



**The adoption of information and communication technology within fast-moving
consumer goods SMMEs within townships in the Cape Metropole**

by

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ABSTRACT

Despite the significant contribution small, medium, and micro enterprises (SMMEs) make to the South African economy through creating employment opportunities, alleviating poverty, and contributing to the country's gross domestic product, they have one of the worst sustainability rates in the world. The high failure rate of South African SMMEs and their slow adoption of information and communication technology (ICT) is of great concern, especially during an era where technologies drive change.

Given the importance of SMMEs and the sparse literature on ICT adoption by particularly township SMMEs, this research intended to investigate the factors influencing ICT adoption within fast-moving consumer goods (FMCG) SMMEs in townships located in the Cape Metropole, South Africa. The main objective was to uncover what factors influence the adoption of ICT by FMCG SMMEs within townships in the Cape Metropole by focusing on the types of ICT adopted and the perceived value, driving forces, and barriers to ICT adoption.

This empirical research focused on the research paradigm of positivism. This was achieved through conducting a survey. Purposive and convenience sampling were employed to select 55 participants. All respondents were managers and/or owners of South African township FMCG SMMEs who adhered to a list of strict delineation criteria.

This research combines the Technology Acceptance Model (TAM) and Actor-Network Theory (ANT) into a comprehensive framework to better understand the factors influencing ICT adoption. This integrated model provided a robust structure to analyse how perceived usefulness (PU), perceived ease of use (PEOU), and various socio-environmental factors influenced the attitudes and intentions of SMME owners regarding ICT adoption.

Results show that South African FMCG SMMEs employ some ICT in one way or another but without fully comprehending how it can benefit their businesses. To address shortfalls and increase the adoption of ICTs in township SMMEs, various recommendations were proposed to address the lack of ICT awareness, use, and computer literacy that contribute to the non-adoption or ineffective adoption of ICTs.

Since the FMCG sector is essential to the South African economy and contributes significantly to its economic growth, this research will recommend township SMME owners and/or managers regarding how to successfully adopt ICT to improve their businesses' day-to-day operations, growth and sustainability. It is recommended to conduct further research with a larger sample size to improve the generalisability of the findings and investigate the various factors that influence ICT adoption in more SMME sectors throughout South Africa.

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DECLARATION

I, Asanda Jonginamba: 207178208, declare that the contents of this research represent my unaided work and that this thesis has not previously been submitted for academic examination towards any qualification. Furthermore, it represents my own opinions and not necessarily those of the CPUT.

The ChatGPT Consensus plugin—a valuable tool that helps users find and access academic research papers related to their questions and is designed to aid in answering queries, drafting content, and conducting thorough research by utilising a vast database of scholarly articles—was employed in the following aspects of the research: literature review and summaries. These tools assisted me in finding relevant literature and summarising content. I have complied with the University’s regulations and policies on the use of AI tools and confirm that this has not compromised the originality and integrity of my work.

Lastly, Grammarly was used for proofreading and editing purposes to enhance spelling, grammar, punctuation, clarity, and style, as well as to ensure proper citation and avoid plagiarism. I reviewed and approved all final edits to maintain the integrity and originality of my work.

.....
Asanda Jonginamba

.....
DATE

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“True education means more than the perusal of a certain course of study. It means more than a preparation for the life that now is. It has to do with the whole being, and with the whole period of existence possible to man. It is the harmonious development of the physical, the mental, and the spiritual powers. It prepares the student for the joy of service in this world and for the higher joy of wider service in the world to come.”

– Ellen G White

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DEDICATION

I dedicate this thesis to my late grandmother, Mrs Nothembile Frances Jonginamba, who prayed for my success and prosperity in every aspect of life.

CLARIFICATION OF TERMS

Fast-moving consumer goods (FMCG): Products that are sold quickly and at a relatively low cost (Abraham, 2019). Examples include non-durable household goods such as packaged foods, beverages, toiletries, over-the-counter drugs, and other consumables.

Information and communication technology (ICT): Digital technologies that support activities (gathering, processing, storing and presenting data) involving information through collaboration and communication (Spiteri & Rundgren, 2020).

Medium enterprises: These businesses have fewer than 250 employees and have an annual turnover of between R35 million and R220 million, depending on the industry (South Africa, 2023).

Micro enterprises: “These enterprises (e.g., *spaza* shops, minibus taxis and household industries)” (Petersen et al., 2018) “typically lack formality in terms of registration, employ no more than ten people” (Zastempowski, 2022), and have an annual turnover of between R5 and R20 million, depending on the industry (South Africa, 2023).

Small enterprises: These business entities have fewer than 50 employees and have an annual turnover of between R15 million and R85 million, depending on the industry (South Africa, 2023).

Small, medium and micro enterprise (SMME): “a separate and distinct business entity, which is managed by one or more owner(s) ... such enterprises should predominantly conduct business in any sector or sub-sector of the national economy”. The various SMME categories are defined based on two proxies, “total full-time equivalent of paid employees” and “annual turnover” (South Africa, 2019:111).

Township: Distinct urban areas with ongoing social and economic challenges, characterised by high population densities, informal settlements, and significant poverty and unemployment rates (Mkhize, 2019).

ACRONYMS AND ABBREVIATIONS

4IR	Fourth Industrial Revolution
B2B	Business-to-Business
B2C	Business-to-Consumer
DT	Digital Technologies
FMCG	Fast-Moving Consumer Goods
GDP	Gross Domestic Product
ICT	Information and Communication Technology
IoT	Internet of Things
IT	Information Technology
KMS	Knowledge Management System
SEDA	Small Enterprise Development Agency
SMME	Small, Medium and Micro Enterprise
VAT	Value Added Tax
VoIP	Voice over Internet Protocol

CHAPTER 1: INTRODUCTION TO THE RESEARCH STUDY

1.1 BACKGROUND TO THE RESEARCH PROBLEM

Small, Medium and Micro Enterprises (SMMEs) are critical to the economic growth and development of a country (Makwara, 2019; Rungani & Potgieter, 2018). SMMEs drive economic growth, create employment opportunities, and alleviate poverty, which, in turn, contribute to a country's Gross Domestic Product (GDP) (Nagaya, 2017). Moreover, SMMEs are vital in developing and developed countries (OECD, 2017). Consequently, it is vital for SMMEs to operate efficiently and expand within their sectors (Dladla, 2016). Given the importance of particularly township SMMEs, the South African government has increased its focus on the growth of these enterprises, acknowledging that SMMEs form the backbone of the township economy (Giddy et al., 2020; Rambe et al., 2017).

Mokoena and Liambo (2023) suggest that the adoption of Information and Communication Technology (ICT) can help township SMMEs gain a competitive edge, strengthen the sector, and boost the township economy (Modisane & Jokonya, 2021), consequently contributing to the country's economic growth and social development (Jere & Ngidi, 2020). ICT is fundamental in supporting SMMEs' competitiveness, productivity, and profitability (Taylor, 2019). Many industries are *au fait* with the advantages of adopting ICT and acknowledge that, when used correctly, it can contribute favourably to both social and economic development (Jahangir et al., 2022).

However, despite the socioeconomic value SMMEs add (Bruwer & van den Berg, 2017), they are regarded as having one of the worst sustainability rates worldwide (Masama, 2018). Between 70% and 80% of South African SMMEs fail within their first five years of operation (Bruwer, 2020). Most SMMEs face numerous impediments that hamper sustainability, adversely impacting their economic growth (Chimucheka & Mandipaka, 2015). South African SMMEs contribute between 45% to 60% to the national GDP and employ 60% to 80% of the labour force, and thus play a crucial role in job creation and economic stability (Sibiya et al., 2023; IOL, 2023). Regardless of the significant contribution SMMEs make to the economy of South Africa, township SMMEs are not highly competitive due to their low incomes and comparatively high

attrition rates (Cant, 2017). Taylor (2019) argues that many South African SMMEs fail and are adversely influenced by their limited or non-adoption of ICT. Furthermore, SMMEs face various factors in adopting ICT (Chege & Wang, 2020), such as Internet access (Okundaye et al., 2019), mobile technology (Nazir & Khan, 2022), online transactions (Bvuma & Marnewick, 2020b), hardware and software (Assiérou & Bourgault, 2022).

Though the preceding phenomenon is often blamed on the mismanagement of economic factors (Khan et al., 2022), the growth and sustainability of South African SMMEs, especially in townships, may be adversely influenced by the limited or non-adoption of ICT (Bvuma & Marnewick, 2020b). Niebel (2018) found that compared to SMME counterparts in affluent countries, SMMEs in developing countries face various difficulties and lower rates of ICT use, which are likely to cause changes in work processes (Soja & Soja, 2020) and, consequently, anxiety among employees relating to the use of ICT (Fu et al., 2022), as well as an increase in costs to address poor ICT implementation (Taylor, 2019).

The Fast-Moving Consumer Goods (FMCG) (products that are sold quickly and at a relatively low cost) sector, characterised as a lucrative sector that creates significant employment opportunities, contributes significantly to the South African economy (Bruwer, 2016). However, sparse literature focuses on the factors affecting ICT adoption, especially among South African FMCG SMMEs in townships (Bvuma & Marnewick, 2020a, 2020b; Mudzamba et al., 2022; Shibiti et al., 2023; Urban & Ndou, 2019), and therefore, warrants further investigation.

For example, Bvuma and Marnewick (2020a) highlight a significant lack of ICT adoption in South African township SMMEs and emphasise the need for investigation and unique interventions to encourage ICT adoption in these areas. Another study by Bvuma and Marnewick (2020b) focused on the sustainable livelihoods of township SMMEs and again emphasised the lack of ICT adoption and sustainability of these enterprises as a critical issue. In addition, Mudzamba et al. (2022) underscored the necessity for targeted interventions to facilitate the adoption of ICT among township SMMEs. Muhwati and Salisbury (2022) agree that a conundrum remains in encouraging township SMMEs to adopt and use ICT within their business operations. Considering the barriers to ICT adoption, Shibiti et al. (2023) assessed the barriers to

technology adoption among SMMEs in Mamelodi township and highlighted the need for further research into the specific barriers and challenges these SMMEs face in adopting new technologies and calls for more detailed studies to develop effective support mechanisms Urban and Ndou (2019) emphasize the need for additional research to better understand the enabling factors and challenges faced by township small, medium, and micro enterprises (SMMEs) in order to enhance their performance and adoption of information and communication technology (ICT). Furthermore, the challenges that SMMEs encounter when adopting ICT are distinct due to their socioeconomic conditions, lack of infrastructure, and limited access to training and support. This context-specific difficulty warrants further investigation to develop tailored solutions that can effectively address these issues (Mudzamba et al., 2022).

Stemming from the above, it is evident that the academic literature acknowledges the lack of ICT adoption and the significant barriers and challenges SMMEs in South African townships face. Therefore, an inference could be made that many South African SMMEs are negatively affected by the limited or non-adoption of ICT within their business.

Using the above as a basis, this research aims to ascertain what factors influence the adoption of ICT by FMCG SMMEs within townships in the Cape Metropole. Particular focus will be on the types of ICT adopted and the perceived value, driving forces, and barriers to ICT adoption.

The content layout of Chapter 1 is shown in Figure 1.1 (see overleaf).

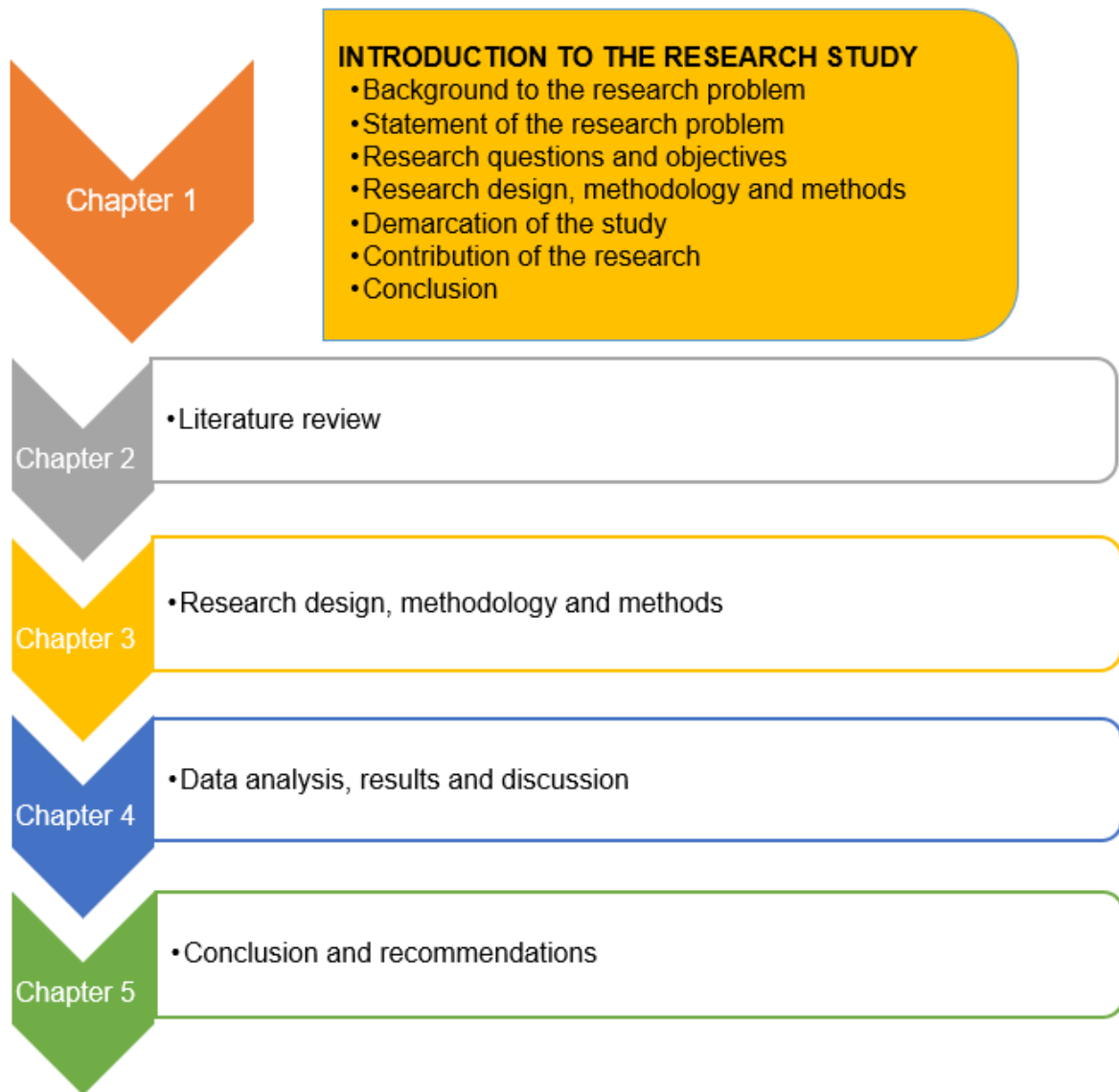


Figure 1.1: Layout of Chapter 1

1.2 STATEMENT OF THE RESEARCH PROBLEM

Building upon the context outlined in Section 1.1, this research’s core issue concerns ICT adoption by FMCG SMMEs within Cape Metropole, South Africa townships. The research problem, therefore, is succinctly articulated as follows:

Township FMCG SMMEs are adversely influenced by their limited or non-adoption of ICT.

This statement encapsulates the underlying challenge this research seeks to investigate: what factors influence the adoption of ICT by FMCG SMMEs within

townships in the Cape Metropole? This statement not only reiterates the problem but also subtly introduces what ICTs are adopted, as well as the perceived value, driving forces, and barriers to ICT adoption, which tie into this research’s broader objectives and findings (see Table 1.1).

1.3 RESEARCH QUESTIONS AND OBJECTIVES

1.3.1 Primary research question and objective

The primary research posed was:

What factors influence the adoption of ICT by FMCG SMMEs within townships in the Cape Metropole?

Consequently, the main objective was:

To determine what factors influence the adoption of ICT by FMCG SMMEs within townships in the Cape Metropole.

1.3.2 Secondary research questions and objectives

Table 1.1 summarises the research sub-questions and objectives, as discussed in Section 1.4.1.

Table 1.1: Research sub-questions and objectives

Question	Objective
What ICTs are adopted in township FMCG SMMEs?	To determine what ICTs are adopted in township FMCG SMMEs.
What is the perceived value of ICT adoption by township FMCG SMMEs?	To determine the perceived value of ICT adoption by township FMCG SMMEs.
What are the driving forces of ICT adoption by township FMCG SMMEs?	To determine the driving forces of ICT adoption by township FMCG SMMEs.
What are the barriers to ICT adoption by township FMCG SMMEs?	To determine the barriers to ICT adoption by township FMCG SMMEs.

1.4 RESEARCH DESIGN, METHODOLOGY AND METHODS

This research adopted the research paradigm of positivism to gather quantitative data from a purposively selected SMME sample, relying predominantly upon “quantitative findings and the establishment of statistical significance” (Alessandrini, 2012).

In this study, a quantitative approach was used to focus on the adoption of ICT by FMCG SMMEs within townships in the Cape Metropole. Creswell and Poth (2017) opine that “quantitative research quantifies, collects, and analyses numerical data and emphasises links among a smaller number of attributes across several cases”. Therefore, this research was empirical and comprised survey research. Survey research collects information like “opinions, characteristics, attitudes or previous experiences about people by posing questions and presenting the results” (Bitso, 2011).

The population size was unknown to the researcher. Therefore, non-probability sampling techniques (purposive and convenience sampling) were employed to select a representative sample (managers and/or owners of South African township FMCG SMMEs) while maintaining compliance with the delineation criteria listed below. When using non-probability purposive sampling, the researcher must choose participants with information pertinent to the research (Dlamini, 2020). Purposive sampling enables identifying and selecting information-rich scenarios to use sparse resources (Patton, 2002) efficiently. It involves selecting participants based on specific characteristics or criteria relevant to the research question or hypothesis and is often used when researchers seek to study a particular subgroup crucial to the investigation (Ritchie et al., 2013).

On the other hand, convenience sampling is used when the research subjects within a population are easily accessible to the researcher (Given, 2008). This sampling method is considered to be the most appropriate for this research because the researcher selected the representatives according to preset attributes from a targeted research populace to contribute to the research to collect sound and reasonably rich data (purposive sampling) and, because of the proposed systematic method (convenience sampling) of participant selection, they were easy to reach. The targeted sample for this research consisted of 55 participants, all of whom are either the owners

and/or managers of their respective FMCG SMMEs within townships in the Cape Metropole.

Data was gleaned from a group of respondents adhering to the below criteria:

- Respondents were citizens of South Africa.
- They were either owners and/or managers of their businesses.
- They were involved in the day-to-day operations of their companies.
- Their businesses adhered strictly to the definition of SMMEs as outlined in the National Small Enterprise Act of South Africa.
- Their businesses employed fewer than ten employees and were classified as micro-enterprises.
- Respondents' businesses were non-franchised.
- Respondents' businesses were operating in the FMCG industry, situated within townships in the Cape Metropole.

Primary data was gathered from respondents using a self-constructed questionnaire (see Appendix A) designed to align with the research objectives and seek answers to the research questions. Creating the questionnaire was a detailed, step-by-step process to ensure each question aligned perfectly with the research objectives. The researcher conducted a pilot study before launching the main survey to ensure clarity and relevance. This trial run involved a statistician, two PhD academics, and the owners/managers of two FMCG township SMMEs in the Cape Metropole to ensure that all questions were unambiguous, reasonable, and impartial. Their feedback was invaluable, helping refine the questions, ensuring they were clear and directly relevant to the research objectives, and fortifying the questionnaire's content, face, and construct validity. After piloting, reliability was ensured by adequately gathering truthful/factual data and documenting it precisely.

The final survey questions consisted of multiple-choice questions, yes/no questions, and, mostly, Likert scale questions, which were distributed to the respondents. Respondents were afforded the opportunity to convey their opinions within predetermined borders (Cooper & Emory, 1995).

Descriptive and inferential statistics were used to describe the survey data (see Chapter 3).

1.5 DEMARCATION OF THE RESEARCH

The research was conducted in the Cape Metropole of South Africa (see Figure 1.2). The population comprised FMCG SMMEs located in townships in the metropolitan area.

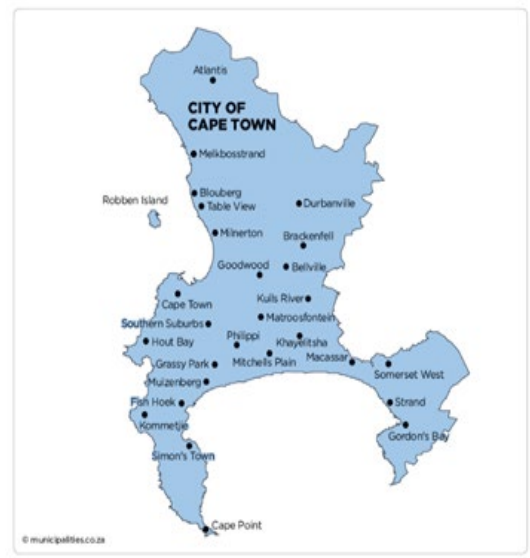


Figure 1.2: Cape Metropole

Source: Municipalities (2021:Online)

1.6 RESEARCH CONTRIBUTION

Sparse literature exists about the factors influencing ICT adoption, particularly among South African FMCG SMMEs located in townships.(Bvuma & Marnewick, 2020a, 2020b; Mudzamba et al., 2022; Shibiti et al., 2023; Urban & Ndou, 2019), and therefore, warrants further investigation.

By addressing the below aspects, this research could advance academic knowledge, provide tangible benefits to SMME owners/managers, and set a clear agenda for future studies in this area.

Theoretical implications: This research aims to fill significant gaps in the existing literature on factors influencing ICT adoption among township FMCG SMMEs. By focusing on a specific and under-researched area—the Cape Metropole townships—this research will contribute to the broader understanding of ICT adoption in developing economies. The results will offer a detailed understanding of the factors that positively and negatively influence ICT adoption, specifically for township SMMEs.. Furthermore,

the research's insights into the perceived value, driving forces and barriers of ICT adoption will help refine and expand existing frameworks, ensuring they are more inclusive of diverse business environments.

Owner/Manager implications: For SMME owners/managers, this research offers practical insights that can directly influence business strategies and operations. SMME owners and managers in townships can benefit from understanding the specific types of ICT that can enhance their business operations, increase efficiency, and drive growth. By identifying the perceived value of ICT, this research can help demystify the benefits and encourage more widespread adoption among township businesses. The research also provides actionable recommendations for overcoming these challenges by highlighting the driving forces and barriers to ICT adoption. This can guide local governments, non-profits, and business support organisations in developing targeted programmes and interventions to support ICT adoption, ultimately contributing to the sustainability and competitiveness of township SMMEs.

Future research directions: This research opens several avenues for future research. First, longitudinal studies could track the impact of ICT adoption over time to better understand its long-term benefits and challenges. Second, comparative studies could explore ICT adoption across different regions or sectors to identify commonalities and unique factors. Additionally, research could focus on developing and testing specific interventions to overcome the identified barriers, providing a robust evidence base for policy and practice. Finally, further investigation into the socioeconomic impacts of ICT adoption on township communities would provide a holistic view of its benefits beyond the business context, contributing to the broader discourse on technology and development.

1.7 CONCLUSION

Chapter 1 explored the vital importance of SMMEs in fostering economic growth and development, particularly within South African townships. These businesses drive economic growth, create jobs, and play a crucial role in alleviating poverty. Recognising their significance, the South African government emphasised supporting the growth of township SMMEs, acknowledging their pivotal role in the township economy. However, these businesses face various challenges. Many SMMEs fail within their first five years, largely due to barriers like the limited or non-adoption of ICT. This chapter has highlighted how crucial ICT

is in enhancing the efficiency, competitiveness, and sustainability of SMMEs. Despite its potential benefits, many township SMMEs struggle with adopting these technologies, facing barriers such as lack of awareness, inadequate training, and financial constraints.

This chapter identified a gap in the existing research – a pressing need for more studies focusing on the factors influencing ICT adoption among township SMMEs. We can better support these businesses by understanding what types of ICT are adopted, the perceived value of these technologies, the driving forces behind their adoption, and the barriers that prevent their use.

The main goal of this research was to delve into these factors within the context of FMCG SMMEs in Cape Metropole townships. By doing so, this research aims to provide insights that can guide policymaking, support targeted interventions, and ultimately assist with the sustainability of township SMMEs, and contribute valuable knowledge that can aid in ICT adoption among township SMMEs, particularly micro-enterprises, transforming these businesses into sustainable and competitive enterprises, thereby strengthening the broader economy.

Following Chapter 1, the subsequent chapters for this research are outlined below:

CHAPTER 1 – INTRODUCTION TO THE RESEARCH

Chapter 1 presents the research problem, outlining its intentions, aims, and objectives. It also summarises the research design, methodology, and methods used and highlights the contributions made by the conducted research. The detailed layout of Chapter 1 sets the stage for a comprehensive exploration of ICT adoption in township FMCG SMMEs, aiming to provide valuable insights for academia, practitioners, and policymakers.

CHAPTER 2 – LITERATURE REVIEW

Chapter 2 discusses SMMEs, especially SMMEs in the FMCG sector, their sustainability, and various factors affecting SMME growth. This chapter also expands upon ICT and its use in developed and developing countries, ICT adoption in SMMEs and its importance, as well as the perceived value and driving forces of ICT adoption in SMMEs and the barriers to its successful adoption.

CHAPTER 3 – RESEARCH DESIGN, METHODOLOGY AND METHODS

This chapter expands on the research design, methodology, and methods, as well as the ethical considerations, validity and reliability of the data, the data collection method used, survey design and the limitations of the research.

CHAPTER 4 – DATA ANALYSIS, RESULTS AND DISCUSSION

Chapter 4 addresses the data analysis, interpretations, and presentation of the collected data.

CHAPTER 5 – CONCLUSION AND RECOMMENDATIONS

Chapter 5 revisits the most essential aspects of the research, conclusions are made, and recommendations are provided.

CHAPTER 2: LITERATURE REVIEW

2.1. INTRODUCTION

Establishing research and relating it to existing knowledge is a fundamental building block of all scientific research activities, regardless of the discipline. Therefore, this should be a priority for all academic literature reviews as a research method is more relevant than ever (Snyder, 2019). Baumeister et al. (2003) broadly define a literature review as a methodical approach to collecting and synthesising previous research. Remenyi et al. (1998) describe a literature review as a thorough examination of previous research undertaken by academics to address a specific research problem. A well-conducted and effective literature review as part of research provides a solid foundation for advancing knowledge and facilitating theory development (Webster & Watson, 2002).

This chapter reviews the literature to recognise the factors influencing ICT adoption within township FMCG SMMEs in the Cape Metropole, South Africa. It explores the significance of ICT for SMMEs in developed and developing countries, the specific context of ICT adoption in South African township SMMEs, and the perceived value, driving forces, and barriers to ICT adoption in these businesses. This literature review aims to identify gaps in the current research and set the foundation for the empirical investigation conducted in this study. Additionally, this chapter examines various ICT adoption frameworks, focusing on Bvuma and Marnewick's (2020a) framework, which explicitly addresses the unique challenges that township SMMEs face.

This chapter is a discussion structured according to the headings depicted in Figure 2.1 (see overleaf).

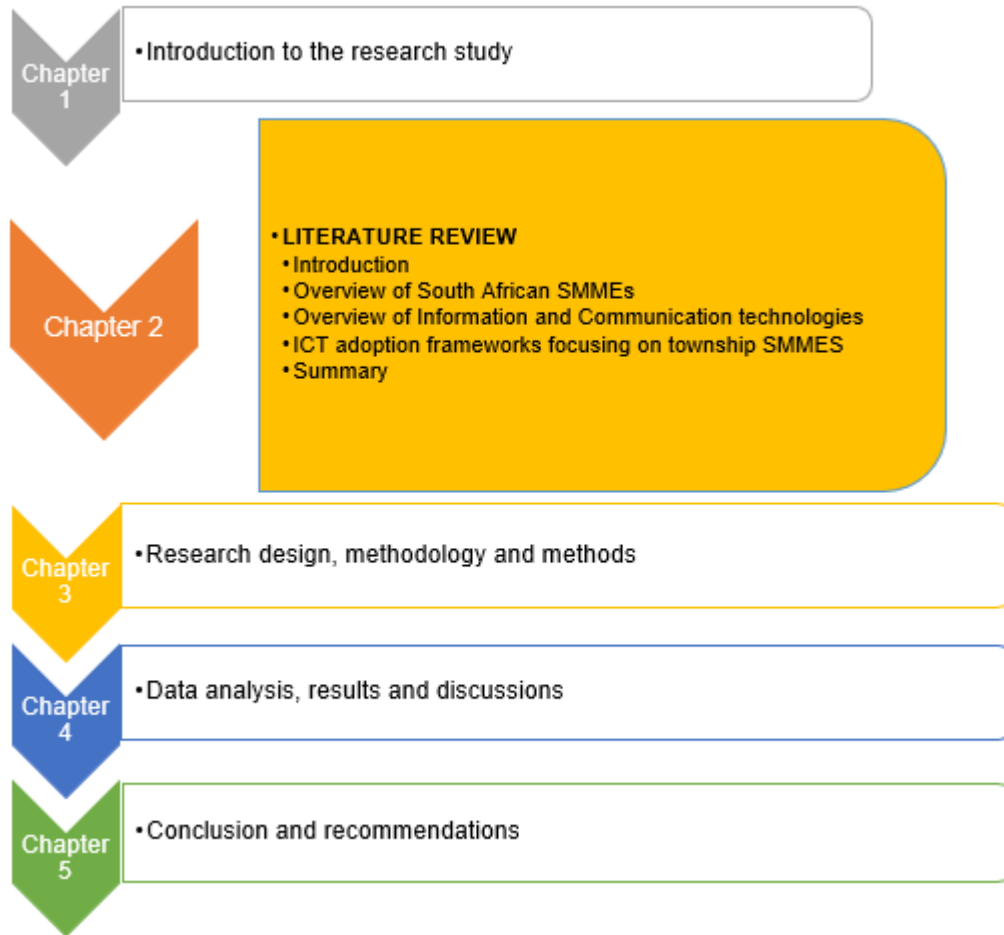


Figure 2.1: Layout of Chapter 2

2.2. OVERVIEW OF SOUTH AFRICAN SMMEs

The history of South African township SMMEs extends back to the apartheid regime when Black South Africans were not allowed to own or manage businesses and were punished for any entrepreneurial activity (Mtshali, Mtapuri & Shamase, 2017). Townships, also known as “urban residential communities”, were established for the black population outside urban borders (Lemon, 2021). On the other hand, whites lived in suburbs or city centres (Purifoye, 2020). Every city had at least one, and frequently more, townships affiliated with it (Bischoff-Mattson et al., 2020). As a result, during apartheid, small company owners in townships were considered self-employed, and the majority of them operated illegally (Mazwai, 2017).

This is why Bvuma and Marnewick (2020b) opine that, in South Africa, it is critical to differentiate among townships and cities. An insight into townships and cities offers direction for SMME development and expansion (du Plessis & Marnewick, 2017).

Furthermore, Bvuma and Marnewick (2020b) imply that understanding South African SMMEs without considering their historical context and particular obstacles would lead to inaccurate judgments about the country's SMMEs.

There is no uniform agreed definition of SMMEs; thus, reaching an agreement on one is difficult (Gibson & van der Vaart, 2008; Bvuma & Marnewick, 2020b). The term 'SMME' refers to a specific group of enterprises, how they function, and the features and structures that differentiate them from other businesses (Maduku et al., 2016). SMMEs contribute to the national GDP by manufacturing commodities of value or rendering services to consumers and/or other businesses (Donga et al., 2021). Naicker et al. (2017) state that SMMEs are known to be the lifeblood of the national economy due to their potential to assist with attaining core socioeconomic objectives. South African SMMEs are defined by The National Small Enterprise Act SMMEs as "a separate and distinct business entity, together with its branches or subsidiaries, if any, including co-operative enterprises, managed by one owner or more predominantly carried on in any sector or subsector of the economy" (South Africa, 2019). The Act further states that SMMEs may or may not be registered under any law, implying that informal traders are also classified as SMMEs (Newman et al., 2018).

The Act (South Africa, 2019; 2023) classifies SMMEs as:

1. **Micro enterprises:** Enterprises such as "spaza shops, minibus taxis, and household industries" (Petersen et al., 2018) with a turnover of less than the value-added tax (VAT) registration limit (R150 000 per year) (Lesejane, 2021), typically lack formality related to registration, employ no more than ten people (Jayachandran, 2021; Zastempowski, 2022), and have an annual turnover of between R5 and R20 million, depending on the industry (South Africa; 2023).
2. **Small enterprises:** These business entities have fewer than 50 employees and have an annual turnover of between R15 million and R80 million (South Africa, 2023).
3. **Medium enterprises:** These businesses have fewer than 250 employees and have an annual turnover of between R35 million and R220 million, depending on the industry (South Africa, 2023).

South African SMMEs aim to achieve three essential socioeconomic goals: reducing poverty and unemployment and increasing the country's GDP (Jili et al., 2017). South African small, medium, and micro enterprises (SMMEs) make significant contributions to the economy, accounting for between 45% and 60% of the country's GDP and employing 60% to 80% of the labour force (Sibiya et al., 2023; IOL, 2023). The socioeconomic impact of SMMEs in South Africa is considerable (Chimucheka et al., 2019; Mbumbo et al., 2019; Statistics South Africa, 2019; Schutte et al., 2019).

This research focuses on micro-enterprises located in the Cape Metropole townships, specifically those not registered for Value Added Tax (VAT). These enterprises typically have fewer than ten employees and operate as self-contained entities run by their managers, owners, or co-owners. They generate modest annual revenues that fall below the threshold required for VAT registration. A key characteristic of micro-enterprises operating in the informal sector is their commitment to serving the local community. The owners of these businesses often have minimal savings and face significant restrictions in accessing bank financing (Yousfani et al., 2019). These micro-enterprises are primarily family-owned, located in urban areas, and are engaged in producing and distributing goods and services. They are unregulated, operate in highly competitive markets, are labour-intensive, and are considered part of the informal economy (Snowball & Mapuma, 2020). The reason for focusing particularly on micro-enterprises is three-fold. Firstly, these enterprises form a significant portion of the township economy, representing the grassroots level of entrepreneurship. By targeting this specific group, the research can provide insights into ICT adoption and the challenges faced by the smallest and often most vulnerable businesses. Secondly, broader economic studies often overlook micro-enterprises, focusing mainly on larger SMMEs. However, their impact on local economies, employment, and community development is profound. Understanding the factors influencing their ICT adoption can lead to tailored interventions that support their growth and sustainability. Lastly, by focusing on micro-enterprises, this research highlights the specific needs and barriers these businesses encounter, particularly regarding ICT adoption. This focus ensures that the findings directly apply to the micro-enterprise context, providing practical recommendations that can make a real difference at the grassroots level, ultimately fostering economic resilience and growth in the Cape Metropole townships.

2.2.1 Importance of South African SMME growth and sustainability

SMMEs are undeniably and without argument essential to sustaining a strong and solid economy (Ndubisi et al., 2021). SMMEs are well-known worldwide for their importance in “social development, employment, and economic growth” (Rungani & Potgieter, 2018). SMMEs are undeniably viewed as engines of global economic growth and development, prospective job creators (Anugwo & Shakantu, 2020; Bhorat et al., 2018; Jili et al., 2017; Lekhanya, 2016; Makwara, 2019; Mukwarami et al., 2020; Naradda et al., 2020), are imperative in reducing poverty (Cant & Rabic, 2018; Maziriri & Chivandi, 2020), and play an essential role in mainly developing countries (Auzzir et al., 2018) such as South Africa. As mentioned earlier, the significance of South African SMMEs extends beyond the job market, as they wield economic influence by contributing between 45% and 60% to the GDP (Sibiya et al., 2023; IOL, 2023). The South African National Development Plan acknowledges SMMEs as the “backbone of economic growth and development, placing the onus on SMMEs to seize opportunities and meet everyone’s expectations” (Bhorat et al., 2018).

