthermore, those who currently dominate the market often resist sharing their dominance with newcomers, as outlined in the Eastern Cape Development Plan (Commission, 2014).

2.9 Socio-economic factors

As per Aruleba and Jere (2022), rural communities face significant disadvantages compared to urban populations due to the inefficient utilisation of ICT services. Enhanced internet access has the potential to substantially diminish disparities between various social groups (Aruleba & Jere, 2022). Inequality is a prevalent and glaring aspect of many societies, resulting in socio-economic disparities that manifest in various forms, affecting communities and individuals differently. The digital divide present in South Africa is closely intertwined with these socio-economic imbalances, constraining people's engagement in the country's economy, society, and political activities, as pointed out by (Mphahlele et al., 2021). It is evident that economic inequalities persist and have intensified, particularly in rural areas, as highlighted by (Katiyatiya, 2020). Due to these persistent disparities, which are exacerbated in rural areas, Katiyatiya (2020) contends that even with the advent of a democratic government, equal opportunities remain elusive. High levels of unemployment directly contribute to elevated poverty levels in these communities, adversely affecting their overall quality of life. Additionally, the classification of South African society along class lines significantly contributes to socio-economic inequality, as observed by (Katiyatiya, 2020). In South Africa, these class distinctions can be delineated into

three categories: the upper class (comprising professionals), the intermediate class (comprising white-collar workers), and the underclass - comprising domestic workers, farm labourers, and the unemployed (Katiyatiya, 2020).

According to Zhang and Zhang (2020), a substantial economic development gap exists between urban and rural areas, with rural regions grappling with persistent poverty. Moreover, the concept of a "smart village" can be defined as a rural development strategy that fully leverages ICT-based solutions to facilitate sustainable growth in villages while tailoring solutions to address their specific needs. Smart villages should prioritise understanding the advantages, challenges, and unique characteristics of various types of communities, offering customised solutions for each (Zhang & Zhang, 2020). The authors go on to highlight that, in the context of community-centred development (CCD), the potential of ICT in fostering the sustainability of communities played a significant role in shaping CCD. As outlined by Zavratnik et al. (2020), CCD underscores the importance of empowering local, regional, and national authorities in driving transformative processes for a sustainable future. Additionally, it seeks to integrate local knowledge and empower communities (Zavratnik et al., 2020).

2.10 Economic Participation

A study conducted by Ye and Yang, (2020) in China illustrates the role of a mobile platform in narrowing the digital divide and promoting social inclusion in rural regions. In Heze city, China, the introduction of an e-commerce platform called "We Country" aimed to empower the local village community. This digital platform enables residents in rural villages to market their agricultural produce and handmade products, motivating them to generate income through these sales. Notably, the entire village is involved in this process, including sourcing materials for transportation and handling after-sale services (Ye & Yang, 2020).

People can connect through online community networking (Hansen Henten & Maria Windekilde, 2016). Moreover, the internet offers opportunities for increased social interaction among individuals living in remote and isolated areas. Developing skills that can open doors to fresh job prospects and enhance work processes brings economic advantages to both those presently employed and

those contemplating a return to the workforce (Henten et al, 2016). This also holds the potential to narrow the widening disparity observed between rural and urban communities concerning equal opportunities. Internet capabilities also enhance the likelihood of individuals becoming self-employed or achieving success when launching new businesses (Hansen Henten & Maria Windekilde, 2016).

There is a need for the use of innovative technologies and approaches to inform, empower, and connect people in the Mhlakulo village. For someone looking for employment in the village without having to move to urban areas to access job opportunities, a smart community is not only interconnected but is also information-rich, inclusive, collaborative, cooperative, and social, enabling the expression of the spirit of Ubuntu in all its activities and providing opportunities to all citizens.

There are also different debates on the origins of the term smart community or cities. While this is not the primary focus of this paper, it is worth noting that, according to Mariscal et al., (2019), it is not just a matter of having access to digital technology; it also involves having the competence to efficiently employ these technologies.

2.11 Digital Inequality within the Province of Eastern Cape

Dependence on digital communication tools has become crucial not only for seeking employment but also for the process of applying for jobs (Oyedemi & Choung, 2020). This provides an effective means of accessing a wider range of job opportunities within the workforce, broadening individuals' exposure to various career possibilities by granting them access to information they may not have otherwise considered (Oyedemi & Choung, 2020). Individuals can now even apply for jobs overseas right from the convenience of their own homes. This illustrates the growing reliance on technology, as companies conduct online interviews, and in exceptional situations, one can work for an international company without leaving their home (Oyedemi & Choung, 2020).

Gcora-Vumazonke et al., (2015) researched the use of telecentres and other shared information and communication technology (ICT) facilities meant to give people access to digital technologies, which can help with socioeconomic development. This is especially significant in rural areas, where residents are less likely to have access to technology. Despite significant investment in such interventions, developing countries have yet to reap the full advantages (Gcora-Vumazonke et al., 2015). Women in rural areas appear to gain the least from such interventions, owing to various societal reasons. Identifying the socio-economic factors that are barriers to digital access in the village can bring them to the forefront, enabling the community to benefit from these initiatives. Another issue faced by telecentres is a lack of ICT skills; many members of the community lack the ability to use services such as the internet or type (Gcora-Vumazonke et al., 2015). Some members of the community are hesitant to use the telecentre due to a lack of expertise. When implementing a project in a village, it proves beneficial to understand the existing abilities in the community to grow and efficiently utilise resources.

2.12 Theoretical Framework

Technology Acceptance Theories explain individuals' usage behaviour towards technologies (Momani & Jamous, 2017). Moreover, these theories are meant to express the idea of how consumers might comprehend and accept new technology, as well as how they might use it (Momani & Jamous, 2017). The authors suggest that numerous factors are believed to impact individuals' decision-making regarding the adoption of new technologies, with several theories available. The theoretical framework of this study draws upon the Theory of Planned Behavior (TPB) and the Technology Acceptance Model (TAM) to elucidate the factors influencing digital technology adoption among Small, Medium, and Micro Enterprises (SMMEs) and local vendors in Mhlakulo village.

2.12.1 Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM) is a theoretical framework that explains and predicts individuals' acceptance and usage behaviour towards technology. Proposed by Davis in 1989, TAM suggests that a person's intention

to use a particular technology is determined by their perceived usefulness and perceived ease of use of that technology.

Perceived Usefulness: This refers to the individual's belief that adopting digital technology will enhance their performance and productivity in marketing activities. In the context of this study, SMMEs and local vendors' perception of the usefulness of digital technology for expanding market reach and increasing sales drives their acceptance and adoption behaviour.

Perceived Ease of Use: This reflects the individual's perception of the ease or difficulty associated with using digital technology for marketing purposes. User-friendly interfaces, training programs, and technical support can influence perceived ease of use among SMMEs and local vendors in Mhlakulo village.

TAM has been extensively applied across a range of domains to comprehend consumers' attitudes and actions around the adoption of new technologies, and it has shaped user acceptance and technology adoption research.

It replaced TRA's attitude toward behaviour with two technology acceptance measures: perceived usefulness and perceived ease of use (Momani & Jamous, 2017). This theoretical framework is better suited for this study because the target group would need easy use of the technology, leading to increased technology adoption. With the lack of digital access and digital skills, people might not have patience in navigating the technology; therefore, ease of use would facilitate increased technology adoption, especially if they perceive value in it.

2.12.2 Theory of Planned Behaviour (TPB)

The Theory of Planned Behaviour (TPB), developed by (Ajzen, 1991), is a psychological model predicting individuals' intention to engage in a specific behaviour. The TPB suggests that an individual's behavioural intentions are determined by three key factors:

Attitude: This refers to the individual's positive or negative evaluation of adopting digital technology for marketing purposes. In the context of this study, it involves

assessing the perceived usefulness and benefits of digital technology adoption for enhancing marketing activities among SMMEs and local vendors.

Subjective Norms: These are the perceived social pressures or norms influencing an individual's decision to adopt digital technology. In Mhlakulo village, subjective norms may arise from the influence of peers, community leaders, or other stakeholders who endorse or discourage the use of digital technology for marketing.

Perceived Behavioural Control: This represents the individual's perception of their ability to successfully adopt and use digital technology for marketing purposes. Factors such as technical skills, access to resources, and financial constraints may influence perceived behavioural control among SMMEs and local vendors in Mhlakulo.

These factors collectively shape behavioural intention, a strong predictor of actual behaviour. TPB is widely applied across various fields to understand and predict behaviours, including technology adoption, health, and social actions.

According to Momani and Jamous, (2017), both theories suggest that behaviour is affected by an individual's intention to perform it. Thus, intention indicates how hard an individual is willing to try and how much effort the individual is planning to exert to perform a behaviour. It is a function of an individual's attitude towards the behaviour and subjective norm about the behaviour.

In this qualitative study, the TPB and TAM serve as conceptual frameworks to understand the underlying motivations, attitudes, and perceptions that shape SMMEs and local vendors' adoption of digital technology for marketing purposes in Mhlakulo village. While qualitative research does not aim to establish causality, these theoretical frameworks provide valuable insights into the factors influencing participants' behaviours and decision-making processes regarding digital technology adoption.

The selection of TPB and TAM is justified by their relevance to understanding human behaviour and technology acceptance in the context of digital technology adoption among SMMEs and local vendors. TPB offers a comprehensive

framework for examining the influence of attitudes, subjective norms, and perceived behavioural control on behavioural intentions, while TAM provides insights into the factors influencing users' acceptance and use of technology. By integrating these theories, this study aims to provide a nuanced understanding of the complexities surrounding digital technology adoption in rural settings like Mhlakulo village.

2.13 Conceptual Framework

The conceptual framework for this study aims to elucidate the complexities of technology adoption within the Mhlakulo village community. It draws upon the theoretical underpinnings of the Technology Acceptance Model (TAM) and the Theory of Planned Behaviour (TPB). *Figure 1* provides an overview of how digital platforms influence various aspects of village life, including business opportunities, local connections, and overall community dynamics.

Behavioural Factors:

Perceived Usefulness: Residents' perceptions of the utility of digital technology in addressing their needs, including identifying business opportunities, and fostering local connections.

Perceived Ease of Use: The ease with which residents can navigate digital platforms, crucial for fostering a vibrant village ecosystem.

Technology:

Digital Technology Platform: At the core of the framework lies the digital platform designed specifically for Mhlakulo. It encompasses various services tailored to the community's context, emphasizing local connections, business identification, and improved technology adoption.

Ultimate Outcome:

Improved Technology Availability and Use Adoption: Reflecting the overarching goal of residents embracing and integrating the digital platform, ultimately benefiting rural businesses and the informal market. This includes not only

business opportunities and local connections but also a community-wide enhancement in technology adoption.

The conceptual framework visually articulates the interplay between residents' perceptions, behavioural factors, and the desired outcome of technology adoption.

It integrates TAM's emphasis on perceived usefulness and ease of use with TPB's focus on attitudes, subjective norms, and perceived behavioural control.

Distinct perceptions in adoption are observed, with residents falling into different groups based on their priorities and preferences regarding technology adoption.

Observations reveal two distinct groups among Mhlakulo residents regarding their perceptions of technology adoption:

Group A: Residents interested in both perceived usefulness and ease of use, reflecting a holistic approach to technology adoption with a focus on business opportunities, local connections, and improved technology availability and use adoption. This group recognizes the potential benefits of digital technology for enhancing business operations, fostering community connections, and facilitating widespread technology adoption. Their adoption decisions are influenced by a combination of the perceived usefulness of the technology in addressing specific needs and the ease of use in navigating the digital platform.

Group B: Residents emphasizing the significance of ease of use, underscoring the importance of user-friendly technology for cultivating a vibrant village ecosystem and promoting improved technology availability and use adoption. This group prioritizes the user experience and simplicity of technology interfaces, recognizing that ease of use is critical for encouraging widespread adoption and integration into daily life. Their adoption decisions are primarily influenced by the perceived ease of navigating the digital platform and the convenience it offers in accessing information and services.

Understanding these distinct perceptions is crucial for tailoring technology solutions to meet the diverse needs and preferences of Mhlakulo residents. By

acknowledging these varying perspectives, stakeholders can design digital platforms that strike a balance between usability and functionality, thereby maximising adoption rates and promoting positive community development.

Villages facing a deficit in digital technology platforms require management theories that address both the introduction and sustainable use of technology. Here are several management theories applied to facilitate access to information about business market opportunities:

Diffusion of Innovations Theory: Identifying and supporting innovators and early adopters within the community to champion the use of digital technology.

Participatory Development Theory: Engaging villagers in the planning and implementation process to ensure digital solutions are tailored to their needs.

Resource-Based View (RBV) of the Firm: Leveraging local resources and capabilities to support the introduction of digital platforms.

Stakeholder Theory: Engaging stakeholders in discussions about digital technology use to ensure their needs are addressed.

Theory of Planned Behaviour (TPB): Educating the community about the benefits of digital technology to foster positive attitudes and subjective norms.

Social Capital Theory: Strengthening social networks within the village to facilitate support for digital technology initiatives.

Practical Steps for Implementation:

Conducting a thorough community assessment to understand specific needs, resources, and barriers to technology adoption.

Implementing small-scale pilot projects to demonstrate the benefits of digital technology.

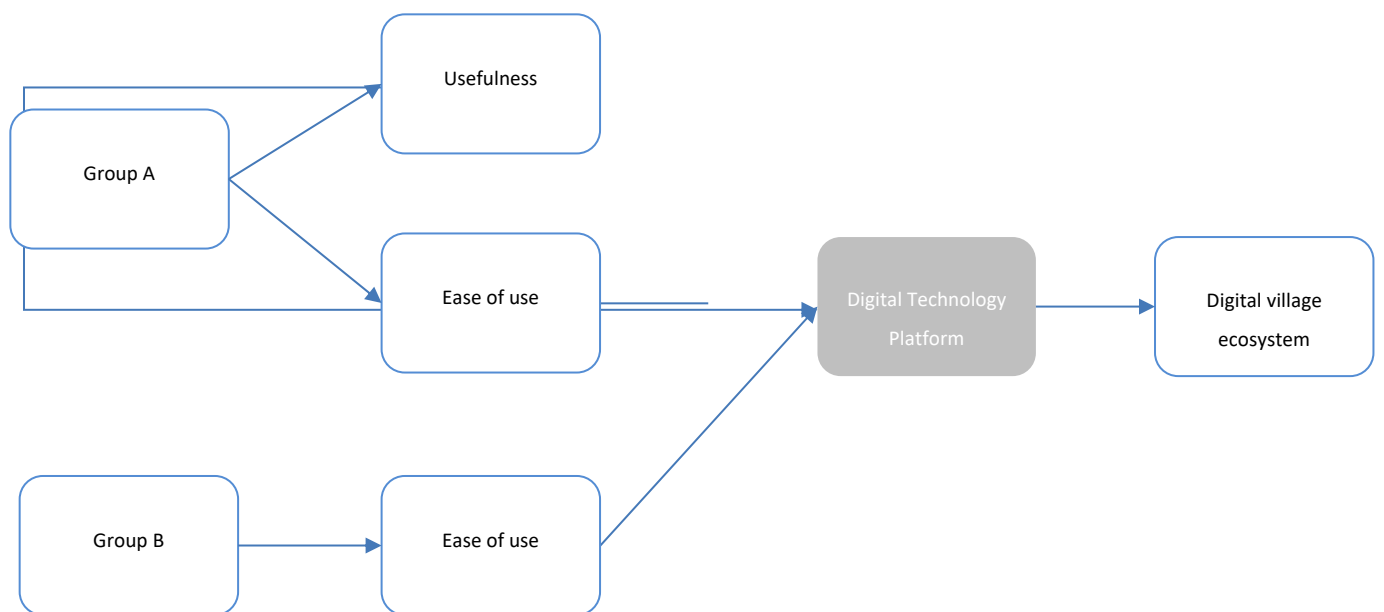
Providing ongoing training programs to build digital literacy and empower villagers.