However, despite the importance of SMME growth and sustainability in South Africa, Bruwer (2020) avers the unfortunate fact that SMMEs in South Africa represent one of the lowest sustainability performances worldwide, with about 70% to 80% failing within their first five years in operation. Consequently, this high failure rate paints a bleak picture of the SMME sector’s potential to meaningfully contribute to job creation, economic growth, and poverty reduction (Bruwer, 2018) and indicates that there must be factors that impede their efforts to grow and remain sustainable.

Thus, maintaining SMMEs’ long-term performance is a major dilemma, as most of these businesses (70% – 80%) fail within five years (Bruwer, 2020). In supporting SMMEs, to mitigate the former, the South African government implemented policies, strategies and programs to create a favourable environment for SMMEs (The Small Business Development Agency, 2016). In addition, since 2008, the DTI has aimed to evaluate and improve the capabilities of the South African FMCG sector to become a sustainable and globally competitive industry (DTI, 2008).

2.2.2 SMMEs in the FMCG sector

Before elaborating on ICT adoption by South African FMCG SMMEs, it is necessary to define the acronym 'FMCG' and expand upon what it implies within the scope of this research. The term 'FMCG', also known as consumer-packaged goods, refers to consumable goods sold quickly and at relatively low cost, consumed frequently by customers, and have a shelf life of less than three years (Gupta, 2018). FMCGs have a limited shelf life (e.g. meat, dairy and baked goods) due to increased consumer demand (e.g. for soft drinks and confectionery) (Joshi, 2022) or the fact that they are perishable (Joshi, 2022). FMCG are often bought, quickly consumed, inexpensive and widely available (Droomer & Bekker, 2020). FMCG also has a high turnover rate when it is on store shelves (Kenton, 2021).

Due to fierce rivalry, the implementation of new rules, and the quick evolution of technology, customers are not known for being amenable to minor product flaws or issues (Powell & Coughlan, 2020), making the FMCG sector one of the most unexpected and difficult industries to thrive in (Makaleng, 2022). The South African FMCG sector primarily contributes to the country's GDP and has significant potential to create employment opportunities and improve national economic growth (Meyer et al., 2019). According to Marwanto et al. (2023), the FMCG sector contributes directly to the country's GDP, employment, exports, and human capital development and plays a pivotal role in developing a country by creating jobs for the growing rural and urban workforce, thereby alleviating poverty and consequently ensuring the desired sustainability and innovation in the economy (Bruwer & Petersen, 2022).

2.3 OVERVIEW OF INFORMATION AND COMMUNICATION TECHNOLOGIES

The term 'ICT' is typically applied to all hardware, software, networking elements, and systems that enable interaction between businesses, non-profit organisations, governments, and enterprises in the modern digital era (Wang et al., 2020). Businesses constantly work with vast amounts of data in globally digitalised environments (Rainnie & Dean, 2020). Data, the raw material from which information is created, refers to facts, events, actions, activities, and transactions that have been or may be recorded, supporting the infrastructure and parts that make contemporary computing possible (Franca, 2020). Salinas et al. (2017) define ICT as any technology

that affects or mediates communication and informational processes. ICTs are interconnected technology resources that support scientific research, teaching, and learning, as well as the automation and communication of business processes via hardware, software, and telecommunications capabilities (Antoni et al., 2020). ICT includes equipment, machinery, farms, and factories and comprises people, procedures, and organisations (Saputra, 2022).

The ICT boom commenced in the United States during the late 1990s (Fernald et al., 2023) and has since spread globally, transforming production methods and enhancing business productivity (Zafar et al., 2022). While large corporations have effectively integrated ICT infrastructure, small and medium-sized enterprises (SMMEs) have faced more significant challenges, progressing gradually through this transition over time (Gupta et al., 2018).

Recent research highlights essential ICT tools that SMMEs utilise to enhance their operations and market visibility. Wdowik and Ratnayake (2019) emphasize the importance of open-access digital tools such as email, chat, blogs, and social media in facilitating planning and communication within SMMEs. These tools streamline operations and minimize resource wastage. Similarly, Modisane and Jokonya (2020) note that cloud computing services like Software-as-a-Service (SaaS) simplify the integration of email, online chatting, and social media platforms, ultimately reducing IT costs and improving access to advanced ICT services. Bellaaj (2021) finds that most SMME owners primarily rely on cell phones to access information to support their businesses, followed by the Internet, computers, and social media platforms like WhatsApp and Facebook. Li et al. (2020) argue that various ICT technologies, including email, online chatting, blogs, Facebook, and Twitter, provide SMMEs with numerous opportunities for interaction, idea exchange, and feedback. The types of ICT tools adopted by SMMEs are elaborated upon in Section 2.3.1 below.

Furthermore, the strategic implementation and security of ICT tools are crucial SMMEs. Walaza et al. (2020) offer guidelines to enhance ICT security through education, training, and awareness programs, which ensure the safe use of email, online communication, and social media. Baporikar (2020) and Samsudeen et al. (2021) underscore the significance of these tools in improving internal processes and customer interactions. They highlight that social media and email marketing are vital in boosting customer engagement and driving business

growth. Consequently, the studies indicate that ICT tools such as email, social media, and cloud-based services are essential for fostering business growth, enhancing customer relationships, and maintaining a competitive advantage in the digital age.

2.3.1 ICT adoption and its importance for SMMEs: A developed and developing country perspective

Taylor (2019) defines ICT adoption as using ICT tools—such as computer hardware, software, and networks—to connect to the Internet. It represents the willingness and preparedness to embrace the latest technological innovations related to computers and the Internet. This process involves recognizing these advancements and actively employing ICT tools to establish connections and engage with the online world (Taylor, 2019). Essentially, ICT adoption encompasses the acceptance of cutting-edge technological developments and the practical use of these tools for online connectivity (Geng et al., 2023; Yadav et al., 2021).

The integration of ICT has become vital for driving economic growth, enhancing productivity, and fostering innovation in developed and underdeveloped nations. Numerous sectors across various countries have demonstrated that widespread ICT adoption positively impacts organisational efficiency (AlBar & Hoque, 2019). Consequently, this integration has significantly contributed to the rapid development of these nations (Yunis et al., 2018). As Bilan et al. (2019) noted, ICT has played a crucial role in enhancing economic competitiveness and long-term growth. Therefore, embracing ICT is essential for the success of SMMEs and for the economic development of nations that depend on SMMEs for growth, particularly in developing contexts (Chege & Wang, 2020).

Furthermore, ICT significantly influences societal expansion and progress (Roztocki et al., 2019). It amalgamates knowledge, skills, and ideas and is often regarded as the science and art of accomplishing tasks by applying this knowledge and expertise (Baporikar, 2020).

Authors like Kumar et al. (2023) and Taylor (2019) propose several approaches regarding how the adoption and utilisation of ICTs in SMMEs can assist these businesses in overcoming the challenges they face and achieving sustainability. Lang'at (2016) highlights that the significance of ICT applications in marketing

strategies and inventory management indicates that SMMEs prioritise expanding their client base and increasing market share. Thus, ICT is employed as a marketing tool as well as a tool to ensure that the available stocks are exploited (Shehzadi et al., 2021). In addition, The introduction of ICT eliminates or at least lessens the demand for paper, removing the concerns with its usage in communication. More importantly, it decreases paper waste and avoids its sustainability challenges while increasing the efficiency of SMMEs overall (Atkinson, Spillane, Bradley & Brooks, 2022).

The adoption and use of ICT in business activities are crucial in today's challenging and competitive environment (Rozmi et al., 2020), especially in SMMEs (Ahmad Tarmizi et al., 2020). Integrating ICT in SMME activities helps business owners increase productivity while running the business properly (Nazir & Khan, 2022). Rozmi et al.'s (2018) research results suggest that SMME owners believe that adopting ICT helps to increase the company's business performance, especially in managing day-to-day operations and sustaining the business. The research conducted by Šimberová et al. (2022) proved that ICT is perceived as necessary for the development of a company to maintain sustainability.

Thus, SMMEs can be positively impacted by the successful adoption of ICT that could assist in lowering unemployment, creating jobs, combating poverty, creating safe, secure, and sustainable communities, fostering competition with larger businesses, and boosting economic growth and development (Murithi, 2017; Wentzel et al., 2023). Chatti and Majeed (2022) argue that ICTs improve information flow, reduce transaction costs, boost speed, and improve knowledge management and transactional trustworthiness in businesses by utilising e-commerce.

Small businesses may compete with giant corporations by selling their products in foreign markets thanks to the effective use of ICT (Kano et al., 2022). Using ICTs within a corporation expands information and knowledge management, lowers transaction costs, and speeds up transactions for enterprises and consumers. ICTs are also helpful in increasing external communication and service quality for existing and new clients (Lukacs & Burnham, 2005). ICTs can transform SMMEs and make them more competitive while stimulating innovation. As the world's economies continue integrating developments in ICTs, SMMEs will reap these benefits by engaging in

regional and international markets. In this era of globalisation, SMMEs' adoption of ICTs is vital to their survival (Ongori & Migiro, 2010).

ICT's ability to succeed (or fail) depends on the cultural, historical, and organisational context in which it is conceived and deployed (Ammenwerth et al., 2006; Rahmani et al., 2022.). In industrialised countries, ICT has transformed much of daily life (Sheth, 2020) and influences how people connect, find information, work and do business, interact with government institutions and go about their lives (Langley et al., 2021). While ICT can be expected to have brought major social and economic benefits in less developed countries (Huang et al., 2022), actual outcomes may vary as culture, existing infrastructure and government laws all influence the nature and extent of ICT and ICT-enabled services (Roztock & Weistroffer, 2016). To maintain competitiveness, SMMEs need to plan and assess technology based on their business strategy and procedures and adopt innovation as a strategy (Afolayan et al., 2020). However, based on the findings of Afolayan et al. (2020), SMMEs are still cautious about using ICT despite the many advantages and available technology adoption strategies.

According to Kim et al. (2021), developed and developing nations have adopted ICTs to leverage digital business opportunities, recognising ICT's potential to stimulate socioeconomic development (Chukwuere et al., 2019; Liljevern & Karlsson, 2017; Ramzan et al., 2022; Ravindran, 2022). The conditions and factors influencing ICT adoption differ markedly between these regions, underscoring the need for customized strategies and policies (Etim, 2021; Farooqi, 2020; Hawash & Lang, 2020). Furthermore, the OECD (2019) emphasizes that SMMEs must keep pace with current developments, as their limited adoption of digital technologies may hinder them from reaping the benefits of participating in the global market (Bagale et al., 2021).

Chairoel and Riski (2018) highlight a clear distinction between the external and internal factors that influence the adoption of ICT by SMMEs. Internal factors encompass the attributes of the SMME owner or manager, the size of the company, access to financing, and the costs associated with conducting business. In contrast, external factors include the political, economic, social, infrastructural, environmental, and legal landscapes (Effiom & Edet, 2018). DePaula (2023) and Ahinful et al. (2023) point to internal factors such as access to finance, management skills, networking, investment

in information technology, and product costs. Conversely, Nazir and Khan (2022) identify external factors that can impede the growth and sustainability of SMMEs, including the economic environment, market conditions, infrastructure, crime, corruption, and labour issues.

In addition, in a developing country like South Africa, the cost of data significantly impacts the adoption of ICT among micro-enterprises. A study by Bvuma and Marnewick (2020a) indicates that high data expenses constitute a significant barrier to ICT integration for township SMMEs. The research emphasizes the financial strain these enterprises face due to elevated data costs, which restricts their ability to utilise ICT for business growth and enhancing competitiveness entirely. South Africa has the highest data costs in the world, with annual price increases that outpace those of other developing nations (ITU Report, 2017). In contrast, several countries, such as Ireland and Armenia, have experienced reductions in data costs exceeding 50% since 2015, largely attributed to technological advancements and intensified competition within the telecommunications sector (Attaran, 2023). This could be seen as favourable for promoting ICT adoption. The cost savings from ICTs like prepaid and mobile broadband, which ranged from 40% to 80%, were enormously beneficial to Arab state governments (Markowitz, 2019). Cost-reduction efforts for ICTs have included participation from nations like Europe and America, which has helped promote ICT adoption (Jiang et al., 2022).

The International Monetary Fund (IMF, 2016) evaluated how ICT adoption affects enterprises' long-term viability in developing nations and found that the following criteria are essential for assessing how sustainability affects businesses using ICT in various countries: The widespread availability of recent technologies in a nation is influenced by economic factors, digital infrastructure, education, government policies, cultural attitudes, and factors like accessibility, affordability, and global collaborations. Gupta et al. (2022) argue that industry dynamics, financial capacity, leadership readiness, organisational flexibility, and external factors such as regulatory support and market demands shape the pace of technology adoption by businesses in a nation.

Given that South Africa is a developing country (Maroyi, 2022) going through a period of growth (Jakovljevic et al., 2022) and utilising diverse and ever-changing

technologies (Magoro et al., 2022), there is a great advantage to using emerging ICTs, especially pervasive technologies with Internet connectivity (Segkouli et al., 2021). Innovations and applications based on ICT have emerged as key forces behind improved organisational performance, economic expansion, and social transformation (Yunis et al., 2018). According to Thabela (2019), in South Africa, it is assumed that all SMMEs in urban areas have the latest modern technologies and infrastructure, while the previously disadvantaged rural areas are underdeveloped with little infrastructure, such as electricity and telephone lines, which are the key enablers for the knowledge economy. Considering that digitalisation is seen as a critical enabler for social, economic, and environmental sustainability (Bilali, 2018), ICT solutions, logistical systems that support the food value chain, and even simple communication tools are regarded as essential ways to address sustainability (Mondejar et al., 2021).

Recent studies have delved into various aspects of ICT adoption, including what types of ICT tools are adopted by SMMEs. Table 2.1 below draws upon 14 recent studies to provide a comprehensive overview of ICT adoption in both developed and developing countries.

Table 2.2: ICT adoption in developed and developing nations

Study	Focus of the Study	Types of ICT Tools Used	Findings/Conclusion	Country Type
Boateng (2019)	ICT adoption in Ghanaian rural SMMEs	Mobile phones, radio	High usage of basic ICT tools like mobile phones and radio	Developing
Fosu et al. (2020)	Social media use in rural SMMEs	Social media platforms	Limited use of social media for business promotion	Developing
García & Martínez (2022)	E-commerce in Spanish SMMEs	E-commerce platforms	Increased sales and market expansion through e-commerce	Developed
Johnson & Lee (2020)	ICT adoption in North American SMMEs	Mobile apps, cloud storage, social media	Enhanced business operations and customer engagement	Developed
Kumar et al. (2022)	ICT adoption during COVID-19 in Indian SMMEs	Email, online chatting, social media	Use of ICT as a strategic tool during COVID-19	Developing
Lim et al. (2020)	ICT adoption in Malaysian SMMEs	Operational efficiency tools, market expansion tools	Adoption of ICT for operational efficiency and market expansion	Developing
Müller & Wilson (2021)	Social media use in UK SMMEs	Social media platforms	Significant role of social media in marketing and communication	Developed

Mwangi (2021)	ICT adoption in Kenyan SMMEs	Various ICT tools based on cost and benefits	Adoption influenced by cost and perceived benefits	Developing
Nkosi & Kritzinger (2020)	Cloud computing in African SMMEs	Cloud computing services	Increased adoption of cloud computing for cost efficiency	Developing
Rao (2021)	Digital marketing in Indian SMMEs	Social media, email marketing	Impact of digital marketing on customer engagement and sales	Developing
Silva & Alves (2020)	Social media use in Brazilian SMMEs	Social media platforms	Significant use of social media for customer interaction	Developing
Smith & Jones (2020)	Digital tools in European SMEs	Cloud services, advanced digital tools	Use of advanced digital tools including cloud services	Developed
Yanti et al. (2021)	ICT competency development in Bandung SMMEs	Email, online chatting, social media	Strategies to enhance ICT usage for business sustainability	Developing
Zhang et al. (2021)	E-commerce adoption in Chinese SMMEs	E-commerce platforms	Growth in e-commerce platforms enhancing market reach	Developing

Table 2.1 above provides a detailed overview of various research on SMMEs' adoption of ICT in developed and developing countries over the past five years. Many of these studies focus on developing countries, highlighting the pressing need for ICT adoption to spur economic growth and development in these areas. The studies explore a variety of ICT tools, including mobile phones, radio, social media platforms, e-commerce platforms, cloud services, and tools for operational efficiency. Developed and developing countries commonly use mobile phones and social media platforms due to their accessibility and wide-ranging benefits for business operations. In developing countries, the adoption of ICT among small, micro, and medium enterprises (SMMEs) is often influenced by factors such as cost, perceived benefits, and the availability of infrastructure. For instance, rural SMMEs in Ghana favour basic ICT tools like mobile phones and radios due to their affordability and accessibility. Additionally, cloud computing is gaining traction in African SMMEs for its cost-effectiveness. In contrast, SMMEs in developed countries tend to adopt more advanced ICT solutions, including mobile applications, cloud storage, and e-commerce platforms, significantly enhancing their business operations, customer engagement, and market reach. European SMEs, for example, greatly benefit from these advanced digital tools, leading to improved operational efficiency and competitiveness in the marketplace.

It can be argued that adopting ICT positively impacts business operations across various sectors, enhancing efficiency, customer engagement, and market expansion. Digital marketing and e-commerce are vital for increasing sales and expanding market presence. Research from developed countries highlights the strategic application of ICT to achieve a competitive advantage. Conversely, studies in developing nations underscore the critical role of ICT in overcoming infrastructural and operational challenges. These findings emphasise the necessity for tailored ICT solutions that cater to the unique needs and obstacles faced by Small, Medium, and Micro Enterprises (SMMEs) in different regions.

Unfortunately, many emerging countries grapple with inadequate infrastructure (Mhlanga, 2021), an unwelcoming corporate culture (Singh et al., 2022), and a regulatory framework that hinders effective business operations (Kumar et al., 2022). Consequently, governments should look to the examples set by developed nations and encourage small businesses to invest in modern technologies that will enhance their operations (Khalil et al., 2022). For developing countries like South Africa, Das et al. (2020) suggest that when devising strategies to guide SMEs (including SMMEs) toward sustainable development, it is crucial to consider the nation's technological landscape. Effectively addressing the myriad challenges faced by SMMEs requires comprehensive strategies, including infrastructure development, policy support, managerial training, and an appreciation of local cultural and psychological factors. By focusing on these areas, policymakers and business leaders can facilitate ICT adoption, thereby driving economic growth and sustainable development in both developed and developing nations.

Given this context, the research investigated the factors influencing ICT adoption in township FMCG (Fast-Moving Consumer Goods) SMMEs. This exploration is essential for understanding how these businesses can integrate ICT into their operations to enhance daily functioning, drive growth, and ensure sustainability. Adopting and utilising ICT efficiently is essential to help SMMEs survive and remain competitive in today's highly competitive business environment (Rozmi et al., 2018). A look into ICT adoption trends in established and emerging economies might provide information regarding the challenges of ICT adoption, particularly for small and micro-enterprise leaders in developing countries (Audi & Ali, 2019).

2.3.2 Perceived value of ICT adoption in SMMEs

Perceived value refers to the extent to which an organisation's owners/managers believe that using a particular system would improve the organisation's overall performance (Ali et al., 2015), which is also a factor that directly affects the intention to adopt a system (Davis, 1989). According to Davis (1989), perceived value is regarded as the "belief that using a particular technology will improve the potential user's job performance". Kiveu (2013) obtained similar results in Kenya, showing that ICT adoption is influenced by perceived value, implying that a prospective ICT user is likelier to adopt ICT when finding these technologies useful (Alam & Noor, 2009; Kiveu, 2013).

According to Pongwana (2010), the less knowledge about ICT's ability to improve decision-making and business operations, the lower the perceived value of ICT. To complicate matters further, the fact that the actual impact of ICT on business success is not directly measurable makes it difficult even for modern managers/executives to justify significant ICT investments (Herath et al., 2022). Stemming from the aforementioned, it is evident why ICT has not been effectively adopted in FMCG township SMMEs.

In his research, Ali (2013) highlighted the perceived value of ICT's uptake for businesses and SMMEs in Rwanda, including, amongst other things, increased customer satisfaction, increased quality of the products and services provided, and the efficiency of business processes and tasks (Kamau, 2022), improved communication and interaction with partners (Zhang et al., 2020), and an improved customer relationship and customer base (Baashar et al., 2020).

Regarding the perceived value of using ICT, Pillay (2016) found that the SMMEs surveyed believe their operations improved since introducing particular ICTs in their businesses. Furthermore, Mustafa et al. (2022) determined that the perceived value of ICT significantly relates to ICT adoption. Chipeta et al. (2022) found that ICT use adds value to SMMEs by helping them stay competitive and increase their chances of survival. Youthful SMME entrepreneurs have begun adopting ICTs for marketing using social media technology as they believe that these technologies add value to their businesses (Tajpour et al., 2023).

Zamini (2022) opines that adopting new technology is influenced by its benefits and value to the organisation. The expense of the technology is seen by SMMEs as related to its potential benefits and value when they discuss their experiences using it (Lutfi et al., 2022). Using technology, businesses may provide superior products and services to clients (Nayak et al., 2021), outpacing their rivals (Sindakis & Aggarwal, 2022.). To make educated decisions, it is still crucial to acknowledge that ICT offers a deeper grasp of the technology (Afolayan, 2020).

According to Sunday and Vera (2018), there is a wide belief that SMMEs must adopt and utilise developing digital technologies to maintain their competitiveness in the burgeoning global digital market. Furthermore, Kademeteme (2020) states that ICTs, amongst others, provide the most up-to-date capabilities and requirements, which promote the growth and ensuing survival of SMMEs in extremely tumultuous business settings. Thus, SMME owners should assess current ICTs before implementing novel, emerging digital technologies (Khrais & Alghamdi, 2022). In addition, implementing digital technologies can affect the social value and economic sustainability of businesses (Leszkiewicz et al., 2022), as well as improve the socioeconomic conditions in a region (Vrontis et al., 2022). Therefore, integrating digital technologies is perceived to add value by increasing economic and social value (Hiteva & Foxon, 2021), affecting SMMEs' overall performance by enabling more sophisticated business practices, thus leading to sustainability (Chatterjee et al., 2021).

2.3.3 Driving forces of ICT adoption in SMMEs

The uptake of ICT by SMMEs in communities is crucial as it enables them to access markets (Kamutuezu et al., 2021), source goods at reasonable prices (Kabue et al., 2023), manage stakeholder and customer relationships effectively (Kamau & Kyalo, 2022), make evidence-based decisions and improve the efficiency and effectiveness of internal and external business processes (Marnewick, 2014). SMMEs gain a competitive advantage by adopting ICT (Bvuma & Marnewick, 2020b). Neirotti and Raguseo (2017) agree that ICTs can give small businesses a competitive advantage.

Technology promotes change (Akpan et al., 2022.), and change requires technology (Oberascher et al., 2022). ICT unquestionably has favoured various changes in several businesses (Patnaik et al., 2023).

Due to the rapid development (Selmi, 2023) and expansion of ICT (Awad, 2022) over the past few decades, SMMEs have faced many significant challenges (Nagy et al., 2023). Identifying the traits influencing the adoption process to facilitate or guide the adoption procedure is one of the most important topics in technology adoption research. According to Gallivan (2001), a firm's objectives, difficulties, or environment motivate it at the organisational level.

In the first stage, a company endeavours to gather information and knowledge that will be utilised to determine whether or not to purchase a specific technology (Risius & Spohrer, 2017). When a company decides to invest in new technology, it moves to the secondary level of technology adoption (Pegoraro et al., 2022), during which employees will use the new technology (Enholm et al., 2022). From this reasoning, it can be deduced that the actual adoption depends on an organisation's previous decision on whether to adopt an ICT (Lin, 2022). Functional performance (Martín-García et al., 2022), acquisition cost (Mujahed et al., 2022), running cost (Setiawati et al., 2021), ease of use (Antonietti et al., 2022), dependability (Matsuyama et al., 2021), interoperability (Yuen et al., 2021), and serviceability (Hong et al., 2021) are all factors that can influence technology adoption (Washington, 2004). These factors are briefly expanded upon below:

- Functional performance refers to how well a piece of technology will work. ICT tools such as enterprise resource planning (ERP) systems and collaboration software have been shown to enhance operational efficiency and overall productivity in SMMEs (AlMuhayfith & Shaiti, 2020)
- The acquisition cost of technology is the price that adopters must pay to own the product. Acquiring and implementing ICT in SMMEs can involve various costs, including hardware, software, infrastructure, training, and ongoing maintenance (Al Busaidi, Bhuiyan & Zulkifli, 2019).
- Ease of use pertains to the simplicity with which users can use technology. It is a vital factor that affects both the adoption and effectiveness of ICT in SMMEs. User-friendly interfaces and intuitive designs enhance the ease of use of ICT systems, resulting in greater user acceptance and adoption within these businesses (Yuan et al., 2017).

- A user's operating cost is incurred when using technology and regular maintenance, updates, and support services for hardware and software (Logeshwaran, 2022).
- Reliability refers to how resistant a technology is to failure and its useful lifespan. The reliability of ICT is a critical factor for the effective functioning of SMMEs. System reliability, encompassing factors such as uptime and minimal downtime, is vital for the success and performance of Information and Communication Technology (ICT) in Small and Medium-sized Enterprises (SMMEs). Reliable systems significantly contribute to overall user satisfaction (Behera et al., 2023). Serviceability pertains to the duration and cost of repairing technology when it malfunctions. In the context of ICT, serviceability refers to the ease and effectiveness of maintaining, repairing, and supporting ICT systems within SMMEs
- Compatibility is another essential factor, indicating how seamlessly a new technology integrates with existing devices or business requirements. The compatibility of ICT is crucial for its successful implementation in SMMEs, involving how well ICT systems align with current technologies, processes, and the overall business environment (Prause, 2019).
- In response to the challenges posed by the pandemic, SMMEs have been compelled to adopt new digital technologies to sustain operational effectiveness and manage costs. Consequently, ICT has become an increasingly vital tool for these enterprises, enhancing their efficiency, financial structuring, and adaptability (Sastararuji et al., 2022).

Sastararuji et al. (2022) indicate that SMMEs are primarily driven to adopt ICT by their perceived internal needs and challenges rather than by external information sources regarding ICT. However, according to a study by Sastararuji et al. (2022), the motivations for adoption varied; the three mentioned frequently were efficiency improvement, real-time data acquisition, and increased mobility, as shown by the following excerpts: The primary cause is the absence of real-time financial data, which is typical. When using standard accounting software, SMMEs frequently have no idea who owes them money. As a result, they can more accurately track expenses, revenue, margins, accounts payable, accounts receivable, and expenses. The forces behind SMMEs' adoption of sustainable practices are a mix of internal organisational

elements like organisational culture and top management commitment and external factors like governmental requirements.

2.3.4 Barriers to successful ICT adoption

Though many small and micro-enterprises adopt and use ICT daily to achieve their business objectives, many have failed (Dagpin et al., 2022). Literature suggests that the growth and sustainability of South African FMCG small businesses are adversely affected by their limited or non-adoption and use of ICT (Bvuma & Marnewick, 2020a; Dos Santos & Duffett, 2021) due to various barriers they face to ensure successful ICT adoption. For example, ICT adoption is likely to cause changes in work processes (Anshari & Almunawar, 2022) and, consequently, anxiety among employees relating to the use of ICT (Lutfi et al., 2022), as well as an increase in costs to address poor ICT implementation (McFarlane et al., 2020).

Though small businesses are driven to employ ICTs to obtain a competitive advantage in the global marketplace (Alam et al., 2022), Nazir and Khan (2022) list several challenges preventing small businesses from fully utilising the advantages of ICTs. These reasons include a lack of knowledge and information (Kumar et al., 2022), commercial prospects (Bracci et al., 2022), strategic vision (Ghobakhloo & Iranmanesh, 2021), understanding the advantages of ICT (Wendt et al., 2021), and lack of confidence in ICT tools (Mbuyisa et al., 2017).

While the benefits of ICT adoption for SMMEs are clear, it is vital to acknowledge the challenges. Many small and micro-enterprises adopt and use ICT daily to achieve their business objectives, but many have also faced significant barriers (Chan, 2019). Research indicates that the growth and sustainability of small businesses in South Africa's fast-moving consumer goods (FMCG) sector are negatively impacted by their limited or non-existent adoption of information and communication technology (ICT) (Bvuma & Marnewick, 2020a; Dos Santos & Duffett, 2021). Key challenges include changes in work processes (Anshari & Almunawar, 2022), employee anxiety about using ICT (Lutfi et al., 2022), and increased costs stemming from poor ICT implementation (McFarlane et al., 2020).

With the advancement of ICT and the transition to a knowledge-based economy (El Khatib et al., 2023), the adoption and use of ICT are becoming increasingly important

for small, medium, and micro enterprises (SMMEs) to enhance corporate management and support national economic development (Belitski et al., 2022). Moreover, SMMEs in developing countries face unique barriers to ICT adoption (Chege & Wang, 2020), some of which are more severe than those faced by SMMEs in wealthier nations (Dana et al., 2022). These barriers include a lack of technology awareness and insufficient computer skills (Nes et al., 2021).

The OECD (2019b) suggests that SMMEs must stay abreast of current developments; however, there is a notable gap in their utilization of digital technology. Poor adoption of digital tools among SMMEs hinders their ability to effectively leverage competitive advantages (Mohamed & Weber, 2020). Furthermore, a lack of training and knowledge regarding the benefits of ICT (Enholm et al., 2022), along with inadequate infrastructure to ensure regular electricity (Oke & Arowoija, 2022) and internet connectivity (Faturoti, 2022), further impede ICT adoption. One significant reason for limited or no ICT adoption is a lack of awareness (Behera et al., 2022) concerning technology utilization and insufficient computer literacy (Lee, 2022). Cultural barriers also inhibit the acceptance of ICT as a viable business tool among certain ethnic groups and specific countries (Saidu et al., 2017).

Neumeyer et al. (2020) and Attaran and Woods (2019) found that many SMMEs were unaware of the various ICT tools available to enhance specific business operations. For example, they were often oblivious to numerous online resources that could assist them with funding applications (Neumeyer et al., 2020) and other support activities like business registration (Attaran & Woods, 2019). Additionally, according to Mahapatra and Krishnan (2017), a lack of financial resources represents one of the primary barriers to ICT adoption among SMMEs. Beyond infrastructural limitations, concerns about data privacy are a significant obstacle to the adoption of modern ICT (Qureshi, 2020). Occasionally, this concern is an excuse for not purchasing ICT from reputable vendors (Olszak, 2020). Consequently, some SMMEs try to develop applications internally (El-Haddadeh, 2020). However, this approach may not yield effective results, as employees tasked with designing ICT applications often lack the necessary training and expertise (Saniuk et al., 2023) and may struggle to document their solutions adequately, leading to future issues (Teixeira et al., 2022). Furthermore, the fear of rising costs may pose a challenge (Won et al., 2022); however, this concern can be

addressed by employing external suppliers to obtain application information services (Cuevas-Vargas, 2020). Although SMMEs recognise the importance of ICT for their operations (Mushi et al., 2023), limited knowledge (Thottoli, 2020) and insufficient capital for ICT infrastructure make adoption difficult (Hussain et al., 2022).

According to Ikediashi (2016), ICT adoption in SMMEs within developing nations has the potential to offer fresh perspectives, as the barriers to ICT adoption in these countries may differ significantly from those in developed economies, where the ICT sector is more established and operates under more explicit regulatory frameworks and cultural norms.

2.4 ICT ADOPTION FRAMEWORKS FOCUSING ON TOWNSHIP SMMEs

Various theories and models have been employed to understand the adoption of ICT by SMMEs. Among the most commonly used are the Diffusion of Innovation (DoI), Technology Acceptance Model (TAM), Technology-Organisation-Environment (TOE) framework, Theory of Planned Behaviour (TPB), and the Unified Theory of Acceptance and Use of Technology (UTAUT). These frameworks are essential for investigating technology acceptance, adoption, and usage (Bvuma, 2016).

The DoI theory, introduced by Everett Rogers, explains how new ideas and technologies disseminate through societies and cultures. It highlights key factors influencing the adoption process, such as the innovation's characteristics, communication channels, time, and social systems. This theory has proven relevant in modern studies aimed at understanding the adoption of different technologies across various contexts, making it particularly useful for analyzing SMME behaviours (Al-Emran et al., 2020; Lee et al., 2019).

The TAM, developed by Davis in 1986, centres on two primary factors: Perceived Usefulness (PU) and Perceived Ease of Use (PEOU). These factors determine an individual's intention to use a specific technology by explaining how users accept and utilise it (Davis et al., 1989). Since its introduction, TAM has become a foundational model for predicting user acceptance and behaviour towards new technologies. Recent research continues to validate and extend TAM's relevance in understanding technology adoption (Chatterjee et al., 2021; Scherer et al., 2019).

The TOE framework, created by Tornatzky and Fleischer, examines how technological, organisational, and environmental contexts influence the adoption of technological innovations. This model provides a comprehensive understanding of the factors that affect an organisation's decision to adopt new technologies. Recent studies have demonstrated its effectiveness in explaining ICT adoption across various organisational settings, including SMMEs (Baker, 2019; Hossain & Quaddus, 2020).

The TPB, developed by Ajzen (2011), suggests that individual behaviour is driven by intentions, which are influenced by attitudes towards the behaviour, subjective norms, and perceived behavioural control. TPB has been widely used to predict and understand a range of behaviours, including adopting new technologies. This theory offers a robust framework for examining how these factors influence technology adoption decisions (Ajzen, 2011; Tarhini et al., 2017).

The UTAUT, proposed by Venkatesh et al. (2016), integrates elements from several other models, including TAM and TPB, to comprehensively understand technology acceptance. It identifies four key constructs: performance expectancy, effort expectancy, social influence, and facilitating conditions, all impacting user intentions and usage behaviour. UTAUT has been widely applied to study technology adoption in various contexts, demonstrating its flexibility and robustness (Venkatesh et al., 2016; Williams et al., 2015).

This research focuses on ICT adoption in FMCG SMMEs in the Cape Metropole. To explore the factors influencing ICT adoption within these micro-enterprises, Bvuma and Marnewick's (2020a) ICT adoption framework, which explicitly targets township SMMEs, has been partially adapted (see Figure 2.3 below). This framework addresses the unique challenges that township SMMEs encounter when adopting ICT. It is grounded in the ANT and TAM, providing a structured approach to understanding and facilitating ICT adoption. The following section discusses each component of this framework concerning township SMMEs.

Integrating the TAM with other frameworks is prevalent in technology adoption studies (Chatterjee et al., 2021; Scherer et al., 2019; Russo, 2023). However, this approach has certain limitations, including a failure to consider environmental factors such as influences from suppliers, customers, and competitors (Manueli et al., 2007). To

address these gaps, Bvuma and Marnewick (2020a) incorporated the ANT into the framework. This integration allows for exploring various actors' roles that TAM omits, enabling researchers to comprehensively examine perceptions, attitudes, and intentions related to ICT use among small, medium, and micro enterprises (SMMEs) in townships.

According to Bvuma and Marnewick (2020a), TAM's strength lies in its ability to explain how township SMME owners perceive and approach ICT adoption. By integrating ANT, which acknowledges the influence of diverse actors, the framework offers a more robust understanding of ICT adoption in SMMEs. Additionally, the framework emphasizes the importance of human actors, particularly SMME owners and managers, who are vital decision-makers in the adoption process. These individuals possess distinct characteristics, such as age, ICT skills, and education levels, and they must accept and initiate any changes for adoption to occur.

Furthermore, the framework addresses the outcomes produced within the township SMME network. It underscores the role of non-human actors, including ICT infrastructure, stakeholders, government support, and competitive pressures. Successful ICT adoption depends on the interaction between both human and non-human actors. Even if SMME owners and managers are willing to adopt ICT, non-human factors may impede this process if they do not align with the needs of the businesses.

The TAM suggests that SMME owners/managers adopt ICT if they believe it will benefit their business growth or sustainability (PU). Conversely, if they perceive no business enhancement from ICT, they will reject it. PEOU implies that ICT will be adopted if considered easy to use and not overly complex. The framework shows that PU and PEOU significantly impact the type of ICT adopted. Township SMME owners/managers may decide based on the perceived complexity or benefits of the ICT. These perceptions influence their attitude toward ICT adoption.

Non-human actors are critical in shaping the behavioural intention to adopt ICT. If all non-human actors listed in the framework positively influence the intention to adopt, there will be a higher likelihood of ICT adoption. Thus, the framework underscores the

significant role of non-human actors in influencing ICT adoption among township SMMEs.

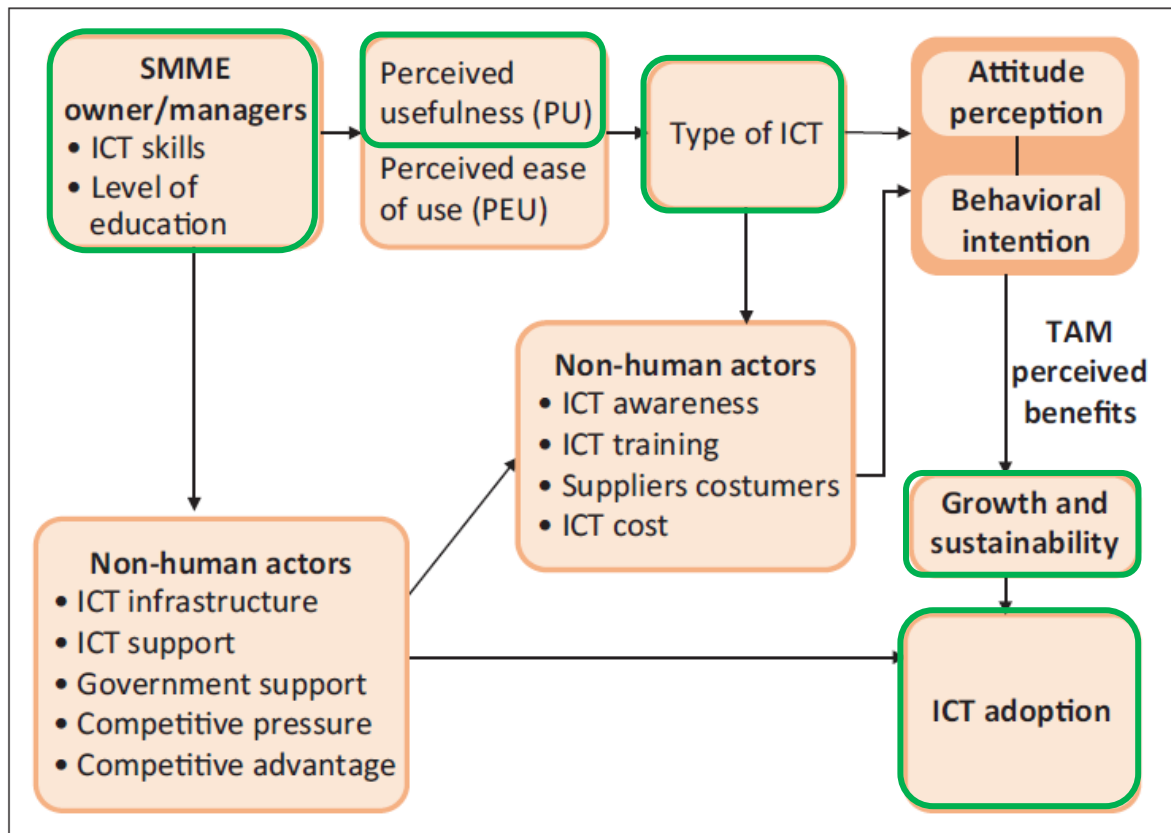


Figure 1.3: Framework for ICT adoption in township SMMEs

Source: Bvuma & Marnewick (2020a:7)

Within the context of this research, five components from Bvuma and Marnewick’s (2020a) ICT adoption framework were adopted: SMME owner/managers, perceived usefulness/value of ICT adoption, the type of ICTs used, and the growth and sustainability of township SMMEs, and ultimately, ICT adoption (see Figure 2.3, components highlighted in green).

Some elements were added to the above framework to provide more detailed information on the targeted SMME and to address the research sub-questions, namely to determine (1) what ICTs are adopted in township FMCGs SMMES, (2) perceived valued and (3) driving forces of ICT adoption, and (4) the various barriers faced in adopting these technologies in especially FMCG micro-enterprises in townships in the Cape Metropole. Furthermore, the SMME owner/manager component was expanded

upon to gather more detailed information (descriptive statistics) on the research subjects. The conceptual framework used within this research is shown in Figure 3.3 below.

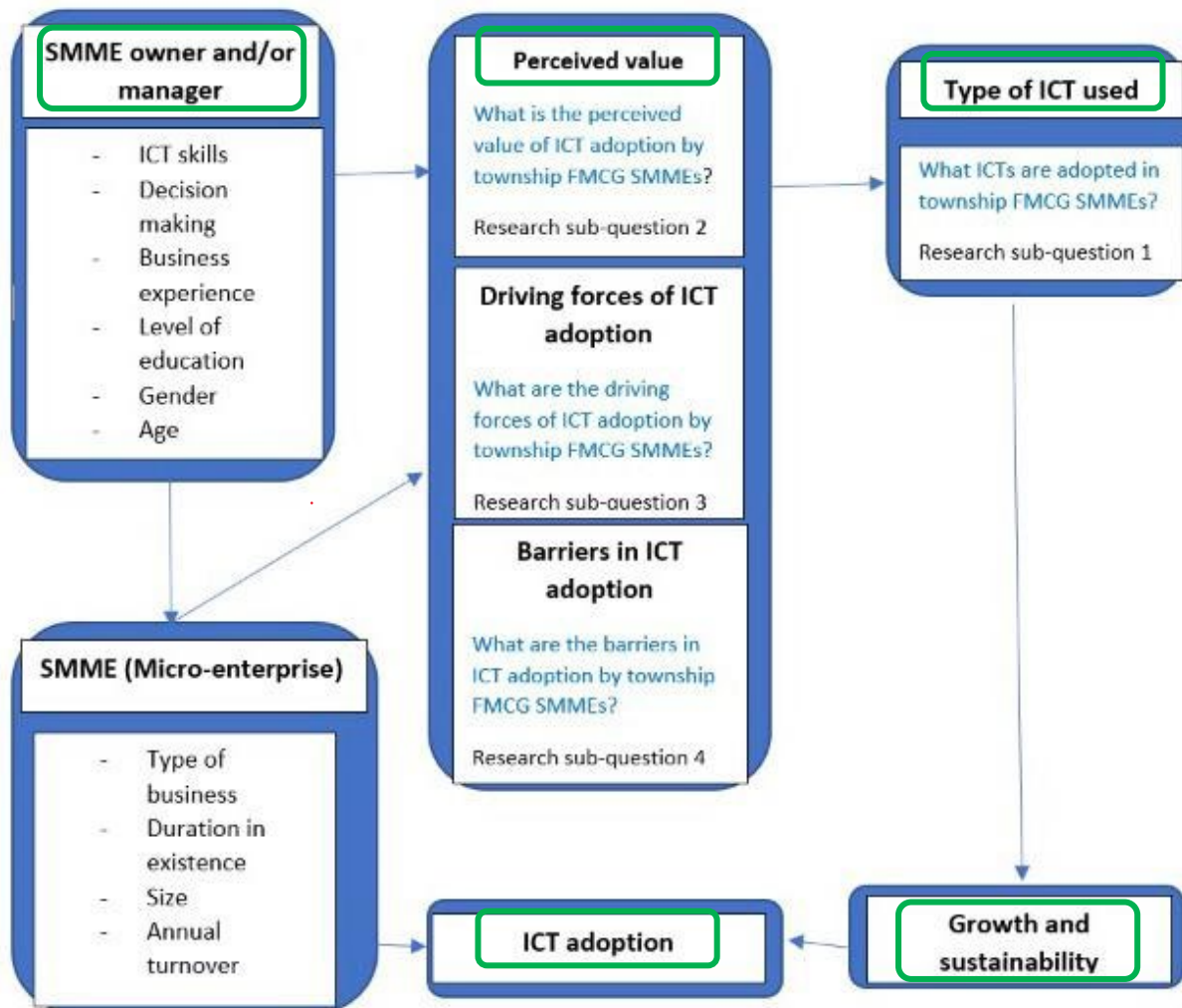


Figure 3.2: Conceptual framework for ICT adoption in FMCG township SMMEs

Source: Author (2022)

2.4 SUMMARY

This chapter began by introducing the research, followed by an overview of South African SMMEs with a particular focus on FMCG micro-enterprises located in townships. The importance of these businesses’s growth and sustainability was expanded on, highlighting the critical role SMMEs play in the economy of a country. In addition, ICT adoption and its importance for SMMES in both developed and developing countries were discussed. ICTs were discussed in detail, focusing on the

types of ICTs adopted and the perceived value within SMMEs. The chapter concluded with insights into the driving forces and barriers to ICT adoption, as well as an examination of various ICT adoption frameworks relevant to this research.

CHAPTER 3: RESEARCH DESIGN, METHODOLOGY AND METHODS

3.1 INTRODUCTION

This chapter narrates how the research was designed and conducted. Four research sub-questions were asked to answer the main research question.

Chapter 2 comprises a literature review to help find evidence linked to the research questions and achieve the research objectives. A questionnaire was developed to collect the primary quantitative data.

The content of Chapter 3 is graphically depicted in Figure 3.1 below.

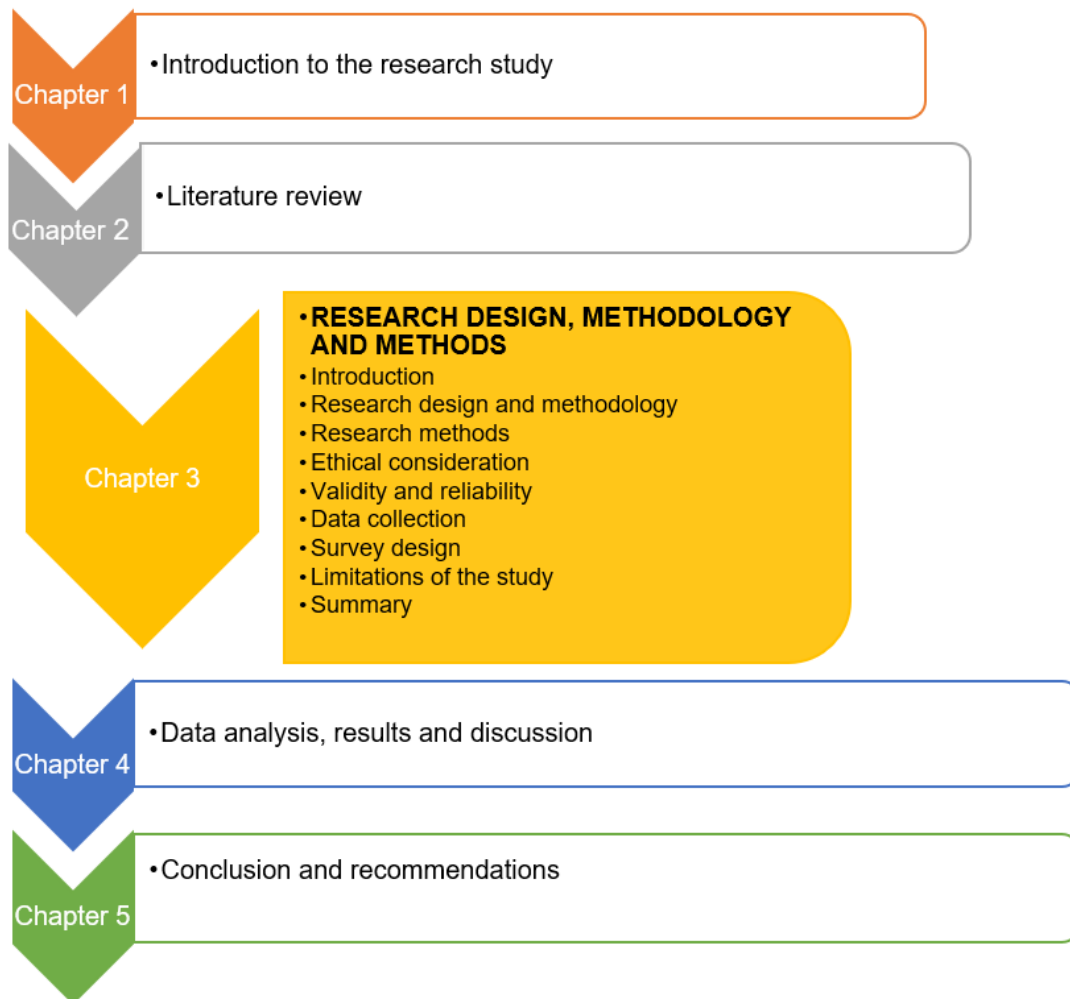


Figure 3.3: Layout of Chapter 3

3.2 RESEARCH DESIGN, METHODOLOGY AND METHODS

A research design is an approach to solving a specific research question. This concern compels researchers to develop a plan that outlines the terms and procedures for collecting, analysing, and reporting data guided by and derived from the research questions (Hameed, 2020). Therefore, the researcher must have extensive knowledge of the available methodological and analytical tools and their advantages and disadvantages (Dzansi & Amedzo, 2014). Quantitative, qualitative and mixed-methods research are examples of research design types (Hong et al., 2018). Combining these approaches, commonly called mixed-methods research, can enhance the quality of research findings and provide more nuanced insights (Matović & Ovesni, 2021). The three types of research design are briefly discussed below:

- **Quantitative research:** Research methods that deal with collecting and evaluating structured and quantitative data (Adhab & Anozie, 2017). Building precise and trustworthy measurements that enable statistical analysis is one of the main goals, with an emphasis on measurable data (Goertzen, 2017).
- **Qualitative research:** Asper et al. (2019) describe qualitative research as focusing on various methodologies and having an interpretative, naturalistic approach to its subject. Qualitative researchers investigate phenomena in their natural environment while seeking to explicate phenomena in terms of the meanings individuals assign to them (Willig, 2019). Case studies, personal experiences, life stories, and other types of empirical data are examined and collected for qualitative research (Gregory, 2020). Through conversational, observational, historical, interactive, and graphic texts, qualitative research describes frequent and difficult moments and meanings in people's lives (Aspers & Corte, 2019).
- **Mixed-methods research:** Fetters (2017) suggests that mixed-methods research combines elements of qualitative and quantitative research approaches (such as the use of qualitative and quantitative viewpoints, data collection, analysis, and inference techniques) to achieve the general objectives of breadth and depth of understanding and corroboration.

This research fell within the positivistic research paradigm and involved survey research to collect primary data concerning the identified research problem from a

selected sample of 55 owners/managers of FMCG SMMEs within townships in the Cape Metropole. A quantitative research methodology was pursued and focused on the research process, tool(s), and procedures to be used (Cypress, 2018). Positivism relies on “quantitative findings and statistical significance” (Alessandrini, 2012). According to Shutaleva (2023), in a positivist paradigm, the underlying ontology and epistemology emphasise objectivity and the belief in an external, objective reality that can be studied and understood through empirical observation and measurement. The positivist approach assumes that a single, objective truth can be discovered through systematic, rigorous methods. However, even within this paradigm, researchers may need to exercise judgment under certain circumstances. The positivistic research paradigm was deemed most suitable within the context of this research since it relies on an objective understanding of the collected data and stresses the significance of surveys to obtain a complete impression of humanity.

Selecting a positivist paradigm for this research involved embracing a philosophical stance that emphasised objectivity, empirical observation, and the pursuit of universal laws governing phenomena. Out of the several reasons to consider and justify the selection of a positivist paradigm for this research, the researcher deployed objectivity in research, emphasising the need for unbiased observation and measurement. A positivist approach was appropriate since the research involved quantifiable variables that could be measured and analysed statistically. This paradigm was well-suited for this research, where numerical data was collected to test hypotheses objectively.

Primary data were obtained using a questionnaire – see Appendix A). The self-constructed questionnaire consisted of multiple-choice questions, yes/no questions, and, mostly, Likert scale questions, and it was distributed to respondents. A total of 55 questionnaires were distributed among qualifying SMMEs, of which 52 returned. Eight of the 52 questionnaires returned were discarded due to being incomplete and/or completed by foreign nationals (which were excluded based on delineation criteria). Thus, only 44 questionnaires were deemed suitable for further analysis.

Selecting a representative sample is essential for generalising findings from a sample to a larger population (Penn et al., 2023). Researchers must make judgments about the characteristics of the population, the sampling frame, and the sampling method to ensure the external validity of their study (Vanwoerden et al., 2023). Non-probability

sampling (purposive- and convenience sampling) was employed in this research. Purposive sampling is employed for a specific 'purpose' such as selecting individuals who are 'typical' of a group or those who reflect a range of viewpoints on a subject (Watkins, 2008:56). Purposive sampling is a method of gathering data in which a researcher chooses members of a particular research community depending on whether or not their traits make them suitable for participating in a particular research endeavour (Collis & Hussey, 2009:213). Purposive sampling allowed the researcher to select the SMMEs in the Cape Metropole townships because these SMMEs have similar characteristics and had to stick to the delineation criteria. The purposive sample of 55 SMMEs was selected and met the specific criteria set out in Chapter 1, with the main condition that the business must be located and operated within the Cape Metropole and owned by South Africans. This sample was selected because it served the expected purpose of the research (Alvi, 2016). Non-probability sampling was used because the researcher relied on his judgment when selecting the population members to participate in the research (Vanwoerden et al., 2023). Furthermore, this research focused on a small sample of 55 FMCG SMMEs in townships in the Cape Metropole, with the focus being to obtain 'rich data' (Welman et al., 2007).

Contrarily, convenience sampling refers to the examination of members of the public who are convenient for the researcher to reach to solve the stated research problem (Given, 2008). Convenience sampling is the methodical selection of accessible participants to the researcher so that the topic under research can be solved (Remenyi et al., 1998). Because the research participants were readily available to the researcher, convenience sampling was used.

The sample size of this research was determined after applying convenience and purposive sampling since the targeted population could not be quantified as their size was unknown. All respondents had to meet delineation criteria (see Chapter 1, Sections 1.4 – 1.5 and Section 3.4 below). Participation was voluntary, and respondents could withdraw at any time without penalty.

Research methods are instruments and procedures utilised to conduct research and offer options to gather, classify, and analyse data to make conclusions (Walliman, 2017). Examples of data-collection techniques for research include focus groups (Islam & Aldaihani, 2022), role-playing (Junus et al., 2022), in-depth surveys (Sharma,

2022), large-scale surveys (Moreno-Serra et al., 2022), laboratory experiments (Tang et al., 2022), scenario research (Dimitrovski et al., 2022), interviews (Henriksen et al., 2022), observations (Johnston et al., 2023), critical incident procedures (Kozinets, 2023), diary entries (Dyar, 2022), repertory grid methods (Aranda-Mena et al., 2022), and mixed methodologies (Watkins, 2010).

For this research, 55 questionnaires were distributed among the selected sample. A total of 52 questionnaire responses were received, of which eight were incomplete and incoherent with this research as these targeted businesses were owned by foreign nationals (which were excluded for the purposes of this research), and three out of the 55 questionnaires were not returned. Therefore, a total of 44 questionnaire responses qualified for further analysis. Lamb et al. (2019) argue that after Apartheid, a large number of immigrants entered South Africa, which led to an increase in the informal economy's activity. As a result, The problem at hand is the underperformance of, and subsequent closing down phenomenon of locally run township businesses as opposed to foreign-owned entities. The units of analysis (owners/managers of FMCG SMMEs within townships in the Cape Metropole) were within easy reach of the researcher. Because doing surveys is quicker, more cost-effective, and more convenient for gathering data from respondents than interviews, surveys were employed for data collecting (Al-Mubarak, 1997).

The survey was self-constructed and comprised multiple-choice, yes/no, and mostly Likert scale questions. A pilot test was used to determine the usability of the questionnaire (Abd Gani et al., 2020). A statistician, two PhD academics, and two owners/managers of two FMCG township SMMEs in the Cape Metropole conducted a pilot study before data collection to ensure that all questions were clear, reasonable, and impartial. The content validity, face validity, and construct validity of the questionnaire were strengthened as a result of the input from the pilot survey. After piloting, reliability was guaranteed by carefully collecting and meticulously documenting accurate data. Subsequently, the researcher modified the research questions, their semantics, and the questionnaire duration before the start of the final survey, thanks to the pilot feedback. Questionnaires were distributed among respondents by the researcher, providing the researcher with the opportunity to present the research objectives to them. It piqued their interest in participating in this

research. Most respondents finished the questionnaire when it was delivered and returned it to the researcher. The researcher returned at a predetermined time to collect those questionnaires that had not been completed by the delivery time. This approach was effective, saved time, and improved the response rate. Despite the option of filling out the questionnaire at their leisure, the researcher waited while the respondents did so in most cases. In some cases, however, the researcher had to make many follow-up visits to respondents who had pledged to finish the questionnaire but neglected to do so within the given time frame. Despite the researcher's assurances, some potential respondents were adamantly opposed to participating in this research because they believed it was a government-sponsored private probe. At the same time, another group was disinterested because they believed research offered little or no value to their businesses. They also stated that they frequently receive requests from students to complete similar questionnaires.

Surveyed data was recorded using Microsoft Excel and evaluated using SAS software. The data analysis reviews the collected data, providing valuable insights into adopting and using ICT in township FMCG SMMEs in the Cape Metropole. To ensure the highest level of authenticity and correctness, the researcher evaluated the data recorded in Excel format. The researcher verified all surveys submitted by respondents. In the utilised data collection tool, "delineation questions" such as "Are you the owner or manager of the specific SMME?" "Is your business part of a franchise?" and "What is the name of your business?" were asked as validation questions. Additionally, the information gathered from the questionnaire was coded using a specified coding method. Descriptive and inferential statistics were drawn from the data using various statistical techniques, as expanded upon in Chapter 4 (see Chapter 4, Sections 4.32 and 4.3.3).

3.4 ETHICAL CONSIDERATION

Ethics refers to a researcher's behaviour that is suitable in light of his/her obligations and the rights of those who are the subjects of the research or otherwise impacted by it—this research involved, amongst others, collecting data from respondents by making use of a questionnaire (Saunders et al., 2000:130). Accordingly, approval of the questionnaire itself was a basic requirement, and an application for ethical clearance was made to the Ethics Committee of the Faculty of Business and

Management Sciences, Cape Peninsula University of Technology and was granted (see Appendix B). The committee required that the research participants be safeguarded from harm or any negative repercussions from participating in the research. Consequently, informed consent was obtained from participants before handing out the questionnaire. In addition, confidentiality and anonymity were maintained, and the below points ensured, as advised by Hennink, Hutter and Bailey (2020):

- **Informed Consent:** The researcher personally invited the possible respondents to participate in the research to comply with the ethical committee's requirements. The major goal of the research and what was expected of the respondents were communicated, as well as the fact that participation was voluntary. Participants would face no negative consequences if they chose to discontinue at any moment. They were also told that while they would not receive compensation for taking part, the research's findings will help SMMEs better utilise ICT for their development and sustainability.
- **Self-determination:** Respondents have the right to choose whether or not to participate in the study and may decline to partake without repercussions. Potential respondents disagreeing with the research's terms and conditions were not required to sign the letter and, as a result, were not included in the research.
- **Anonymity:** Respondents' identities must remain private at all times. In this research, respondents were advised not to include their personal information or company name in the survey. However, a few respondents insisted on recording such information on the questionnaire because they wished to be informed of the research's outcome once it was completed.
- **Confidentiality:** The researcher must maintain the confidentiality of all data records; thus, the information collated from the data collection process was kept private permanently.

Within this research, conformance to the ethical considerations was implemented through means of the following:

- **Informed consent:** Respondents were informed about the research before participating in the study.

- **Protection from harm:** Respondents were safeguarded from physical harm.
- **Right to refuse:** Participation in the research was voluntary and confidential.
- **Voluntary participation:** All respondents were allowed to withdraw from the research at any stage if they so wished without being discriminated against.
- **Right to privacy:** Information was kept confidential, and the anonymity of respondents was guaranteed.

3.5 VALIDITY AND RELIABILITY

Validity and reliability are criteria for good measurements in quantitative research (Mohajan, 2017). Validity focuses on the degree to which the selected data collection instrument authentically portrays the variables that are being examined and refers to assessing if the research measures what it is intended to measure (Koonin, 2014). Matsoso (2014) describes reliability as “the stability of the same outcome if the questionnaire was administered once again to the same population using the same methods”. Determining the adequacy of consistency and stability of a measuring instrument is essential to replicate the results. For clarity, the survey employed in this research (see Appendix A) was validated concerning content validity, construct validity, and reliability (see Chapter 4, Section 4.2.1). Descriptive analysis was carried out to determine the validity of the information received.

3.5.1 Content validity

The “degree to which a research tool accurately evaluates each feature of a construct” is known as content validity (Heale & Twycross, 2015). According to Mohjan (2017), content validity is “always dependent upon the assessment of experts in the field”. Two senior academics were asked about the suitability of the survey questions in improving the research's content validity. As a result, questions were amended as per the suggested corrections. Descriptive statistics were used to verify the validity of the information obtained.

3.5.2 Construct validity

The degree to which a data collection tool accurately measures the theoretical construct it is intended to measure is known as construct validity (Ghzali, 2016). Thus, it is important to ensure that the responses to the questionnaire will attain the

research's goals (Huisamen & Weyers, 2014). Rowley (2002) states that a pilot test is the most effective technique to ensure construct validity. As previously indicated, the questionnaire was sent to a statistician, two PhD academics, and the owners/managers of two FMCG SMMEs in the Cape Metropole, who reviewed the questions and ensured that the questionnaire covered the research objectives. The questionnaire was updated in accordance with the suggested changes.

3.5.3 Reliability

Reliability refers to the degree to which the measurement process is distortion-free (error-free). Reliability is “the degree to which the indicator or test is a consistent measure over time or whether participants give similar answers at another point in time” (David & Sutton, 2011).

For this research, reliability was examined to guarantee that similar results could be reproduced if the questionnaire was addressed to a similar population at a different time using the same methods. During the experimental stage, the questionnaire's dependability was tested to accomplish this adoption of ICT in SMMEs. The average Cronbach's Alpha Coefficient for various sections in the questionnaire (ICT tools used = 0.9293, driving forces of ICT adoption = 0.8670, the perceived value of ICT adoption = 0.9622, and barriers to adopting ICT = 0.9269) was 0.92135. This indicates a reliable and consistent questionnaire, which indicates internal consistency and reliability because the Cronbach's Alpha Coefficient result was above 0.7. Bruwer (2010) confirms that if the Cronbach's Alpha Coefficient is more than 0.70, the questionnaires for the survey are considered reliable and consistent in terms of consistency and dependability.

3.6 DATA COLLECTION

Primary data were collected from respondents through the use of a questionnaire. The questionnaire was distributed among the respondents. A total of 55 questionnaires were distributed and again collected by hand (refer to Chapter 1, Section 1.5) between March 2021 and August 2021. Fifty-two (n=52) respondents returned their questionnaires; eight of these questionnaires were not considered for this research, as they were either partially completed or completed by foreign nationals who fell

without the scope of this research. Consequently, 44 respondents participated in this research.

Paper-based surveys were distributed among the participants to ensure a higher response rate than electronic questionnaires. However, the data collection process was hampered as most FMCG SMMEs were not operating or were forced to close their doors during the data collection period (March 2021 to August 2021) due to the global COVID-19 pandemic. Additionally, SMMEs in Cape Metropole-based townships are mostly owned by foreign nationals (Malgas & Zondi, 2020), which further resulted in a minimal number of South African-owned townships SMMEs that could be targeted, especially during the challenging COVID-19 lockdown period that restricted face-to-face interactions and communication (Ojugbe et al., 2022). According to Lamb et al. (2019), spaza shops are among the most common businesses in the FMCG industry.

The survey was accompanied by a cover letter providing a brief overview of the research and informing participants that they could withdraw from the study without penalty. Finally, respondents were asked to provide consent to participate in the research.

Survey data were captured in Microsoft Excel and then analysed with SAS software.

3.7 SURVEY DESIGN

Compiling a list of questions and establishing a questionnaire's format are crucial stages of survey design (Zikmund et al., 2012). The survey design used in this research comes under the category of descriptive research. Furthermore, Leedy and Ormond (2001) state that the researcher analyses and records the sample's responses to a series of questions using survey data, summarising these responses using percentages, frequency counts, or more complex statistical indices, and then makes conclusions about a particular population.

The research survey (see Sections A to F of the questionnaire) that formed the core of this research contained six sections.

SECTION A: DEMOGRAPHICS

Section A zoomed in on the respondents' demographics and their companies, learning more about the respondents' backgrounds, educational attainment, employment history, and compliance with the defined demarcation criteria for FMCG SMMEs. This section starts from question 1 to question 10. This section included questions about the participant's position within the business, their capacity to make business decisions, their SMME duration status in years and the types of goods they sell, the length of time the company has been in operation, the number of employees they have, their annual revenue, their business experience and education, as well as their gender and age group, as shown below.

Question 1: What is your position in this business?

[1] Owner [2] Manager [3] Owner and Manager [4] Other

Question 2: Do you have decision-making power within the business?

[1] Yes [2] No

Question 3: Which of the following options best describes your business?

[1 – 11] For key, see Appendix A

Question 4: How long has your business been in existence?

[1] Years [2] Months

Question 5: How many full-time employees do you employ?

[1] 0 – 10 [2] 11 – 50 [3] 51 – 250

Question 6: What is the annual turnover of your business?

[1] Less than 10 million rand [2] 10 – 49 million rand [3] 50 – 169 million rand

Question 7: How much business experience do you have?

[1] Years [2] Months

Question 8: What is your highest qualification?

[1 – 9] For key, see Appendix A

Question 9: What is your gender?

[1] Male [2] Female

Question 10: What is your age?

[1] Younger than 21 years [2] 21 – 30 years [3] 31 – 40 years [4] 41 – 50 years

[5] Older than 50 years

SECTION B: ICT TOOLS USED

Section B aimed to determine SMME managers' and/or owners' frequency in utilising ICT using a four-point Likert scale ranging from Frequently Used to Never Used (Question 11). The questions that addressed this objective were:

Question 11: How frequently are the following ICT tools used in your business?

[1] Desktop computer (PC) [2] Laptop [3] Tablet [4] Smartphone [5] Printer

Question 12: How do you rate your use of ICT tools in the business?

[1] Novice [2] Advanced Beginner [3] Competent [4] Proficient [5] Expert

SECTION C: DRIVING FORCES OF ICT ADOPTION

Section C aimed to establish the driving forces of ICT adoption in township FMCG SMMEs using a five-point Likert scale ranging from Strongly disagree to Strongly agree, and the following question was, therefore, asked:

Question 13: What are the most common driving forces in adopting ICT in the business?

The Likert scale questions asked tested whether the owners/managers were driven by competitors, customers, intention to improve work efficiency and quality within their businesses, government influences, and lastly, to support the strategic direction of their businesses to support growth and sustainability.

SECTION D: PERCEIVED VALUE OF ICT ADOPTION

This section sought to determine the perceived value of ICT adoption to township FMCG SMMEs using a five-point Likert scale ranging from Strongly disagree to Strongly agree. The following question formed the basis of achieving the research objective:

Question 14: How would you rate your experience regarding the below aspects in adopting ICT in your business? The use of ICT ...?

Business owners and managers were asked to comment on whether the use of ICT increased operational efficiency, reduced operational costs, improved

quality within the business, directly impacted revenue growth, helped the business achieve its goals, increased customer satisfaction, and/or increased productivity. The researcher asked further questions to understand whether the use of ICT increased staff morale, improved communication in and outside the business, enhanced the image of the business and improved business stability, amongst other things.

SECTION E: BARRIERS TO ADOPTING ICT

This section aimed to establish the barriers to adopting ICT in township FMCG SMMES using a five-point Likert scale ranging from Strongly disagree to Strongly agree. The following question was asked:

Question 15: How would you rate your experience regarding the below barriers preventing the business from adopting ICT?

Business owners and managers were asked to scale their experience in the use of ICT within their businesses and had to indicate whether Shortage of knowledge and skills hindered the business from using ICT, whether Limited access to ICT prevents my business from using ICT, Limited or no ICT technical support for businesses in townships discouraged the business from using ICT in the business, whether Societies' negative views about ICT hindered the business from using ICT, Competitors' negative views about ICT hinder the business from using ICT, Frequent power outages (load shedding) The complexity associated with ICT implementation hinders the business from using ICT, the questionnaire has been attached in Appendix A.

SECTION F – THANK YOU

This section was optional to complete, and thanked participants for completing the survey. Participants could provide their contact details should they require feedback on the results and outcomes of this research.

3.8 RESEARCH LIMITATIONS

The following limitations were encountered during this research:

- Only the owners and/or managers of townships FMCG SMMEs in the Cape Metropole were considered to partake in this study. Therefore, SMMEs from other townships and sectors were excluded from this research.
- Data collection was done in 2021 during the second (December 2020 – April 2021) and third waves (May 2021 – October 2021) of the COVID-19 pandemic, which had a detrimental impact on the intended sample size, as businesses had to close and citizens had to remain home.
- The sample size (n = 55) could have been larger as only 55 questionnaires were sent out. However, in addition to the limitations described, three businesses did not return their questionnaires, and eight responses were either incomplete or completed by foreign nationals, which did not adhere to the strict delineation criteria. This limited drawing broad inferences from particular observations and results that are widely acknowledged as a quality standard in quantitative research (Polit & Beck, 2010). Consequently, research results could not be generalised to represent the entire population of FMCG SMMEs operating in townships in the Cape Metropole. Furthermore, travelling restrictions during the COVID-19 pandemic negatively impacted the sample size as more SMMEs could not be reached.
- In South Africa, there are currently several African foreign nationals who have established small businesses in townships and, in doing so, have overtaken the many South Africans who own Spaza shops. Furthermore, foreign entrepreneurs generally employ local South Africans who do not act as the decision-makers of the businesses they are employed. Consequently, these businesses were excluded from this research based on the delineation criteria set for this research in Chapter 1 (see Sections 1.4 – 1.5), which, as a result, significantly reduced the pool of township FMCG SMMEs that could be targeted, especially during the COVID-19 pandemic.
- Most South African-owned SMMEs in townships run survivalist businesses and could not afford to formally employ more than two persons.

3.9 SUMMARY

The overall research design, methodology, and methods of the research, as well as data collection, validity and reliability, ethical issues, survey design, and limitations

pertinent to this research, were all covered in length in this chapter. This research was quantitative and adhered to the positivistic research paradigm. A representative sample size of respondents was chosen using non-probability sampling techniques, particularly convenience and purposeful sampling. The sample had to adhere to a set of delineation criteria to ensure valid results. Survey data was recorded using Microsoft Excel and evaluated using SAS software. Chapter 4 summarises the collected data, which provides valuable insights into the adoption of ICT in FMCG SMMEs operating in townships in the Cape Metropole.