Forming partnerships with relevant stakeholders to support the introduction and maintenance of digital platforms.

Establishing mechanisms for continuous feedback from the community to refine and improve digital technology initiatives.

By applying these management theories, stakeholders can create a supportive environment for the adoption of digital technology in villages, enabling access to vital business market information and improving livelihoods.

Figure 1: Conceptual framework



Source: (Momani & Jamous, 2017)

2.14 Critical Evaluation of Literature:

Zhang and Zhang (2020) highlight the economic development gap between urban and rural areas, emphasizing the persistent poverty in rural regions. Their work is significant as it lays the foundation for understanding the context in which digital technology adoption must occur. However, the study primarily describes the problem rather than offering detailed solutions or mechanisms for bridging the gap through technology. Some of the strengths that add value to this case study is that it provides a comprehensive overview of the economic disparities.

Highlights the importance of tailored ICT-based solutions for rural development. However, some of the weaknesses are that it lacks specific examples of successful implementations of "smart village" initiatives. Furthermore, the paper does not explore in-depth the socio-cultural factors that might affect technology adoption.

The concept of "smart villages" as described by Zhang and Zhang (2020) is crucial for framing the potential of ICT in rural development. This idea aligns well with the objectives of this research, which focuses on digital technology adoption. It establishes a clear vision for leveraging technology to drive sustainable rural development.

Emphasizes the need for customised solutions tailored to specific community needs. However, there are some shortcomings such as insufficient empirical evidence to support the efficacy of smart village initiatives. There is also limited discussion on the challenges of implementing these solutions in diverse rural settings.

Zavratnik et al. (2020) provide insights into the role of ICT in fostering community sustainability within the framework of CCD. Their emphasis on empowering local authorities and integrating local knowledge is particularly relevant. The paper provides a strong focus on local empowerment and the integration of community knowledge. It further highlights the transformative potential of ICT in sustainable development. The paper however gives limited practical examples or case studies. They do not address potential resistance from communities towards new technologies.

Ye and Yang (2020) illustrate the role of mobile platforms in reducing the digital divide and promoting social inclusion. Their study on the "We Country" platform in Heze city provides a practical example of technology adoption in rural areas. The paper presents a real-world application of digital technology enhancing rural economic participation. It further Demonstrates the community-wide impact of such platforms, including income generation and social inclusion. Upon critical analyses one found that the focus on a single case study is limiting generalisability. It further does not explore long-term sustainability or scalability of the platform.

Hansen Henten and Windekilde (2016) discuss the internet's role in increasing social interaction and job opportunities in remote areas. Their work aligns with the research focus on technology adoption and its broader socio-economic impacts. The paper provides a broad perspective on the potential of internet connectivity in rural development.

Highlights the role of digital skills in enhancing employment opportunities. The shortcomings however are that the paper lacks specific data on the impact of internet access on rural employment rates. Furthermore, there is a limited discussion on the challenges of providing internet access in remote areas.

Oyedemi and Choung (2020) and Gcora-Vumazonke et al. (2015) explore the digital inequality within the Eastern Cape, focusing on access to digital technologies and the socio-economic barriers faced by rural communities. The paper addresses the critical issue of digital inequality and its socio-economic implications.

Highlights the barriers to digital access and the potential of telecentres in rural areas. The paper is more descriptive than analytical, lacking in-depth analysis of the underlying causes of digital inequality. It provides a limited focus on potential solutions or interventions to overcome these barriers.

Momani and Jamous (2017) discuss the Technology Acceptance Model (TAM) and the Theory of Planned Behaviour (TPB), which are employed as theoretical frameworks in this research. The paper gives a solid theoretical foundation for understanding technology adoption behaviours. It is also well-suited for analysing

factors influencing the adoption of digital technologies. The paper however is predominantly used in quantitative studies, raising questions about their applicability in a qualitative context. It requires adaptation to fully capture the qualitative nuances of rural technology adoption.

2.15 Conclusion

In conclusion, the imperative of incorporating rural communities into digital access has been prominently emphasized. The studies reviewed indicate that such inclusion can pave the way for financial independence and the sustainable development of communities. The literature establishes a causal connection between digital access and economic participation, supported by theories such as the Technology Acceptance Model (TAM) and the Theory of Planned Behaviour (TPB). These theories provide frameworks for understanding how residents' perceptions and behavioural factors influence the adoption of digital technology platforms, ultimately contributing to improved technology availability and use adoption in rural villages.

Limited access to digital resources translates into restricted opportunities, highlighting the cascading impact of socio-economic factors hindering digital access in rural villages, affecting both economic participation and local businesses. By integrating management theories such as the Diffusion of Innovations Theory, Participatory Development Theory, Resource-Based View (RBV) of the Firm, Stakeholder Theory, Theory of Planned Behaviour (TPB), and Social Capital Theory, stakeholders can create a supportive environment for the adoption of digital technology in villages, enabling access to vital business market information and improving livelihoods.

The subsequent chapter delves into the research design, methodology, sampling techniques, data collection methods, and ethical considerations, providing a comprehensive framework for investigating the role of digital technology in enhancing livelihoods and economic participation in rural communities like Mhlakulo village.

CHAPTER 3: RESEARCH METHODOLOGY

3.1 Introduction

This chapter outlined the methodology employed for data collection to address the primary research questions. It encompassed the study's approach, sample selection, data collection methods, and analysis procedures. The chapter also discussed the limitations that constrained the study's scope, encountered challenges, and proposed potential solutions. Ethical considerations were thoroughly addressed to ensure the study's adherence to ethical standards.

3.2 Research Design

According to (Abutabenjeh & Jaradat, 2018), a research design serves as a framework crafted to guide the entire research process. It outlines the steps from defining the research purpose and research questions to the final results. This framework encompasses a thorough process of data collection and analysis, facilitating a clear understanding of the study's topic throughout the research journey, from the initial research purpose and questions to the eventual outcomes.

An exploratory design was used in this study to gain in-depth knowledge or clarity while attempting to fully understand a problem (Saunders et al., 2009). This design fostered greater flexibility and changing research direction to better explore and understand the ongoing phenomenon (Saunders et al., 2009). To seek answers to the questions and make findings and interpretations in this study, the design made it possible to collect primary data through an in-depth interviewing interview schedule.

The researcher first identified a research problem, clarified theories regarding it, and then identified research questions. Next, the data was collected based on the problem and organised. The data was then analysed and interpreted.

Research Paradigm:

The research paradigm provides the foundational framework that guides the entire research process, including the selection of methods, data collection, analysis, and interpretation. In this study, a constructivist paradigm was adopted. Constructivism aligns with the belief that knowledge is actively constructed by individuals based on their experiences and interactions with the social world (Creswell & Creswell, 2017). By embracing a constructivist paradigm, the study acknowledges the subjective nature of reality and seeks to explore how individuals perceive and make meaning of their experiences with digital technology adoption in a rural setting like Mhlakulo village.

Research Approach:

An exploratory research approach was chosen for this study. Exploratory research aims to gain deeper insights into a particular phenomenon, especially when little is known about it or when the topic is relatively new (Saunders et al., 2009). Given the limited existing research on digital technology adoption in rural villages like Mhlakulo, an exploratory approach was deemed appropriate to explore and understand the complexities of technology adoption within this context. This approach allowed for flexibility in data collection and analysis, enabling the researcher to adapt to emerging insights and perspectives throughout the research process.

Data Collection Methods:

Primary data was collected through in-depth interviews with stakeholders in Mhlakulo village, including small, medium, and micro-enterprises (SMMEs), local vendors, community leaders, and residents. In-depth interviews provide an opportunity for participants to express their thoughts, experiences, and perceptions in detail, allowing for a rich and nuanced understanding of the research topic (Creswell & Creswell, 2017). Semi-structured interview schedules were used to guide the interviews, providing a framework for exploring key themes related to digital technology adoption, perceived benefits, challenges, and opportunities within the community.

The interviews are most suitable as they allow one to get detailed information from the participants and due to the following:

- The targeted population encounter various challenges when it comes to digital access and therefore might not be able to participate in an online survey or questionnaire.
- The level of exposure and access to any digital devices is quite low and differs for each participant. Therefore, interviews allowed us to also take into consideration all the small differences. For example, some participants may have used a smartphone compared to some participants who may have never held a phone.
- Having the participants complete the survey on their own may have lead to inaccurate capturing and misinformation because of inexperience in completing surveys or questionnaires.

Data Analysis:

Qualitative content analysis was employed to analyse the interview data. Content analysis involves systematically categorising and interpreting textual data to identify patterns, themes, and insights (Elo & Kyngäs, 2008). Following transcription, the interview data were coded and categorised based on recurring themes and concepts related to digital technology adoption, perceived usefulness, ease of use, and factors influencing adoption behaviour. Through iterative coding and thematic analysis, key findings and insights were identified, allowing for a deeper understanding of the research questions and objectives.

The chosen research paradigm and approach align closely with the nature of the research questions and objectives. By adopting a constructivist paradigm, the study acknowledges the subjective interpretations of reality and seeks to explore the diverse perspectives and experiences of stakeholders regarding digital technology adoption in a rural village context. The exploratory research approach facilitates an in-depth exploration of the phenomenon, allowing for flexibility and adaptation to emerging insights during data collection and analysis. Overall, the research design provides a robust framework for generating rich, contextually relevant data and insights to address the research questions effectively.

3.5 Population and sample

In instances where it is impractical to involve the entire population or identify all members of the target population, researchers use sampling to collect representative data (Stratton, 2021). This is particularly necessary when the population is too extensive for a census-based study or when individuals cannot be individually identified or reached (Stratton, 2021).

According to Wiid and Diggins, (2013) , stress that members of the population should share at least one relevant trait for the research question, and Pascoe (2014) adds that the population size is determined by shared characteristics. Purposeful sampling, suitable for the study's specific group, was employed. Even within the targeted group, not everyone qualifies, allowing for the identification of participants. Purposeful sampling aims to select individuals or groups capable of contributing to a specific interest, ensuring the sample's efficiency and validity (Palinkas et al., 2015).

The target population for this study were community members operating formal and informal businesses within Mhlakulo village, located in the Mhlontlo municipality. This village faces a persistent challenge of high youth unemployment, maintaining a rate of 43% over the past three consecutive years (Mhlontlo Local Municipality, 2023). Additionally, statistics revealed that 4% of households in the village continue to experience financial hardships with no income. The prevalence of illiterate individuals aged 14 years and older remains a constant concern, lingering at 15% without improvement (Mhlontlo Local Municipality, 2023).

The study concentrated on a sample of 8 participants engaged in informal businesses within Mhlakulo village in Tsolo. These participants are predominantly in the agriculture, construction, and freelance sectors, chosen due to the prevalence of small informal and formal businesses in Mhlakulo operating within these sectors.

A sample size of 8 participants in a qualitative study focused on informal businesses in Mhlakulo village, Tsolo, can be justified based on the principles of qualitative research. Qualitative studies aim for in-depth exploration and

understanding of the lived experiences, perspectives, and behaviours of participants. Unlike quantitative research, where large sample sizes aim for statistical generalisability, qualitative research prioritizes the richness and depth of data obtained from a smaller number of participants.

In qualitative research, there is no fixed or universally acceptable sample size, as the adequacy of the sample depends on the research questions, objectives, and the concept of data saturation. Data saturation occurs when collecting additional data no longer provides new insights or information, indicating that a comprehensive understanding of the phenomenon has been achieved.

Creswell (2013) notes that in qualitative studies, sample sizes are often determined by the principle of saturation rather than a specific numerical criterion. For phenomenological studies, which focus on understanding the essence of experiences, Morse (1995) suggests that sample sizes of 6 to 12 participants are typically sufficient. However, this is not a strict rule, and the decision on sample size should be context dependent.

Considering the specific focus on informal businesses in a rural setting, a sample size of 8 may be appropriate if data saturation is reached, and the study aims for a detailed exploration of the experiences and perspectives of participants. It's important for researchers to justify their sample size decisions based on the nature of their study and the depth of information they seek to uncover.

In conclusion, the adequacy of a sample size in qualitative research, such as the study in Mhlakulo village, is contingent on achieving data saturation and conducting a thorough exploration of the research questions rather than adhering to a specific numerical guideline.

The discrepancy between the target sample of eleven (11) people and the actual number of eight (8) participants is attributed to logistical challenges. Many individuals from the target sample were not readily available for interviews, some providing no reasons for their unavailability. Attempts to reach them via mobile phones were unsuccessful due to poor network signals, leading to the decision to proceed with accessible and willing participants in the study (Mhlontlo Local Municipality, 2023).

Table 3.1: Demographic profile of Participants

Category	Target sample	Actual
Community members operating an informal business from the ages (of 18 – 34)	3	1
Community members operating informal businesses from the ages (of 35 -64)	8	7
Total	11	8

Source: Authors Composition

3.5.1 Sampling

Most importantly, purposeful sampling, while potentially causing under- or over-representation, allows the researcher to collect valuable information that would be challenging with probability sampling methods (Bernard, 2013; Creswell, 2009; Tongco, 2007). Since the entire population is not accessible, a sample is necessary, which can be described as a subset of the population representing the whole (Bernard, 2013).

For this study, purposeful sampling was used. It was best suited for studying specific groups, and even within the targeted group, not everyone qualified, allowing for the identification of suitable participants. Purposeful sampling is commonly employed to identify and select information-rich examples linked to the topic of interest (Palinkas et al., 2015). This entailed locating and selecting individuals or groups of individuals who were particularly capable of participating in a specific area of interest. The sample methods were designed to be as efficient and valid as possible (Palinkas et al., 2015).

The selection of businesses and individuals participating in the study was based on the purposive criteria outlined in the table below.

Criteria	Condition used
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Location	The businesses involved in this study were those located in rural Mhlakulo village.
Services offered	They cover every service offered in the community, including transportation, retail, agricultural, and building. This does not preclude the community from using any additional businesses or skills for communal improvement. These can be formal and informal businesses
Entrepreneurial idea	To ensure a successful evaluation, the businesses chosen had to be ones that had been in existence for at least a year.
Ownership	The village people must own the businesses or operations independently from the larger organisations and the government.

In December 2022, the researcher visited Mhlakulo village, collecting firsthand information about businesses and skills. After selection, the gathered data underwent thorough analysis, yielding relevant insights. The overview includes eight businesses and participants with variations, such as internet access and computer training limitations. The majority, residing in rural areas, operated businesses for over a year. Each business is identified by codes (Bs) corresponding to the table below.