CHAPTER 4: DATA ANALYSIS, RESULTS AND DISCUSSION

4.1. INTRODUCTION

Data analysis is “the process of bringing order, structure and meaning to the mass of collected data” (De Vos, 2002:339). This chapter discusses the results of the data analysis of a survey conducted to determine facts relating to the adoption and usage of ICT within FMCG SMMEs within townships in the Cape Metropole. As mentioned previously, the main objective of this research was to determine what factors influence ICT adoption in FMCG SMMEs within townships in the Cape Metropole. The secondary research questions were:

- What ICTs are adopted in township FMCG SMMEs?
- What is the perceived value of ICT adoption by township FMCG SMMEs?
- What are the driving forces of ICT adoption by township FMCG SMMEs?
- What are the barriers to ICT adoption by township FMCG SMMEs?

The collected data were presented and scrutinised using univariate, bivariate, and multivariate analyses involving data preparation and descriptive- and inferential statistics.

This research’s data were analysed using SAS software (refer to Appendix D for the descriptive statistics and Appendix E for the inferential statistics).

The content of Chapter 4 is graphically depicted in Figure 4.1 (see overleaf).

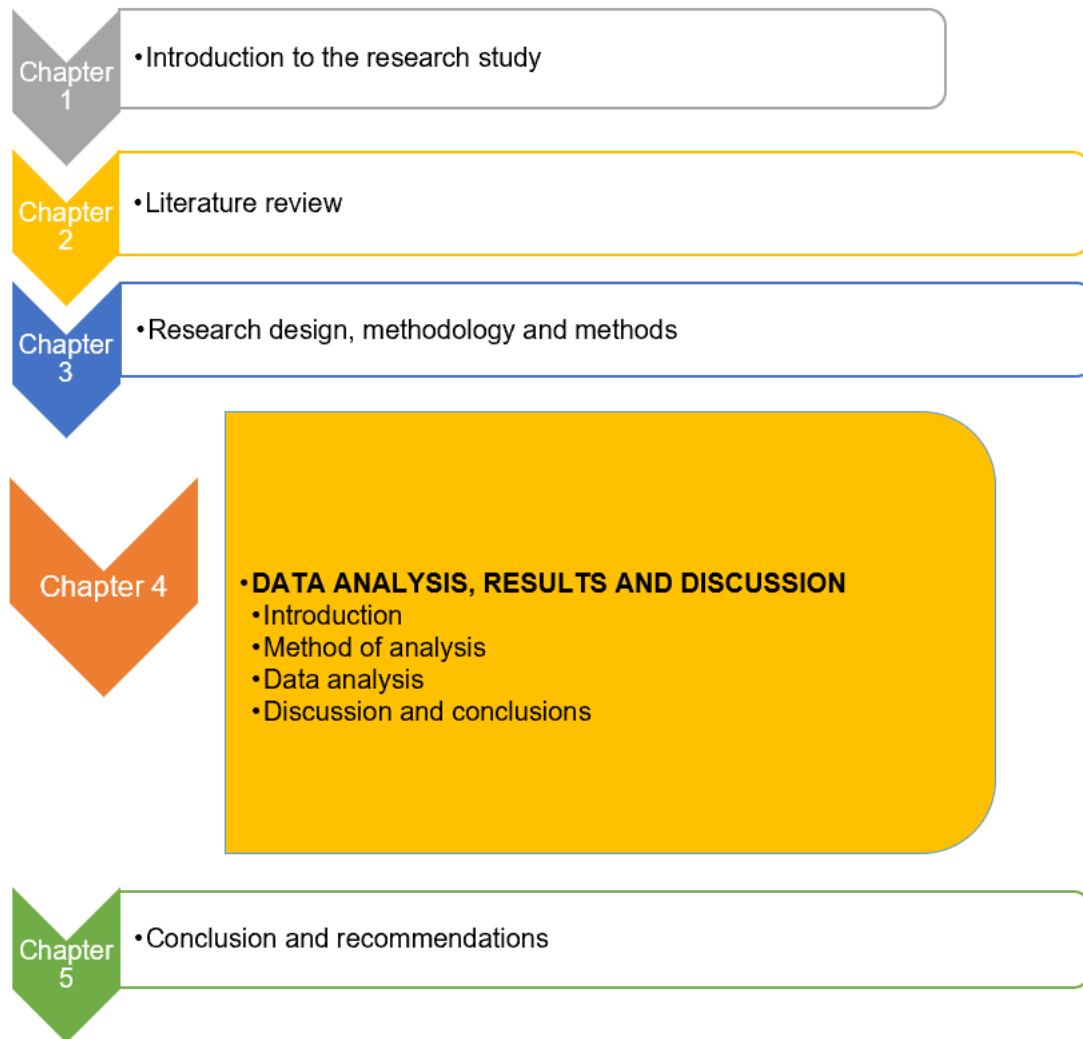


Figure 4.1: Layout of Chapter 4

4.2. METHOD OF ANALYSIS

The strategy of inquiry, comprising the method of data analysis, data processing, and data interpretation, differs between quantitative and qualitative research approaches.

4.2.1 Data validation and validation survey results

It was important for the researcher to establish the reliability and validity of the research as it “enhances the accuracy of the assessment and evaluation of the research” (Tavakol & Dennick, 2011). Reliability refers to the “consistency, stability, and repeatability of results”, i.e., research results are reliable if consistent results can be obtained in identical situations but under different circumstances (Twycross & Shields,

2004). Validity concerns the data collection instruments that measure what the researcher intends to measure (Rose & Sullivan, 1996).

Content validity concerns the representativeness or sampling adequacy of a measuring instrument's content (e.g., topic or items) (De Vos, 2001). Construct validity is about "how much a measuring instrument can measure a particular hypothetical construct". Construct validation is essential during the planning and development of the questionnaire. Senior academics reviewed the questionnaire before distribution to the relevant respondents. The questionnaire was improved according to their suggested corrections to develop construct validity. Content validity was adopted to ensure that research questions and objectives were expressed clearly, as these served as the basis for survey questions. The senior academics confirmed content validity by advising if the research covered all research objectives.

Reliability was considered during the analysis phase of data collection. A descriptive analysis of the survey results is shown in Section 4.3.2. Survey responses are provided in Appendix D.

4.2.2 Data format

Data reformatting was done to present the data in an acceptable format for analysis.

Scales 1 to 3 below, with their associated coding, were used for the original data set:

Scale 1 (Likert scale)

“Frequently used” (1)

“Used” (2)

“Rarely used” (3)

“Never used”(4)

Scale 2 (Likert scale)

“Strongly disagree” (1)

“Disagree” (2)

“Neither agree nor disagree” (3)

“Agree” (4)

“Strongly agree” (5)

Scale 3 (categorical scale)

“Novice” (1)

“Advanced beginner” (2)

“Competent” (3)

“Proficient” (4)

“Expert” (5)

The coding was done following the references provided in the questionnaire. In interpreting the ordinal scale, it should be noted that the lower the rating for Scale 1, the more the respondents frequently used an ICT tool and the higher the rating, the less it was used. Also, for Scale 2, the lower the rating, the more the respondents disagreed with the statement and the higher the rating, the more the respondents agreed with the statement. For statement B12, Scale 3 was used, and the lower the rating, the lower the skill and the higher the rating, the higher the skill.

4.2.3 Preliminary analysis

The reliability of questionnaire statements was tested using the Cronbach Alpha test (see Section 4.3.1 and Appendix C). In addition, descriptive statistics were done on all variables (see Section 4.3.2 and Appendix D).

4.2.4 Inferential statistics

Inferential statistics are discussed in Section 4.3.3. Chi-square tests, Chi-square goodness-of-fit tests, Cronbach Alpha tests, and Kruskal-Wallis tests were performed on the data (see Section 4.3). The respondents completed a total of 52 questionnaires. Eight of these questionnaires were not considered for this research, as explained in Chapter 3. The Small Enterprise Development Agency (SEDA) was unable to supply the actual size of the target population, making it challenging to select a representative sample.

4.3. DATA ANALYSIS

Questionnaire statements were tested for reliability and the verification of the construct validity. The details are provided below.

4.3.1 Reliability of the research instrument

Reliability tests (Cronbach's Alpha Coefficient) were done on Likert scaled variables (statements) in the questionnaire (the survey's measuring instrument) (see Appendix C). All the above-mentioned measuring variables (statements) were exposed to a Cronbach Alpha test in total and for each theme/construct/section. Cronbach Alpha test results for the above-mentioned variables within the survey are provided in Appendix C, and the summary table (see Table 4.1) is provided below.

Table 4.1: Cronbach's Alpha Coefficients for all the ordinal variables and each section

No.	Section	Variables entered*	Raw Cronbach Alpha Coefficient	Standardised Cronbach Alpha Coefficient
1.	All the ordinal variables (items)	B11_01-B12 C13_01-C13_05 D14_01-D14_21 E15_01-E15_22	0.8996	0.9005
2.	Section B: ICTs used	B11_01-B12	0.9293	0.9280
3.	Section C: Driving forces of ICT adoption	C13_01-C13_05	0.8670	0.8673
4.	Section D: Perceived value of ICT adoption	D14_01-D14_21	0.9622	0.9652
5.	Section E: Barriers to adopting ICT	E15_01-E15_22	0.9269	0.9273

*Refer to Appendix F for variable naming contentions.

4.3.2 Descriptive statistics

The descriptive statistics are based on the total sample for the survey; thus, if a respondent did not answer a question, it was recorded as unknown (see Appendix D).

4.3.2.1 Descriptive statistics: demographic variables

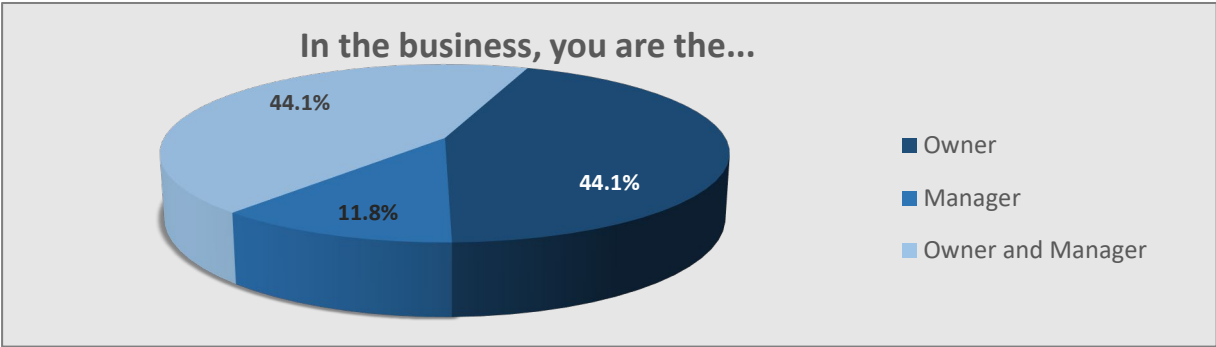


Figure 4.2: In the business, you are the

As graphically depicted in Figure 4.2 above, respondents were asked what position they hold in their respective Cape Metropole township FMCG SMMEs. A total of 44.1% of the respondents indicated that they are business owners, and 11.8% indicated that they manage the business. The remaining 44.1% indicated that they are both the owner and manager of the business (see Figure 4.2). Considering the above, statistically significantly more respondents acted as owners or both owners and managers than those who acted as managers of their businesses.

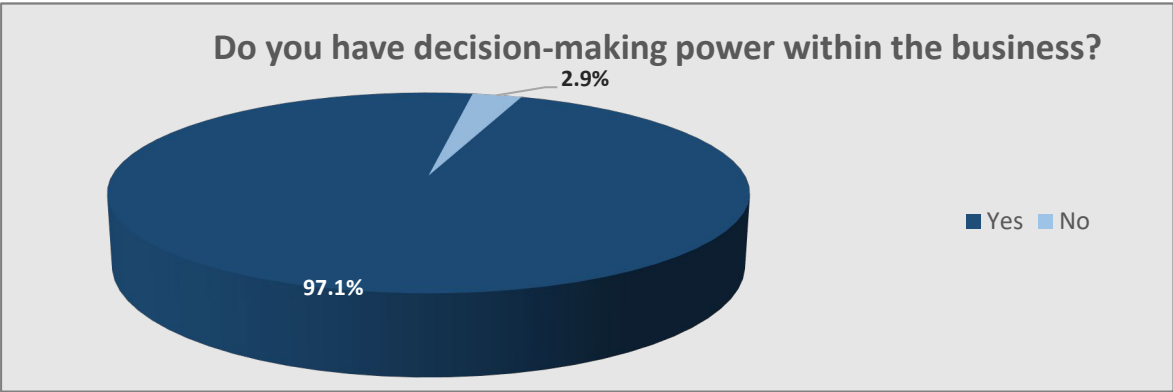


Figure 4.3: Do you have decision-making power within the business?

The majority (97.1%) of the survey respondents indicated having decision-making power within their businesses, while only 2.9% indicated that they do not have any decision-making power. The goodness-of-fit test shows that statistically significantly more respondents have decision-making power within their businesses than those without (see Figure 4.3).

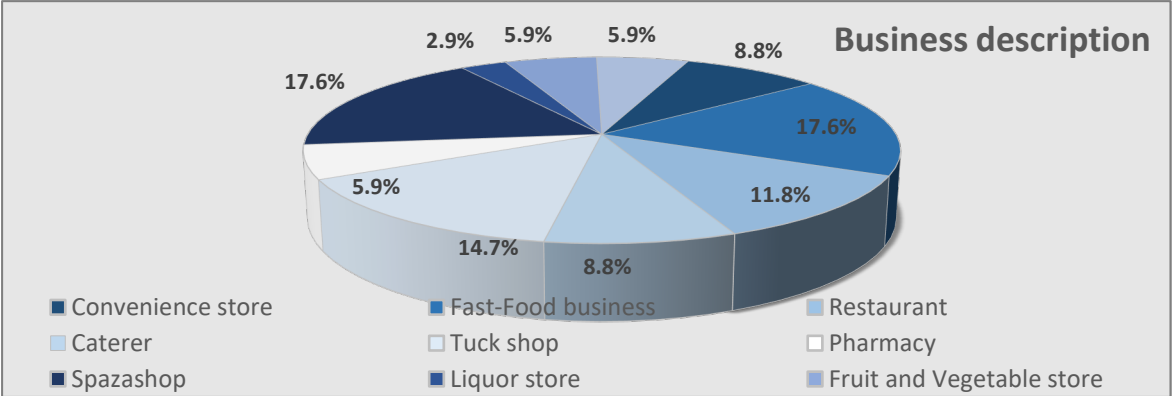


Figure 4.4: Business description

The sample distribution of the business description types (see Figure 4.4) is as follows: 17.6% of the respondents who completed the survey are employed in fast-food businesses and spaza shops, followed by 14.7% in tuck shops, 11.8% in restaurants, and 8.8% in convenience stores and catering. On the other hand, the smallest number of respondents work at fruit and vegetable shops (5.9%), catering businesses (5.9%), liquor stores (2.9%), and pharmacies (2.4%). “Other” reflected the business type (5.9%) as general dealers.

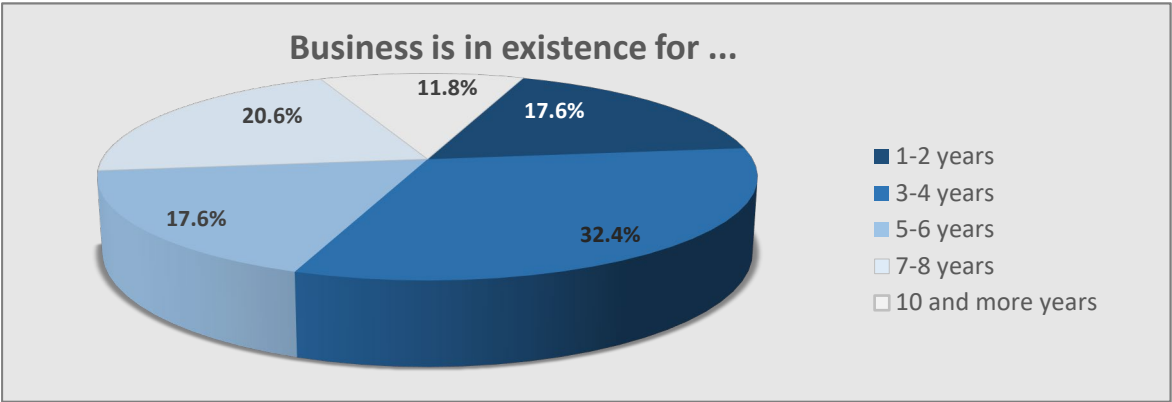


Figure 4.5: Business is in existence for

The respondents were asked to indicate how long their township FMCG SMMEs had been in existence. Figure 4.5 shows that 17.6% of the respondents indicated that their businesses have been in existence for 1 to 2 years, 32.4% have existed for 3-4 years, 17.6% have existed for 5-6 years, 20.6% have existed for 7-8 years, and 11.8% have existed for 10 and more years.

The above results contrast the literature reviewed, stating that the majority of South African SMMEs fail within their first five years (Bruwer, 2020). Most SMMEs that participated in this research survived without adopting ICT. No studies could be found that explain why SMMEs can survive for a long time regardless of the absence of ICT adaption and use. The researcher believes this anomaly may, amongst others, be because SMMEs, particularly microenterprises due to their size, receive little or no attention from researchers (Hörisch et al., 2015). The researcher recommends further research using larger samples to determine if this research's results are unique or if other unknown reasons exist as to why these businesses operated for so long regardless of their limited or non-adoption of ICT.

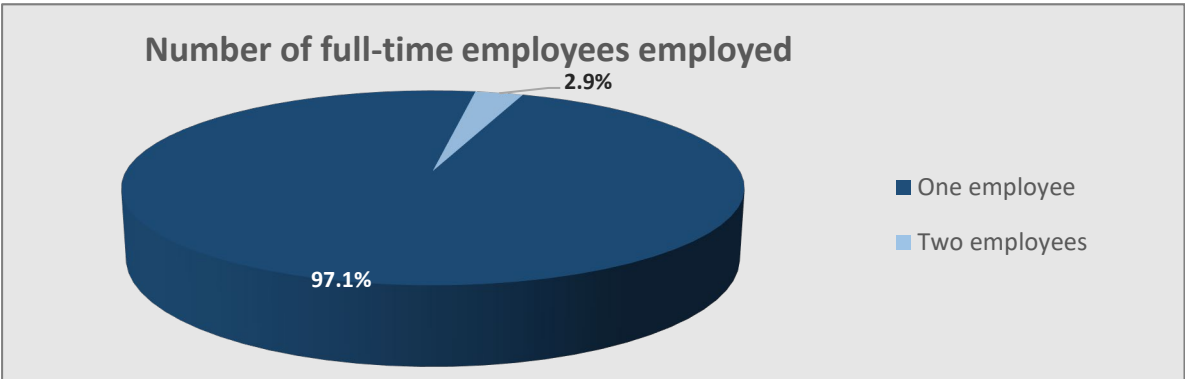


Figure 4.6: Number of full-time employees employed

Figure 4.6 shows that 97.1% of the respondents indicated that they have one employee, and 2.9% indicated they have two employees employed at their business. The targeted businesses can thus be classified as microenterprises under the South African Small Enterprise Act (South Africa, 2019), which, in this case, employ between 1 and 10 employees.

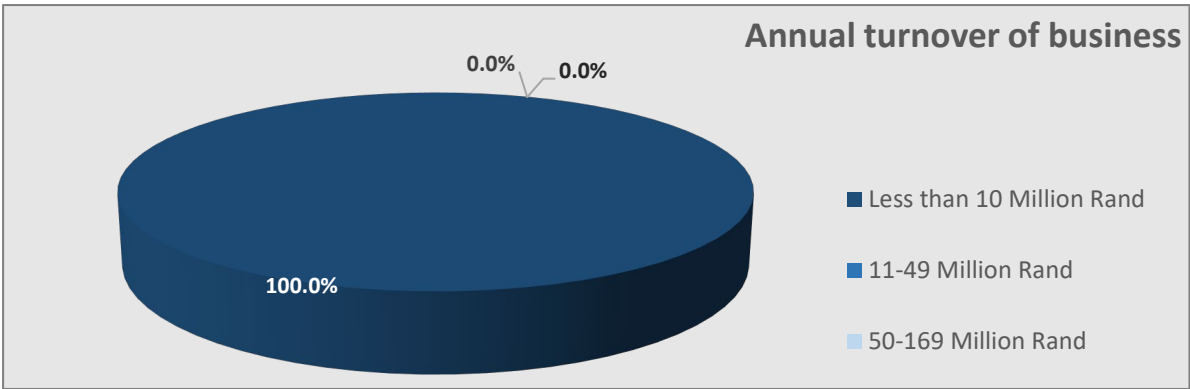


Figure 4.7: Annual turnover of business

All the respondents (100.0%) indicated that their business has an annual turnover of fewer than 10 million rands (see Figure 4.7), which is expected based on the South African Small Enterprise Act (South Africa, 2019) classification guidelines provided by the government.

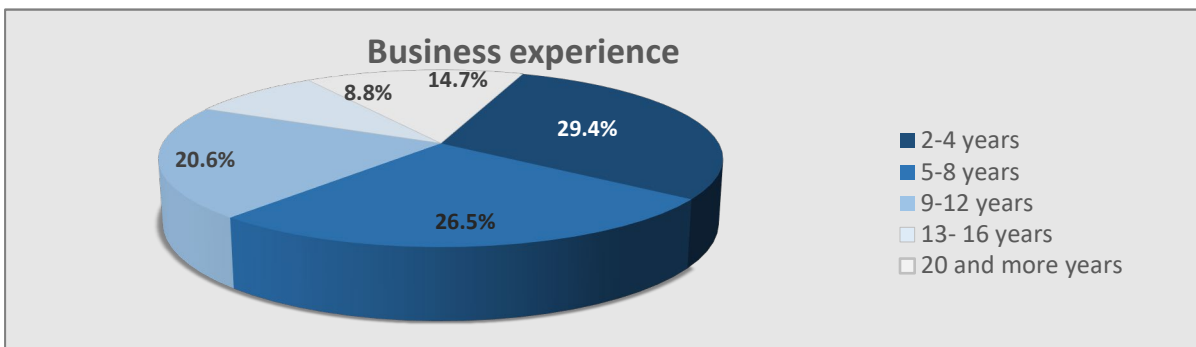


Figure 4.8: Business experience

Figure 4.8 shows that 29.4% of the respondents indicated that they have 2-4 years of business experience, 26.5% have 5-8 years of business experience, 20.6% have 9-12 years of business experience, 8.8% have 13-16 years of business experience, and 14.7% have 20 and more years business experience.

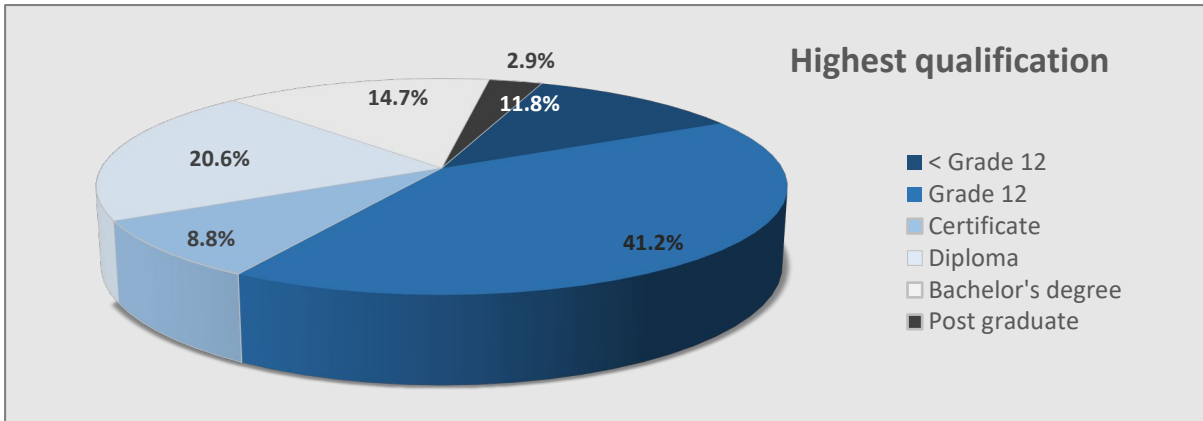


Figure 4.9: Highest qualification

As graphically depicted in Figure 4.9 above, respondents had to provide their highest qualifications. A total of 11.8% of the respondents indicated that they have lower than a Grade 12 qualification, 41.2% have a Grade 12/Senior Certificate/Matric qualification, 8.8% have a National Higher Certificate/Higher Certificate/National Certificate, 20.6% have a Higher Diploma/ Diploma/National Diploma, 14.7% have a Bachelor's Degree, and 2.9% have an Honours degree/Postgraduate Diploma. The aforesaid shows that respondents were not equally distributed regarding their highest level of education.

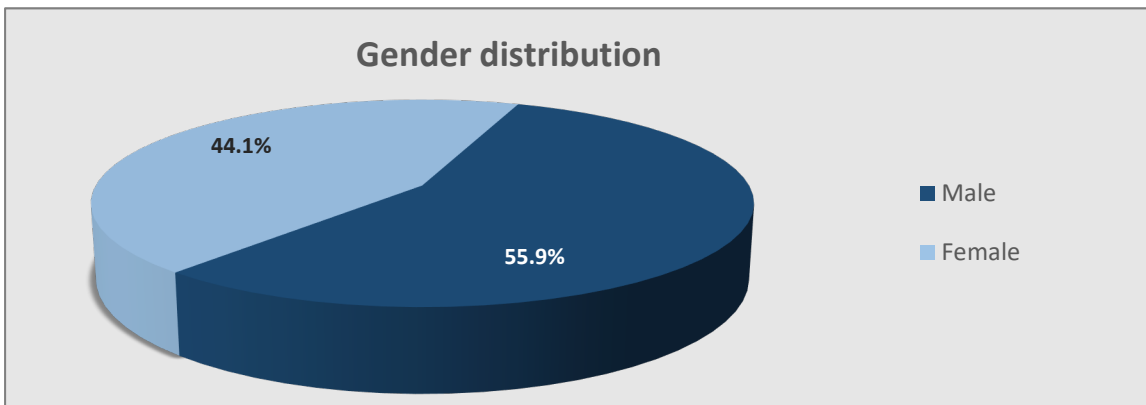


Figure 4.10: Gender distribution

A total of 55.9% of the respondents were male (see Figure 4.10).

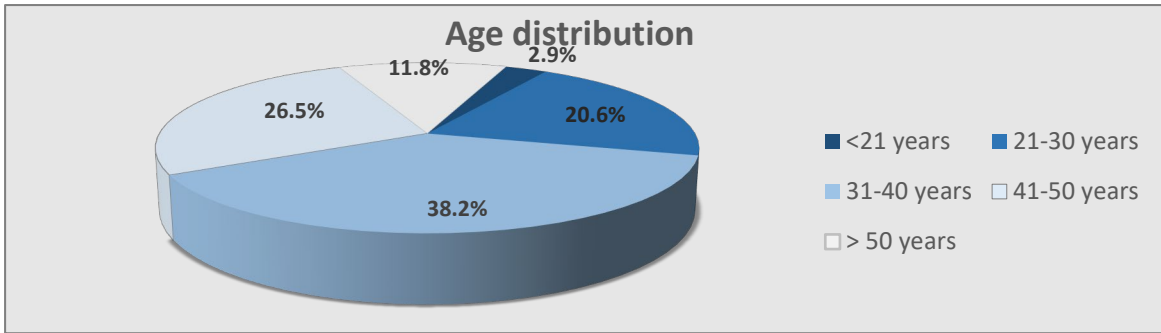


Figure 4.11: Age distribution

Figure 4.11 shows that the majority of the participants (38.2%) are between 31-40 years, followed by 26.5% being between 41-50 years. A further 2.9% of the respondents are less than 21, 20.6% are 21-30, and 11.8% are more than 50.

4.3.2.2 Descriptive statistics: Measuring variables

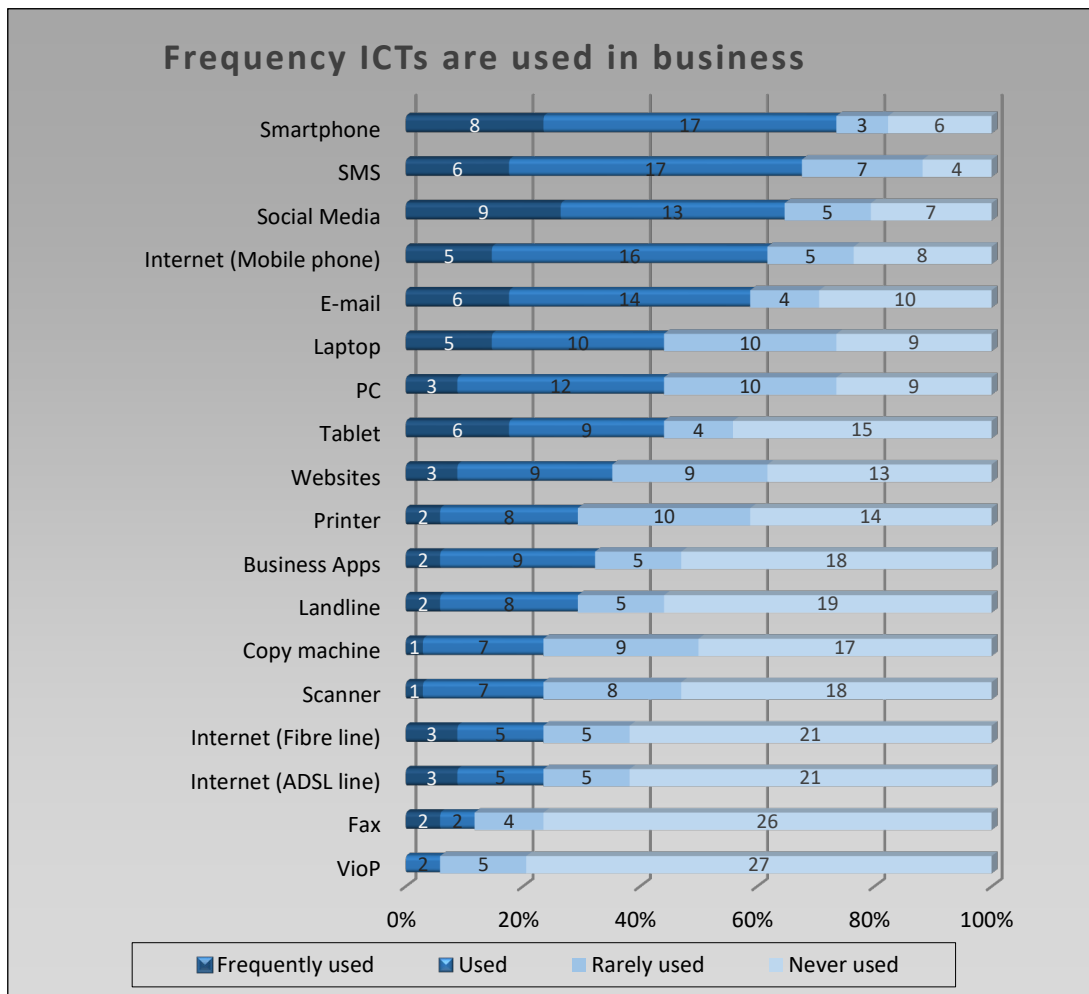


Figure 4.12: Frequency ICTs are used in business

As graphically depicted in Figure 4.12 above, respondents were asked to indicate the frequency with which ICTs are used in their businesses. Based on the responses received, the following were listed as the top three frequently used ICTs in their businesses: 1) smartphones (50.0%) and SMSes (50.0%), 2) accessing the Internet via mobile phone (47.1%), and 3) sending/receiving e-mails (41.1%). Fax (6.0%) and Voice over Internet Protocol (VoIP) services (6.0%) are barely used by these businesses. For the question mentioned above (see Figure 4.12), which consists of Likert-scaled variables, a score is calculated for each of the tools by weighting “Never used” with the lowest weight and “Frequently used” with the highest weight. The sum of these scores was sorted from the lowest to the highest and then presented graphically.

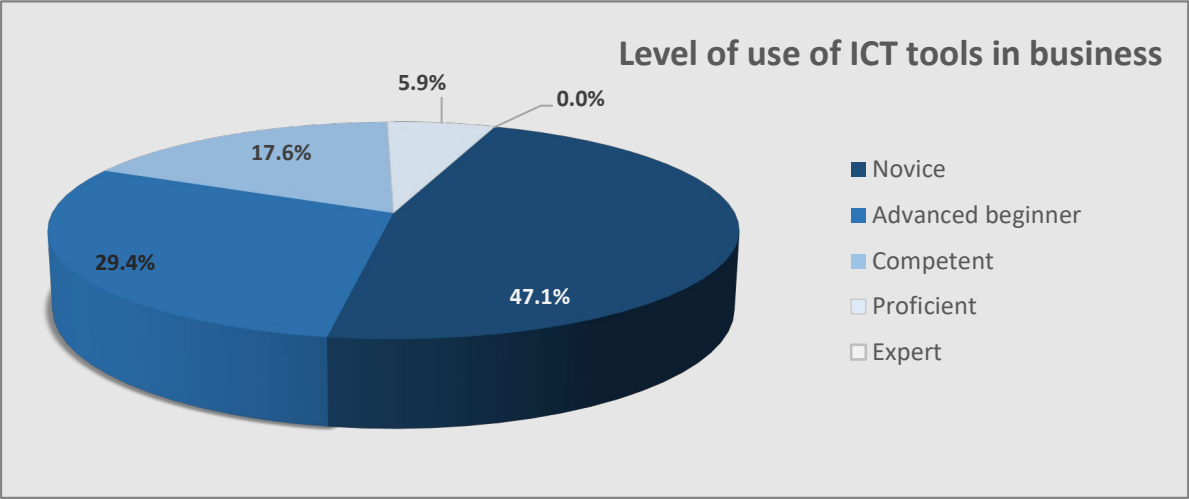


Figure 4.13: Level of use of ICTs in business

As graphically depicted in Figure 4.13 above, respondents were asked to indicate their level of ICT use. A total of 47.1% of the respondents are novices in using ICTs in their businesses, 29.4% are advanced beginners, 17.6% are competent users, 5.9% are proficient users, and none are experts.

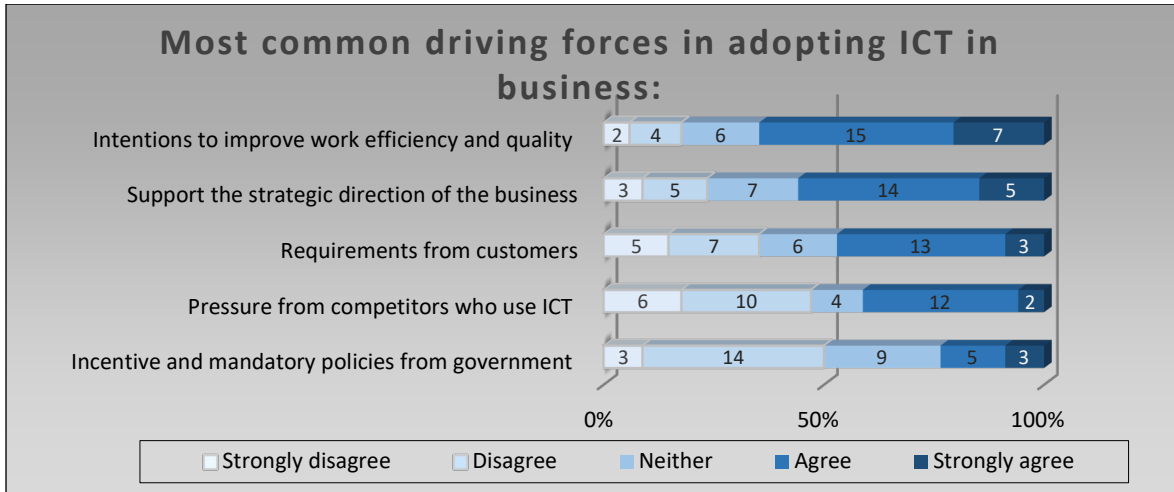


Figure 4.14: Most common driving forces in adopting ICT in business

As graphically depicted in Figure 4.14 above, respondents were asked to indicate the most common driving forces in adopting ICT in their businesses. A total of 44.1% of the respondents agree that intentions to improve work efficiency and quality and support the strategic direction of the business are common driving forces in adopting ICT in their businesses. For the question mentioned above (see Figure 4.14), which consists of Likert-scaled variables, a score is calculated for each of the tools by weighting “Strongly disagree” with the lowest weight and “Strongly agree” with the highest weight. The sum of these scores is sorted from the lowest to the highest and then presented graphically.

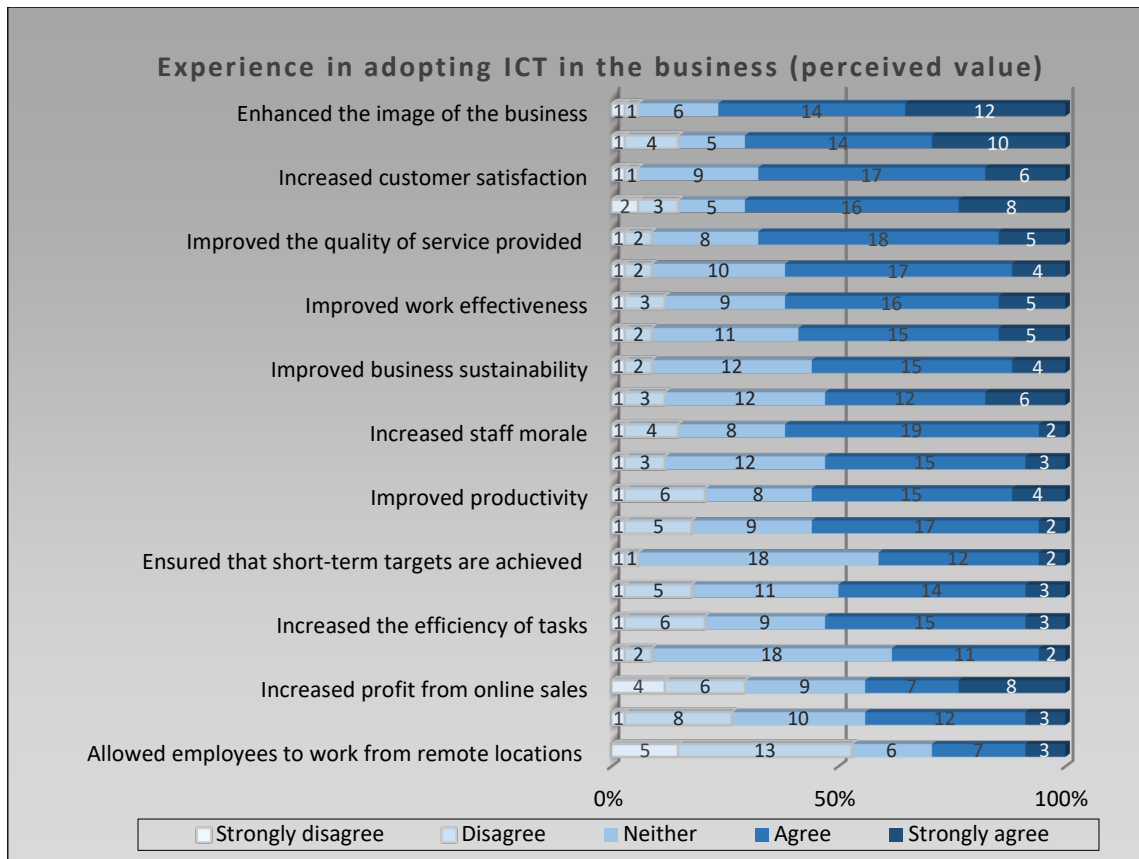


Figure 4.15: Experience in adopting ICT in the business (perceived value)

As graphically depicted in Figure 4.15 above, respondents were tasked to indicate their perceived value of ICT adoption. Most of the respondents (41.2%) agreed that the use of ICT in their businesses enhanced or was likely to enhance the image of their businesses. For the question mentioned above (see Figure 4.15), which consists of Likert-scaled variables, a score is calculated for each of the tools by weighting “Strongly disagree” with the lowest weight and “Strongly agree” with the highest weight. The sum of these scores was sorted from the lowest to the highest and then presented graphically.

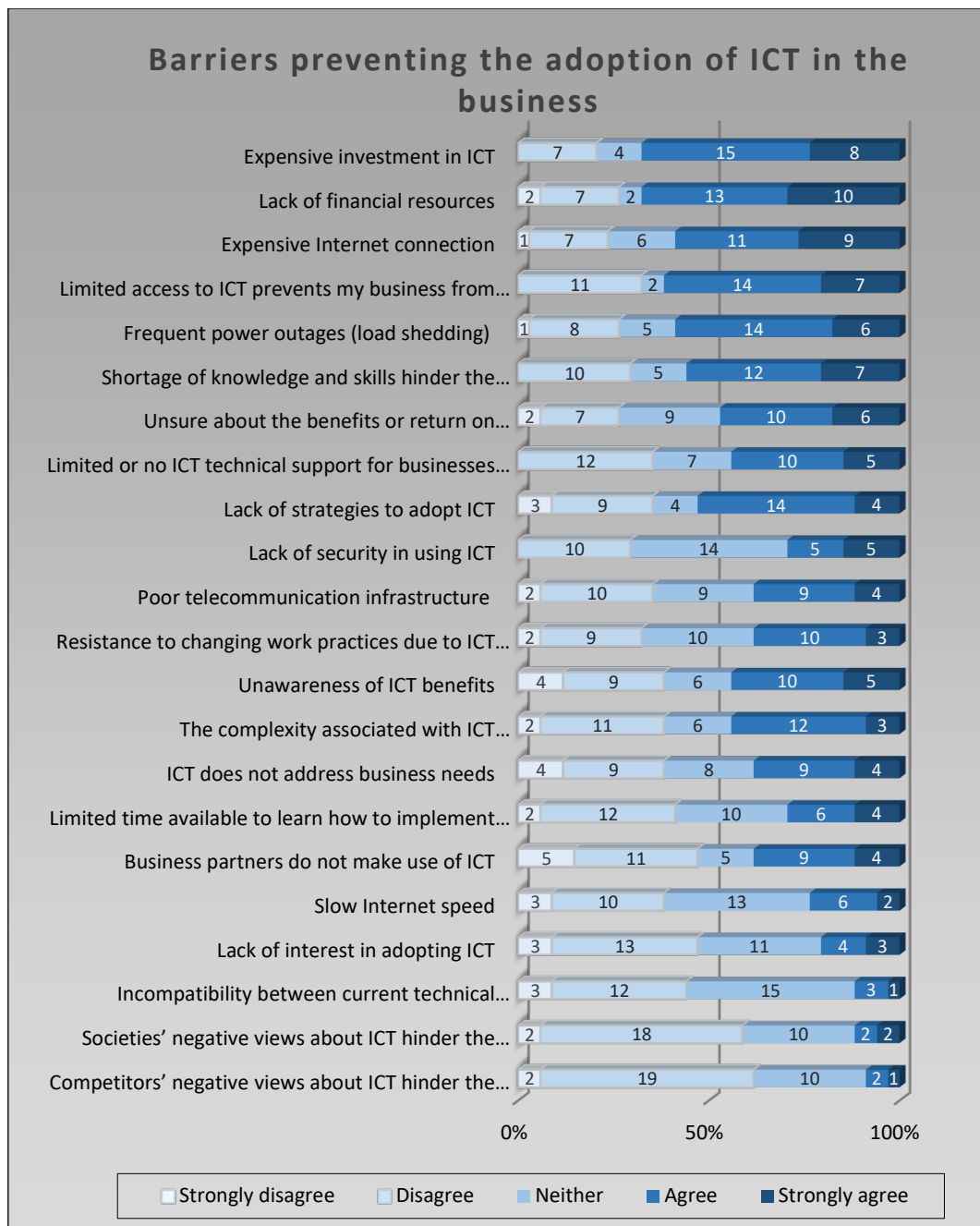


Figure 4.16: Barriers preventing the adoption of ICT in the business

As graphically depicted in Figure 4.16 above, respondents were tasked to list the barriers preventing them from adopting ICT. A total of 44.1% of the respondents agreed that adoption costs are expensive. Figure 4.1 above shows the barriers preventing ICT adoption in township FMCG SMMEs. The question mentioned above (see Figure 4.16) consists of Likert-scaled variables, and a score is calculated for each of the tools by weighting “Strongly disagree” with the lowest weight and “Strongly

agree” with the highest weight. The sum of these scores was sorted from the lowest to the highest and then presented graphically.

Stemming from the descriptive results presented in Section 4.3.2 above, it is evident that most participating SMMEs experience various barriers to adopting ICT. A total of 44.1% of the respondents indicated that they did not adopt ICT because of its expensive nature, slow Internet speed in their respective areas, and, most (41.5%), a lack of strategies for adopting ICTs.

Therefore, the data obtained from respondents regarding ICT adoption within their business and how this could negatively influence business operations, growth, and sustainability is not similar to the current literature. It could be argued that most SMMEs should be unable to effectively perform business operations as they are not au fait with adopting and using ICT in a business environment, which could affect the growth and sustainability of their businesses. Thus, the following question remains: how can FMCG SMMEs in townships in the Cape Metropole show growth and sustainability despite their limited or non-adoption of ICTs?

4.3.3 Inferential statistics

This section provides information regarding when the null hypothesis is rejected or accepted ($p \leq 0.05$). The p-value is compared to the significance level (α); on this basis, the null hypothesis is either rejected or accepted (if the p-value $< \alpha$, reject null). It is important to note that only statistically significant differences are discussed below. Comparison statistics are available in Appendix E.

4.3.3.1 Goodness-of-fit test

The Chi-square test for goodness-of-fit is used for a single population and is a test used when there is only one categorical variable. This test determines how well the observed frequency distribution from that sample fits the expected frequency distribution. The Chi-square test for goodness-of-fit determines the difference by comparing the observed frequency distribution with the frequency distribution of the null hypothesis. The null hypothesis is the expected frequency distribution when all categories of each variable are the same.

4.3.3.2 Hypothesis testing

The following hypotheses were tested:

Hypothesis A:

- H_0 = the proportion of respondents who selected the different categories is equal ($p_1 = p_2 = p_3$).
- H_1 = the proportion of respondents who selected the different categories is not equal ($p_1 \neq p_2 \neq p_3$).

Hypothesis B:

- H_0 = the mean scores are equal ($r_1 = r_2$).
- H_1 = the mean scores are not equal ($r_1 \neq r_2$).

4.3.3.3 Testing goodness-of-fit for each categorical or ordinal variable

To test whether the proportions are the same in hypothesis A, the Chi-square test was used to test for equal proportions for each variable. The statistically significant different statistics are discussed in the following sections. A summary table of all the statistics can be found in Appendix E. Below follows a discussion regarding these statistically significant differences for the categorical demographic variables:

- For the statement “In the business, you are the ...” there is a statistically significant difference in the proportions of respondents in the different categories. It seems that there are more respondents in the “Owners” or “Owner and Manager” categories than in the “Manager” category for this sample.
- For the statement “Do you have decision-making power within the business?” there is a statistically significant difference in the proportions of respondents in these two categories. All the respondents (34), except for one, indicated that they have decision-making power within the business.
- For the statement “How many full-time employees do you employ?” there is a statistically significant difference between the proportions of respondents in the two categories. All the respondents (34) indicated they employ one

full-time employee except for one. Only one respondent indicated that they employ two employees.

- For the statement “What is your highest qualification?” there is a statistically significant difference in the proportions of respondents in the categories. The significance is that more respondents indicated they have Grade 12 as their highest qualification than the other qualification groups.
- For the statement “What is your age?” there is a statistically significant difference between the proportions of respondents in the categories. The H_0 hypothesis for equal proportions could be rejected because more respondents fall within the 31-40 years (38.2%) age group than in the < 21 years (2.9%) age group or > 50 years (11.8%) age group.

Below follows a discussion regarding where these statistically significant differences lie for the ordinal measuring variables in Section B of the questionnaire, which includes the frequency of use of ICT tools in their businesses:

- For “Tablet”, there is a statistically significant difference in the proportion of respondents for the options listed. The difference is that more respondents ‘never use it’ (44.1%) than those who ‘rarely use it’ (11.8%).
- For “Smartphone”, there is a statistically significant difference in the proportion of respondents for the options listed. The difference is that more respondents ‘use it’ (50.0%) than those who ‘rarely use it’ (8.8%).
- For “Printer”, there is a statistically significant difference in the proportions of respondents for the options listed. The difference is that more respondents ‘never use it’ (41.2%) than those who ‘frequently use it’ (5.9%).
- For “Scanner”, there is a statistically significant difference in the proportions of respondents for the options listed. The difference is that more respondents ‘never use it’ (52.9%) than those who ‘frequently use it’ (2.9%).
- For “Copy machine”, there is a statistically significant difference in the proportions of respondents for the options listed. The difference is that more respondents ‘never use it’ (50.0%) than those who ‘frequently use it’ (2.9%).
- For “Internet (via mobile phone)”, there is a statistically significant difference in the proportions of respondents for the options listed. The differences lie

in that more respondents 'use it' (47.1%) than those who 'frequently use it' (14.7%) or 'rarely use it' (14.7%).

- For "Internet (via ADSL line)", there is a statistically significant difference in the proportions of respondents for the options listed. The difference is that more respondents 'never use it' (61.8%) than those who 'frequently use it' (8.8%).
- For "Internet (via fibre line)", there is a statistically significant difference in the proportions of respondents for the options listed. The difference is that more respondents 'never use it' (61.8%) than those who 'frequently use it' (8.8%).
- For "SMS", there is a statistically significant difference in the proportions of respondents for the options listed. The difference is that more respondents 'use it' (50.0%) than those who 'never use it' (11.8%).
- For "Voice over Internet Protocol (VoIP)", there is a statistically significant difference in the proportions of respondents for the options listed. The difference is that more respondents 'never use it' (79.4%) than those who 'use it' (5.9%).
- For "Landline telephone", there is a statistically significant difference in the proportions of respondents for the options listed. The difference is that more respondents 'never use it' (55.9%) than those who frequently 'use it' (5.9%).
- For "Fax", there is a statistically significant difference in the proportions of respondents for the options listed. The differences lie in that more respondents 'never use it' (76.5%) than those who 'frequently use it' (5.9%) or who 'use it' (5.9%).
- For "Business applications/software", there is a statistically significant difference in the proportions of respondents for the options listed. The difference is that more respondents 'never use it' (52.9%) than those who 'frequently use it' (5.9%).
- For the statement "How do you rate your use of ICT tools in the business?", there is a statistically significant difference in the proportions of respondents for the options listed. The difference is that more respondents are 'novices' (47.1%) than 'proficient users' (5.9%).

Below follows a discussion regarding where these statistically significant differences lie for the ordinal measuring variables in Section C of the questionnaire, which includes the most common driving forces in adopting ICT in the business:

- For “Pressure from competitors who use ICT”, there is a statistically significant difference in the proportions of respondents for the options listed. The difference is that more respondents ‘agree’ (35.3%) than those who ‘strongly agree’ (5.9%).
- For “Intentions to improve work efficiency and quality”, there is a statistically significant difference in the proportions of respondents for the options listed. The difference is that more respondents ‘agree’ (44.1%) than those who ‘strongly disagree’ (5.9%).
- For “Incentive and mandatory policies from government”, there is a statistically significant difference in the proportions of respondents for the options listed. The differences lie in that more respondents ‘disagree’ (41.2%) than those who ‘strongly disagree’ (8.8%) or ‘strongly agree’ (8.8%).
- For “Support the strategic direction of the business”, there is a statistically significant difference in the proportions of respondents for the options listed. The difference is that more respondents ‘agree’ (41.2%) than those who ‘strongly disagree’ (8.8%).

Below follows a discussion regarding where these statistically significant differences lie for the ordinal measuring variables in Section D of the questionnaire, which includes the experience the respondents perceived in adopting ICT in their business:

- For “Decreased operational costs”, there is a statistically significant difference in the proportions of respondents for the options listed. The difference is that more respondents ‘agree’ (35.3%) than those who ‘strongly disagree’ (2.9%).
- For “Increased the efficiency of tasks”, there is a statistically significant difference in the proportions of respondents for the options listed. The difference is that more respondents ‘agree’ (44.1%) than those who ‘strongly disagree’ (2.9%).
- For “Increased the accurateness of stock levels”, there is a statistically significant difference in the proportions of respondents for the options listed.

The difference is that more respondents 'agree' (50.0%) than those who 'strongly disagree' (2.9%).

- For "Improved the quality of service provided", there is a statistically significant difference in the proportions of respondents for the options listed. The differences lie in that more respondents 'agree' (52.9%) than those who 'strongly disagree' (2.9%) or 'disagree' (5.9%).
- For "Improved productivity", there is a statistically significant difference in the proportions of respondents for the options listed. The difference is that more respondents 'agree' (44.1%) than those who 'strongly disagree' (2.9%).
- For "Increased revenue", there is a statistically significant difference in the proportions of respondents for the options listed. The differences lie in that more respondents 'agree' (44.1%) or 'neither agree nor disagree' (35.3%) than those who 'strongly disagree' (2.9%).
- For "Increased customer satisfaction", there is a statistically significant difference in the proportions of respondents for the options listed. The differences lie in that more respondents 'agree' (50.0%) than those who 'strongly disagree' (2.9%) or 'disagree' (2.9%).
- For "Improved turnaround time", there is a statistically significant difference in the proportions of respondents for the options listed. The differences lie in that more respondents 'agree' (44.1%) than those who 'strongly disagree' (2.9%) or 'disagree' (5.9%).
- For "Improved work effectiveness", there is a statistically significant difference in the proportions of respondents for the options listed. The difference is that more respondents 'agree' (47.1%) than those who 'strongly disagree' (2.9%).
- For "Ensured that business goals are met with more ease", there is a statistically significant difference in the proportions of respondents for the options listed. The difference is that more respondents 'agree' (41.2%) than those who 'strongly disagree' (2.9%).
- For "Ensured that short-term targets are achieved", there is a statistically significant difference in the proportions of respondents for the options listed. The differences lie in that more respondents 'neither agree nor disagree' (52.9%) than those who 'disagree' (2.9%) or 'strongly disagree' (2.9%).

- For “Improved product quality”, there is a statistically significant difference in the proportions of respondents for the options listed. The differences lie in that more respondents ‘neither agree nor disagree’ (52.9%) than those who ‘disagree’ (2.9%) or ‘strongly disagree’ (5.9%), or ‘strongly agree’ (5.9%).
- For “Increased staff morale”, there is a statistically significant difference in the proportions of respondents for the options listed. The difference is that more respondents ‘agree’ (55.9%) than those who ‘strongly disagree’ (2.9%).
- For “Improved communication within and outside the business”, there is a statistically significant difference in the proportions of respondents for the options listed. The difference is that more respondents ‘agree’ (47.1%) than those who ‘strongly disagree’ (5.9%).
- For “Provided better access to information”, there is a statistically significant difference in the proportions of respondents for the options listed. The difference is that more respondents ‘agree’ (41.2%) than those who ‘strongly disagree’ (2.9%).
- For “Allowed employees to work from remote locations”, there is a statistically significant difference in the proportions of respondents for the options listed. The difference is that more respondents ‘disagree’ (38.2%) than those who ‘strongly agree’ (8.8%).
- For “Increased the competitiveness of the business (competitive advantage)”, there is a statistically significant difference in the proportions of respondents for the options listed. The differences lie in that more respondents ‘agree’ (35.3%) or respondents who ‘neither agree nor disagree’ (35.3%) than those who ‘strongly disagree’ (2.9%).
- For “Increased quality control in the business”, there is a statistically significant difference in the proportions of respondents for the options listed. The difference is that more respondents ‘agree’ (50.0%) than those who ‘strongly disagree’ (2.9%).
- For “Improved business sustainability”, there is a statistically significant difference in the proportions of respondents for the options listed. The differences lie in that more respondents ‘agree’ (44.1%) or respondents who

'neither agree nor disagree' (35.3%) than those who 'strongly disagree' (2.9%).

- For "Enhanced the image of the business", there is a statistically significant difference in the proportions of respondents for the options listed. The differences lie in that more respondents 'agree' (41.2%) or those who 'strongly agree' (35.3%) than those who 'disagree' (2.9%) or 'strongly disagree' (2.9%).

Below follows a discussion relating to where these statistically significant differences lie for the ordinal measuring variables in section E of the questionnaire, which includes the respondents' perceptions regarding the barriers preventing the business from adopting ICT:

- For "Limited access to ICT prevents my business from using ICT", there is a statistically significant difference in the proportions of respondents for the options listed. The difference is that more respondents 'agree' (41.2%) than those who 'neither agree nor disagree' (5.8%).
- For "Societies' negative views about ICT hinder the business from using ICT", there is a statistically significant difference in the proportions of respondents for the options listed. The differences lie in that more respondents 'disagree' (52.9%) than those who 'strongly disagree' (5.8%), 'agree' (5.8%), or 'strongly agree' (5.8%).
- For "Competitors' negative views about ICT hinder the business from using ICT", there is a statistically significant difference in the proportions of respondents for the options listed. The differences lie in that more respondents 'disagree' (55.9%) than those who 'strongly disagree' (5.8%), 'agree' (5.8%), or 'strongly agree' (2.9%).
- For "Limited time available to learn how to implement ICT hinders the business from using ICT", there is a statistically significant difference in the proportions of respondents for the options listed. The difference is that more respondents 'disagree' (35.3%) than those who 'strongly disagree' (5.8%).
- For "Frequent power outages (load shedding)", there is a statistically significant difference in the proportions of respondents for the options listed.

The difference is that more respondents 'agree' (41.2%) than those who 'strongly disagree' (2.9%).

- For “The complexity associated with ICT implementation hinders the business from using ICT”, there is a statistically significant difference in the proportions of respondents for the options listed. The differences lie in that more respondents 'agree' (35.3%) or 'disagree' (32.4%) than those who 'strongly disagree' (5.8%).
- For “Slow Internet speed”, there is a statistically significant difference in the proportions of respondents for the options listed. The difference is that more respondents 'neither agree nor disagree' (38.2%) than those who 'strongly agree' (5.8%).
- For “Lack of financial resources”, there is a statistically significant difference in the proportions of respondents for the options listed. The differences lie in that more respondents 'agree' (38.2%) than those who 'strongly disagree' (5.8%) or 'neither agree nor disagree' (5.8%).
- For “Lack of strategies to adopt ICT”, there is a statistically significant difference in the proportions of respondents for the options listed. The difference is that more respondents 'agree' (41.2%) than those who 'strongly disagree' (8.8%).
- For “Incompatibility between current technical infrastructure and ICT”, there is a statistically significant difference in the proportions of respondents for the options listed. The difference is that more respondents 'neither agree nor disagree' (44.1%) than those who 'strongly agree' (2.9%).
- For “Lack of interest in adopting ICT”, there is a statistically significant difference in the proportions of respondents for the options listed. The differences lie in that more respondents 'disagree' (39.2%) than those who 'strongly disagree' (8.8%) or 'strongly agree' (8.8%).

4.3.3.4 Kruskal-Wallis test for demographic versus measuring variables

The Kruskal-Wallis test determines if there are differences in the mean scores of the number of years the businesses have been operating and the respondents' years of business experience (continuous variables) with respect to the measuring variables. If $\alpha < 0.05$ is, thus, statistically significant (null hypothesis is rejected), then there is a

statistically significant difference between the groups. The discussion of the statistically significant results follows below. Summary tables displaying the statistically significant outcomes and computer printouts of all the statistics are attached in Appendix E. Due to the small sample size, one group may have mean scores higher than those of another group, but these are not statistically significant. This fact is due to the small number of respondents in the group.

4.3.3.5 Years businesses are in existence versus measuring variables

There is a statistically significant difference between the mean scores of the years the businesses have been in existence with respect to the Internet ICT tool (via a fibre line). The mean score for the years that these businesses have been in existence is higher for the respondents who never used the Internet (via fibre line) than that of the respondents who rarely use the Internet (via fibre line) (see Figure 4.17).

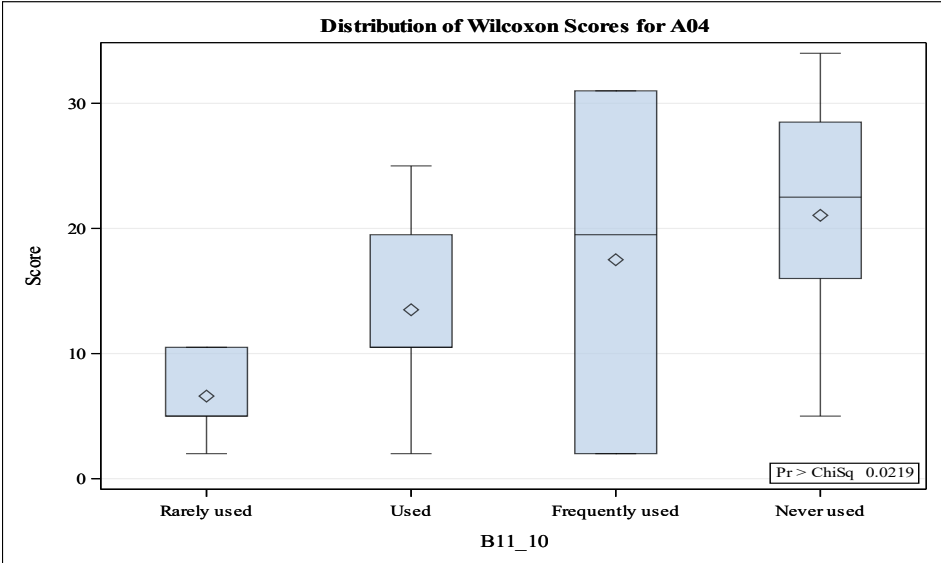


Figure 4.17: Years of existence versus B11_10

A statistically significant difference exists between the mean scores of the years the businesses have existed concerning the ICT tool e-mail. The mean score for the years the businesses have been operating is higher for the respondents who ‘never used’ the Internet (via fibre line) than for the respondents who ‘rarely use’ the Internet (via fibre line) (see Figure 4.18). The reason for this result is that the sample is too small.

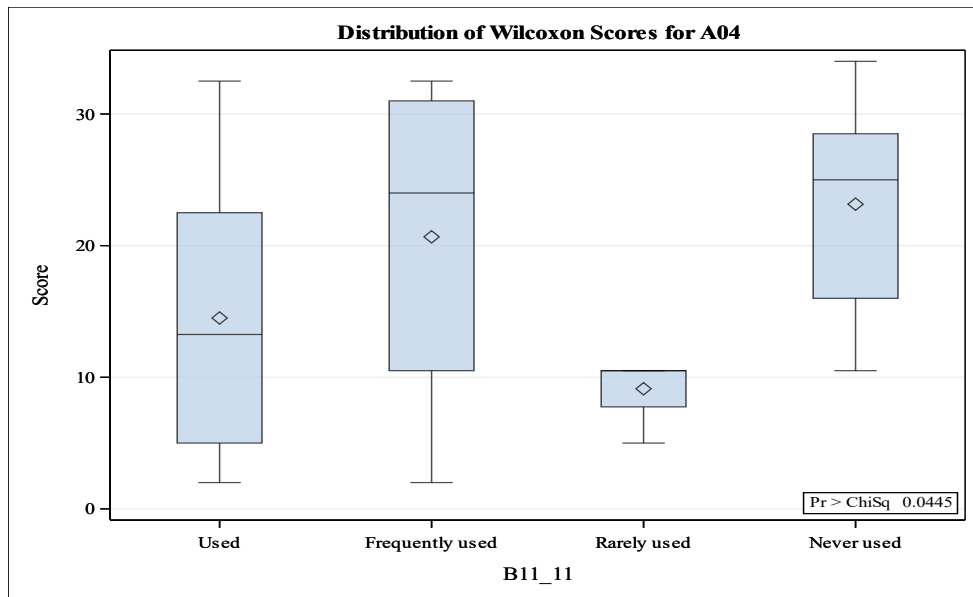


Figure 4.18: Years of existence versus B11_11

A statistically significant difference exists between the mean scores of the years the businesses have been in existence concerning the statement, “The use of ICT ensures that short-term targets are achieved”. Although there is a statistically significant difference between the mean scores of the years the businesses have been in existence (p-value = 0.0455) when pairwise testing was conducted, none of the pairs showed a statistically significant difference because of the small sample size. The mean score of the years the businesses have been in existence seems to be higher for the respondents who ‘neither agree nor disagree’ that the use of ICT ensures that short-term targets are achieved than that of the respondents who ‘agree’; but are not statistically significant (see Figure 4.19).

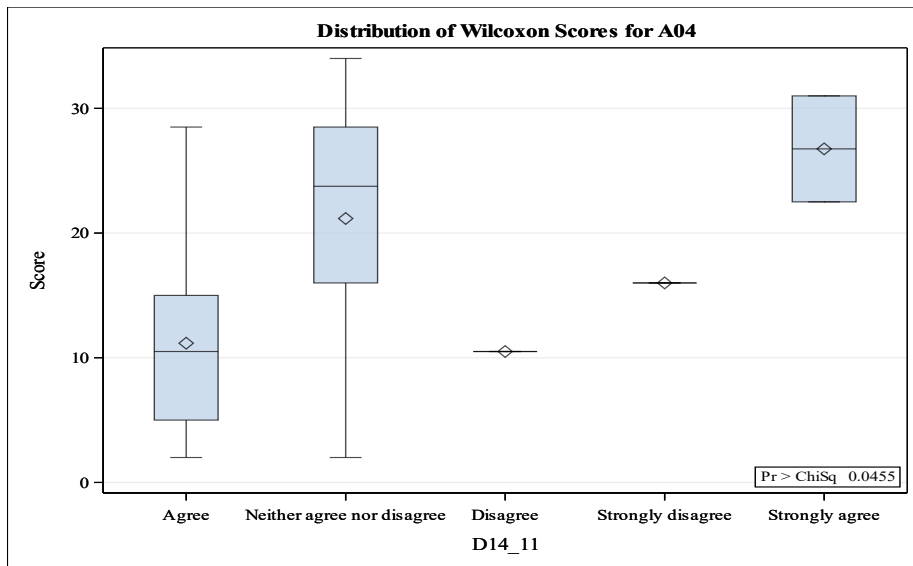


Figure 4.19: Years of existence versus D14_11

A statistically significant difference exists between the mean scores of the years the businesses have been in existence concerning the statement, “The use of ICT improves product quality”. There is a statistically significant difference between the mean scores of the years the businesses have been in existence (p -value = 0.0053). The mean score of the years the businesses have been in existence is statistically significantly higher for the respondents who ‘neither agree nor disagree’ that the use of ICT improves product quality than that of the respondents who ‘agree’ (see Figure 4.20).

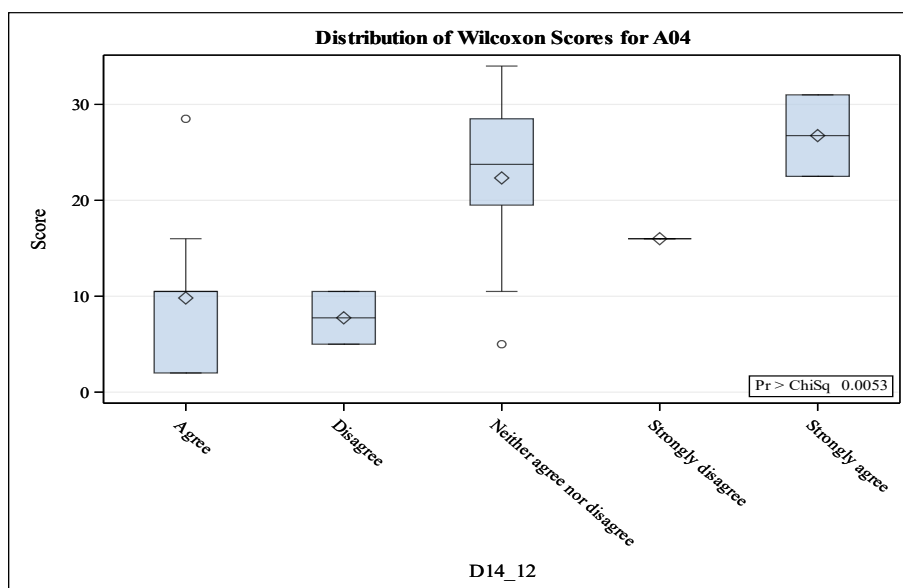


Figure 4.20: Years of existence versus D14_12

A statistically significant difference exists between the mean scores of the years the businesses have been in existence with respect to the statement, “The use of ICT increased the competitiveness of the business (competitive advantage)”. There is a statistically significant difference between the mean scores of the years the businesses have been in existence (p-value = 0.0202). The mean score of the years the businesses have been in existence is statistically significantly higher for the respondents who ‘neither agree nor disagree’ that the use of ICT increased the competitiveness of the business (competitive advantage) than for the respondents who ‘agree’ (see Figure 4.21).

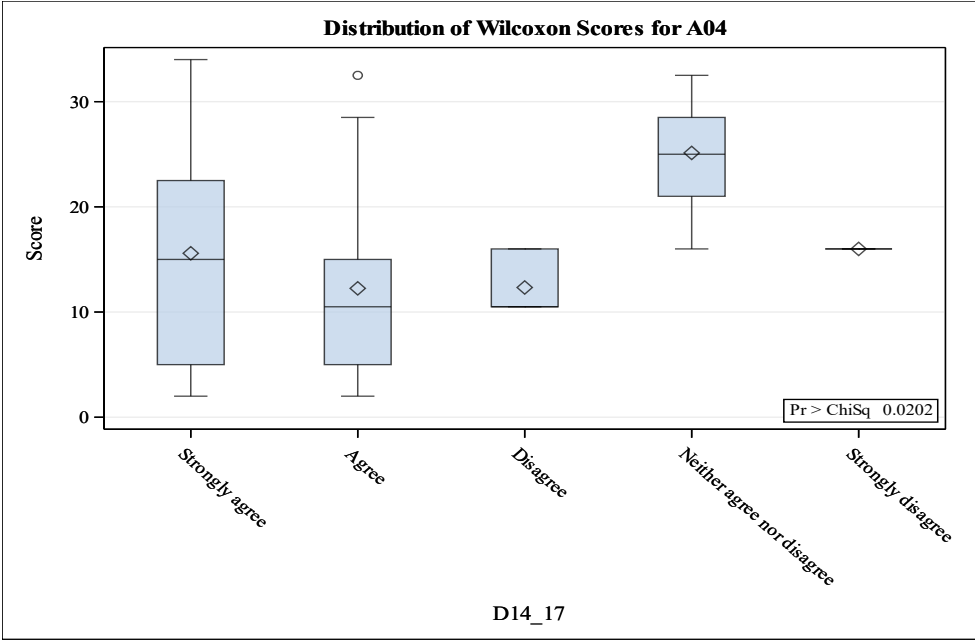


Figure 4.21: Years of existence versus D14_17

A statistically significant difference exists between the mean scores of the years the businesses have been in existence with respect to the statement, “The use of ICT improved business sustainability”. There is a statistically significant difference between the mean scores of the years the businesses have been in existence (p-value = 0.0108). The mean score of the years the businesses have been in existence is statistically significantly higher for the respondents who ‘neither agree nor disagree’ that the use of ICT improved business sustainability than for the respondents who ‘agree’ (see Figure 4.22).