Business(B)	Business Profile
B1	The business is situated in Mhlakulo village and is involved in both maize and livestock farming. The two business segments complement each other, allowing sales from one side of the firm to support the other. This family-run company has been operating for more than ten (10) years. Approximately fifteen (15) permanent employees, as well as seasonal workers, have been part of this family-owned business.
B2	A retired police officer currently manages this informal business. Launched in 2016 upon his departure from the Department of Police, this business initially started as a maize crop growing

	endeavour for domestic use, without the intention of generating profit or establishing a business. Following a successful first harvest, he decided to sell the produce within the village community and later expanded to neighbouring villages through word of mouth. Success in this venture has been achieved through trial and error rather than formal training.
B3	The participant possesses skills in construction, paving, and floor tiling and brick laying acquired during his approximately thirty-four (34) years of employment with a company before being laid off. Establishing a positive reputation in the community, he has developed strong relationships with clients in the village, relying on the quality of his work for recognition. Operating in Mhlakulo village and neighbouring areas since the beginning of 2021, he extends his services to other communities within the Mhlontlo district municipality.
B4	The participant engages in informal trade by roaming around the village and surrounding areas in search of employment prospects. He has completed various training, including those for security guard, upholstery, and sheep shearing. Although he also explores opportunities in nearby towns, he manages to sustain himself by securing temporary jobs within the hamlet. Recently, he obtained temporary employment in road construction, highlighting his continuous effort to acquire new skills.
B5	This company, situated in the village of Mhlakulo, engages in the cultivation of maize and vegetables. In the vegetable segment, the produce is sold to grocery stores, street markets, local restaurants, and schools, while maize is primarily sold to well-established companies through off-take agreements. Operating for four (4) years, the family-run business is duly registered with CIPRO. The fields utilised by the business are often borrowed from individuals who haven't utilised them for an extended period, with the family reciprocating by sharing a portion of their harvest. The company employs about three (3)

	regular employees, supplemented by fifteen (15) seasonal employees depending on the season.
B6	This business primarily focuses on vegetable farming, with the produce being sold to local grocery stores, street vendors, and community members. Although the business is not officially registered, there are plans to do so as it expands. Operating for three (3) years, the family-owned business experienced substantial growth during the pandemic, utilizing both home gardens and fields. The company has made efforts to leverage technology for communication with employees and customers, contributing significantly to its expansion. The business currently employs four (4) permanent workers, including the manager, and hires temporary workers as needed.
B7	This company engages in various farming operations, including grain, vegetable, poultry, and pig farming. Established in 2016, the company initially focused on vegetable farming and gradually expanded into other areas of farming, including grain, chicken, and pigs. The diverse farming activities complement each other, minimising waste within the company. With two permanent employees and additional temporary workers, the company is headquartered in the village of Mhlakulo, serving a customer base that includes the local community, retail stores, and street vendors.
B8	Specialising in landscaping, this family-owned company has been operating for twenty (20) years and is based in the village of Mhlakulo. While the family manages multiple enterprises in nearby towns, this particular business has been a significant contributor to putting the owner's children through university. The company does not have permanent employees but occasionally hires temporary workers for labour-intensive jobs. Primarily serving households and event photographers, the company has expanded solely through word of mouth.

3.5.2 Sample size

According to (Clow & James, 2013), a sample size is like a smaller group within the overall group being studied, and the study outlines how this group is chosen. It's important that the individuals in this larger group share at least one trait related to the research question. The sample consisted of eight (8) participants, who are community members operating informal businesses from various sectors in the village.

The theory of saturation in qualitative research served as justification for the selection of an eleven (11)-person sample size for this investigation. When fresh data stopped revealing new themes or insights, a sufficient understanding of the phenomenon was attained, and saturation occurred. While there were differences in the standards for appropriate sample sizes in qualitative research, generally accepted guidelines indicated that reaching saturation was more important than meeting a certain cutoff point (Guest et al., 2006). Rather than relying on predetermined sample sizes, the objective was to assure rich, in-depth data collection and analysis. The chosen sample was in line with the goals of saturation and qualitative research principles.

This study utilised purposeful sampling, a method chosen from the two main approaches, namely probability and non-probability sampling. Purposeful sampling is specifically employed due to its appropriateness for investigating particular groups. Moreover, even within the targeted group, not everyone qualifies, providing the flexibility to select participants based on specific criteria. Purposeful sampling is a common strategy employed to identify and choose individuals or groups with rich and relevant information related to the research topic (Palinkas et al., 2015). This involves locating and selecting individuals or groups who possess specific capabilities or experiences in the area of interest. The sampling methods are carefully designed to maximise efficiency and validity (Palinkas et al., 2015). The sample for this study comprised of community members of Mhlakulo village in Tsolo currently engaged in business activities within the area.

3.6 Interviews

During research interviews, the interview guide was verbally administered in a semi-structured format to gather information for the designated objective. The focus was on comprehending the community's needs and viewpoints by creating a detailed understanding of the subject matter. Semi-structured interviews were chosen to facilitate the acquisition of in-depth information from participants.

In semi-structured interviews, a basic framework, a set of fundamental questions, and a predetermined technique were utilised, offering the interviewer more flexibility in treating, probing, and prompting various responses. Data was collected through direct verbal communication between individuals during interviews. Unlike questionnaires, participants were not obligated to record their answers to predetermined questions. Interviews allowed for flexibility, enabling the interviewer to delve deeper and pose additional questions, thus yielding more detailed information than a questionnaire.

3.7 Data analysis and interpretation

Thematic analysis was employed for this study. Thematic analysis is a qualitative research method that involves identifying, analysing, and reporting patterns or themes within data. The process typically consisted of six steps:

1. Familiarisation with the data:

Researchers immerse themselves in the data through repeated readings and listening (in the case of interviews) to gain a deep understanding (Braun & Clarke, 2012).

2. Generating initial codes:

Researchers systematically tag segments of data with labels or codes representing concepts, themes, or patterns (Braun & Clarke, 2012).

3. Searching for themes:

Codes are organised to identify potential themes by looking for patterns and connections within the coded data (Braun & Clarke, 2012).

4. Reviewing themes:

Identified themes are checked against coded extracts and the entire dataset for accuracy and consistency, refining or adjusting as needed (Braun & Clarke, 2012).

5. Defining and naming themes:

Clearly defining and naming themes accurately represents the content they encapsulate (Braun & Clarke, 2012).

6. Writing the report:

Weaving together identified themes into a narrative that answers research questions and objectives, the final report provides insights, interpretations, and implications (Braun & Clarke, 2012).

Thematic analysis is a flexible yet systematic approach, ensuring a rigorous analysis that aligns with study objectives (Braun & Clarke, 2012).

The interviews will be recorded and transcribed. As the research questions are thematic, aligned with the research objectives, it will be easy to analyse. According to Braun & Clarke (2012), the purpose of the analysis is to identify patterns relevant to answering a particular research question. The key advantage of thematic analysis is that it allows for exploratory discussions, which is the basis of this study.

The study's objectives and research questions will guide the analysis of the raw data collected to produce conclusive results.

3.8 Limitations of the study

1. **Digital Access:** The target group faces limitations in internet access due to socio-economic challenges.
2. **Telephone Signal:** The study area experiences poor telephone signals, potentially making it challenging to contact participants.

3. **Digital Terminology:** Some individuals may struggle to understand digital terminology, emphasizing the suitability of face-to-face interviews for the study.

3.9 Trustworthiness

The study of trustworthiness is critical in qualitative research to assure reliability. states that in qualitative research while creating good quality studies through reliability and validity, states that "the trustworthiness of a study report lies at the heart of concerns often articulated as validity and reliability." When grading qualitative work, Welman et al. (2005, p. 145) recommends modification of the standard gauges to fit the contents of subjective research. Trustworthiness is all about establishing the following four things, which are described in more detail below:

3.9.1 Transferability and credibility

The study's credibility and transferability were evaluated using the qualitative research approach. All participants had their conversations recorded, and their permission was sought. The data were gathered, organised, and categorised before going through the thematic analysis process that was used for the study. According to Tracy (2010, 2019), the aforementioned study adheres to the idea of transferability by collecting data through direct interviews and then analysing it. Transferability refers to how qualitative research shows that the findings of one study can be applied to other situations (Moran, 2020).

3.9.2 Dependability

After some time and setting, dependability refers to the stability or reliability of the information. This denotes the unwavering quality, which could be equated to steadfastness (Shenton, 2004). This refers to the information's security and trackability after some time and under certain situations. According to Shenton (2004), the degree to which another analyst with equivalent training and compatibility with respondents would cite identical objective facts determines trustworthiness. This component can be tracked throughout the study process,

providing all of the raw data generated and reviewing the information evaluation technique to see how information was stored and how precise it is (Sinkovics & Alföldi, 2012). A semi-structured guide allows the researcher to use both open and closed-ended questions, providing the inquiry with essential data from the respondents in their own time, which aided in obtaining implications and psychological procedures.

3.9.3 Confirmability

Confirmability is the degree of neutrality in the research study's findings. In other words, this means that the findings are based on participants' responses and not any potential bias or personal motivations of the researcher. This involves ensuring that researcher bias does not skew the interpretation of what the research participants said to fit a certain narrative. To establish confirmability, qualitative researchers can provide an audit, which highlights every step of data analysis that was made to provide a rationale for the decisions made. This helps establish that the research study's findings accurately portray participants' responses (Moran, 2020).

3.10 Ethical considerations

The following are the components of ethical standards, according to Myers (2019): Honesty; ii) Plagiarism; iii) Informed Consent; and iv) Permission to publish. Resnik (2019); Resnik et al. (2015, p. 2) defines the principles of ethics as:

1. **Honesty:** The researcher must honestly report all of their findings without using any false information.
2. **Integrity:** All commitments made to interview subjects or participants must be kept.
3. **Openness:** A researcher must be receptive to any suggestions or criticism made by the participants.
4. **Confidentiality:** The researcher is required to always safeguard and treat the data with strict confidentiality.

Several ethical considerations were also taken into account, and the researcher ensured that none of the inquiries made the participants feel uncomfortable. Informed consent was obtained before scheduling any sessions for qualitative interviews. There was a need to pay attention to the following ethical considerations as stated by (Welman et al., 2005):

- The researcher asked participants for permission before starting the study and informed the participants in advance about the study's goal.
- All participants were assured of their rights to privacy by the researcher.
- The participants were assured that there won't be any emotional or physical harm.
- Ensuring that permission is obtained: when an organisation or its personnel are being studied, permission must be secured from the relevant authority, according to (Saunders et al., 2009). The Mhlakulo Community Council was asked for permission to perform the study. The letter included information on the study, including why it is being conducted and how long the study and interviews will last.

3.11 Problems encountered during data collection.

During the interviews, the researcher faced challenges in defining and describing terminologies such as digital technology, email, computers, computer networks, and mobile phone networks. Participants encountered difficulties in establishing connections between these terms and their understanding of how digital technology functions or its relevance to their daily lives, despite frequently using applications like WhatsApp. The interviews were primarily conducted in isiXhosa, a language understood by all participants, and some of these terms were used in isiXhosa. However, participants often struggled to relate these terms to the research study or comprehend how limited access to digital technology puts individuals at a disadvantage.

It is noteworthy that some of the participants did not own smartphones, and consequently, they were unable to experience the benefits of digital technology in rural areas, impacting their ability to improve their standard of living or contribute to community development.

3.12 Conclusion

This chapter details the research methodology, outlining the processes and methods employed in line with the study's objectives. A qualitative approach was chosen, aligning with the research philosophy, strategy, aim, and ethical considerations.

Challenges encountered during data collection included logistical constraints and limited participant availability due to poor network connectivity. These challenges influenced adaptations in the data collection process, impacting the sample size and study scope. The transcription step involved grouping keywords for thematic analysis, classifying themes relevant to the research questions. The analysis aimed to address research inquiries and achieve the study's overall aim.

Despite meticulous analysis, limitations persisted, including potential participant response bias, constraints in generalising findings, and inherent subjectivity in qualitative analysis. These limitations emphasize the need for careful interpretation of study outcomes.

The study's credibility was enhanced, contributing to the broader research discourse, despite the encountered challenges and limitations.

CHAPTER 4: ANALYSIS AND FINDINGS

4.1 Introduction

This chapter presents the analysis and conclusions derived from an exploratory research endeavour which aimed at understanding how access to digital technology can improve livelihoods in the community of Mhlakulo. It offers an overview of the data collection process outlined in Chapter Three, providing insights into the context and participants. The examination of this data leads to conclusions and interpretations, encompassing the interview guide, findings, and themes.

The study delved into the tangible impact of digital technology on various aspects of individuals' lives in the rural community of Mhlakulo in the Eastern Cape. It collected empirical data on the community's actual usage and access to digital technology. Chapter Three meticulously outlines the methodology and techniques employed in the investigation, offering justifications where necessary. It covers aspects such as research design, demographic description, and sampling techniques, providing insights into the data gathering procedures and tools. The chapter concludes by summarizing findings that address the posed research questions.

4.2 Participants of the study

The research focused on eight diverse participants from Mhlakulo village, Eastern Cape, involved in various businesses and income-generating skills. Privacy is maintained through participant codes (P1-P8). The study analysed how digital platforms were used to share commercial opportunities in the remote community. Interviews covered formal and informal sectors, representing a broad community actively contributing to village improvement. The businesses, with employee counts from 1 to 20, provide services within the village and the Mhlontlo district municipality. The study aimed to reveal challenges hindering rural communities' adaptation to technology in economic, political, and societal aspects. Table 4.1 provides information on the business sectors and services offered by the participants (Ps).

Table 4.1: Description of the participants(P) who participated in the study

Participant	Business or Skill	Services or products provided	Market
P1	Crop Farming	- Mealies - Cabbage - Spinach	- Supermarkets - Street vendors - Other village communities
P2	Crop Farming	- Mealies	- Community
P3	Crop Farming	- Mealies - Cabbage - Spinach - Potatoes	- Supermarkets - Street vendors - Small businesses - Other village communities
P4	Skill	- Paving - Bricklaying - Tiling	- Village Community
P5	Skill	Any job available in: - Upholstery - Security - assistant bricklayer	- Village Community
P6	Crop farming	- Cabbage - Mealies	- Village community - Supermarket
P7	Crop and animal farming	- Piggery - Chickens - Mealies - Spinach - Cabbage	- Village community - Supermarket - Street vendor
P8	Skill	- Landscaping - Photoshoot - Event hosting	- Village Community

4.3 Findings emanating from the interviews.

The analysis involved examining and organising the findings for each question posed during the interviews. Each interview response underwent transcription and coding, yielding 18 distinct findings. Participants provided insights into how their businesses, or the community had encountered the use of digital technologies in Mhlakulo village, Tsolo.

4.3.1 Research Question 1

RQ 1: How do rural businesses in Mhlakulo village in Tsolo perceive and use digital technology?

RSQ 1.1: Why do rural businesses perceive digital technology as valuable for their business operations?

This question was asked to determine the use of digital technologies in Mhlakulo village in Tsolo.

The community's perceptions of digital technology access in Mhlakulo:

Limited Awareness of Digital Platforms:

Finding: Participants showed limited awareness of digital platforms and their potential benefits. The community's lack of awareness regarding digital platforms highlights a need for education on the potential benefits of social media for reaching a broader market. Limited awareness restricts the community's ability to harness the full potential of digital platforms, hindering access to broader markets and economic opportunities.

Participant 7 (P7): *"I am not well-versed in social media, but I have observed that many people utilise it..."*

Challenges with Network Coverage:

Finding: Participants faced challenges due to poor network coverage affecting communication and online activities. Inadequate network coverage adversely affects job seekers. Improving network infrastructure is crucial to address this

challenge. Poor network coverage hampers communication and limits access to online resources, affecting job seekers and hindering the community's engagement in digital activities.

Participant 4 (P4): *"This situation is disheartening, especially for job seekers who miss out on opportunities..."*

Connectivity Problems Impacting Access:

Finding: Ongoing difficulties due to inadequate network connectivity hinder the full leverage of digital resources. Connectivity problems impede the community's ability to fully benefit from digital resources, limiting their access to information and opportunities.

Participant 5 (P5): *"However, we encounter ongoing difficulties due to inadequate network connectivity..."*

Technology Illiteracy and Limited Understanding:

Finding: Technology illiteracy was evident, particularly regarding online business opportunities. Technology illiteracy contributes to a reliance on traditional communication methods, limiting the community's ability to explore and benefit from online business opportunities.

Participant 2 (P2): *"Due to the low literacy rate among the individuals I interact with in this business..."*

Barriers like High Data Costs and Unreliable Internet:

Finding: Exorbitant data costs and unreliable internet access present significant barriers. The concern about high data costs and unreliable internet access emphasizes barriers hindering technology adoption.

Participant 1 (P1): *"I cannot afford to incorporate technology into my business due to the exorbitant data costs and the unreliable internet connection..."*

The community faces significant challenges in digital technology adoption, impacting their ability to access markets, explore opportunities, and engage effectively online.

RSQ 1.2: How do various factors influence rural businesses' decisions to adopt digital technologies for gaining a competitive advantage?

Affordability and Accessibility:

Finding: Limited affordability and unreliable accessibility of data hinder digital technology adoption. The high cost and unreliability of data create barriers to digital technology adoption. The limited affordability and accessibility of data restrict the community's ability to adopt digital technologies, limiting their participation in the digital economy.