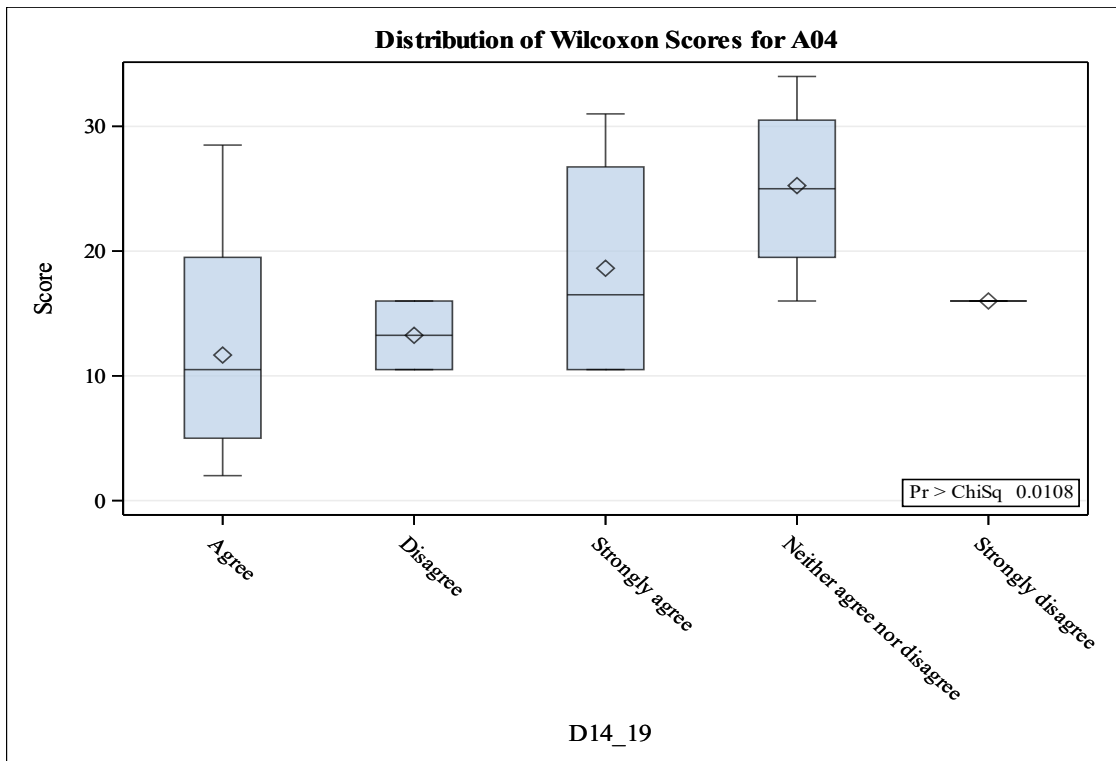


Figure 4.22: Years of existence versus D14_19

A statistically significant difference exists between the mean scores of the years the businesses have been in existence with respect to the barrier, "Lack of security using ICT", that prevents the business from adopting ICT. There is a statistically significant difference between the mean scores of the years the businesses have been in existence (p-value = 0.0170). The mean score of the years the businesses have been in existence is statistically significantly higher for the respondents who 'neither agree nor disagree' that the barrier "Lack of security in using ICT" prevents the business from adopting ICT sustainability than that of respondents who 'disagree' (see Figure 4.23).

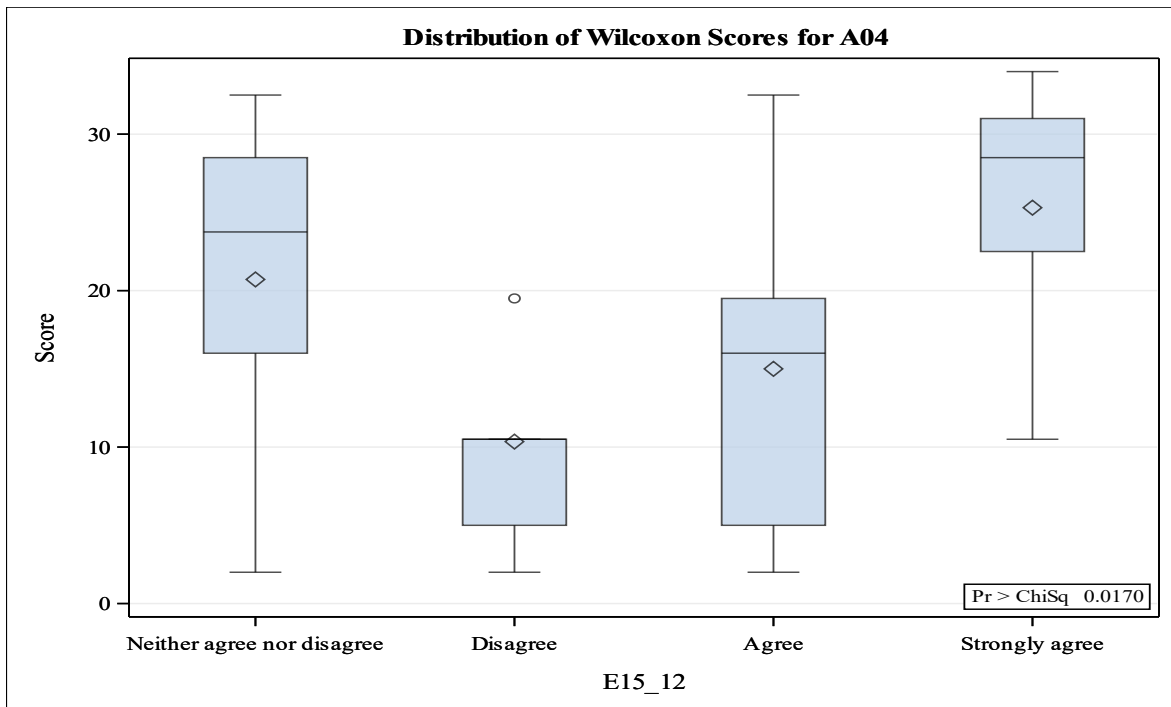


Figure 4.23: Years of existence versus E15_12

4.3.3.6 Years of experience in business versus measuring variables

A statistically significant difference exists between the mean scores of the years the businesses have been in existence with respect to the statement, "The use of ICT improved communication within and outside the business". Although there is a statistically significant difference between the mean scores of the years of experience (p -value = 0.0482), when pairwise testing was conducted, none of the pairs differed significantly. The mean score of the years of experience seems to be higher for the respondents who 'strongly agree' that the use of ICT improves communication within and outside business than that of the respondents who 'disagree' but is not statistically significant due to a too-small sample (see Figure 4.24).

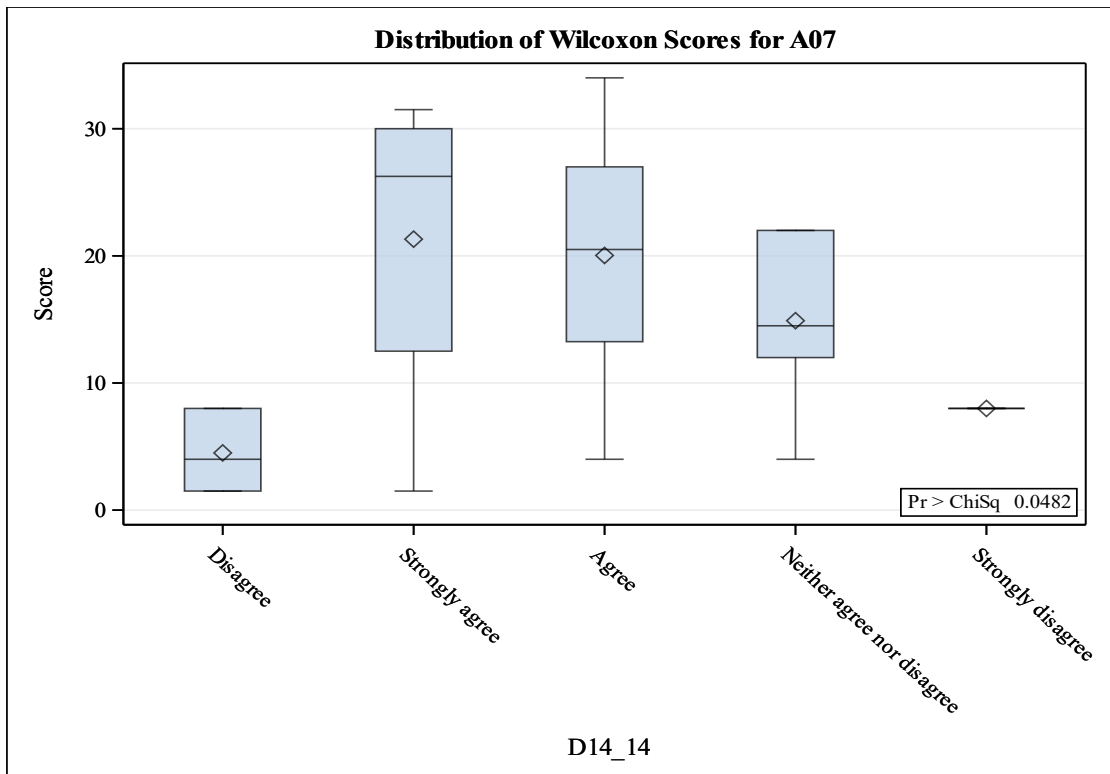


Figure 4.24: Years of experience versus D14_14

4.3.3.7 Chi-square test for demographic versus measuring variables

The Chi-square test was used to test whether the demographic groups differed concerning their responses to the measuring variables. However, due to the small sample size, more than 20% of the expected frequencies are less than 5 in the cells of the contingency tables. In order to overcome this problem because the Chi-square test becomes invalid in the above-mentioned circumstances, the groups are aggregated so that there are fewer groups. The following groupings are formulated for the demographic variables:

- The highest qualification is grouped into two groups – “Up to Matric” and “Qualification after Matric”.
- Age is grouped into two groups – “Less than 41 years” and “Greater and equal to 41 years”.

The following groupings are formulated for the measuring variables:

- B11 is grouped into two groups – “Used to frequently used” and “Never to rarely used”.
- C13, D14 and E15 are grouped into three groups – “Disagree to strongly disagree”, “Neither agree nor disagree”, and “Agree to strongly agree”.

This research comprised a very small sample; thus, there are still cells with expected frequencies of less than 5 in the contingency tables' cells; when interpreting the results, this fact must be considered. Note that only the statistically significantly different statistics are discussed in the sections below. A summary table with the statistically significant outcomes and a computer printout of all the statistics can be found in Appendix E.

4.3.3.8 Designation of respondent versus measuring variables

A statistically significant difference exists between the designation of the respondent groups with respect to the barrier, “Shortage of knowledge and skills hinder the business from using ICT”, which prevents the business from adopting ICT (p-value = 0.0002). Furthermore, there are statistically significantly more respondents from the owner group who ‘agree’ to ‘strongly agree’ than from the other two groups that the barrier, “Shortage of knowledge and skills hinder the business from using ICT”, which prevents the business from adopting ICT. On the other hand, more respondents from the owner and manager group than from the other two groups ‘disagree’ to ‘strongly agree’ with this statement (see Figure 4.25).

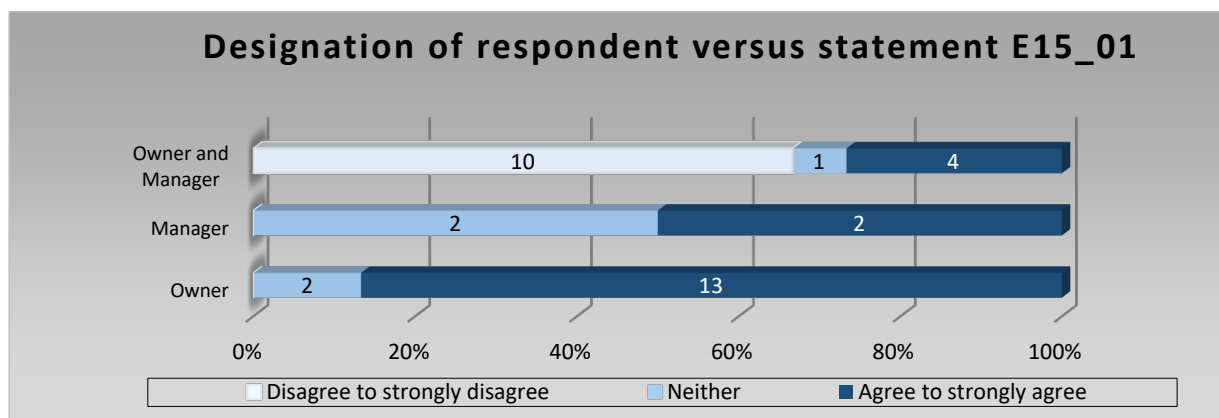


Figure 4.25: Designation of respondent versus E15_01

A statistically significant difference exists between the designation of the respondent groups concerning the barrier, “Limited access to ICT prevents my business from using ICT”, and to prevent the business from adopting ICT (p-value = 0.0419). There are statistically significantly more respondents from the owner group than from the other two groups who ‘agree to ‘strongly agree’ that the barrier, “Limited access to ICT prevents my business from using ICT”, than preventing the business from adopting ICT. More respondents from the owner and manager group than from the other two groups ‘disagree’ to ‘strongly agree’ with this statement (see Figure 4.26).

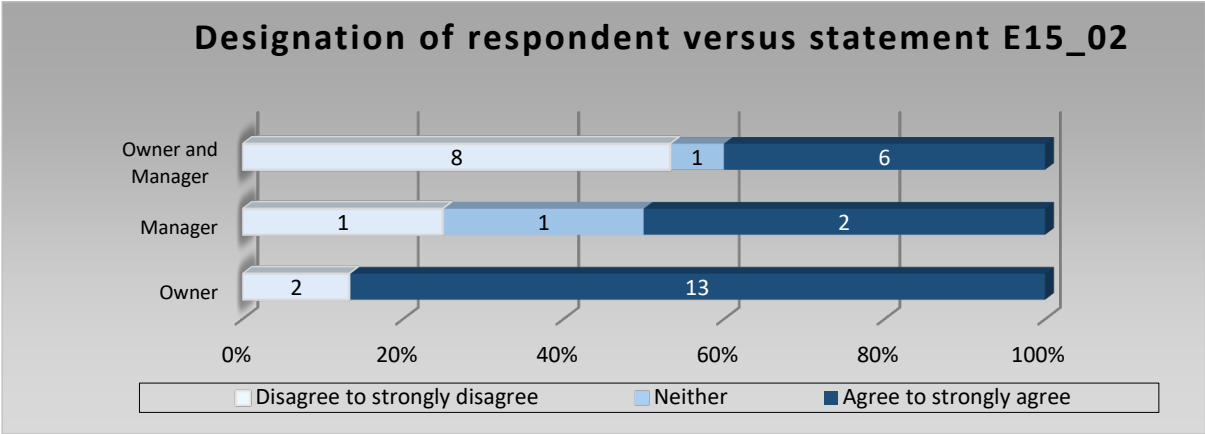


Figure 4.26: Designation of respondent versus E15_02

There is a statistically significant difference between the designation of the respondent groups with respect to the barrier, “Limited or no ICT technical support for businesses in townships discourages me from using ICT in the business”, than to prevent the business from adopting ICT (p-value = 0.0170). There are statistically significantly more respondents from the owner group than from the manager group who ‘agree’ to ‘strongly’ agree that the barrier, “Limited or no ICT technical support for businesses in townships discourages me from using ICT in the business”, that to prevents the business from adopting ICT. More respondents from the manager group than the other two groups ‘neither agree nor disagree’ with this statement (see Figure 4.27).

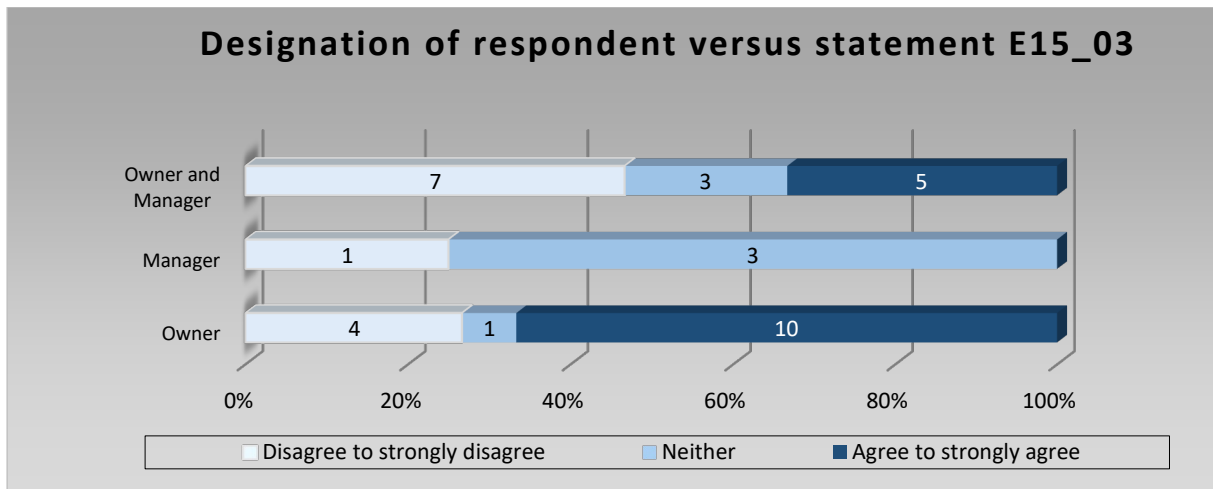


Figure 4.27: Designation of respondent versus E15_03

4.3.3.9 Highest qualification versus measuring variables

There is a statistically significant difference between the highest qualification groups with respect to the use of the ICT tool, “Tablet” (p-value = 0.0418). There are statistically significantly more respondents who have a higher qualification after Matric than those who have as their highest qualification Matric or below; who ‘use’ to ‘frequently use’ the ICT tool, “Tablet” (see Figure 4.28).

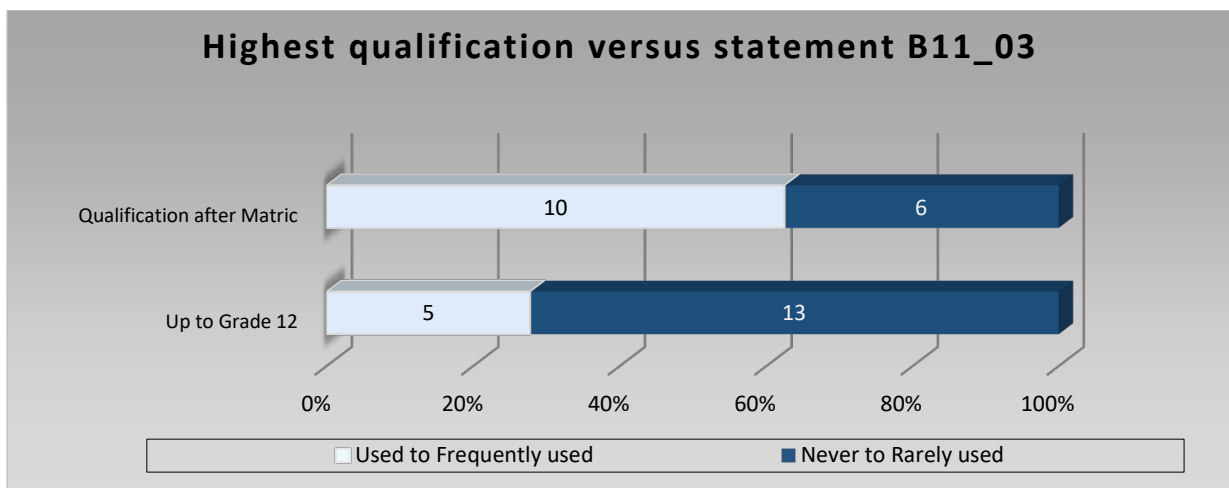


Figure 4.28: Highest qualification versus B11_03

There is a statistically significant difference between the highest qualification groups with respect to the use of the ICT tool, “Smartphone” (p-value = 0.0117). There are statistically significantly more respondents with a higher qualification after Matric than

those whose highest qualification is Matric and below, who ‘use’ to ‘frequently use’ the ICT tool, “Smartphone” (see Figure 4.29).

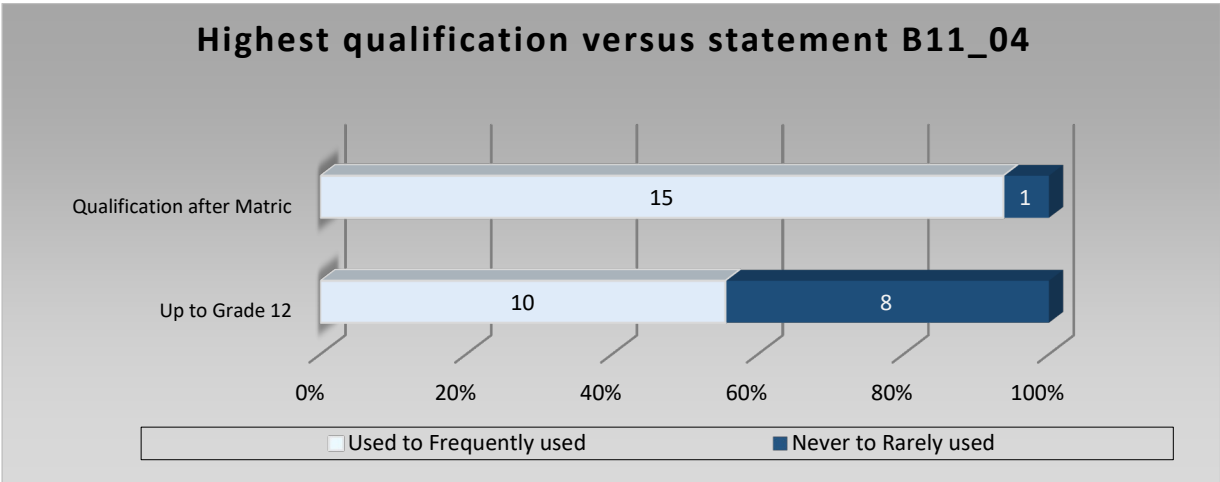


Figure 4.29: Highest qualification versus B11_04

There is a statistically significant difference between the highest qualification groups concerning the most common driving force in adopting ICT: "Intentions to improve work efficiency and quality" (p-value = 0.0165). There are statistically significantly more respondents who have a higher qualification after Matric than the respondents whose highest qualification is Matric or below, who ‘agree’ to ‘strongly agree’ the most common driving force in adopting ICT being “Intentions to improve work efficiency and quality” (see Figure 4.30).

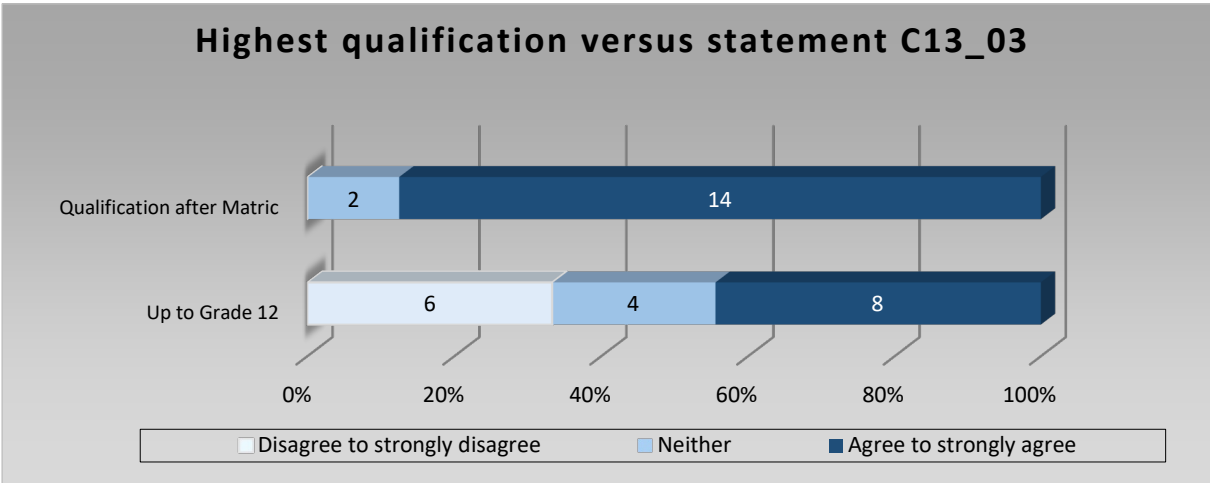


Figure 4.30: Highest qualification versus C13_03

There is a statistically significant difference between the highest qualification groups with respect to the adoption of ICT in the business and increased profit from online sales (p-value = 0.0205). There are statistically significantly more respondents with a higher qualification after Matric than those whose highest qualification is up to Matric who agree to strongly agree with the statement that adopting ICT in the business increases the profit from online sales (see Figure 4.31).

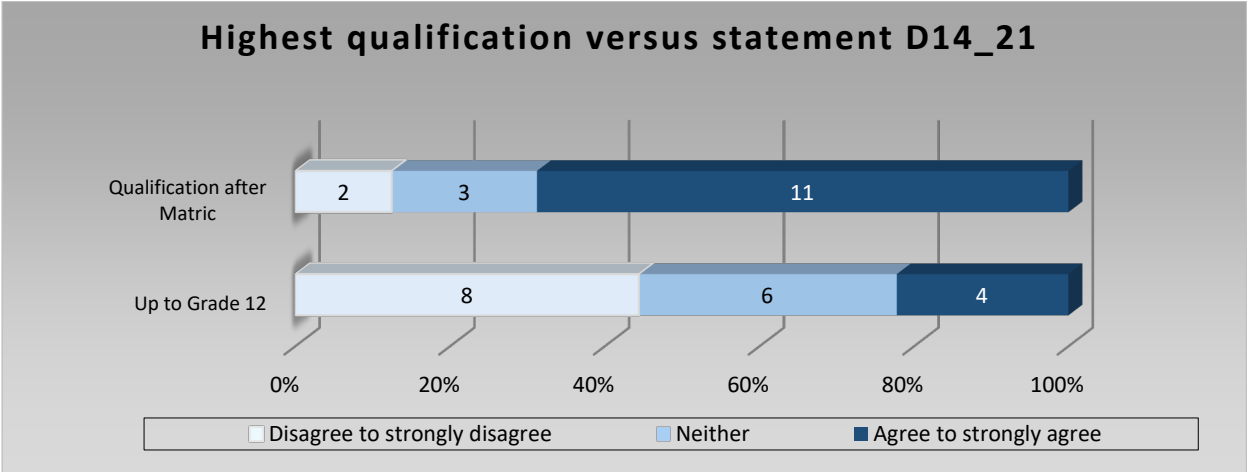


Figure 4.31: Highest qualification versus D14_21

There is a statistically significant difference between the designation of the respondent groups with respect to the barrier, “Expensive investment in ICT”, that prevents the business from adopting ICT (p-value = 0.0205). There are statistically significantly more respondents from the highest qualification being up to Grade 12 group than from the highest qualification after matric group who ‘agree’ to ‘strongly agree’ that the barrier, “Expensive investment in ICT”, prevents the business from adopting ICT (see Figure 4.32).

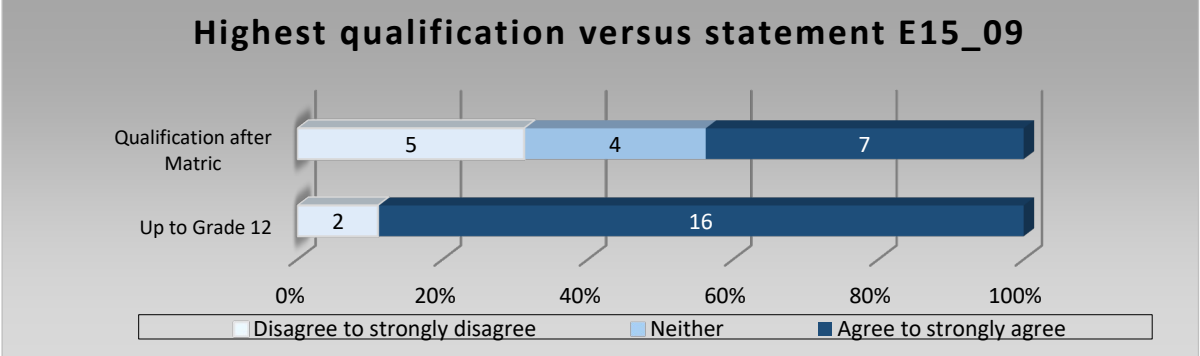


Figure 4.32: Highest qualification versus E15_09

There is a statistically significant difference between the designation of the respondent groups with respect to the barrier, “Expensive Internet connection”, that prevents the business from adopting ICT (p-value = 0.0223). There are statistically significantly more respondents from the highest qualification up to Grade 12 group than from the highest qualification after matric group who ‘agree’ to ‘strongly agree’ that the barrier, “Expensive Internet connection”, prevents the business from adopting ICT (see Figure 4.33).

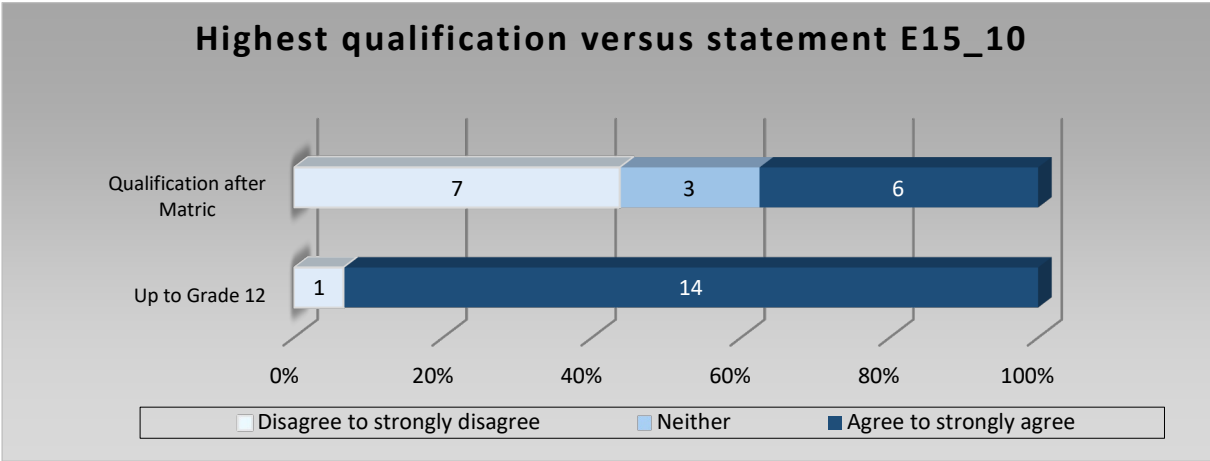


Figure 4.33: Highest qualification versus E15_10

4.3.3.10 Gender versus measuring variables

There is a statistically significant difference between genders with respect to the use of the ICT tool “E-mail” (p-value = 0.0073). There are statistically significantly more females than males who ‘use’ to ‘frequently use’ the ICT tool “E-mail” (see Figure 4.34).

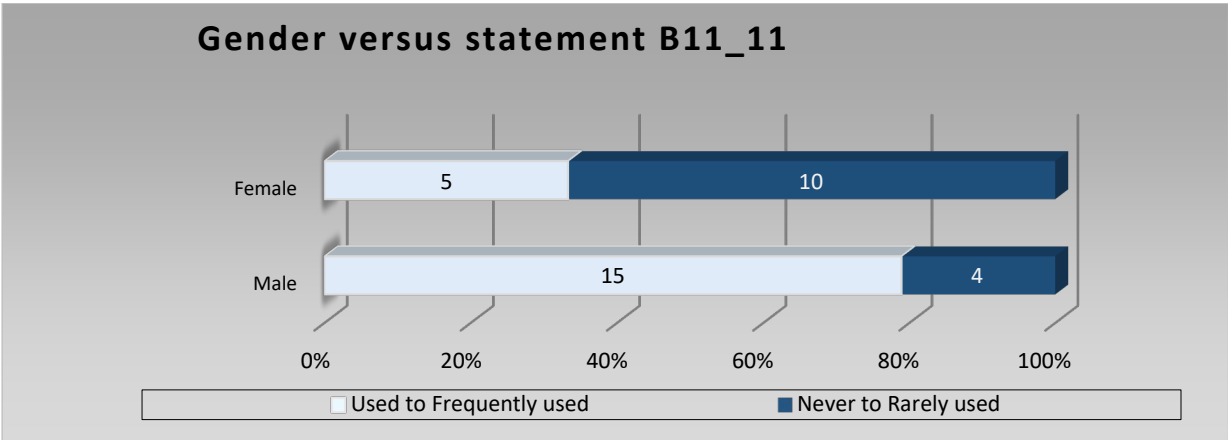


Figure 4.34: Gender versus B11_11

A statistically significant difference exists between genders concerning the use of the ICT tool, “Social media (e.g. Facebook, Twitter, Instagram, WhatsApp, etc.)” (p-value = 0.0074). There are statistically significantly more males than females who ‘use’ to ‘frequently use’ the ICT tool, “Social media (e.g., Facebook, Twitter, Instagram, WhatsApp, etc.)” (see Figure 4.35).

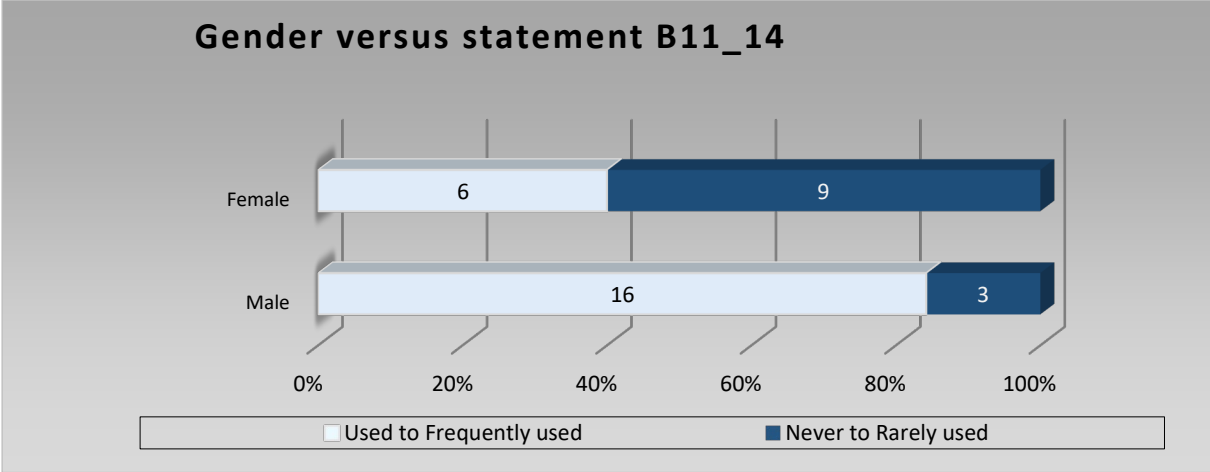


Figure 4.35: Gender versus B11_14

A statistically significant difference exists between genders concerning the adoption of ICT in the business, which ensures that business goals are met with greater ease (p-value = 0.0052). There are statistically significantly more males than females who ‘agree’ to ‘strongly agree’ with the statement that adopting ICT in the business ensures that business goals are met with greater ease (see Figure 4.36).