Participant 1 (P1): *"Data costs are a significant challenge, and even in our village, data access is unreliable."*

Perceived Benefits:

Finding: Recognition of the potential benefits of technology, especially in reaching inaccessible areas. Acknowledging the potential benefits indicates opportunities for market expansion through technology. Reliance on traditional communication methods limits the community's ability to fully embrace the benefits of digital technologies, hindering efficient and modern communication.

Participant 5 (P5): *"It enables me to reach inaccessible areas and expand my market presence without incurring any travel expenses."*

Community and Business Advancements:

Finding: Acknowledgment of the need for assistance in households, particularly those led by women and elderly individuals. This suggests the broader societal impact of technology adoption. The need for assistance in households indicates the potential of digital technologies to address specific challenges, especially in marginalised groups, but barriers prevent their widespread adoption.

Participant 2 (P2): *"Assistance is needed in many households, particularly those led by women and elderly individuals."*

Governmental Role:

Finding: Emphasis on the government's crucial role in promoting digital adoption within rural areas. The importance of government support underscores the need for policy initiatives. Government support is identified as crucial, suggesting that without intervention, the community may struggle to overcome the barriers to digital adoption.

Participant 3 (P3): *"The government has a crucial role to play in promoting digital adoption within rural areas."*

The community faces barriers such as limited affordability, a reliance on traditional communication, and the need for government support to fully embrace digital technologies for a competitive advantage.

4.3.2 Research Question 2

RQ 2: How do entrepreneurs in Mhlakulo village use digital technology to enhance their entrepreneurial activities?

RSQ 2.1: How can entrepreneurs in Mhlakulo rural village improve their use of digital technologies?

Limited Digital Literacy:

Finding: Entrepreneurs emphasize the need for targeted training programs to enhance digital literacy. Limited digital literacy among entrepreneurs hinders the community's ability to fully leverage digital tools for efficient business operations.

Participant 6 (P6): *"We need training programs. Digital skills are crucial for efficiency. With proper training, we can unlock the full potential of digital tools."*

Community Empowerment:

Finding: Workshops and community support are essential for empowering the community with digital skills. Community empowerment initiatives can uplift the community by providing them with essential digital skills, potentially improving overall livelihoods.

Participant 4 (P4): "Workshops and community support are essential. We need initiatives to empower the community with digital skills."

The efficiency of entrepreneurial activities through digital technology is contingent on addressing the lack of digital literacy among entrepreneurs through targeted training programs and community empowerment initiatives.

RSQ 2.2: Why and how do available digital technologies in the rural village facilitate the identification of new business opportunities?

Data Costs and Connectivity Barriers:

Finding: Concerns about data costs and connectivity issues limiting the exploration of new opportunities (P1). High data costs and connectivity issues restrict the community's ability to explore and benefit from new business opportunities.

Quote: Participant 1 (P1): "Data costs are a challenge. We need affordable data. Connectivity issues limit our exploration of new opportunities."

Online Potential:

Finding: Entrepreneurs recognize the transformative potential of online platforms in education and skills marketing (P5). The recognition of online potential indicates a desire for growth, but existing barriers limit the community's ability to fully harness online platforms for education and skills marketing.

Quote: Participant 5 (P5): "Online platforms can be a game-changer for us. Especially in education and skills marketing, there's untapped potential."

Call for Government Support:

Finding: Emphasis on the crucial role of government support in overcoming barriers. Government support is identified as crucial, suggesting that without intervention, the community may struggle to overcome the barriers to digital adoption.

Quote: Participant 3 (P3): "Government support is crucial. Initiatives for affordable data can break down barriers."

The efficiency of entrepreneurial activities in identifying new business opportunities through digital technology hinges on addressing challenges related to data costs, connectivity issues, and the transformative potential of online platforms.

Conclusion

The interconnected themes of lack of knowledge, digital connectivity, technology illiteracy, and technology adoption emerge as critical dimensions impacting the efficiency of entrepreneurial activities through digital technology in Mhlakulo. Entrepreneurs highlight the urgent need for training programs, community empowerment, and government support to unlock the full potential of digital tools. A holistic approach that addresses these themes is imperative for enhancing digital efficiency, fostering economic growth, and ensuring the success of entrepreneurial endeavours in Mhlakulo.

Addressing these challenges is imperative for enhancing digital efficiency, fostering economic growth, and ensuring the success of entrepreneurial endeavours in Mhlakulo. By bridging knowledge gaps, improving connectivity, and fostering technology adoption, a comprehensive strategy can be devised to empower entrepreneurs, leading to a more efficient and digitally resilient entrepreneurial landscape in Mhlakulo.

In summary, the overarching themes of lack of knowledge, digital connectivity challenges, technology illiteracy, and technology adoption collectively shape the community's engagement with digital technologies. The identified challenges and aspirations provide a roadmap for fostering digital inclusion, driving economic development, and creating a competitive advantage for rural businesses in

Mhlakulo. The findings emphasize the importance of targeted interventions, community empowerment, and governmental support to navigate the complexities of digital technology adoption in this rural context.

4.4 Thematic Analysis

In delving into the thematic analysis of Mhlakulo village's digital landscape, the examination of various research sub-questions has unearthed critical insights. The exploration aimed to address the overarching research questions by dissecting the intricacies of Lack of Technology Knowledge, Digital Connectivity, Technology Illiteracy, and Technology Adoption.

4.4.1 Research Question 1

RQ1: How do rural businesses in Mhlakulo village in Tsolo perceive and use digital technology?

RSQ 1.1: Why do rural businesses perceive digital technology as valuable for their business operations?

Lack of Technology Knowledge: Unearthing Digital Gaps

Subtheme 1.1: Limited Awareness of Digital Platforms

Finding 1: Participants showed limited awareness of digital platforms and their potential benefits.

Participant 7 (P7): "I am not well-versed in social media, but I have observed that many people utilize it..."

Subtheme 1.2: Technology Illiteracy

Finding 2: Technology illiteracy was evident, particularly regarding online business opportunities.

Participant 2 (P2): "Due to the low literacy rate among the individuals I interact with in this business..."

Digital Connectivity: Unravelling Network Challenges

Subtheme 2.1: Poor Network Coverage

Finding 3: Participants faced challenges due to poor network coverage affecting communication and online activities.

Participant 4 (P4): "This situation is disheartening, especially for job seekers..."

Subtheme 2.2: Connectivity Problems Impacting Access

Finding 4: Ongoing difficulties due to inadequate network connectivity hinder the full leverage of digital resources.

Participant 5 (P5): "However, we encounter ongoing difficulties due to inadequate network connectivity..."

Technology Illiteracy: Community Perspectives

Subtheme 3.1: Need for Training Programs

Finding 5: Participants emphasized the importance of training programs to enhance digital literacy.

Participant 6 (P6): "We need training programs. Digital skills are crucial for efficiency..."

Subtheme 3.2: Community Empowerment Initiatives

Finding 6: Calls for community-based initiatives and workshops to empower individuals with digital skills.

Participant 4 (P4): "Workshops and community support are essential. We need initiatives to empower the community with digital skills."

The findings underscore substantial challenges in digital technology adoption among rural businesses in Mhlakulo village, including knowledge gaps, connectivity issues, technology illiteracy, and adoption barriers.

RSQ 1.2: How do various factors influence rural businesses' decisions to adopt digital technologies for gaining a competitive advantage?

Affordability and Accessibility:

Subtheme 4.1: Limited Affordability of Data

Finding 7: Limited affordability and unreliable accessibility of data hinder digital technology adoption.

Participant 1 (P1): "Data costs are a significant challenge, and even in our village, data access is unreliable."

Subtheme 4.2: Perceived Benefits

Finding 8: Recognition of the potential benefits of technology, especially in reaching inaccessible areas.

Participant 5 (P5): "It enables me to reach inaccessible areas and expand my market presence without incurring any travel expenses."

Subtheme 4.3: Community and Business Advancements

Finding 9: Acknowledgment of the need for assistance in households, particularly those led by women and elderly individuals.

Participant 2 (P2): "Assistance is needed in many households, particularly those led by women and elderly individuals."

Subtheme 4.4: Governmental Role

Finding 10: Emphasis on the government's crucial role in promoting digital adoption within rural areas.

Participant 3 (P3): "The government has a crucial role to play in promoting digital adoption within rural areas."

The community faces barriers such as limited affordability, a reliance on traditional communication, and the need for government support to fully embrace digital technologies for a competitive advantage.

4.4.2 Research Question 2

RQ 2: How do entrepreneurs in Mhlakulo village use digital technology to enhance their entrepreneurial activities?

RSQ 2.1: How can entrepreneurs in Mhlakulo rural village improve their use of digital technologies?

Lack of Technology Knowledge: Unearthing Digital Gaps

Subtheme 1.1: Limited Awareness of Digital Platforms

Finding 11: Entrepreneurs emphasize the need for targeted training programs to enhance digital literacy.

Participant 6 (P6): "We need training programs. Digital skills are crucial for efficiency. With proper training, we can unlock the full potential of digital tools."

Subtheme 1.2: Technology Illiteracy

Finding 12: Workshops and community support are essential for empowering the community with digital skills.

Participant 4 (P4): "Workshops and community support are essential. We need initiatives to empower the community with digital skills."

The efficiency of entrepreneurial activities through digital technology is contingent on addressing the lack of digital literacy among entrepreneurs through targeted training programs and community empowerment initiatives.

RSQ 2.2: Why and how do available digital technologies in the rural village facilitate the identification of new business opportunities?

Barriers to Technology Adoption: Community Aspirations

Subtheme 4.1: Aspirations for Integration

Finding 13: Expressions of a strong desire among participants to integrate more digital tools into their businesses.

Participant 1 (P1): "I dream of integrating technology into my business. It can open up new markets and opportunities..."

Subtheme 4.2: Barriers to Technology Adoption

Finding 14: Concerns about high data costs limiting the frequency and scope of digital interactions.

Participant 5 (P5): "Data costs are a challenge. We need affordable data. Connectivity issues limit our exploration of new opportunities."

Subtheme 4.3: Digital Connectivity: Unravelling Network Challenges

Finding 15: Participants faced challenges due to poor network coverage affecting communication and online activities.

Participant 4 (P4): "This situation is disheartening, especially for job seekers..."

Subtheme 4.4: Connectivity Problems Impacting Access

Finding 16: Ongoing difficulties due to inadequate network connectivity, hindering the full leverage of digital resources.

Participant 5 (P5): "However, we encounter ongoing difficulties due to inadequate network connectivity..."

Technology Adoption: Community Aspirations

Subtheme 4.1: Aspirations for Integration

Finding 17: Expressions of a strong desire among participants to integrate more digital tools into their businesses.

Participant 1 (P1): "I dream of integrating technology into my business. It can open up new markets and opportunities..."

Subtheme 4.2: Barriers to Technology Adoption

Finding 18: Concerns about high data costs limiting the frequency and scope of digital interactions.

Participant 5 (P5): "Data costs are a challenge. We need affordable data. Connectivity issues limit our exploration of new opportunities."

The findings collectively highlight that the efficiency of entrepreneurial activities through digital technology in Mhlakulo is contingent on addressing key challenges related to digital knowledge, connectivity, and adoption.

The interconnected themes of lack of knowledge, digital connectivity, technology illiteracy, and technology adoption emerge as critical dimensions impacting the efficiency of entrepreneurial activities through digital technology in Mhlakulo. Entrepreneurs highlight the urgent need for training programs, community empowerment, and government support to unlock the full potential of digital tools. A holistic approach that addresses these themes is imperative for enhancing digital efficiency, fostering economic growth, and ensuring the success of entrepreneurial endeavours in Mhlakulo. Addressing these challenges is pivotal for fostering digital inclusion, driving economic development, and creating a competitive advantage for rural businesses.

Deriving Themes:

Themes were derived through a systematic process of coding and categorisation based on the analysis of participant interviews. The identified themes align with the overarching dimensions of lack of knowledge, digital connectivity, technology illiteracy, and technology adoption, which emerged as critical factors influencing the use of digital technology in rural businesses in Mhlakulo. Overlaps were minimised to ensure distinct categorisation, and findings were attributed to the most relevant and representative themes. The themes were refined iteratively to accurately capture the nuances in participants' narratives.

Implications and Future Directions:

These thematic findings offer valuable insights into the multifaceted dynamics of digital technology in rural communities. They emphasize the need for targeted interventions, such as training programs, community empowerment initiatives, and government support, to address knowledge gaps, connectivity issues, and literacy barriers. Incorporating these insights into strategic policies and

community-driven initiatives can pave the way for a more technologically inclusive future in Mhlakulo.

4.5 Data analysis

Participant Diversity and Privacy Measures:

The inclusion of eight diverse participants engaged in various businesses and income-generating skills ensures a comprehensive understanding of the community's economic landscape. Privacy maintenance through participant codes (P1-P8) demonstrates ethical considerations, safeguarding the anonymity and confidentiality of participants.

Utilisation of Digital Platforms:

The study focuses on how digital platforms are used to share commercial opportunities in the remote community, highlighting the increasing relevance of technology in fostering economic development even in rural areas. Interviews covering formal and informal sectors depict a broad community actively contributing to village improvement, indicating a diverse range of business activities.

Business Description and Market Reach:

Table 4.1 provides detailed information about the participants' businesses or skills, services/products offered, and target markets, elucidating the economic activities prevalent in the community. Businesses, with employee counts ranging from 1 to 20, cater to both the village and the Mhlontlo district municipality, showcasing their local and regional significance.

Challenges in Technology Adaptation:

The study aims to reveal challenges hindering rural communities' adaptation to technology in various aspects, indicating a comprehensive exploration beyond technology adoption, considering systemic barriers to development. Limited awareness of digital platforms among rural businesses suggests potential barriers to technology adoption or access, underscoring the importance of

addressing awareness gaps and enhancing digital literacy among rural communities.

Theme Development and Theoretical Alignment:

The process of theme development involved a systematic approach of identifying, refining, and organising themes based on interview responses. Themes were derived from the data through iterative coding and analysis, ensuring reliability and validity. The identified themes were then linked to existing theoretical frameworks, such as the Technology Acceptance Model or the Diffusion of Innovations theory, to provide theoretical grounding and interpretation of findings.

In conclusion, the case study offers valuable insights into the dynamics of rural businesses in Mhlakulo village and the challenges they face in leveraging digital technology for economic development. The findings highlight the need for targeted interventions to address awareness gaps and enhance digital literacy, thereby facilitating more inclusive and sustainable development in rural areas. Further research could explore specific strategies to overcome barriers to technology adoption and promote the effective utilisation of digital platforms among rural businesses.

Chapter Summary

This chapter delves deeply into the landscape of digital technology access in Mhlakulo village, exploring both challenges and opportunities. It unravels the community's aspirations, emphasizes the pivotal role of government support, identifies prevailing barriers, and delineates the evolving landscape of technology adoption. By directly addressing the research questions, this analysis unveils nuanced insights into the complexities of digital inclusion within the community.

A key aspect of this exploration is the categorisation of findings into defined themes and sub-themes. Through a systematic process of coding and categorisation, themes such as Lack of Technology Knowledge, Digital Connectivity, Technology Illiteracy, and Technology Adoption emerge, offering a

comprehensive understanding of the multifaceted dynamics in Mhlakulo. This structured approach ensures a clear and organised presentation of the diverse challenges and opportunities revealed through participant interviews, providing a robust framework for subsequent discussions and conclusions.

Through insightful participant voices and meticulous analysis, the chapter provides a nuanced understanding of both the challenges and potentials inherent in digital technology adoption within Mhlakulo village. By delving into RSQ 1.1, the chapter elucidates the limited awareness and the critical need for education about digital platforms among rural businesses. Furthermore, RSQ 1.2 and RSQ 2.1 shed light on the barriers hindering digital technology adoption among entrepreneurs, emphasizing the necessity for targeted interventions such as training programs and community empowerment initiatives.

The findings presented herein not only dissect the intricacies of digital inclusion within the community but also offer valuable insights into the transformative potential of digital technologies. Thus, the chapter effectively addresses the research questions, paving the way for informed strategies and interventions to foster digital literacy and enhance technology adoption in Mhlakulo village.

As the study transitions to the next chapter, a deep dive into thematic analysis awaits. The identified themes are further dissected, offering a more nuanced understanding of their interplay and implications. By connecting participant narratives, findings, and themes, the study progresses toward formulating targeted recommendations and interventions to enhance digital inclusion and economic development in Mhlakulo.

CHAPTER 5: DISCUSSION OF FINDINGS

5.1 Introduction

Chapter 4 provided a detailed analysis of the thematic findings derived from interviews conducted in Mhlakulo village. In this chapter, we delve deeper into the implications of these findings, aiming to contextualise them within existing literature and theoretical frameworks. By synthesizing the insights gleaned from participant narratives with established knowledge, we aim to offer a robust understanding of the challenges and opportunities surrounding digital technology access in rural settings.

5.2 Lack of Technology Knowledge

The lack of technology knowledge, as illuminated by participant narratives, underscores the pervasive issue of limited awareness of digital platforms in rural communities. Participant 7's acknowledgment of underutilised social media channels due to a lack of knowledge resonates with existing literature, highlighting the barriers faced by rural businesses in leveraging digital tools for market expansion (Ferrari et al., 2022; Wanof, 2023). This finding underscores the critical need for targeted educational interventions aimed at enhancing digital literacy among community members.

5.3 Digital Connectivity

Digital connectivity emerges as a critical theme, encapsulating challenges associated with poor network coverage and connectivity issues. Participant 4's portrayal of the disheartening situations faced by job seekers due to inadequate network coverage highlights the broader socio-economic implications of digital infrastructure deficiencies (Guo et al., 2022; Wang & Fu, 2022). The community's plea for government support in addressing these connectivity challenges underscores the systemic nature of the issue and the necessity for coordinated efforts to bridge the digital divide.

5.4 Technology Illiteracy

The theme of technology illiteracy sheds light on the impact of low literacy levels within the community on effective technology utilisation. Participant 2's concern about the prevalence of phone calls as a primary mode of communication due to low literacy rates underscores the fundamental role of literacy in digital inclusion efforts (Mwanza, 2022). The community's emphasis on training programs and empowerment initiatives reflects a collective recognition of the need to address literacy barriers through targeted interventions (Nogueira et al., 2022; Sujarwo et al., 2022).

5.5 Technology Adoption

Technology adoption emerges as a central concern, with participants expressing aspirations to integrate digital tools into their businesses despite facing barriers such as limited resources and high data costs. Participant 1's dream of technology integration underscores the transformative potential of digital technologies in expanding market opportunities (Diao et al., 2023). However, concerns about data costs echo existing challenges that hinder successful technology adoption in rural settings (Mbunge et al., 2022).

5.6 Synthesis and Implications

The thematic analysis presented in this chapter offers valuable insights into the digital technology landscape of Mhlakulo village, highlighting the interconnected challenges and opportunities faced by rural communities. Lack of technology knowledge, digital connectivity barriers, technology illiteracy, and challenges in technology adoption collectively shape the efficiency of entrepreneurial activities through digital technology.

To address these challenges effectively, a holistic approach is imperative. Educational interventions tailored to the community's needs can bridge the knowledge gap, empowering individuals and businesses to engage effectively with digital platforms. Improvements in digital infrastructure, supported by government initiatives, are essential to overcome connectivity barriers and ensure reliable internet access. Targeted training programs and community-

based initiatives are instrumental in addressing technology illiteracy, recognising the collective nature of learning in the community. Finally, efforts to facilitate technology adoption should focus on making digital tools more accessible and affordable, with pivotal government support in creating an enabling environment for digital innovation and entrepreneurship in rural areas.

In conclusion, by synthesizing participant narratives with existing literature and theoretical frameworks, this discussion provides a comprehensive understanding of the challenges and opportunities surrounding digital technology access in Mhlakulo village. It underscores the importance of coordinated efforts from multiple stakeholders to foster digital inclusion, drive economic development, and empower rural communities to thrive in the digital age.

CHAPTER 6: CONCLUSIONS AND RECOMMENDATIONS

6.1 Understanding Digital Access Challenges

In the exploration of digital access within Mhlakulo village, this research delved into crucial themes: Lack of Technology Knowledge, Digital Connectivity, Technology Illiteracy, and Technology Adoption. The lack of awareness and understanding of digital platforms emerged as a significant challenge, with participants expressing limited knowledge of the potential benefits of social media and online tools. Connectivity barriers, characterised by poor network coverage, hindered participants from fully leveraging digital resources. Additionally, low literacy rates within the community contributed to technology illiteracy, particularly in the context of online business opportunities. Some participants expressed aspirations for greater technology integration into their businesses, citing the potential to open up new markets and opportunities. However, external barriers, such as high data costs, were identified as impediments to full technology adoption.

These findings collectively shape the community's engagement with digital technologies in Mhlakulo, aligning with and contributing to existing literature on digital access in rural settings. The study uncovered nuanced differences in the rural context of Mhlakulo, addressing specific contextual elements that affect the adoption of technology.

6.2 Enhancing Entrepreneurial Activities through Technology

Highlighting the need for training programs and community-based initiatives to enhance digital literacy underscores the critical role of addressing the lack of knowledge theme in optimising entrepreneurial activities through digital technology. Participants recognised the transformative potential of digital technologies in identifying new business opportunities. However, challenges such as high data costs and connectivity barriers highlighted the need for government support to address these hindrances.

The study emphasises the necessity of targeted interventions, including training programs and government support, to improve the use of digital technologies

within Mhlakulo village. These findings contribute valuable insights to the discourse on efficient technology adoption in rural entrepreneurial activities.

6.3 Recommendations

6.3.1 Government Intervention

Implement Targeted Digital Literacy Programs: Develop and implement programs specifically designed to enhance digital literacy, addressing the lack of technology knowledge identified in the community.

Prioritise infrastructure development: Focus on improving digital infrastructure, with a specific emphasis on enhancing network coverage. This addresses the digital connectivity barriers faced by the community, especially in the context of job opportunities and communication.

Establish computer labs for skill development: Create accessible computer labs within the community to provide hands-on training opportunities, addressing technology illiteracy.

Affordable data initiatives: Introduce initiatives to make data more affordable, addressing concerns about high data costs and facilitating greater digital engagement.

6.3.2 Support for Rural Farmers

Develop and implement comprehensive support programs for rural farmers, including access to technology, training, and financial assistance to enhance business opportunities.

6.3.3 Mindset Shift and Trust Building

Initiate community-wide campaigns to shift mindsets towards the benefits of digital tools, addressing the technology adoption aspirations expressed by participants.

6.3.4 Infrastructure Improvement

Allocate resources to improve digital infrastructure, particularly focusing on ensuring reliable internet connectivity.

6.3.5 Tailored Support Mechanisms

Tailor support mechanisms to the diverse needs and preferences of individuals and the community as a whole, providing resources, training, and assistance based on specific contexts.

These recommendations offer specific, well-thought-out answers to the particular problems found in Mhlakulo, aligning with the specific needs identified in the research. They aim to create an environment favourable for digital inclusion and, in the process, empower communities via the use of technology.

6.4 Future Research

Future research should focus on conducting a longitudinal impact assessment of implemented interventions in Mhlakulo, gauging the sustained effectiveness over time. This will provide valuable insights into the long-term viability and adaptability of digital empowerment strategies in rural communities.

6.5 Chapter Summary

This chapter concludes with a reflection on the intricate digital landscape of Mhlakulo village. The themes of digital connectivity, technology adoption, technology illiteracy, and lack of technology knowledge have emerged as guiding lights in the latter stages of this research project, showing both potential and obstacles. The synthesized conclusions and recommendations serve as beacons, pointing towards a path forward, while the study's outcomes extend into the final sections. The roadmap outlined here charts the course for a digitally empowered Mhlakulo, emphasizing the need for governmental action, policy reform, and the grassroots potential of community-led initiatives.

In concluding this chapter, the researcher embarked on the final leg of the research journey, unravelling the broader implications, potential impacts, and universal lessons embedded in the Mhlakulo narrative. This research, rooted in

a specific village, resonates with the universal call for equitable and inclusive digital access, extending far beyond the confines of just the Mhlakulo village.

REFERENCES

- Abushawali, M., Lim, Y. P., & Bedu, A. R. (2013, September). The impact of new digital media on graphic designer in Jordan. In *2013 International Conference on Informatics and Creative Multimedia* (pp. 274-277). IEEE.
- Abutabenjeh, S., & Jaradat, R. (2018). Clarification of research design, research methods, and research methodology: A guide for public administration researchers and practitioners. *Teaching Public Administration*, 36(3), 237-258.
- Abu-Taieh, E., Hadid, I. H. A., & Mouatasim, A. E. (2020). *Cyberspace. BoD – Books on Demand*.
- Ajzen, I. (1991). The theory of planned behavior. *Organizational behavior and human decision processes*, 50(2), 179-211.
- Anyikwa, I. C. (2021). *Eastern Cape digital economy diagnostic reports*. https://www.ecsecc.org/datarepository/documents/ecsecc-dr-anyikwa_5t6ry.pdf
- Aruleba, K., & Jere, N. (2022). Exploring digital transforming challenges in rural areas of South Africa through a systematic review of empirical studies. *Scientific African*, 16, e01190.
- Ayandibu, A. O., & Houghton, J. (2017). The role of Small and Medium Scale Enterprise in local economic development (LED). *Journal of Business and Retail Management Research*, 11(2).

- Bartczak, K. (2021). Digital Technology Platforms as an Innovative Tool for the Implementation of Renewable Energy Sources. *Energies*, 14(23), 7877.
- Ben, S., Bosc, R., Jiao, J., Li, W., Simonelli, F., & Zhang, R. (2017). Digital Infrastructure Overcoming the digital divide in China and the European Union. *Centre for European Policy Studies*.
- Bernard, H. R. (2013). *Social research methods: Qualitative and quantitative approaches*. Sage.
- Bhaskara, S., & Bawa, K. S. (2021). Societal digital platforms for sustainability: Agriculture. *Sustainability*, 13(9), 5048.
- Bhorat, H., Asmal, Z., Lilenstein, K., & Van der Zee, K. (2018). SMMEs in South Africa: Understanding the constraints on growth and performance.
- Bocconcelli, R., Cioppi, M., & Pagano, A. (2017). Social media as a resource in SMEs' sales process. *Journal of Business & Industrial Marketing*, 32(5), 693-709.
- BRADBROOK, G., & FISHER, J. (2004). *Digital equality: Reviewing Digital Inclusion Activity and Mapping the Way Forwards*. CitizensOnline.
- Braun, V., & Clarke, V. (2012). *Thematic analysis*. American Psychological Association.
- Cecchini, S., & Scott, C. (2003). Can information and communications technology applications contribute to poverty reduction? Lessons from rural India. *Information Technology for development*, 10(2), 73-84.

- Chen, G., Cox, J. H., Uluagac, A. S., & Copeland, J. A. (2016). In-depth survey of digital advertising technologies. *IEEE Communications Surveys & Tutorials*, 18(3), 2124-2148.
- Choung, M. E., & Manamela, M. G. (2018). Digital Inequality in Rural and Urban settings: Challenges of Education and Information in South African Youth Context. *Bangladesh e-Journal of Sociology*, 15(2).
- Clow, K. E., & James, K. E. (2013). *Essentials of marketing research: Putting research into practice*. SAGE publications.
- Creswell, J. W. (2009). Mapping the field of mixed methods research. *Journal of mixed methods research*, 3(2), 95-108.
- Creswell, J. W., & Creswell, J. D. (2017). *Research design: Qualitative, quantitative, and mixed methods approaches*. Sage publications.
- Cullen, R. (2001). Addressing the digital divide. *Online information review*, 25(5), 311-320.
- Davis, F. D. (1989). Technology acceptance model: TAM. *Al-Suqri, MN, Al-Aufi, AS: Information Seeking Behavior and Technology Adoption*, 205-219.
- Diao, X., Reardon, T., Kennedy, A., DeFries, R. S., Koo, J., Minten, B., ... & Thornton, P. (2023). The future of small farms: innovations for inclusive transformation. In *Science and Innovations for Food Systems Transformation* (pp. 191-205). Cham: Springer International Publishing.
- Dlodlo, N. (2009). Access to ICT education for girls and women in rural South Africa: A case study. *Technology in society*, 31(2), 168-175.

Eastern Cape Commission. (2014). *Eastern cape vision 2030 provincial development plan*.

https://www.ecsecc.org/documentrepository/informationcentre/ec-vision-2030-planoctober-post-exco_14935.pdf

Elo, S., & Kyngäs, H. (2008). The qualitative content analysis process. *Journal of advanced nursing*, 62(1), 107-115.

Ferrari, A., Bacco, M., Gaber, K., Jedlitschka, A., Hess, S., Kaipainen, J., ... & Brunori, G. (2022). Drivers, barriers and impacts of digitalisation in rural areas from the viewpoint of experts. *Information and Software Technology*, 145, 106816.

Fox, N. (2009). Using interviews in a research project. *The NIHR RDS for the East Midlands/Yorkshire & the Humber*, 26.

Gcora, N., Gopeni, A., Tuswa, M., Lwoga, E. T., & Chigona, W. (2015). The challenges rural women face in using Telecentres: The case of the Eastern Cape Province. *Proceedings of the 9th IDIA conference*.

Gómez-Carmona, O., Buján-Carballal, D., Casado-Mansilla, D., López-de-Ipiña, D., Cano-Benito, J., Cimmino, A., ... & Bujalkova, N. (2023). Mind the gap: The AURORAL ecosystem for the digital transformation of smart communities and rural areas. *Technology in Society*, 74, 102304.

Guest, G., Bunce, A., & Johnson, L. (2006). How many interviews are enough? An experiment with data saturation and variability. *Field methods*, 18(1), 59-82.

- Guo, Y., Zhou, Y., & Liu, Y. (2022). Targeted poverty alleviation and its practices in rural China: A case study of Fuping county, Hebei Province. *Journal of Rural Studies*, 93, 430-440.
- Hansen Henten, A., & Maria Windekilde, I. (2016). Transaction costs and the sharing economy. *info*, 18(1), 1-15.
- Helsper, E. (2008). *Digital inclusion: an analysis of social disadvantage and the information society*. Department for Communities and Local Government.
- Jamil, S. (2021). From digital divide to digital inclusion: Challenges for wide-ranging digitalization in Pakistan. *Telecommunications Policy*, 45(8), 102206.
- Katiyatiya, L. M. (2020). Part A: Socio-economic inequality in South Africa and the continual plight for social protection in the future world of work. *Journal of Poverty*, 24(3), 203-221.
- Kavese, K., & Mbali, A. (2021). *Eastern cape labour market overview*. <https://www.ecsecc.org/infocentreitem/eastern-cape-labour-market-overview-2021q1> - google search
- Kulkarni, M. (2019). Digital accessibility: Challenges and opportunities. *IIMB Management Review*, 31(1), 91-98.
- Manana, D. P. (2019). Inclusive Growth and Economic Transformation in South Africa. *Graduate school of Business Leadership University of South Africa*.
- Mariscal, J., Mayne, G., Aneja, U., & Sorgner, A. (2019). Bridging the gender digital gap. *Economics*, 13(1), 20190009.

- Mbunge, E., Muchemwa, B., & Batani, J. (2022). Are we there yet? Unbundling the potential adoption and integration of telemedicine to improve virtual healthcare services in African health systems. *Sensors International*, 3, 100152.
- Mhlontlo Local Municipality. (2023). *Final Annual Report 2021/22*. https://mhlontlolo.gov.za/cat_doc/annual-reports-2/
- Momani, A. M., & Jamous, M. (2017). The evolution of technology acceptance theories. *International journal of contemporary computer research (IJCCR)*, 1(1), 51-58.
- Moran, M. (2020, July 24). *Trustworthiness in Qualitative Research*. Statistics Solutions. <https://www.statisticssolutions.com/trustworthiness-in-qualitative-research/>
- Moyo, P. Z. (2020). *The role of digital design and technology in the development of entrepreneurship in Gokwe, Zimbabwe* (Doctoral dissertation, Cape Peninsula University of Technology).
- Mphahlele, M. I., Mokwena, S. N., & Ilorah, A. (2021). The impact of digital divide for first-year students in adoption of social media for learning in South Africa. *South African Journal of Information Management*, 23(1), 1-9.
- Munyoka, W. (2022). Inclusive digital innovation in South Africa: Perspectives from disadvantaged and marginalized communities. *Sustainability*, 14(9), 5372.