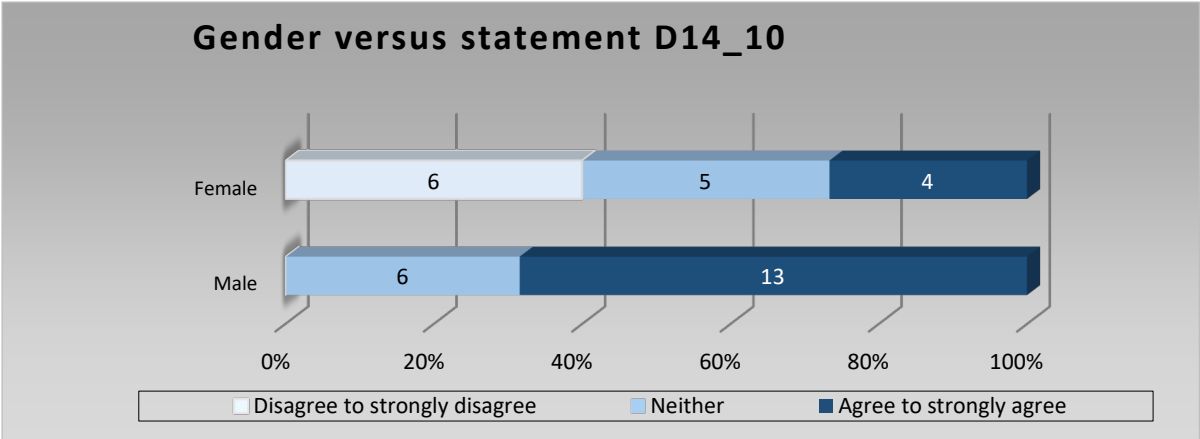


Figure 4.36: Gender versus D14_10

A statistically significant difference exists between the genders concerning the adoption of ICT in the business and increased quality control in the business (p-value = 0.0052). There are statistically significantly more males than females who 'agree' to 'strongly agree' with the statement that adopting ICT in the business increased quality control in the business (see Figure 4.37).

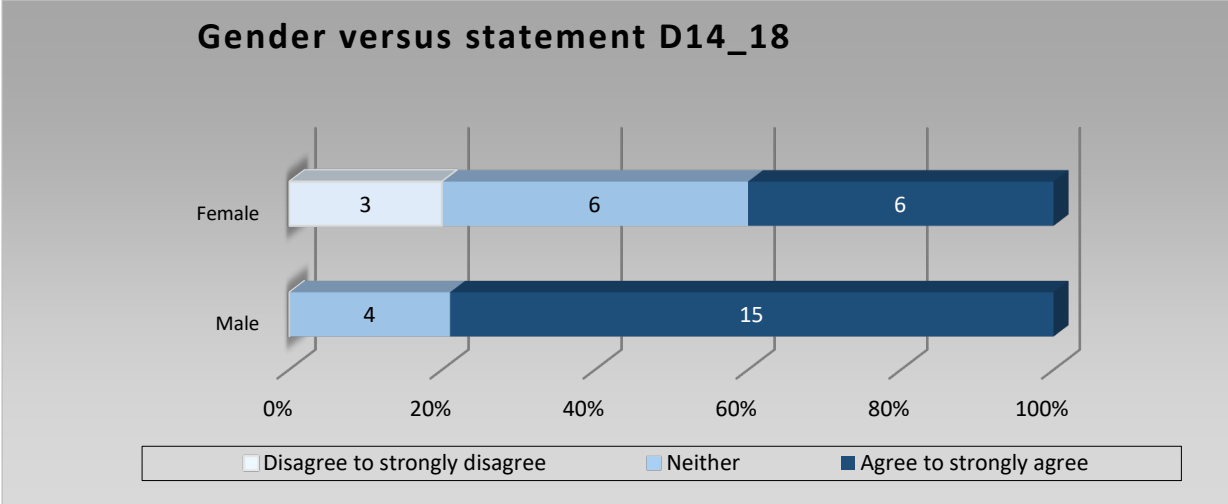


Figure 4.37: Gender versus D14_18

A statistically significant difference exists between genders concerning the barrier, "Expensive Internet connection", that prevents the business from adopting ICT (p-value = 0.0063). There are statistically significantly more females than males who 'agree' to 'strongly agree' that the "Expensive Internet connection" barrier prevents businesses from adopting ICT (see Figure 4.38).

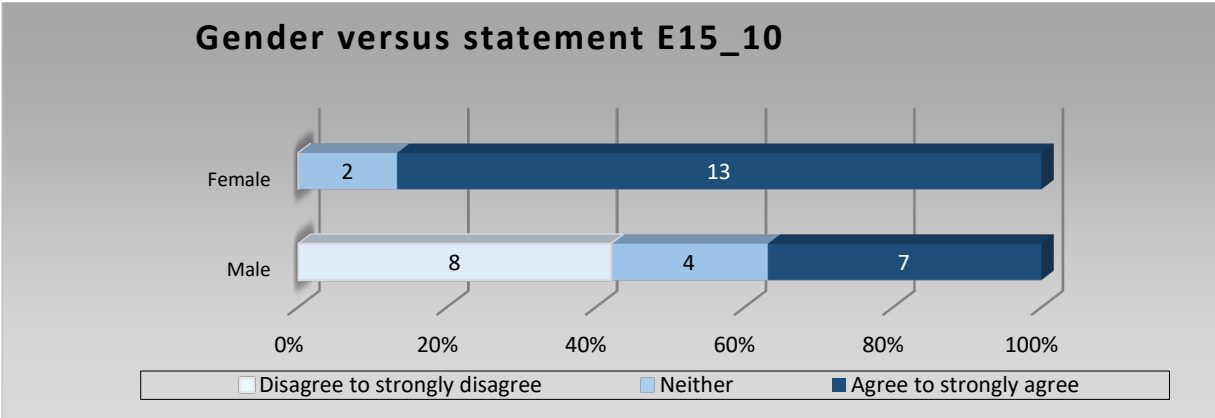


Figure 4.38: Gender versus E15_10

There is a statistically significant difference between the genders with respect to the barrier, “ICT does not address business needs”, that prevents the business from adopting ICT (p-value = 0.0295). There are statistically significantly more males than females who ‘disagree’ to ‘strongly disagree’ that the barrier “ICT does not address business needs” prevents the business from adopting ICT (see Figure 4.39).

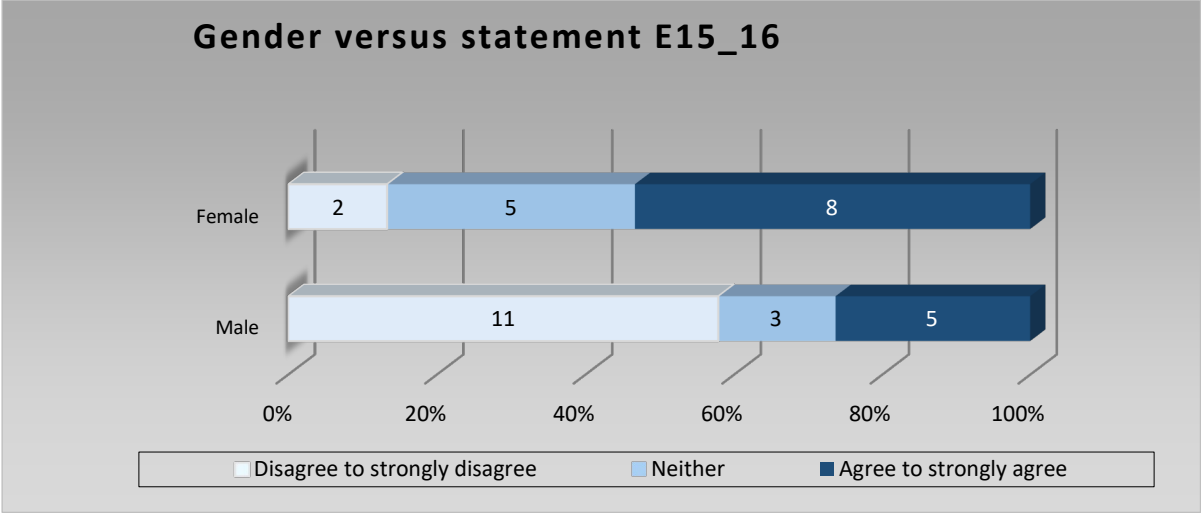


Figure 4.39: Gender versus E15_16

4.3.3.11 Age versus measuring variables

A statistically significant difference exists between age groups concerning the adoption of ICT in the business increased revenue (p-value = 0.0194). There are statistically significantly more respondents with less than 41 years than respondents with an age equal to or greater than 41 years who ‘agree’ to ‘strongly agree’ with the statement that adopting ICT in the business increased revenue (see Figure 4.40).

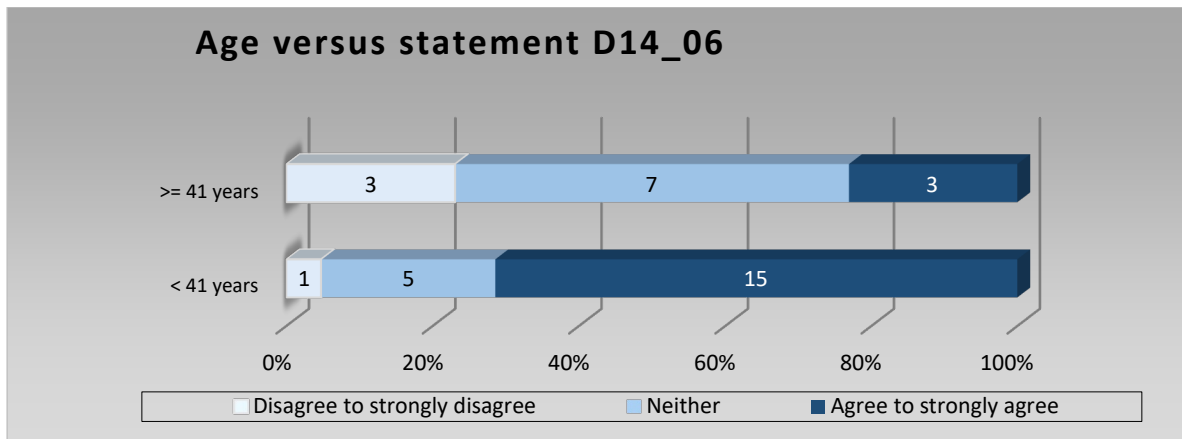


Figure 4.40: Age versus D14_06

A statistically significant difference exists between age groups concerning the adoption of ICT in improved business sustainability (p-value = 0.0042). There are statistically significantly more respondents with an age of fewer than 41 years than those with an age equal and greater than 41 years who 'agree' to 'strongly agree' with the statement that adopting ICT in the business improved business sustainability (see Figure 4.41).

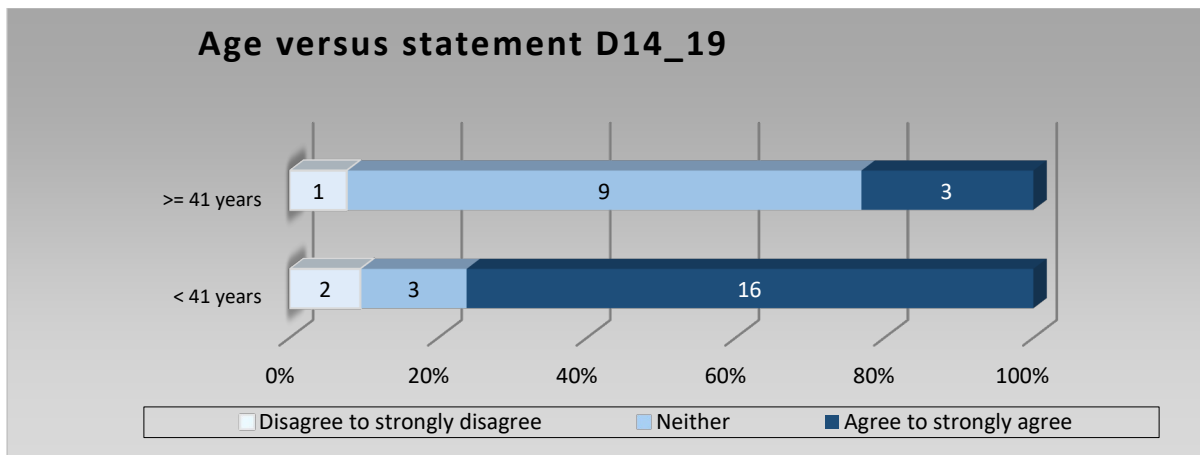


Figure 4.41: Age versus D14_19

A statistically significant difference exists between age groups concerning the adoption of ICT in the business and increased profits from online sales (p-value = 0.0070). There are statistically significantly more respondents with an age of fewer than 41 years than respondents with an age equal to or greater than 41 years who 'agree' to 'strongly agree' with the statement that adopting ICT in the business increased profits from online sales (see Figure 4.42).

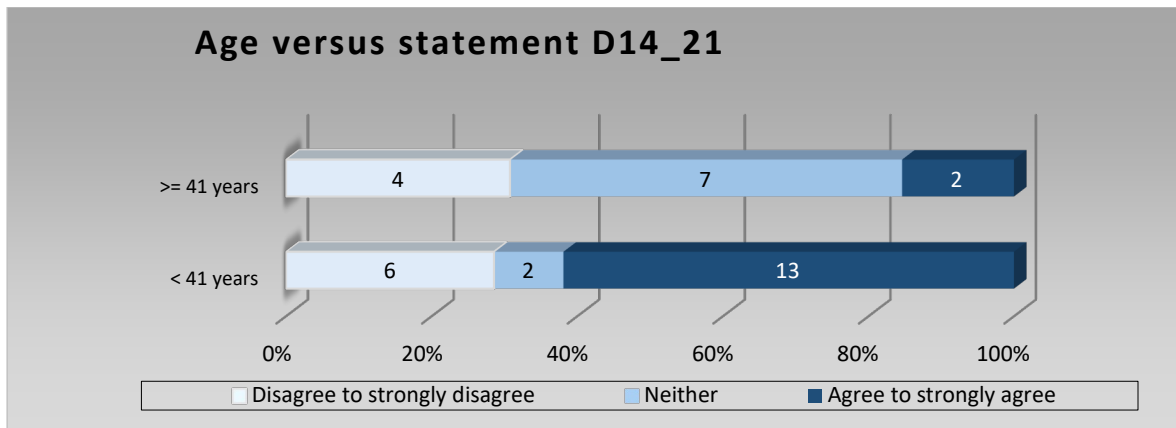


Figure 4.42: Age versus D14_21

A statistically significant difference exists between the age groups concerning the barrier “Shortage of knowledge and skills hinder the business from using ICT” that prevents the business from adopting ICT (p-value=0.0222). There are statistically significantly more respondents with an age equal to or greater than 41 years than respondents with an age less than 41 years who ‘agree’ to ‘strongly agree’ that the barrier “Shortage of knowledge and skills hinder the business from using ICT” prevents the business from adopting ICT (see Figure 4.43).

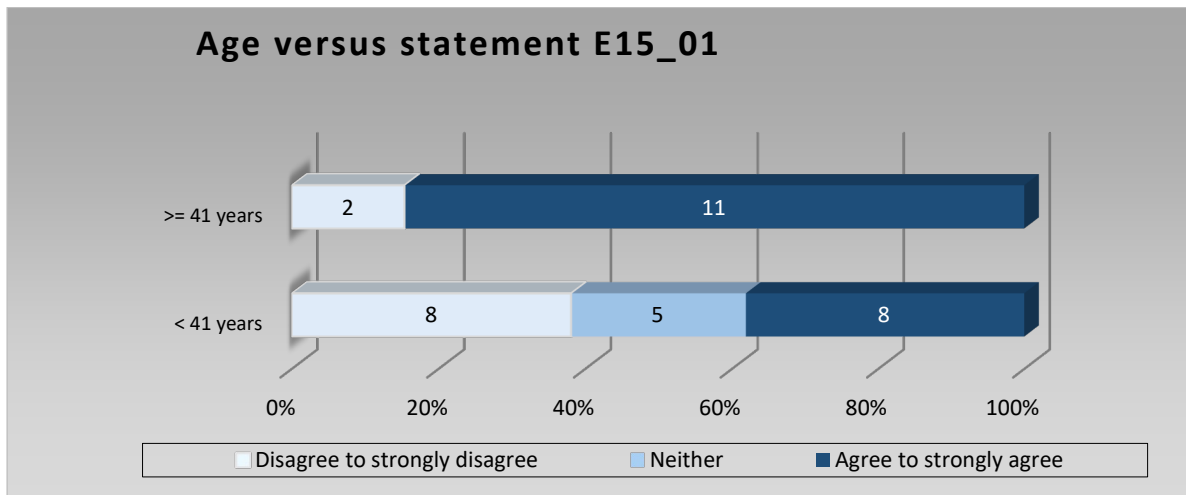


Figure 4.43: Age versus E15_01

A statistically significant difference exists between the age groups concerning the barrier, “Limited access to ICT prevents my business from using ICT”, which prevents the business from adopting ICT (p-value = 0.0152). There are statistically significantly more respondents with an age equal to or greater than 41 years than those with an

age less than 41 years who 'agree' to 'strongly agree' that the barrier, "Limited access to ICT prevents my business from using ICT", prevents the business from adopting ICT (see Figure 4.44).

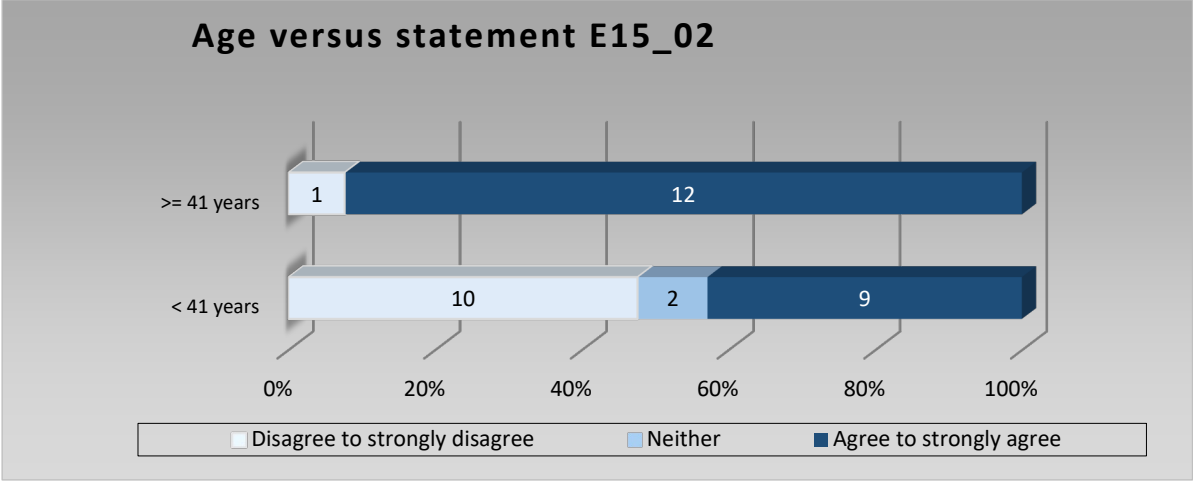


Figure 4.44: Age versus E15_02

A statistically significant difference exists between the age groups concerning the barrier, "Limited or no ICT technical support for businesses in townships discourages them from using ICT in the business", which prevents the business from adopting ICT (p-value=0.0152). There are statistically significantly more respondents with an age equal to or greater than 41 years than those with an age less than 41 years who 'agree' to 'strongly agree' that the barrier "Limited or no ICT technical support for businesses in townships discourages them from using ICT in the business", prevents the business from adopting ICT (see Figure 4.45).

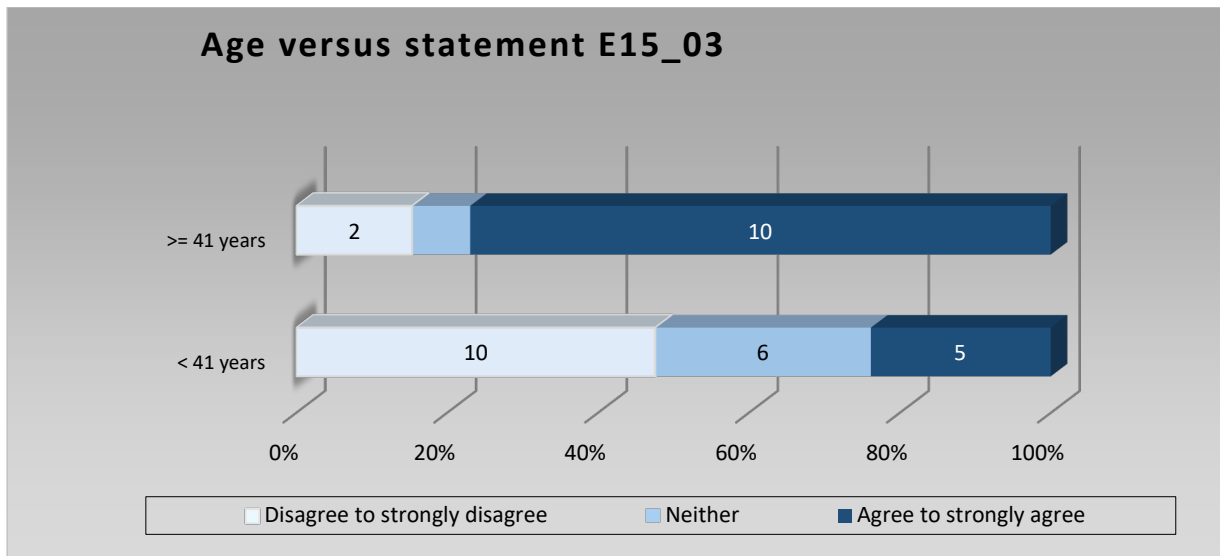


Figure 4.45: Age versus E15_03

The aforesaid statistics are provided in Appendix E.

4.4 DISCUSSIONS AND CONCLUSION

This chapter discussed the analysis of survey data in an attempt to answer the research questions. Prior to the data analysis, the validity and reliability of the data were discussed, followed by Cronbach's Alpha tests to determine the reliability of the data collected using Likert scale questions.

Descriptive statistics were compiled on the demographic information and ICT adoption and usage of the surveyed sample. In addition, relevant results and discussions related to the inferential statistics were provided.

The following analogies can be drawn regarding data collected concerning demographic variables:

- Most respondents are owners or both the owner and manager of their businesses.
- All the respondents but one have decision-making power within their respective businesses.
- Following the business grouping according to the business description, most businesses operate as fast-food businesses, spaza shops, and tuck shops.

- The average time the businesses have existed is 5.32 years, with a standard deviation of 3.5224.
- Following the grouping of full-time employees employed at the business according to enterprise size, the respondents employ one employee, with only one respondent who employs two employees.
- All the businesses have an annual turnover of fewer than 10 million rands, which is in line with the South African Small Enterprise Act (South Africa, 2019) classification guidelines provided by the government.
- The average business experience of all the respondents is 9.09 years, with a standard deviation of 6.1564.
 - Following the highest qualification distribution, most respondents have a formal qualification. A total of 41.2% have Grade12/Senior Certificate/Matric, followed by 47.0% having either a higher education certificate, diploma or degree. Only 11.8% of the respondents have a highest qualification of lower than Grade 12.
- The genders are fairly evenly distributed in this survey, with slightly more males than females.
- The age distribution of the survey respondents is as follows:
 - 2.9% are less than 21 years old,
 - 20.6% are 21-30 years old,
 - 38.2% are 31-40 years old,
 - 26.5% are 41-50 years old, and
 - 11.8% are more than 51 years old.
- The following analogies can be drawn regarding data collected concerning measuring variables:
- The top five 'used' to 'frequently used' ICT tools in these FMCG SMME businesses are:
 - Smartphone,
 - SMS,
 - Social media,
 - Internet (via mobile phone), and
 - E-mail.

- Nearly 50% of the respondents are 'novices' in using ICT tools, nearly 30% are 'advanced beginners', nearly 20% are 'competent users', and 6% are 'proficient users'. Thus, it could be concluded that the majority of respondents from these businesses are not skilled in using ICT tools.
- The most common driving force for adopting ICT in these businesses is the intention to improve work efficiency and quality. The second most common driving force for adopting ICT in these businesses is to support the strategic direction of the business.
- The top five experiences for adopting ICT in the FMCG SMME businesses are:
 - Enhanced the image of the business,
 - Provide better access to information,
 - Increased customer satisfaction,
 - Improved communication within and outside the business and
 - Improved the quality of services provided.
- The top five barriers preventing the adoption of ICT in the FMCG SMME business are:
 - Expensive investment in ICT,
 - Lack of financial resources,
 - Expensive Internet connection,
 - Limited access to ICT prevents the business from using ICT, and
 - Frequent power outages (load shedding).

Due to the small sample size, the statistically significant differences that arise when demographic groups are compared with respect to the measuring variables should only be used as a guideline and should not be inferred to the whole population.

Considering the above, it is evident that township micro-enterprises are formed to alleviate poverty and mostly do not employ more than three people. These micro-enterprises have listed several reasons that impede ICT adoption in their businesses, such as the limitation of funds and infrastructure, among others. However, despite these barriers, they have shown a keen interest in adopting ICT in their businesses.

Chapter 5 revisits the research problem, questions and objectives discussed in Chapter 1, draws conclusions and makes recommendations.

CHAPTER 5: CONCLUSION AND RECOMMENDATIONS

5.1. INTRODUCTION

Critical aspects of this investigation are reviewed in this concluding chapter. The findings are then contextualised in relation to the primary research, conclusions are developed, and suggestions are given.

The main objective of this research was to determine what factors affect ICT adoption in FMCG SMMEs within townships in the Cape Metropole. This was achieved by conducting a survey. Chapter 5 provides a summary of the major research discoveries by discussing 1) the types of ICTs adopted by FMCG SMMEs within Cape Metropole townships, 2) the driving forces of ICT adoption, 3) the perceived value of ICT adoption and 4) the barriers faced in adopting ICT. It is imperative to emphasise that proper ICT resources and infrastructure are necessary for township FMCG SMMEs to adopt and use ICTs successfully. Without these, the adoption of ICTs is impossible.

Chapter 1 outlined the main research problem, research questions, and objectives, which are revisited in Sections 5.1.1 – 5.1.3 below. The literature review on several topics related to South African SMMEs, ICTs, and the adoption and use of ICTs was summarised in Chapter 2 from the viewpoint of a South African FMCG SMME. While Chapter 4 described the data analysis and findings of the data collected from the respondents by means of a survey, Chapter 3 discussed the research design, methodology, and methodologies applied in this research. Delineation criteria had to be followed strictly by the respondents. Descriptive and inferential statistics were mostly used to analyse the pertinent data collected from the respondents.

This chapter (Chapter 5) summarises the research findings and provides suggestions for providing SMME owners and/or managers with useful information about ICTs and how they might embrace and use these technologies to improve ongoing operations, business expansion, and sustainability. Finally, this chapter concludes by suggesting various avenues for further research.

The content layout of Chapter 5 is graphically depicted in Figure 5.1 (see overleaf).

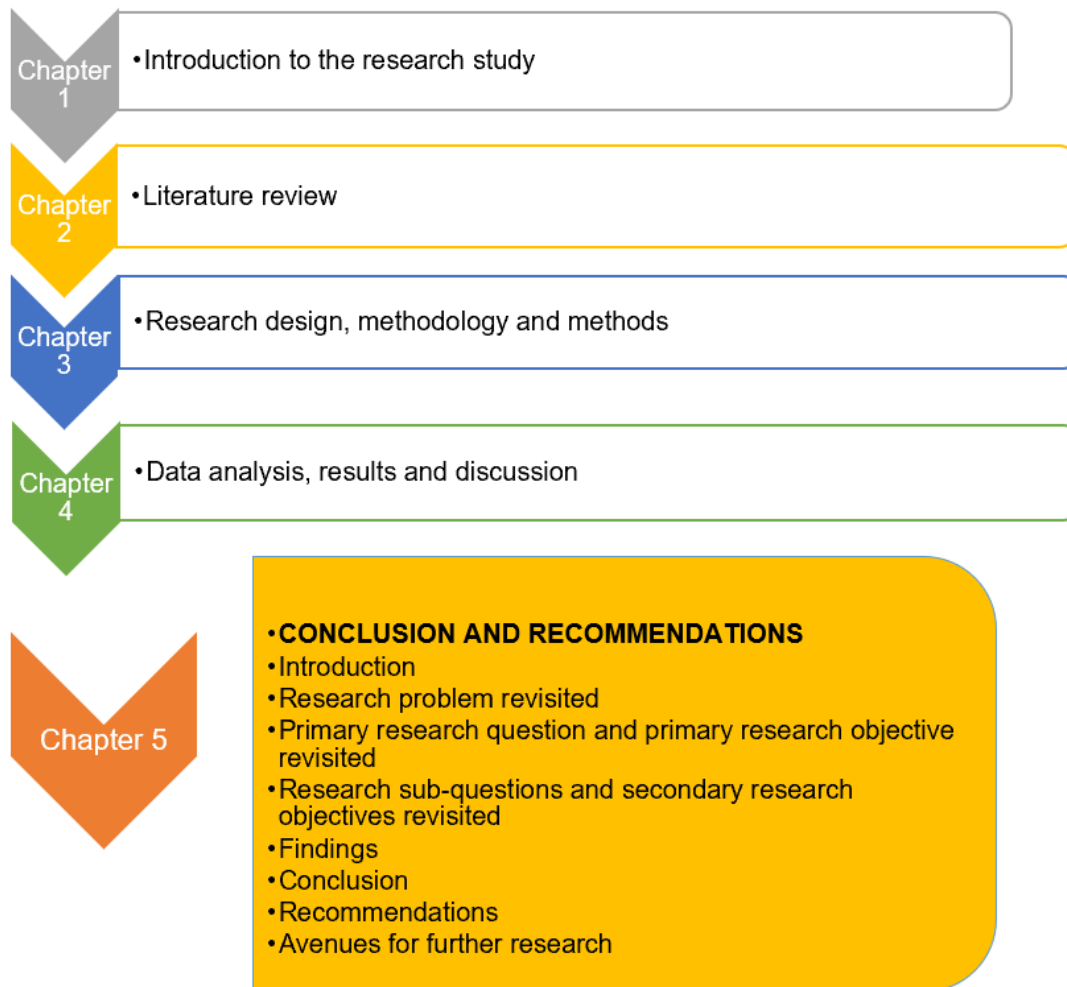


Figure 5.1: Layout of Chapter 5

5.2. RESEARCH PROBLEM REVISITED

Despite SMMEs' significant contribution to the South African economy, their day-to-day business operations, growth, and sustainability are exposed to various factors in adopting ICT. Many South African SMMEs fail and are adversely influenced by their ICT adoption. Sparse literature focuses on the unique nature and challenges affecting ICT adoption within South African SMMEs. Among other factors, a lack of awareness about technology use and computer literacy are reasons SMME owners and/or managers are not adopting ICTs. As a result, the research problem investigated is:

Township FMCG SMMEs are adversely influenced by their limited or non-adoption of ICT.

In Chapter 2, the literature review emphasises that the growth and sustainability of SMMEs are influenced adversely by their adoption of ICT. Based on these results, it

is reasonable to conclude that FMCG SMME owners/managers who participated in this research use some form of ICT in their businesses; however, the adoption thereof was limited.

5.3. PRIMARY RESEARCH QUESTION AND OBJECTIVE REVISITED

To address the research problem, the following primary research question was asked:
What factors influence the adoption of ICT by FMCG SMMEs within townships in the Cape Metropole?

Given the research question, the main goal of this research was to determine the factors that influence ICT adoption in FMCG SMMEs within townships in the Cape Metropole.

Four sub-questions and four secondary research objectives were created to respond to the primary research question and objective (see Section 5.4 below).

5.4. RESEARCH SUB-QUESTIONS AND OBJECTIVES RE-VISITED

As discussed in Chapter 1, four research sub-questions and objectives were developed (see Table 5.1).

Table 5.1: Research sub-questions and objectives revisited

Sub-question	Objectives
What ICTs are adopted in township FMCG SMMEs?	To determine what ICTs are adopted in township FMCG SMMEs.
What is the perceived value of ICT adoption by township FMCG SMMEs?	To determine the perceived value of ICT adoption by township FMCG SMMEs.
What are the driving forces of ICT adoption by township FMCG SMMEs?	To determine the driving forces of ICT adoption by township FMCG SMMEs.
What are the barriers to ICT adoption by township FMCG SMMEs?	To determine the barriers to ICT adoption by township FMCG SMMEs.

5.5. FINDINGS

The analogies below were drawn and grounded on the four research sub-questions posed.

5.5.1 First research sub-question: What ICTs are adopted in township FMCG SMMEs?

Based on the actual survey findings in Chapter 4, it is evident that SMMEs employ ICTs in some capacity, albeit to a lesser extent. Questionnaires were distributed among 55 SMMEs to establish what ICTs are adopted by township FMCG SMMEs in the Cape Metropole. Of the 44 responses received, all acknowledged using ICT in some way to conduct their daily business tasks. There was a clear indication of the types of ICTs that township SMMEs used, with mobile phones/smartphones dominating as the preferred ICT by the majority of the respondents. Results show that 18 types of ICTs are used by township SMMEs, of which smartphones, SMS, Internet use via a mobile phone, e-mail, and social media were the top five adopted and most frequently used ICTs. Participants primarily used mobile ICTs, and while some SMME owners/managers claimed to use fixed telephone lines, mobile phones were perceived as the most dependable ICTs. Fax, VoIP, scanners, copy machines, and landline telephones were the lowest ranked (rarely used and never used) among the ICTs used by FMCG township SMMEs. Interestingly, more than half of the businesses indicated that they use the Internet, Wi-Fi, and a mobile telecommunication network to conduct their daily business. Some businesses may be using the Internet or other software applications/programmes without being aware of how they are doing it. The results also indicated that the type of ICT chosen depended solely on the requirements of a given SMME. There is strong evidence that SMMEs are utilising ICT for their business operations, even though the type of ICT used varies from company to company.

Unsurprisingly, most of the respondents (47%) indicated their level of ICT use in their businesses as novices. None of the respondents viewed themselves as experts and only 5.9% believed they were proficient users. This could explain the low level of ICT adoption in township SMMEs.

5.5.2 Second research sub-question: What is the perceived value of ICT adoption by township FMCG SMMEs?

Businesses of all sizes make decisions that promote sustainability and growth. Respondents believed implementing ICT would be essential for their business's growth and sustainability. Most of the respondents agreed that the use of ICT in their

businesses enhanced or was likely to enhance the image of their businesses. They saw the use of ICT as a must for expanding their enterprises and a way to improve how their operations were carried out. They admitted that they were not using some of the mentioned ICTs because doing so did not make sense from a business standpoint. Other ICTs highlighted and utilised by larger businesses were considered quite complicated for their businesses. According to the respondents, ICT adoption would give them a competitive advantage and alleviate their worries about being left behind in the digital world. This implied that competitive pressure motivated their behaviour and attitude towards the value of and use of ICT. Participants made it abundantly obvious how important ICT adoption is to their firms and how it may help them acquire a competitive edge. Participants spoke of their wish to maintain their businesses and how using ICT will give them some advantage over their market rivals. They thought that ICT would help them expand their firm and remain competitive. Respondents generally said they wanted to adopt ICTs to help them expand and sustain their businesses. Other ICTs perceived to have added value when adopted included those used for marketing and advertising, such as social media.

Additionally, data analysis revealed that SMMEs would like to adopt ICTs to help them manage their consumers. Although they were unable to cite ICTs specifically, they were able to give a detailed explanation of their advantages, such as customer relationship management. Some respondents strongly believed that using ICT tools would positively impact enhancing the image of their businesses, which would generate more revenue for them.

In summary, the perceived value of ICTs shows their ability to influence ICT adoption. The requirement and desire to expand and sustain SMME firms impact how beneficial ICT adoption is viewed to be. The results also showed they are discouraged and afraid of not participating in the global economy because of their old business methods, such as not relying on ICTs for efficiency. The ability of ICTs to support and provide efficiency in their enterprises was clearly understood. This was also made clear by the participants' admission that big businesses were more visible because they have ICT capabilities.