- Mwanza, A. J. (2022). Can digital technology be used for addressing digital literacy in the dissemination of Indigenous Knowledge in rural areas?. *South African Journal of Libraries and Information Science*, 88(1), 1-11.
- Myers, M. D. (2019). Qualitative research in business and management. *Qualitative research in business and management*, 1-364.
- Nogueira, V. B., Teixeira, D. G., de Lima, I. A. C. N., Moreira, M. V. C., de Oliveira, B. S. C., Pedrosa, I. M. B., ... & Jeronimo, S. M. B. (2022). Towards an inclusive digital literacy: An experimental intervention study in a rural area of Brazil. *Education and Information Technologies*, 27(2), 2807-2834.
- Ntolwana, O. A. (2013). *ICT skills shortages in under-developed areas of South Africa: a case of the Eastern Cape* (Doctoral dissertation, University of the Western Cape).
- Odoi, E. (2020). Social Media as Digital Tool for Promoting Businesses in Underdeveloped Regions of Former Transkei Homelands Eastern Cape Province South Africa—A Survey Study.
- Osmani, M. The “smart village” as an Approach for Sustainable Rural Development of Albania.
- Oyedemi, T. D. (2012). Digital inequalities and implications for social inequalities: A study of Internet penetration amongst university students in South Africa. *Telematics and informatics*, 29(3), 302-313.

Oyedemi, T. D., & Choung, M. (2020). Digital inequality and youth unemployment. *Communicatio*, 46(3), 68-86.

Palinkas, L. A., Horwitz, S. M., Green, C. A., Wisdom, J. P., Duan, N., & Hoagwood, K. (2015). Purposeful sampling for qualitative data collection and analysis in mixed method implementation research. *Administration and policy in mental health and mental health services research*, 42, 533-544.

Parsons, C., & Hick, S. F. (2008). Moving from the Digital Divide to Digital Inclusion. *Currents: Scholarship in the Human Services*, 7(2), Article 2. <https://journalhosting.ucalgary.ca/index.php/currents/article/view/15892>

Parsons, C., & Hick, S. F. (2008). Moving from the digital divide to digital inclusion. *Currents: Scholarship in the Human Services*, 7(2).

Ragnedda, M., & Mutsvairo, B. (2018). Digital Inclusion: Empowering People through Information and Communication Technologies. *The Digital Inclusion. An International Comparative Analysis*.

Resnik, D. B. (2019). Citizen scientists as human subjects: Ethical issues. *Citizen Science: Theory and Practice*, 4(1).

Resnik, D. B., Rasmussen, L. M., & Kissling, G. E. (2015). An international study of research misconduct policies. *Accountability in research*, 22(5), 249-266.

- Roberts, T., & Hernandez, K. (2019). Digital access is not binary: The 5'A's of technology access in the Philippines. *The Electronic Journal of Information Systems in Developing Countries*, 85(4), e12084.
- Rolandi, S., Brunori, G., Bacco, M., & Scotti, I. (2021). The digitalization of agriculture and rural areas: Towards a taxonomy of the impacts. *Sustainability*, 13(9), 5172.
- Rumata, V. M., & Sakinah, A. M. (2020). The impact of internet information and communication literacy and overload, as well as social influence, on ICT adoption by rural communities. *Asia-Pacific Journal of Rural Development*, 30(1-2), 155-174.
- Saunders, M., Lewis, P., & Thornhill, A. (2003). Research methods for business students. Essex: Prentice Hall: Financial Times.
- Seadira, B. D., & Heuva, W. E. (2021). Exclusion of South African Rural Communities from Digital Communication Podia: A Regulatory Conundrum. *Communicatio*, 47(4), 72-98.
- Shenton, A. K. (2004). Strategies for ensuring trustworthiness in qualitative research projects. *Education for information*, 22(2), 63-75.
- Sinkovics, R. R., & Alfoldi, E. A. (2012). Progressive focusing and trustworthiness in qualitative research: The enabling role of computer-assisted qualitative data analysis software (CAQDAS). *Management International Review*, 52, 817-845.

South African National Government. (2024). *NDP Vision 2030*.
https://www.gov.za/sites/default/files/gcis_document/201409/ndp-2030-our-future-make-it-workr.pdf

Statistics South Africa. (2023). *2023 | Statistics South Africa*.
<https://www.statssa.gov.za/?m=2023>

Stratton, S. J. (2021). Population research: convenience sampling strategies. *Prehospital and disaster Medicine*, 36(4), 373-374.

Sujarwo, S., Trisanti, T., & Kusumawardani, E. (2022). Digital Literacy Model to Empower Women Using Community-Based Education Approach. *World Journal on Educational Technology: Current Issues*, 14(1), 175-188.

Takavarasha, S., Cilliers, L., & Chinyamurindi, W. (2 Takavarasha Jr, S., Cilliers, L., & Chinyamurindi, W. (2018, August). Assessing ICT Access Disparities Between the Institutional and Home Front: A Case of University Students in South Africa's Eastern Cape. In *IFIP International Conference on Human Choice and Computers* (pp. 45-59). Cham: Springer International Publishing.

Kreps, D., Ess, C., Leenen, L., & Kimppa, K. (2018). This changes everything—ICT and climate change: what can we do?.

Teherani, A., Martimianakis, T., Stenfors-Hayes, T., Wadhwa, A., & Varpio, L. (2015). Choosing a qualitative research approach. *Journal of graduate medical education*, 7(4), 669-670.

- Thomas, J., Barraket, J., Wilson, C. K., Holcombe-James, I., Kennedy, J., Rennie, E., ... & MacDonald, T. (2020). Measuring Australia's digital divide: The Australian digital inclusion index 2020.
- Tongco, M. D. C. (2007). Purposive sampling as a tool for informant selection.
- Tracy, S. J. (2010). Qualitative quality: Eight "big-tent" criteria for excellent qualitative research. *Qualitative inquiry*, 16(10), 837-851.
- Tracy, S. J. (2019). *Qualitative research methods: Collecting evidence, crafting analysis, communicating impact*. John Wiley & Sons.
- United Nations Development Programme. (2024). *UNDP Annual Report 2019*. UNDP. <https://www.undp.org/publications/undp-annual-report-2019>
- United Nations Development Programme. (2024). *UNDP Annual Report 2021*. <https://www.undp.org/publications/undp-annual-report-2021>
- Van Dijk, J. A. (1999). The one-dimensional network society of Manuel Castells. *New media & society*, 1(1), 127-138.
- Van Dijk, J. A. (2017). Digital divide: Impact of access. *The international encyclopedia of media effects*, 1-11.
- Wang, X., & Fu, Y. (2022). Digital financial inclusion and vulnerability to poverty: Evidence from Chinese rural households. *China agricultural economic review*, 14(1), 64-83.

- Wanof, M. I. (2023). Digital technology innovation in improving financial access for low-income communities. *Technology and Society Perspectives (TACIT)*, 1(1), 26-34.
- Welman, J. C., Kruger, F., Mitchell, B., & Huysamen, G. K. (2005). *Research methodology* (3rd ed.). Oxford University Press.
- Wiid, J., & Diggines, C. (2013). *Marketing research* (2nd ed). Juta.
- Ye, L., & Yang, H. (2020). From digital divide to social inclusion: A tale of mobile platform empowerment in rural areas. *Sustainability*, 12(6), 2424.
- Zavratnik, V., Podjed, D., Trilar, J., Hlebec, N., Kos, A., & Stojmenova Duh, E. (2020). Sustainable and community-centred development of smart cities and villages. *Sustainability*, 12(10), 3961.
- Zhang, X., & Zhang, Z. (2020). How Do Smart Villages Become a Way to Achieve Sustainable Development in Rural Areas? Smart Village Planning and Practices in China. *Sustainability*, 12(24), Article 24.
<https://doi.org/10.3390/su122410510>

APPENDIX A: CONSENT LETTER

University of the Witwatersrand,
Wits Business School

Mhlakulo Community Forum
Mhlakulo A/A
Tsolo
Eastern Cape

27/09/2022

Dear Sir/Madam,

Re: Permission to conduct research at Mhlakulo A/A community.

My name is Yollanda Majokweni.

I am studying for a Master of Business Administration(MBA) in the Wits Business School(WBS) at the University of the Witwatersrand. I am seeking permission to do research at Mhlakulo A/A community (Eastern Cape).

I am conducting research on the use of digital technology to identify business market opportunities in the rural Mhlakulo village in Tsolo(Eastern Cape).There are high levels of poverty and unemployment, particularly among women in rural communities. Numerous efforts that aim to address some of these issues have been launched as a result of the introduction and widespread adoption of digital technologies. The people in the rural villages are being left behind in terms of getting equal opportunities as the ones in urban specifically entrepreneurial information. Access to local and regional trading markets is further aggravated by inadequate technological infrastructure and lack of financial resources. This highlights the critical importance of exploring the function of digital design and technology in extending business outreach in rural Mhlakulo village in Tsolo.

The results of the study can be used by the village communities, in using a digital platform for information access that might aid the community in discovering how to provide their services or sell items to the community/local SMMEs. There is a need to create linkages between buyer and seller in the rural villages.

The research will entail collecting data from the community members that are operating informal businesses from various sectors in the village. The sample of this study will consist of 8 participants which are community members of Mhlakulo village that are currently operating businesses in the area.

If they agree, they will be interviewed for 30 to 45 minutes via a telephone conversation at the time suitable to them. The participant's responses will be recorded with their consent.

Participants will be asked to give their written or verbal consent before the research begins. Their responses will be treated confidentially, and identities (their names) will be anonymous unless otherwise expressly indicated. Individual privacy will be maintained in all published and written data resulting from the study.

The research participants will not be advantaged or disadvantaged in any way. They will be reassured that they can withdraw their permission at any time during this project without any penalty. There are no foreseeable risks in participating in this study. The participants will not be paid for this study.

I therefore request permission in writing to conduct my research in Mhlakulo A/A. The permission letter should be on your organisation's headed paper, signed and dated, and specifically referring to myself by name and the title of my study.

Please let me know if you require any further information. I look forward to your response as soon as is convenient.

Yours sincerely,

Yollanda Majokweni
Contact number: 083 538 9254
673592@students.wits.ac.za

Nomusa Mazonde
Contact number: 074 773 5253
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APPENDIX D1-D8: INTERVIEW TRANSCRIPTION P1-8

	D1	D2	D3	D4	D5	D6	D7	D8
	Responses for P1	Responses for P2	Responses for P3	Responses for P4	Responses for P5	Responses for P6	Responses for P7	Responses for P8
Q 1: How does your family sustain itself?	The family sustains itself with the farming business.	In addition to the pension funds I receive, the profits from farming contribute to the financial stability of the family.	With this business	Solely rely on this business	We survive on this business	The family relies on a vegetable garden for sustenance, cultivating a variety of crops such as spinach, cabbage, and seasonal potatoes.	I depend on this business.	This business is what sustains my family, and thanks to its success, my children have been able to pursue higher education at the university level.

Q 2: Take us through your normal day.	The day begins early in the morning, around 5:00 o'clock, to allow time for planning and preparation before heading out to the fields. It's essential to be well-prepared and aware of the tasks at hand. Checking the condition of the fields, assessing the presence of pests and the need for pesticides, and organising the day's schedule are all crucial steps. The cultivation of vegetables demands particular attention, requiring daily inspection for any signs of issues and the implementation of appropriate insecticide and pesticide spraying programs. Additionally, keeping track of orders for the market is important to ensure timely supply. Overall,	Since farming work is seasonal, my daily routine varies depending on the priorities of the day. However, during the maize season, I typically wake up at 5 o'clock in the morning and head to the fields, working until sunset. This routine continues until the specific task at hand is completed.	Our daily routine begins very early, around 5:00 o'clock, as we need to be in the fields and start our agricultural activities promptly. Our goal is to ensure that our vegetables are delivered by 9:00 o'clock at the latest, allowing our people to sell their produce while it is still fresh. We prioritize picking the vegetables in the morning to maintain their freshness. The tasks of picking, packing, pesticide spraying, and weed removal are assigned to specific individuals. To ensure smooth operations, we plan our daily program a day in advance. This way, when we start our day in the morning, we already have a clear plan of what needs to be done. Our planning process takes place the day before, enabling us to begin our activities promptly at 5:00	On a typical day, my activities revolve around the nature of my job. If I have a job lined up, I proceed directly to fulfill my responsibilities or, in some cases, stay overnight at the job location. However, if I don't have a job scheduled, I actively search for employment opportunities. If I come across a job that requires additional manpower beyond my capacity, I seek out temporary workers who can assist me in completing the task at hand. This is the usual approach I follow in managing my work operations.	My job situation relies on the available job opportunities that I come across. If I have a job, I continue with it, but if not, I actively search for job opportunities within the village.	We employ four workers regularly, along with one seasonal worker. Our morning routine involves preparing the team to inspect the fences and ensure there have been no attempts by pests or animals to enter the fields. Additionally, we check the crops to determine if any covering or protection is needed. We also assess if any pesticides need to be applied and if there is any hoeing required. Furthermore, we gather and pick any orders that are ready for delivery, ensuring prompt and efficient transportation to the designated destinations.	Depending on the available crops in my garden, such as cabbage during its season, our routine involves waking up early at around 5:00 AM and starting our tasks at approximately 6:00 AM. These tasks include watering the cabbages, gathering the garden helpers for activities like weeding, spraying, and planting, all depending on the requirements of the garden. Typically, we work until around 3:00 PM. To ensure efficiency, we plan our tasks a day in advance, determining what needs to be accomplished the following day. On the actual workday, we promptly commence with the assigned tasks.	My business has experienced growth primarily through word of mouth and the pictures I post on my WhatsApp statuses. I do not advertise my business elsewhere. Moreover, my daily routine lacks a strict structure as it depends on the demands and bookings I receive, which are often unpredictable.
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	this outlines the typical program of the day for agricultural activities.		o'clock. Additionally, those responsible for deliveries need to be on the road by 7:00 o'clock, ensuring timely transportation of the produce. This is our established approach to managing our daily operations efficiently.					
Q 3: How do you get money in the household?	The household solely rely on this business financially.	Predominantly pension funds then subsistence farming.	We mostly use this business to supplement our home income.	I earn my income by undertaking various jobs within the village, focusing on those that align with my specific skill set. Among the skills I possess, I heavily rely on my expertise in building, paving, fencing, plastering, and painting. These particular abilities	I generate income from this business by utilising the skills I possess.	Our entire livelihood is reliant solely on this business.	Our family relies on this business, and I also contribute my grant to support it.	From the businesses we have in the family.

				allow me to secure work opportunities and generate income within the community.				
Q 4: What youth development challenges do you face in your area which you feel digital technology access would play a great role?	High unemployment rates and alcohol abuse are significant issues among the youth, which further deter their interest in pursuing independence or showing any inclination towards agriculture. They witness the challenges and struggles we face as farmers, and as a result, they lack enthusiasm or interest in this field. The youth often only lend a helping hand in the fields or on the farm when they are in need of money, demonstrating limited long-term engagement. This lack of interest is	Alcohol abuse, other drugs and high unemployment rate. A significant number of young individuals find themselves discouraged and idle due to the prevailing issue of unemployment. This situation leads some of them to resort to alcohol abuse and drug use as a means of coping with their circumstances.	Unemployment is the main problem of our youth in our community. Entrepreneurial opportunities and further education online at a more affordable cost.	It is often perceived that many people more especially the youth in our area are not actively engaged in work, as a result, they tend to indulge in excessive alcohol consumption on a daily basis other than creating jobs. It is believed that there's lot of opportunities with digital access e.g. teaching English in China while in South Africa.	As I have often remarked, youth unemployment is predominantly attributed to the lack of available job opportunities.	Due to the perception of agriculture as labour-intensive and beyond their capabilities, many young people lack interest in pursuing it as a career. They often find other professions more appealing and overlook the potential within the agricultural sector. However, when faced with limited opportunities or desperate circumstances, some youth may reluctantly turn to agriculture as a means of employment. This trend contributes to high unemployment rates among the youth population.	Due to high unemployment rates within our community, there is a corresponding increase in crime.	Poverty, lack of exposure and unemployment.

	particularly noticeable in the Eastern Cape, where the lack of support is evident. Despite the abundance of land in the Eastern Cape, there is a noticeable lack of progress and development in agricultural initiatives. The province lags behind in various aspects, including agriculture, and is also characterized as one of the poorer regions in the country.							
RQ1 :	How do rural businesses in Mhlakulo village in Tsolo perceive and use digital technology?							
RSQ1.1	Why do rural businesses perceive digital technology as valuable for their business operations?							
IQ1.1.1	With your current knowledge of digital access, how do you think it can be a benefit to your business?							

	Making calls instead of physically traveling to meet customers does have the potential to reduce costs. However, in my case, I do not see significant cost-cutting benefits because my customers are not receptive to technology yet. Additionally, I cannot afford to incorporate technology into my business due to the exorbitant data costs and the unreliable internet connection in the rural village. I rely on the internet when I am outside the village since network coverage is poor, making it challenging to even make phone calls from here.	Due to the low literacy rate among the individuals I interact with in this business, phone calls are primarily used as the primary mode of communication. Anything beyond a phone call is simply not feasible, unless I physically visit the person. The majority of the people I deal with fall into this category. However, it's important to note that there are still some individuals whom I communicate with through messaging platforms like WhatsApp. This approach has its advantages, such as cost savings on phone bills, airtime, fuel, and time. Additionally, in our area, we face challenges with mobile phone connectivity, so we make every effort to establish a connection with others.	Receiving timely payments can significantly benefit small businesses, and this is where technology plays a pivotal role by streamlining processes and enabling quick transactions.	Currently, I believe that digital access has the potential to greatly benefit my business. However, this would only be possible if I had the necessary tools, access to affordable data, and a suitable phone. Unfortunately, obtaining data is a struggle for me due to its high cost, and even in our village, data access is unreliable. It becomes a challenge to even make a simple phone call because of network issues. This situation is disheartening, especially for job seekers who miss out on opportunities because they cannot be reached or receive callbacks due to poor network coverage. Nevertheless, there are some positive outcomes when I upload my work pictures on Facebook. Occasionally, I	It enables me to reach inaccessible areas and expand my market presence without incurring any travel expenses. This is particularly beneficial as I can promote myself and secure job opportunities without physically having to visit different locations. By leveraging digital platforms, I can stay where I am and effectively market my skills, ultimately finding employment without the need for costly travel.	Through my business, my goal is to provide convenience to the community by offering nutritious food that can help alleviate the issue of poverty. If I can successfully provide an ample supply of affordable food with high nutritional value, I would consider it a mastery of my craft. I firmly believe that technology can play a vital role in achieving this goal by enabling efficient processes and innovative solutions in food production and distribution.	With my limited knowledge, I understand that using a cell phone and WhatsApp allows me to communicate with others, especially when I am at a convenient location and the intended recipients are also available. Although it may not be effortless, it is a cost-effective means of communication. However, I am not well-versed in social media, but I have observed that many people utilise it. If social media can assist me in reaching a broader market, I would greatly appreciate learning more about its potential benefits.	Through effective marketing, the aim is to promote the business and raise awareness not only locally but also on a broader scale, reaching a wider audience.
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		Undoubtedly, this facilitates easier communication and enables me to sell my products to people in other villages. Nonetheless, there is room for improvement and further possibilities.		receive inquiries and interest from people who have seen my work and contact me for potential projects, especially from neighbouring villages. This platform helps me expand my reach beyond the village and generate more business. It is a crucial tool since there is a limited amount of local work available, and having an online presence enables me to spread the word and attract customers from unexpected areas.				

IQ1.1.2	How would digital access benefit your community?							
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	Access to market to neighbouring villages, marketing businesses on social media, door-to-door deliveries of essentials for the elderly and schools kids would benefit a lot.	Assistance is needed in many households, particularly those led by women and elderly individuals. This village experiences a significant amount of criminal activity, and utilizing technology can provide a sense of security and facilitate mutual support to protect against these crimes. For instance, instances of cable theft and livestock theft are common in homes without male presence. By leveraging technology, community members can alert each other about criminal activities occurring in different households, enabling them to offer assistance when needed. This collaborative approach contributes to the overall safety of the community. Moreover, there are	Access to digital resources can greatly benefit the community by creating various opportunities for market expansion, business growth, knowledge sharing, skills enhancement, learning, and improved prospects for individuals.	I strongly believe that access to Facebook, Google, and digital resources is crucial for acquiring information. My focus is primarily on the advantages they can provide to my business if I had the appropriate tools, data, and a suitable smartphone. However, obtaining data poses a challenge for me due to its high cost, and in our village, the availability of data is unreliable. Even making a simple phone call becomes difficult due to network problems. I sympathize with job seekers who miss out on opportunities because they cannot be reached or fail to receive callbacks due to inadequate network coverage. Nonetheless, I have experienced some positive outcomes by sharing my work pictures on	Digital communication plays a crucial role within our community, especially considering the significant number of elderly individuals and the challenges associated with travel. Having access to delivery services can greatly benefit our community by providing convenient access to essential items. This door-to-door delivery approach alleviates the difficulties faced by the elderly. Additionally, given the prevalent poverty and resulting crime rates, it becomes imperative for us to have access to phones and other digital devices for enhanced safety within our community. However, we encounter ongoing difficulties due to	In rural areas, the absence of online businesses and online payment options is evident due to a lack of awareness and understanding among the community. Introducing such systems would bring noteworthy advantages, especially for stock sellers, by eliminating the necessity of carrying cash and offering a more secure and convenient payment method. This transition to online platforms would enhance financial transactions and promote economic growth in the villages.	I see digital access highly critical when it comes to communication, particularly when it comes to essential matters such as obtaining medication and seeking assistance for the elderly. It becomes especially important in households affected by crime, as reaching out to others for help can greatly ease the challenges of daily life.	Entrepreneurial activities, particularly focused on youth seeking employment, can leverage technology to provide them with new skills and opportunities. This enables them to explore various avenues without having to leave their homes. They can market themselves, engage in remote jobs, and even teach English abroad while remaining in their own communities. These are opportunities that are often inaccessible to people in rural villages. Additionally, for the elderly population, technology can enhance their
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		small businesses within the community that can help each household sustain itself economically, considering the prevalent poverty. Many unemployed youths possess valuable skills that remain untapped due to the lack of job opportunities. However, by promoting their skills from home, they can generate income and provide for their families. This approach allows them to market themselves effectively and earn money without having to venture into distant areas in search of employment.		Facebook. Every now and then, I receive inquiries and interest from individuals who have come across my work and reach out to me for potential projects, particularly from neighboring villages. This platform assists me in expanding my outreach beyond the village and generating more business. It is crucial because there is a limited amount of local work available, and having an online presence helps me spread the word and attract customers from unexpected areas. To sum up, the Internet and digital access play a significant role and serve as effective marketing tools, facilitating business growth and expansion, thereby making life easier.	inadequate network connectivity, which hinders our ability to fully leverage these digital resources.			safety and contribute to their overall health and well-being, considering that our community is primarily composed of elderly individuals.
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IQ1.1.3	What are the current online businesses available to your community							
	None at the moment	I am not aware of any at the moment.	Access to digital resources can greatly benefit the community by creating various opportunities for market expansion, business growth, knowledge sharing, skills enhancement, learning, and improved prospects for individuals.	None	None	None	I am aware that WhatsApp is commonly used by people for business communication.	None at the moment
.IQ1.1.4	What can government do to improve the use of digital technology within your village to benefit the community and businesses?							

	Prioritising infrastructure development should be the initial step, followed by targeted technology adoption that addresses the specific needs of the village community. It is essential to gain a thorough understanding of the community's requirements and customise the technology offerings accordingly. For instance, providing free access to educational websites, health knowledge platforms, and community-building resources can cater to their specific needs. Recognising and fulfilling these requirements is crucial to effectively leverage technology for the benefit of the community.	Yes, a lot for communication and also for other people like school kids.	The government has a crucial role to play in promoting digital adoption within rural areas. They can provide assistance by educating and supporting individuals who may have limited understanding of the benefits that digital technology and access can bring to their lives. It is essential to bridge the digital divide and ensure that people comprehend the advantages of digital access. By raising awareness and providing necessary training, the government can help individuals understand how digital technology can simplify their daily lives. For instance, people can accomplish tasks from the comfort of their homes without the need to physically go out when they have access to digital tools.	The government can act by offering inexpensive data charges to rural areas, providing free wifi services to village students, and customising some internet sites to satisfy the needs of village communities, including adult community members.	To support individuals in rural areas who are seeking employment or establishing businesses, the government can make data more affordable. By subsidizing small businesses in villages and providing access to websites that can facilitate business growth, the government can encourage economic development. Additionally, offering digital literacy programs through local businesses and community initiatives would empower interested individuals in rural villages to benefit from technology and enhance their skills in this field.	To promote digital literacy and prepare the youth for a technology-driven future, it is essential to introduce computer labs and computer studies in the villages. The current generation of youth holds great potential to become technology champions, and empowering them with digital skills is crucial. Therefore, the government should prioritise increasing digital adoption in rural areas, ensuring that the necessary resources and educational opportunities are provided to bridge the digital divide and foster technological advancement in the villages.	To initiate positive changes in rural areas regarding digital technology awareness and adoption, the government should prioritise educating the people and subsequently enhance the services provided to them. By first focusing on education, the necessary knowledge and understanding can be imparted to the communities. This will empower them to embrace and effectively utilise digital technology. Additionally, improving the services offered will ensure that the necessary infrastructure and resources are readily available, further facilitating digital transformation in rural villages.	The issue of digital illiteracy remains a significant concern within our community. It is crucial for the government to take substantial measures to assist our people in harnessing the benefits of digital technology and enhancing their quality of life.
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RSQ1.2	How do various factors influence rural businesses' decisions to adopt digital technologies for gaining a competitive advantage?							
IQ1.2.1	What are digital technology changes that you want to experience in your business which you think will improve your situation in your business or gaining better opportunities?							

	The government's support, although present, is insufficient. For instance, grant applications are often uncertain, and even if received, the funds provided do not cover more than 2% of the input costs, excluding planting expenses. As emerging farmers in rural areas, we believe the government can assist us further by reducing labour costs, expanding market opportunities, lowering input expenses, and providing essential machinery. Machinery for harvesting, planting, and spraying is in high demand but scarce, and acquiring it would enhance the quality of our produce while reducing labour expenses. There is a lot of information on the internet on	It's more market growth because there's a huge struggle there and also the inputs are becoming very expensive which is a bit discouraging to us as farmers to continue farming because we don't get as much profits as we used to.	There is a need for a shift in mindset among the people we work with as they predominantly prefer face-to-face interactions and have limited belief in the power of technology. Even individuals in our community, including those working in retail stores, rely heavily on manual processes rather than embracing digital technology. Therefore, there is a substantial amount of work required to promote digital adoption, not only among the elderly or illiterate individuals but also among those operating in the formal market who are already utilizing existing systems. While digital technology can greatly benefit businesses, it is essential to consider the preferences and needs of our target market, as they hold	In my current circumstances, what I truly need is to enhance my marketability and secure more job opportunities. It is crucial for me to expand my reach beyond my own village and explore potential employment prospects in neighbouring villages and towns. By doing so, I can increase my income and establish a sustainable source of earnings that I can rely on consistently. Presently, I face the challenge of going through extended periods without any job offers, which directly affects my ability to ensure regular meals for myself and my family.	What we truly need as the youth is an increase in job opportunities that go beyond simply being handed employment. We aspire to have more chances to establish our own businesses, to take initiative and be self-employed, and ultimately become job creators ourselves. I, for instance, have acquired various skills during my quest for employment, such as upholstery, security certificates, farming, and more. These skills enable me to pursue entrepreneurial endeavors and generate income independently.	By utilising an app to track daily tasks and gather feedback on plant requirements, such as identifying which plants need more pesticides or specific care, we can significantly reduce the need for manual labour. This digital solution streamlines the process and enables efficient communication between team members. By contractually managing these aspects through the app, it offers substantial benefits in terms of labour reduction.	There are numerous factors that significantly impact our ability to enhance the quality of our produce. One crucial aspect is the lack of proper tools, leading to high operating expenses due to increased reliance on labour-intensive methods. To address this issue, we strongly believe that government intervention is necessary. We require support in terms of capital and equipment, which are essential for efficient operations. Additionally, while we appreciate the knowledge imparted by the Department of Agriculture, we feel that it falls short of our needs, resulting in ongoing challenges and struggles.	
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	how to get this information for free but the knowledge on how to get the information is not enough. Also, building a network of farmers so you can lend each other machinery and share business advice over the technology network would make life easy for the emerging farmers. Unfortunately, despite producing high-quality goods, local supermarkets tend to source their produce from farmers outside our region, leaving us with limited options like selling to street vendors, the local community, and small convenience stores. While there is potential in this market, our goal is to grow our businesses sustainably rather than living hand-to-mouth. The		the utmost importance in determining the success of our product sales.					
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	technology would play a great role in opening the market for these small emerging farmers if they knew how to use technology to their advantage.							
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IQ1.2.2	What are the digital devices do you have in your household?							
	4 smartphones,1 laptop and 1 TV	2 smartphones and 1 TV	2 smartphones , 1 laptop and 1 tablet	I only possess a basic mobile phone that isn't even a smartphone. Whenever I want to promote my work on Facebook, I have to rely on others to assist me by allowing me to use their smartphones. This enables me to upload pictures of my work and effectively market my services on the platform.	I don't have any.	6 smartphones and 1 laptop	Have two smartphones and the TV	Smartphone, TV, Laptop
IQ1.2.3	What comes to mind when you think of digital access?							
	Communication and internet to get information. For example, I didn't study agriculture, but I used google to research and learn something about agriculture.	Internet connection	Ensuring affordable access to data and the internet is crucial for widespread connectivity. This includes affordable mobile data plans, reliable mobile connections for phone calls, messaging apps like WhatsApp, as well	When digital access comes to mind, I primarily think of platforms such as Facebook and Google, which play a significant role in providing convenient access to information. These platforms are synonymous with digital access, and	Internet , WhatsApp and Facebook	When I think of digital access, I envision self-service functionality that empowers individuals to accomplish tasks independently, ultimately making life more convenient and hassle-free.	Having ability to connect to the internet, utilise mobile phones for communication, and engage in activities such as making calls, using messaging apps like WhatsApp, and participating in social media platforms.	To me, digital access entails having the ability to connect to the internet, having access to digital devices, and being proficient in utilising them effectively.

			as access to online platforms and streaming services such as television.	they contribute greatly to the convenience of obtaining information in today's digital age.				
IQ1.2.4	What digital access facilities are available for the businesses and community for the Mhlakulo village? (Phone, Internet café, etc)							
	Smartphone and laptop	Smartphone	Phone, Laptop and Wifi	Phone	I frequently request the use of other people's phones to access the internet since I don't possess one of my own.	Smartphone, laptop and tablet	2 Smartphones	Phone and wifi connection
IQ1.2.5	Do you see digital access as a necessity in your life, for the community even the businesses in the village?							
	Not necessarily because we can still survive without but definitely if we had full access and adoption then I would tell a different story.	Yes, a lot for communication and also for other people like school kids.	Yes as it supplements the old way of doing things	Yes	Yes	Yes, it is a necessity	Despite the availability of modern alternatives, I continue to rely on traditional methods for certain tasks because they align	Yes, definitely

							with my familiarity, beliefs, and trust.	
RQ2:	How do entrepreneurs in Mhlakulo village use digital technology to enhance their entrepreneurial activities?							
RSQ2.1	How can entrepreneurs in Mhlakulo rural village improve their use of digital technologies?							
IQ2.1.1	With your current knowledge of digital access, how do you think it can be a benefit to your business?							

	Making calls instead of physically traveling to meet customers does have the potential to reduce costs. However, in my case, I do not see significant cost-cutting benefits because my customers are not receptive to technology yet. Additionally, I cannot afford to incorporate technology into my business due to the exorbitant data costs and the unreliable internet connection in the rural village. I rely on the internet when I am outside the village since network coverage is poor, making it challenging to even make phone calls from here.	Due to the low literacy rate among the individuals I interact with in this business, phone calls are primarily used as the primary mode of communication. Anything beyond a phone call is simply not feasible, unless I physically visit the person. The majority of the people I deal with fall into this category. However, it's important to note that there are still some individuals whom I communicate with through messaging platforms like WhatsApp. This approach has its advantages, such as cost savings on phone bills, airtime, fuel, and time. Additionally, in our area, we face challenges with mobile phone connectivity, so we make every effort to establish a connection with others.	Receiving timely payments can significantly benefit small businesses, and this is where technology plays a pivotal role by streamlining processes and enabling quick transactions.	Currently, I believe that digital access has the potential to greatly benefit my business. However, this would only be possible if I had the necessary tools, access to affordable data, and a suitable phone. Unfortunately, obtaining data is a struggle for me due to its high cost, and even in our village, data access is unreliable. It becomes a challenge to even make a simple phone call because of network issues. This situation is disheartening, especially for job seekers who miss out on opportunities because they cannot be reached or receive callbacks due to poor network coverage. Nevertheless, there are some positive outcomes when I upload my work pictures on Facebook. Occasionally, I	It enables me to reach inaccessible areas and expand my market presence without incurring any travel expenses. This is particularly beneficial as I can promote myself and secure job opportunities without physically having to visit different locations. By leveraging digital platforms, I can stay where I am and effectively market my skills, ultimately finding employment without the need for costly travel.	Through my business, my goal is to provide convenience to the community by offering nutritious food that can help alleviate the issue of poverty. If I can successfully provide an ample supply of affordable food with high nutritional value, I would consider it a mastery of my craft. I firmly believe that technology can play a vital role in achieving this goal by enabling efficient processes and innovative solutions in food production and distribution.	With my limited knowledge, I understand that using a cell phone and WhatsApp allows me to communicate with others, especially when I am at a convenient location and the intended recipients are also available. Although it may not be effortless, it is a cost-effective means of communication. However, I am not well-versed in social media, but I have observed that many people utilise it. If social media can assist me in reaching a broader market, I would greatly appreciate learning more about its potential benefits.	Through effective marketing, the aim is to promote the business and raise awareness not only locally but also on a broader scale, reaching a wider audience.
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		Undoubtedly, this facilitates easier communication and enables me to sell my products to people in other villages. Nonetheless, there is room for improvement and further possibilities.		receive inquiries and interest from people who have seen my work and contact me for potential projects, especially from neighbouring villages. This platform helps me expand my reach beyond the village and generate more business. It is a crucial tool since there is a limited amount of local work available, and having an online presence enables me to spread the word and attract customers from unexpected areas.				
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IQ2.1.2	How would digital access benefit your community?							
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	Access to market to neighbouring villages, marketing businesses on social media, door-to-door deliveries of essentials for the elderly and schools kids would benefit a lot.	Assistance is needed in many households, particularly those led by women and elderly individuals. This village experiences a significant amount of criminal activity, and utilizing technology can provide a sense of security and facilitate mutual support to protect against these crimes. For instance, instances of cable theft and livestock theft are common in homes without male presence. By leveraging technology, community members can alert each other about criminal activities occurring in different households, enabling them to offer assistance when needed. This collaborative approach contributes to the overall safety of the community. Moreover, there are	Access to digital resources can greatly benefit the community by creating various opportunities for market expansion, business growth, knowledge sharing, skills enhancement, learning, and improved prospects for individuals.	I strongly believe that access to Facebook, Google, and digital resources is crucial for acquiring information. My focus is primarily on the advantages they can provide to my business if I had the appropriate tools, data, and a suitable smartphone. However, obtaining data poses a challenge for me due to its high cost, and in our village, the availability of data is unreliable. Even making a simple phone call becomes difficult due to network problems. I sympathize with job seekers who miss out on opportunities because they cannot be reached or fail to receive callbacks due to inadequate network coverage. Nonetheless, I have experienced some positive outcomes by sharing my work pictures on	Digital communication plays a crucial role within our community, especially considering the significant number of elderly individuals and the challenges associated with travel. Having access to delivery services can greatly benefit our community by providing convenient access to essential items. This door-to-door delivery approach alleviates the difficulties faced by the elderly. Additionally, given the prevalent poverty and resulting crime rates, it becomes imperative for us to have access to phones and other digital devices for enhanced safety within our community. However, we encounter ongoing difficulties due to	In rural areas, the absence of online businesses and online payment options is evident due to a lack of awareness and understanding among the community. Introducing such systems would bring noteworthy advantages, especially for stock sellers, by eliminating the necessity of carrying cash and offering a more secure and convenient payment method. This transition to online platforms would enhance financial transactions and promote economic growth in the villages.	I see digital access highly critical when it comes to communication, particularly when it comes to essential matters such as obtaining medication and seeking assistance for the elderly. It becomes especially important in households affected by crime, as reaching out to others for help can greatly ease the challenges of daily life.	Entrepreneurial activities, particularly focused on youth seeking employment, can leverage technology to provide them with new skills and opportunities. This enables them to explore various avenues without having to leave their homes. They can market themselves, engage in remote jobs, and even teach English abroad while remaining in their own communities. These are opportunities that are often inaccessible to people in rural villages. Additionally, for the elderly population, technology can enhance their
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		small businesses within the community that can help each household sustain itself economically, considering the prevalent poverty. Many unemployed youths possess valuable skills that remain untapped due to the lack of job opportunities. However, by promoting their skills from home, they can generate income and provide for their families. This approach allows them to market themselves effectively and earn money without having to venture into distant areas in search of employment.		Facebook. Every now and then, I receive inquiries and interest from individuals who have come across my work and reach out to me for potential projects, particularly from neighboring villages. This platform assists me in expanding my outreach beyond the village and generating more business. It is crucial because there is a limited amount of local work available, and having an online presence helps me spread the word and attract customers from unexpected areas. To sum up, the Internet and digital access play a significant role and serve as effective marketing tools, facilitating business growth and expansion, thereby making life easier.	inadequate network connectivity, which hinders our ability to fully leverage these digital resources.			safety and contribute to their overall health and well-being, considering that our community is primarily composed of elderly individuals.

IQ2.1.3	What can government do to improve the use of digital technology within your village to benefit the community and businesses?							
	Prioritising infrastructure development should be the initial step, followed by targeted technology adoption that addresses the specific needs of the village community. It is essential to gain a thorough understanding of the community's requirements and customise the technology offerings accordingly. For instance, providing free access to educational websites, health knowledge platforms, and community-building resources can cater to their	Yes, a lot for communication and also for other people like school kids.	The government has a crucial role to play in promoting digital adoption within rural areas. They can provide assistance by educating and supporting individuals who may have limited understanding of the benefits that digital technology and access can bring to their lives. It is essential to bridge the digital divide and ensure that people comprehend the advantages of digital access. By raising awareness and providing necessary training, the government can help individuals understand how digital technology can simplify their daily lives. For	The government can act by offering inexpensive data charges to rural areas, providing free wifi services to village students, and customising some internet sites to satisfy the needs of village communities, including adult community members.	To support individuals in rural areas who are seeking employment or establishing businesses, the government can make data more affordable. By subsidizing small businesses in villages and providing access to websites that can facilitate business growth, the government can encourage economic development. Additionally, offering digital literacy programs through local businesses and community initiatives would empower interested individuals in rural villages to benefit from technology	To promote digital literacy and prepare the youth for a technology-driven future, it is essential to introduce computer labs and computer studies in the villages. The current generation of youth holds great potential to become technology champions, and empowering them with digital skills is crucial. Therefore, the government should prioritise increasing digital adoption in rural areas, ensuring that the necessary resources and educational opportunities are provided to bridge the digital divide and foster technological	To initiate positive changes in rural areas regarding digital technology awareness and adoption, the government should prioritise educating the people and subsequently enhance the services provided to them. By first focusing on education, the necessary knowledge and understanding can be imparted to the communities. This will empower them to embrace and effectively utilise digital technology. Additionally, improving the services offered will ensure that the necessary infrastructure and resources are	The issue of digital illiteracy remains a significant concern within our community. It is crucial for the government to take substantial measures to assist our people in harnessing the benefits of digital technology and enhancing their quality of life.

	specific needs. Recognising and fulfilling these requirements is crucial to effectively leverage technology for the benefit of the community.		instance, people can accomplish tasks from the comfort of their homes without the need to physically go out when they have access to digital tools.		and enhance their skills in this field.	advancement in the villages.	readily available, further facilitating digital transformation in rural villages.	
IQ 2.1.4	How would you describe your current level of knowledge and skills in utilising digital technologies for your business in Mhlakulo?							
	My knowledge is limited; I use phones and a laptop. I need more skills to utilize digital technologies effectively.	Limited knowledge; I use basic mobile phones. Need more skills for effective digital technology use.	Daily planning through smartphones. Need more skills for broader use of digital technologies.	Basic mobile phone. Need to enhance marketability and secure more job opportunities.	No specific devices mentioned. Acknowledges the potential benefits if there is full access and adoption.	Utilises smartphones and laptops for efficient farm management. Envisions benefits with a digital app for task tracking.	Uses smartphones for efficient daily planning. Seeks government support for capital and equipment.	Growth through word of mouth and WhatsApp statuses. Limited advertising elsewhere but envisions

								broader awareness through effective marketing.
IQ 2.1.5	What specific challenges do you face in incorporating digital technologies into your entrepreneurial activities in the rural village?							
	Challenges include high data costs, unreliable internet, and insufficient government support. Lack of knowledge on using available information online is also an issue.	Challenges include reliance on manual processes, limited belief in technology, and poor mobile connectivity.	Perception challenges; people prefer face-to-face interactions. Promotion of digital adoption needed.	Challenges with extended jobless periods and reliance on others' smartphones for Facebook promotion.	Recognizes the potential for cost reduction through digital communication. Faces challenges with data costs and unreliable internet.	Perceives agriculture as labor-intensive, affecting youth interest. Sees potential in digital solutions for task management and communication.	Challenges include lack of proper tools, high operating expenses, and insufficient government support.	Success in promoting business through WhatsApp. Sees technology as a means for youth to explore opportunities without leaving home.
IQ 2.1.6	Can you share any successful experiences or strategies you have employed to enhance the use of digital technologies in your business within Mhlakulo?							

	I've tried using Google for agriculture info. Building a network of farmers for machinery sharing and business advice is essential.	Use phone calls for communication due to low literacy. Some success with WhatsApp for cost savings and expanding outreach.	Uses smartphones, laptops, and tablets. Affirms the need for affordable data and reliable mobile connections.	Positive outcomes with Facebook promotion, occasional inquiries and interest from neighboring villages.	Sees benefits in online tutoring services, courier services, and skills marketing. Relies on smartphones for communication	Utilises smartphones and laptops for efficient farm management. Envisions benefits with a digital app for task tracking.	Utilises smartphones and TV. Recognizes the importance of digital access for communication and marketing	No specific tools mentioned, but WhatsApp and effective marketing are emphasized for business growth.
RSQ 2.2	Why and how do available digital technologies in the rural village facilitate the identification of new business opportunities?							
IQ 2.2.1	In what ways have digital technologies helped you identify and explore new business opportunities in Mhlakulo?							
	Limited due to data costs and unreliable internet. Would benefit from technology in expanding market opportunities and accessing information.	Limited due to low literacy and reliance on phone calls. Potential with WhatsApp for inquiries and interest from neighboring villages.	Efficient planning and communication through smartphones. Challenges with manual processes in the community.	Due to challenges with data costs and unreliable internet, I haven't seen much but there is a potential that it can help because I do see positive outcomes with Facebook promotions.	The community can have benefits of digital access for communication, marketing, and door-to-door deliveries.	Digital app for task tracking could reduce manual labor. Limited by youth perception of agriculture and limited opportunities.	Efficient planning through smartphones. Seeks government support for efficient operations and capital.	Growth through word of mouth and WhatsApp statuses. Limited advertising elsewhere but envisions broader awareness through effective marketing.
IQ 2.2.2	Can you provide examples of how digital technologies have contributed to the growth and							

	diversification of entrepreneurial activities in the rural village?							
	No specific examples. Limited market options, but potential for growth with effective use of technology.	Positive outcomes with inquiries through Facebook. Limited local work, online presence helps expand reach.	Digital resources can benefit the community. Challenges with network connectivity need improvement.	Facebook helps expand reach beyond the village. Limited local work, online presence aids in generating more business.	No current online businesses. Envisions growth in the community through online opportunities.	The emerging farmers can benefit a lot in digital solutions for agriculture. More especially the youth that are technical savvy.	No specific examples provided. There is a need for government support in capital and equipment in the community.	Success in promoting business through WhatsApp. Sees technology as a means for youth to explore opportunities without leaving home.
IQ 2.2.3	Are there any specific digital tools or platforms that you find particularly effective in discovering and capitalizing on new business prospects in Mhlakulo?							
	Smartphones, laptops, and online platforms are crucial. Lack of awareness and government support hinders effective utilisation.	Primarily uses basic mobile phone. Sees potential benefits with affordable data and reliable mobile connections.	There are no specific tools but there is very much importance of access to digital resources so our businesses can be known and marketable.	Challenges with data costs and network issues are the main concern.	No mention of specific tools. Recognizes the potential of online businesses and services.	No mention of specific tools. Emphasizes the potential benefits of technology in agriculture	The use of smartphones and TVs as crucial for digital access.	No specific tools, but WhatsApp and effective marketing may help in business growth.

APPENDIX C: Table 1 - Research problem, research questions (RQs), research sub-questions (RSQs), methodology and objectives.

Research problem	Mhlakulo village in Eastern Cape is experiencing significant challenges in accessing and utilizing digital technology platforms to obtain information about business market opportunities. This deficit hampers the ability of local businesses to expand their market reach and enhance their livelihoods through digital means.	
RQ1	How do rural businesses in Mhlakulo village in Tsolo perceive and use digital technology?	
Research sub-questions	Research method(s)	Objectives
RSQ 1.1: Why do rural businesses perceive digital technology as valuable for their business operations?	Interviews by means of semi-structured questionnaires.	To determine the use of digital technology within rural businesses in Mhlakulo village in Tsolo.
RSQ 1.2: How do various factors influence rural businesses' decisions to adopt digital technologies for gaining a competitive advantage?	Interviews by means of semi-structured questionnaires.	Examine business opportunities that can be identified through the use of digital technology.
RQ2	How do entrepreneurs in Mhlakulo village use digital technology to enhance their entrepreneurial activities?	
Research sub-questions	Research method(s)	Objectives
RSQ 2.1: How can entrepreneurs in Mhlakulo rural village improve their use of digital technologies?	Interviews by means of semi-structured questionnaires	To assess the efficiency of entrepreneurial activities through digital technology in the area.
RSQ 2.2: Why and how do available digital technologies in the rural village facilitate the identification of new business opportunities?	Interviews by means of semi-structured questionnaires.	To evaluate the effectiveness of available digital technologies in the rural village in identifying new business opportunities.

*RSQ = Research sub-question