5.5.3 Third research sub-question: What are the driving forces of ICT adoption by township FMCG SMMEs?

Results show that the three most common driving forces of ICT adoption in township FMCG SMMEs include pressure from competitors who use ICT, intentions to improve work efficiency and quality, and incentive and mandatory policies from the South African government. Furthermore, most respondents agreed that ICT adoption also supports the strategic direction of the business and is viewed as a common driving force in adopting ICT in their businesses. Other primary driving forces included increased staff morale, improved quality in the services provided, an increase in the accurateness of stock levels, increased customer satisfaction, improved work effectiveness, and

Respondents concurred that they could use ICTs to support the expansion and sustainability of their businesses. Others said they might employ ICTs to boost productivity and enhance the efficacy and efficiency of corporate operations. Other crucial elements included those that would boost productivity and competitiveness, such as providing better access to information, increasing customer satisfaction, and improving the quality of services offered. This implies that competitive pressure motivates behaviour to use technology. In general, participants indicated that they want to adopt ICTs to help them expand and maintain their businesses.

The inference could be made that most of these SMMEs focused more on providing competitive and quality services to their customers, boosting productivity, and maintaining business sustainability compared to being concerned about how well technology works and the reliability thereof, its ease of use, the acquisition, operation and service cost of ICTs, and the compatibility of these ICTs when integrated with existing technologies in their respective businesses.

5.5.4 Fourth research sub-question: What are the barriers to ICT adoption by township FMCG SMMEs?

The results of the inquiry regarding the barriers to adopting ICT in their businesses show that several owners/managers highlighted ICT training, knowledge, and expertise/skills as the primary barriers to ICT adoption in township FMCG SMMEs. The literature emphasises how crucial ICT expertise is as a driving force behind ICT

adoption. Participants acknowledged that using ICTs that they are unfamiliar with can be quite challenging. Because they are unaware of which ICTs are best or most appropriate for their line of work, the research has shown that they are not employing the other ICTs described in Chapter 4. Additionally, they lack the necessary skills to learn more about ICTs, which may help them run their daily operations more successfully and efficiently. Additionally, they mentioned that just because they adopt some ICTs does not necessarily mean it benefits their businesses. This is primarily because they require particular ICTs to run their businesses well or promote growth and sustainability. The top five barriers listed by FMCG township SMMEs in the Cape Metropole include expensive investments in ICT, the lack of financial resources, expensive Internet connections, limited access to ICT that prevents them from running their businesses optimally, and frequent power outages, mainly because of load shedding.

Furthermore, the adoption of ICT was found to be hindered by poor infrastructure. Participants acknowledged that, although wanting to rely on ICTs for growth and sustainability, there are instances when this can be problematic if ICT is not available. There appeared to be a view that township SMMEs may be disadvantaged regarding ICT access because the township's ICT infrastructure is less developed than that of the cities. Therefore, ICT accessibility and connection could be an issue, especially for township SMMEs that depend on ICTs for growth and a competitive edge. In addition, respondents said that adopting ICTs would be challenging given their financial challenges because they did not have enough funds to buy ICTs. Another opinion was that larger businesses should only employ certain ICTs because they have the resources to adopt and sustain them. Some respondents mentioned that because ICTs are difficult to use, using them can be a barrier to adoption. Six SMMEs with reservations possessed ICTs like laptops and printers that were no longer in use, either because they could not maintain them or were unfamiliar with how to utilise them. Surprisingly, some individuals, though the minority, claimed they did not use all the mobile apps that would benefit them, mainly because they are complicated.

Stemming from the above, it is evident that most participating SMMEs experience various barriers to adopting ICT. Furthermore, the data obtained from the respondents regarding ICT adoption within their businesses and how this could negatively influence

their businesses' day-to-day business operations, growth, and sustainability does not align with the current literature. Therefore, it could be argued that most of these SMMEs should not be able to effectively perform their daily business activities as they are not au fait with adopting and using ICT in a business environment, which could affect the growth and sustainability of their businesses. Thus, the question remains: How can FMCG SMMEs in townships in the Cape Metropole show growth and sustainability despite their limited or non-adoption of ICTs?

5.6 CONCLUSION

This research aimed to determine what factors affect ICT adoption in FMCG SMMEs within townships in the Cape Metropole, focusing on what ICTS are adopted, the perceived value of ICTs, the driving forces of ICT adoption, and the barriers to ICT adoption.

This chapter presented an overview of pertinent literature to give the research problem specified in Chapter 1 an empirical foundation (see Chapter 2). In doing so, this chapter discovered gaps in the reviewed literature about the factors that influence the adoption and usage of ICT, particularly by township SMMEs engaged in the FMCG business and the degree to which these SMMEs employ these technologies (see Chapter 4).

This research showed that the owners and/or managers of township FMCG SMMEs believe that their respective SMMEs were not utilising ICT tools due to primarily requiring expensive investment, frequent power outages, a lack of strategies to adopt ICT, a lack of financial resources, and expensive Internet connections. Most respondents also indicated that the limited access to ICTs prevented them from adopting these technologies for their respective businesses. The findings suggest that while there may be a high level of mobile ICT penetration and a strong belief that it improves business performance, the net impact is not yet significant due to problems like limited access to necessary ICTs and applications and a number of limiting factors, such as the cost of ICTs and the lack of technical support, infrastructure, and skills (see Chapter 4).

However, even though SMMEs are crucial for boosting economic growth in South Africa by creating jobs and reducing poverty, literature claims that these business

entities in South Africa have some of the worst sustainability rates in the world. According to the literature, one of the common factors related to South African SMMEs failure is the limited or non-adoption of ICTs by these businesses. Additionally, studies have shown that the lack of understanding of the benefits of ICTs is one of the main causes of small business failure. Therefore, it could be argued that the growth and sustainability of South African township SMMEs could be adversely affected by their limited or non-adoption of ICT.

The implication is thus for SMMEs to be encouraged, supported, and trained to adopt and adequately use ICTs to ensure the growth and sustainability of their businesses. This, in turn, will set a standard that could encourage business longevity and create opportunities for the country and communities to move towards a more sustainable economy.

5.7 RECOMMENDATIONS

In an attempt to address the above barriers/shortfalls and increase the adoption and usage of ICTs in SMMEs, especially townships SMMEs, the owners and/or managers of these businesses must have a common understanding of what ICT entails and how these technologies could be effectively utilised to improve day-to-day business operations, growth, and sustainability of their respective businesses.

Stemming from the above, several recommendations are proposed in Sections 5.7.1 – 5.7.4.

5.7.1 Lack of awareness about how to use ICTs

High ICT adoption could significantly impact SMMEs' performance and sustainability in the short and long term. Therefore, to ensure a competitive advantage, SMMEs need to receive comprehensive training and coaching on how to use technology in their businesses using the different ICTs available to benefit their businesses.

The South African government is advised to provide adequate infrastructure to assist SMMEs in successfully adopting ICTs and training on ICT adoption to enhance the growth and sustainability of these firms to accomplish the aforementioned.

5.7.2 Lack of computer literacy for not adopting ICTs

The South African government should conduct free monthly training, workshops or seminars through academic institutions and learning institutions to ensure that SMME owners/managers understand what ICTs entail and how they can utilise them to foster business growth. Furthermore, the South African government should encourage SMME decision-makers to adopt ICTs for the long-term sustainability of SMMEs.

5.7.3 Poor infrastructure

The majority of participants mentioned inadequate infrastructure as a deterrent to ICT adoption. Participants said that even though they might desire to depend on ICTs for development and sustainability, they believed it might occasionally become troublesome if ICT is unavailable. Therefore, it is suggested that the South African government should implement proper infrastructure to support SMMEs in successfully embracing ICTs.

5.7.4 ICT adoption barriers

Based on previous literature and the results from this research, it is evident that SMMEs and the South African government need to work together more to mitigate the barriers to the uptake and sustainable use of ICTs in businesses. Furthermore, business owners and/or managers need to ensure employee readiness for the change brought about by ICTs. Infrastructure development would also be pivotal in complementing SMME growth and sustainability. Despite the costs associated with ICT adoption, The significant role of small, medium, and micro enterprises (SMMEs) in the South African economy should be acknowledged.

5.8. FURTHER RESEARCH

The below recommendations serve as possible avenues for future research:

- Research results were based on a sample of 55 FMCG SMMEs located in townships in the Cape Metropole. To ensure a more holistic view of ICT adoption among FMCG township SMMEs and ensure the generalisability of the findings, future research should consider a larger sample size to improve the accuracy of results.

- Future studies could compare ICT adoption and use by SMMEs in the Western Cape townships to that in other provinces in South Africa. Future studies can also compare ICT adoption in South African townships to that of other developing countries.
- This research looked into the adoption of ICTs by FMCG SMMEs. Future studies could look into how the adoption of ICT affects all SMME sectors in South Africa.

With more resources such as time, financial and human capital, broader research can be undertaken as the emerging field of ICT adoption in micro-enterprises requires much more attention in South Africa.

REFERENCES

- Abd Gani, N.I., Rathakrishnan, M. & Krishnasamy, H.N., 2020. A pilot test for establishing validity and reliability of qualitative interview in the blended learning English proficiency course. *J Crit Rev*, 7(5):140-143.
- Abraham, M., 2019. Responsiveness of Consumers on the Marketing Tools of Fast Moving Consumer Goods. *Journal of Information and Computational Science*, 9(12-2019).
- Adhabi, E. & Anozie, C.B., 2017. Literature review for the type of interview in qualitative research. *International Journal of Education*, 9(3):86-97.
- Afolayan, A.O. & de la Harpe, A.C. 2020. The role of evaluation in SMMEs' strategic decision-making on new technology adoption. *Technology Analysis & Strategic Management*, 32(6):697-710.
- Ahinful, G.S., Boakye, J.D. & Osei Bempah, N.D., 2023. Determinants of SMEs' financial performance: evidence from an emerging economy. *Journal of Small Business & Entrepreneurship*, 35(3)362-386.
- Ahmad Tarmizi, H., Kamarulzaman, N.H., Abd Rahman, A. & Atan, R., 2020. Adoption of Internet of Things among Malaysian halal agro-food SMEs and its challenges. *Food Research*, 4(S1), pp.256-265.
- Ajzen, I. 2011. The theory of planned behaviour: Reactions and reflections. *Psychology & Health*, 26(9):1113-1127.
- Akpan, I.J., Udoh, E.A.P. & Adebisi, B., 2022. Small business awareness, adoption of state-of-the-art technologies in emerging and developing markets, and lessons from the COVID-19 pandemic. *Journal of Small Business & Entrepreneurship*, 34(2):123-140.
- Al Busaidi, N.S., Bhuiyan, A.B. & Zulkifli, N., 2019. The critical review on the adoption of ICTs in the small and medium enterprises (SMEs) in the developing countries. *International Journal of Small and Medium Enterprises*, 2(2):33-40.

Alam, K., Ali, M.A., Erdiaw-Kwasie, M., Shahiduzzaman, M., Velayutham, E., Murray, P.A. & Wiesner, R., 2022. Impact of ICTs on Innovation and Performance of Firms: Do Start-ups, Regional Proximity and Skills Matter? *Sustainability*, 14(10):5801.

Alam, S.S., & Noor, M.K.M. 2009. ICT Adoption in Small and Medium Enterprises: An Empirical Evidence of Service Sectors in Malaysia. *International Journal of Business and Management*, 4(2):112.

AlBar, A.M. & Hoque, M.R., 2019. Factors affecting the adoption of information and communication technology in small and medium enterprises: A perspective from rural Saudi Arabia. *Information Technology for Development*, 25(4):715-738.

Al-Emran, M., Mezhyuev, V., & Kamaludin, A. 2020. Technology adoption factors in higher education institutions: A systematic review. *IEEE Access*, 8, 91171-91188.

Alessandrini, M. 2012. Non-positivist approaches to research in the third sector: Empowered policy-making. *Annual meeting of the ISTR 10th International Conference Universita Degli Studi Di Siena, Siena, Italy*.10:1-17.

Ali, A.Y. 2013. Impact of ICT on SMEs: Case Study of Rwanda. Unpublished Bachelor's Degree thesis, Turku University of Applied Sciences.

Ali, N.M., Mat, N.K.N. & Ali, N.M. 2015. The conceptual framework for E-commerce adoption model. *American Journal of Economics*, 5(2):148-154.

Almaree, K.E.M.P., Bowman, A., Berenice, B.L.O.M., Visser, C., Bergoer, D., Fullard, D., Moses, G., Brown, S.L., Bornman, J. & Bruwer, J.P. 2015. The usefulness of cash budgets in micro, very small and small retail enterprises operating in the Cape Metropolis. *Expert Journal of Business and Management*, 3(1):1-12.

AlMuhayfith, S. & Shaiti, H., 2020. The impact of enterprise resource planning on business performance: With the discussion on its relationship with open innovation. *Journal of Open Innovation: Technology, Market, and Complexity*, 6(3):87.

Alvi, A.M. 2016. Manual for selecting sampling techniques in research. University of Karachi, Iqra University, Karachi, Sindh, Pakistan.

Ammenwerth, E., Iller, C. & Mahler, C., 2006. IT-adoption and the interaction of task, technology and individuals: a fit framework and a case study. *BMC Medical Informatics and Decision Making*, 6:1-13.

Anshari, M. & Almunawar, M.N., 2022. Adopting open innovation for SMEs and industrial revolution 4.0. *Journal of Science and Technology Policy Management*, 13(2):405-427.

Antoni, D., Jie, F. & Abareshi, A., 2020. Critical factors in information technology capability for enhancing firm's environmental performance: Case of Indonesian ICT sector. *International Journal of Agile Systems and Management*, 13(2):159-181.

Antonietti, C., Cattaneo, A. & Amenduni, F., 2022. Can teachers' digital competence influence technology acceptance in vocational education? *Computers in Human Behavior*, 132:107266.

Anugwo, I.C. & Shakantu, W.M., 2020. Critical review on SME contractors' capability to achieve economic sustainability beyond their first five years in the South African construction. *Journal of Critical Reviews*, 7(19):1930-1942.

Aranda-Mena, G., Vaz-Serra, P. & Edwards, P., 2022, November. Repertory Grid Methodology to Research Tacit Knowledge in Construction. In IOP Conference Series: Earth and Environmental Science, 1101(9):092015). IOP Publishing.

Asian Development Bank (ADB) (1997), *Microenterprise Development: Not by Credit Alone*, Asian Development Bank. Manila.

Aspers, P. & Corte, U. 2019. What is qualitative in qualitative research? *Qualitative Sociology*, 42(2):139-160.

Assiélou, N.D.G. & Bourgault, M., 2022. Perceived barriers to information and communication technology (ICT) adoption in Ivorian SMEs. *International Journal of Technology, Policy and Management*, 22:97-216.

Atkinson, E., Spillane, J., Bradley, J. & Brooks, T., 2022. Challenges in the adoption of mobile information communication technology (M-ICT) in the construction phase of infrastructure projects in the UK. *International Journal of Building Pathology and Adaptation*, 40(3):327-344.

Attaran, M. & Woods, J., 2019. Cloud computing technology: improving small business performance using the Internet. *Journal of Small Business & Entrepreneurship*, 31(6):495-519.

Attaran, M., 2023. The impact of 5G on the evolution of intelligent automation and industry digitization. *Journal of Ambient Intelligence and Humanized Computing*, 14(5):5977-5993.

Audi, M. & Ali, A. 2019. The advancement in Information and Communication Technologies (ICT) and economic development: a panel analysis. MPRA paper. <https://mpra.ub.uni-muenchen.de/93476/#:~:text=The%20results%20of%20panel%20least%20squares%20reveal%20that,role%20in%20the%20economic%20development%20of%20developing%20countries> [13 December 2021].

Auzzir, Z., Haigh, R. & Amaratunga, D., 2018. Impacts of disaster to SMEs in Malaysia. *Procedia Engineering*, 212:1131-1138.

Awad, A., 2022. Is there a trade-off between ICTs and ecological systems in Africa? Evidence from heterogeneous panel methods robust to cross-sectional dependence. *Environmental Science and Pollution Research*, 29(38):58263-58277.

Ayim, C., Kassahun, A., Addison, C. & Tekinerdogan, B., 2022. Adoption of ICT innovations in the agriculture sector in Africa: a review of the literature. *Agriculture & Food Security*, 11(1):1-16.

Baashar, Y., Alhussian, H., Patel, A., Alkaws, G., Alzahrani, A.I., Alfarraj, O. & Hayder, G., 2020. Customer relationship management systems (CRMS) in the healthcare environment: A systematic literature review. *Computer Standards & Interfaces*, 71:103442.

Bagale, G.S., Vandadi, V.R., Singh, D., Sharma, D.K., Garlapati, D.V.K., Bommiseti, R.K., Gupta, R.K., Setsiawan, R., Subramaniaswamy, V. & Sengan, S., 2021. Small and medium-sized enterprises' contribution in digital technology. *Annals of Operations Research*, pp.1-24.

Baker, J. 2019. The technology–organization–environment framework. In *Information Systems Theory* (pp. 231-245). Springer.

Bakos, J., Siu, M., Orengo, A. & Kasiri, N., 2020. An analysis of environmental sustainability in small & medium-sized enterprises: Patterns and trends. *Business Strategy and the Environment*, 29(3):1285-1296.

Baporikar, N. 2020. Strategy for ICT adoption in SMEs. In *Handbook of Research on Increasing the Competitiveness of SMEs* (pp. 244-259). IGI Global.

Baporikar, N. 2020. Strategy for ICT adoption in SMEs. *Journal of Small Business and Enterprise Development*, 27(2):345-365.

Baumeister, R.F. & Leary, M.R. 1997. Writing narrative literature reviews. *Review of General Psychology*, 1(3):311-320.

Behera, B.C., Moharana, B.R., Muduli, K. & Islam, S.M. eds., 2023. *Smart technologies for improved performance of manufacturing systems and services*. CRC Press.

Behera, R.K., Bala, P.K. & Rana, N.P., 2022. Assessing factors influencing consumers' non-adoption intention: exploring the dark sides of mobile payment. *Information Technology & People*, (ahead-of-print).

Belitski, M., Guenther, C., Kritikos, A.S. & Thurik, R., 2022. Economic effects of the COVID-19 pandemic on entrepreneurship and small businesses. *Small Business Economics*,1-17.

Bellaaj, M., 2021. Why and how do individual entrepreneurs use digital channels in an emerging market? Determinants of use and channel coordination. *International Journal of Emerging Markets*, (ahead-of-print).

Bhorat, H., Asmal, Z., Lilenstein, K. & van der Zee, K. 2018. SMMES in South Africa: Understanding the Constraints on Growth and Performance. *Development Policy Research Unit Working Paper 201802*. DPRU, University of Cape Town.

Bilan, Y. Mishchuk, H., Samoliuk, N. & Grishnova, O. 2019. ICT and economic growth: Links and possibilities of engaging. *Intellectual Economics*, 13(1):93-104.

Bischoff-Mattson, Z., Maree, G., Vogel, C., Lynch, A., Olivier, D. & Terblanche, D., 2020. Shape of a water crisis: Practitioner perspectives on urban water scarcity and 'Day Zero' in South Africa. *Water Policy*, 22(2):193-210.

Bitso, C.M.L. 2011. The information needs and information-seeking patterns of secondary level geography teachers in Lesotho: Implications for information service. Unpublished PhD thesis, University of Pretoria, Pretoria.

Blose, S. & Okeke-Uzodike, O. 2020. Pre-Fourth Industrial Revolution: Challenges for Small, Medium and Micro Enterprises in a Transforming Economy. *Journal of Contemporary Management*, 17(1):67-90.

Boateng, R. 2019. ICT adoption in Ghanaian rural SMMEs. *Journal of African Business*, 20(4):529-548.

Bonell, C., Moore, G., Warren, E. & Moore, L., 2018. Are randomised controlled trials positivist? Reviewing the social science and philosophy literature to assess positivist tendencies of trials of social interventions in public health and health services. *Trials*, 19:1-12.

Bracci, E., Tallaki, M., Ievoli, R. & Diplotti, S., 2022. Knowledge, diffusion and interest in blockchain technology in SMEs. *Journal of Knowledge Management*, 26(5):1386-1407.

Brady, M. Saren, M. & Tzokas, N. 2002. Integrating information technology into marketing practice—the IT reality of contemporary marketing practice. *Journal of Marketing Management*, 18(5-6):555-577.

Bruwer, J.P. & Coetzee, P. 2016. A literature review of the sustainability, the managerial conduct of management and the internal control systems evident in South African small, medium and micro enterprises. *Business Perspectives*, 14(2):201-211.

Bruwer, J.P. & Petersen, A., 2022. The perceptions of South African Small, Medium and Micro Enterprise Management on occupational fraud risk, economic sustainability and key employee characteristics: What are the relationships?

Bruwer, J.P. 2017. The conduciveness of the South African economic environment and small, medium and micro enterprise sustainability. <http://www.zbw.eu/econis-archiv/bitstream/11159/1374/1/1006115846.pdf> [02 October 2021].

Bruwer, J.P. 2020. The sustainability of South African Small Medium and Micro Enterprises (SMMEs) operating in the retail industry amidst the ever-increasing excise taxation on tobacco products, alcohol products and plastic bags. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3559059 [13 November 2021].

Bruwer, J.P., Hattingh, C. & Perold, I., 2020. Probable measures to aid South African Small Medium and Micro Enterprises' sustainability, post-COVID-19: A literature review. *Post-COVID-19: A Literature Review* (June 12, 2020).

Bruwer, J.P., Petersen, A. & Le Roux, S., 2018. Occupational fraud risk, internal control initiatives and the sustainability of Small, Medium and Micro Enterprises in a developing country: A Literature Review. *Acta Universitatis Danubius*, 14(4):567-580.

Bruwer, J-P. 2019. Revised classification criteria for South African SMME sizes. The Forum: Southern African Accounting Association, May 2019.

Bryman, A. and Cramer, D., 2012. *Quantitative data analysis with IBM SPSS 17, 18 & 19: A guide for social scientists*. London: Routledge.

Bvuma, S. & Marnewick, C. 2020a. An information and communication technology adoption framework for small, medium and micro-enterprises operating in townships in South Africa. *SA Journal of Information Management*, 12(1):318.

Bvuma, S. & Marnewick, C., 2020b. Sustainable livelihoods of township small, medium and micro enterprises towards growth and development. *Sustainability*, 12(8):3149.

Bvuma, S. 2016. An ICT adoption framework for township SMMEs. Unpublished Doctoral thesis, University of Johannesburg, Johannesburg, South Africa.

- Cant, M. & Wiid, J., 2016. Internet-Based ICT Usage By South African SMEs: The Barriers Faced By SMEs. *Journal of Applied Business Research*, 32(6):1877-1888.
- Cant, M.C. & Rabie, C. 2018. Township SMME sustainability: a South African Perspective. *Acta Universitatis Danubius. Œconomica*, 14(7):227-228.
- Cardona, M. Kretschmer, T. & Strobel, T. 2013. ICT and productivity: conclusions from the empirical literature. *Information Economics and Policy*, 25(3):109-125.
- Chairoel, L. & Riski, T.R., 2018. Internal and external factors influence ICT adoption: a case of Indonesian SMEs. *Jurnal Manajemen dan Kewirausahaan*, 20(1):38-44.
- Chan, D.W.M.; Olawumi, T.O. & Ho, A.M.L. 2019. Perceived benefits of and barriers to Building Information Modelling (BIM) implementation in construction: The case of Hong Kong. *J. Build. Eng*, 25:100764.
- Chatterjee, S., Chaudhuri, R., Vrontis, D., Thrassou, A. & Ghosh, S.K. 2021. Adoption of artificial intelligence-integrated CRM systems in agile organizations in India. *Technological Forecasting and Social Change*, 168:120783.
- Chatterjee, S., Rana, N., Dwivedi, Y. K., & Baabdullah, A. 2021. Understanding AI adoption in manufacturing and production firms using an integrated TAM-TOE model. *Technological Forecasting and Social Change*, 170, 120880.
- Chatti, W. & Majeed, M.T., 2022. Information communication technology (ICT), smart urbanization, and environmental quality: Evidence from a panel of developing and developed economies. *Journal of Cleaner Production*, 366:132925.
- Chege, S.M. & Wang, D., 2020. Information technology innovation and its impact on job creation by SMEs in developing countries: an analysis of the literature review. *Technology Analysis & Strategic Management*, 32(3):256-271.
- Chimucheka, T. & Mandipaka, F., 2015. Challenges faced by small, medium and micro enterprises in the Nkonkobe Municipality. *International Business & Economics Research Journal (IBER)*, 14(2):309-316.

- Chipeta, M. & Malanga, D.F., 2022. The Impact of mHealth on Supply Chain Management of Medical Supplies in Village Clinics: A Case of Cstock mHealth in Malawi. In *Building Resilient Healthcare Systems With ICTs* (pp. 125-152). IGI Global.
- Chukwuere, J.E., Gorejena, K. & Adom, D., 2019. Towards an indigenous crowdfunding framework: a new guide for entrepreneurship funding in developing countries. *Gender and Behaviour*, 17(1):12742-12755.
- Cloete, E., Courtney, S. & Fintz, J. 2002. Small Businesses' Acceptance and Adoption of e-Commerce in the Western-Cape Province of South Africa. *The Electronic Journal of Information Systems in Developing Countries*, 10(1):1-13.
- Collis, J. & Hussey, R. 2013. *Business research: A practical guide for undergraduate and postgraduate students*. <http://journals.univ-danubius.ro/index.php/oeconomica/article/view/5085> [13 November 2021].
- Cooper, D.R. & Emory, C.W. 1995. *Business Research Methods* (5th ed.). Homewood, Illinois: RD Irwin.
- Creswell, J.W. & Poth, C.N. 2016. *Qualitative inquiry and research design: Choosing among five approaches*. London: Sage Publications.
- Cuevas-Vargas, H., Cortés-Palacios, H.A., Vargas-Aguirre, G.A. & Estrada, S. 2020. How Capital Structure Boosts ICTs Adoption in Mexican and Colombian Small Firms: A PLS-SEM Multigroup Analysis. In *International Conference on Software Process Improvement* (pp. 56-70). Springer, Cham.
- Cypress, B., 2018. Qualitative research methods: A phenomenological focus. *Dimensions of Critical Care Nursing*, 37(6):302-309.
- Dagpin, J.C., Escaño, A.R., Mendoza, X.L.D. & Vertuso, J.C., 2022. Microenterprises Shutdown Amidst COVID-19 Pandemic: A Focus on Determinants and Exit Strategies. *Asia Pacific Journal of Academic Research in Business Administration*, 8(1):22-28.
- Dana, L.P., Salamzadeh, A., Mortazavi, S., Hadizadeh, M. & Zolfaghari, M., 2022. Strategic futures studies and entrepreneurial resiliency: a focus on digital technology trends and emerging markets. *Tec Empresarial*, 16(1):87-100.

Das, S., Kundu, A. & Bhattacharya, A., 2020. Technology adaptation and survival of SMEs: a longitudinal study of developing countries. *Technology Innovation Management Review*, 10(6).

Dattalo, P. 2008. *Determining sample size: Balancing power, precision, and practicality*. London: Oxford University Press.

Davies, T.A. 2001. Enhancing competitiveness in the manufacturing sector: key opportunities provided by inter firm clustering. *Competitiveness Review: An International Business Journal*, 11(2):4-15.

Davis, F.D. 1989. Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, 319-340.

Davis, N. 2016. What Is the Fourth Industrial Revolution? World Economic Forum: Geneva, Switzerland, p. 11. <https://www.weforum.org/agenda/2016/01/what-is-the-fourth-industrial-revolution/> [12 May 2022].

De Jongh, E., De Jongh, D., De Jongh, R. & Van Vuuren, G. 2013. A review of operational risk in banks and its role in the financial crisis. *South African Journal of Economic and Management Sciences*, 16(4):364-382.

De Vos, A.S. 2002. *Research at grass roots: For the social sciences and human services professions*. Pretoria: van Schaik.

Del Giudice, M., Khan, Z., De Silva, M., Scuotto, V., Caputo, F. & Carayannis, E., 2017. The micro-level actions undertaken by owner-managers in improving the sustainability practices of cultural and creative small and medium enterprises: A United Kingdom–Italy comparison. *Journal of Organizational Behavior*, 38(9):1396-1414.

Deloitte Global Business Coalition For Education. 2018. Preparing Tomorrow's Workforce for the Fourth Industrial Revolution; Deloitte: London, UK, pp. 1–58. <https://www.voced.edu.au/content/ngv> [22 May 2022].

Department of Trade & Industry (DTI). 2018. Annual report 2017/2018. Pretoria: DTI. https://www.thedti.gov.za/parliament/2017/State_Manufacturing2017.pdf [21 June 2019].

DePaula, N., 2023. Political ideology and information technology in government online communication. *Government Information Quarterly*, 40(1):101747.

Dimitrovski, D., Leković, M. & Đurađević, M., 2022. The issue of methodological rigour within the data collection process in tourism and sports studies investigating the economic impact of sporting events. *Current Issues in Tourism*, pp.1-16.

Dladla, S.C. 2016. *Factors influencing operational performance for SMMEs in the Textile and Clothing manufacturing sector in the eThekweni district*. Unpublished Doctoral thesis, Durban University of Technology, Durban, South Africa.

Dlamini, S.L., 2020. Perceived barriers to long-term survival of start-up small, medium and micro enterprises in the ICT industry: a case of Vhembe District Municipality (Doctoral dissertation).

Donga, G., Ngirande, H. & Chinyakata, R., 2021. Business as Unusual: Carving Out the South African Small, Medium and Micro-Sized Enterprises' Path for Navigating Past COVID-19 Pandemic. *Himalayan Journals Economics and Business Management*, 2(6):48-56.

Dos Santos, J. & Duffett, R., 2021. Exploring social media usage as a communication channel among independent food retailer SMEs in South Africa. *Small Business International Review*, 5(2):e392.

Droomer, M. & Bekker, J., 2020. Using machine learning to predict the next purchase date for an individual retail customer. *South African Journal of Industrial Engineering*, 31(3):69-82.

du Plessis, H. & Marnewick, A., 2017. A roadmap for smart city services to address challenges faced by small businesses in South Africa. *South African Journal of Economic and Management Sciences*, 20(1):1-18.

Dutta, P., Choi, T.M., Somani, S. & Butala, R., 2020. Blockchain technology in supply chain operations: Applications, challenges and research opportunities. Transportation Research Part E. *Logistics and Transportation Review*, 142:102067.

Dyar, K.L., 2022, January. Qualitative inquiry in nursing: Creating rigor. *Nursing Forum*, 57(1):187-200).

Dyerson, R., Harindranath, G. & Barnes, D. 2009. National survey of SMEs' use of IT in four sectors. *Electronic Journal of Information Systems Evaluation*, 12(1): 39-50.

Dzansi, D.Y. & Amedzo, K. 2014. Integrating ICT into rural South African schools: Possible solutions for challenges. *International Journal of Educational Sciences*, 6(2):341-348.

Eccles, R. Ioannou, I. & Serafeim, G. 2012. Is sustainability now the key to corporate success. *The Guardian* (6th Jan. 2012).

Effiom, L. & Edet, S.E., 2018. Success of small and medium enterprises in Nigeria: Do environmental factors matter. *Journal of Economics and Sustainable Development*, 9(4):117-127.

El Bilali, H. & Allahyari, M.S. 2018. Transition towards sustainability in agriculture and food systems: Role of information and communication technologies. *Information Processing in Agriculture*, 5(4):456-464.

El Khatib, M.M., Abidi, N., Al-Nakeeb, A., Alshurideh, M. & Ahmed, G., 2023. Dubai Smart City as a Knowledge Based Economy. In *The Effect of Information Technology on Business and Marketing Intelligence Systems* (pp. 1657-1672). Cham: Springer International Publishing.

El-Haddadeh, R., 2020. Digital innovation dynamics influence on organisational adoption: the case of cloud computing services. *Information Systems Frontiers*, 22(4):985-999.

Enholm, I.M., Papagiannidis, E., Mikalef, P. & Krogstie, J., 2022. Artificial intelligence and business value: A literature review. *Information Systems Frontiers*, 24(5):1709-1734.

Eyisi, D. 2016. The usefulness of qualitative and quantitative approaches and methods in researching problem-solving ability in science education curriculum. *Journal of Education and Practice*, 7(15): 91-100.

Farhadi M., Ismail R. & Fooladi M. 2012. Information and Communication Technology Use and Economic Growth. *PLoS ONE*, 7(11):e48903.

Faturoti, B., 2022. Online learning during COVID19 and beyond: a human right based approach to internet access in Africa. *International Review of Law, Computers & Technology*, 36(1):68-90.

Fernald, J., Inklaar, R. & Ruzic, D., 2023. The Productivity Slowdown in Advanced Economies: Common Shocks or Common Trends? Federal Reserve Bank of San Francisco Working Paper Series (2023-07).

Fetters, M.D. & Molina-Azorin, J.F. 2017. The Journal of Mixed Methods Research starts a new decade: The mixed methods research integration trilogy and its dimensions. *Journal of Mixed Methods Research*, 11(3):291-307.

Fieldsend, A.F. & Nagy, J. 2006. Constraints on rural entrepreneurship in Eastern Hungary. *Journal of Central European Agriculture*, 7(3):529-532.

Fosu, F., Boateng, S. & Bediako, A. 2020. Social media use in rural SMMEs. *Journal of Small Business and Enterprise Development*, 27(3):347-365.

França, R.P., Iano, Y., Monteiro, A.C.B. & Arthur, R. 2020. Improvement of the transmission of information for ICT techniques through CBEDE methodology. In *Utilizing educational data mining techniques for improved learning: emerging research and opportunities* (pp. 13-34). IGI Global.

Fu, S., Zheng, X. & Wong, I.A., 2022. The perils of hotel technology: The robot usage resistance model. *International Journal of Hospitality Management*, 102:103174.

Fulantelli, G. & Allegra, M. 2003. Small company attitude towards ICT based solutions: some key-elements to improve it. *Journal of Educational Technology & Society*, 6(1):45-49.

Gallivan, M.J. 2001. Organizational adoption and assimilation of complex technological innovations: development and application of a new framework. *ACM SIGMIS Database: the DATABASE for Advances in Information Systems*, 32(3):51-85.

García, J. & Martínez, E. 2022. E-commerce in Spanish SMMEs. *Journal of Business Research*, 140:23-35.

Gbandi, E.C. & Amissah, G. 2014. Financing options for small and medium enterprises (SMEs) in Nigeria. *European Scientific Journal January*.

Ghazali, N.H.M. 2016. A Reliability and Validity of an Instrument to Evaluate the School-Based Assessment System: A Pilot Study. *International Journal of Evaluation and Research in Education*, 5(2):148-157.

Gherghina, Ş.C., Botezatu, M.A., Hosszu, A. & Simionescu, L.N., 2020. Small and medium-sized enterprises (SMEs): The engine of economic growth through investments and innovation. *Sustainability*, 12(1):347.

Ghobakhloo, M. & Iranmanesh, M., 2021. Digital transformation success under Industry 4.0: A strategic guideline for manufacturing SMEs. *Journal of Manufacturing Technology Management*, 32(8):533-1556.

Ghobakhloo, M. Tang. SH, Sabouri, MS, & Zulkifli, N. 2012. Strategies for successful information technology adoption in small and medium-sized enterprises. <https://www.mdpi.com/2078-2489/3/1/36> [13 November 2021].

Giddy, J.K., Idahosa, L.O. & Rogerson, C.M., 2020. Leveraging state-owned nature-based assets for transformation and SMME development: Pilanesberg National Park, South Africa. *New directions in South African tourism geographies*, pp.299-316.

Given, L.M. 2008. *The Sage encyclopedia of qualitative research methods*. Thousand Oaks, CA: Sage Publications.

Goertzen, M.J. 2017. Introduction to quantitative research and data. *Library Technology Reports*, 53(4):12-18.

Gregory, E., 2020. Methodological challenges for the qualitative researcher: The use of a conceptual framework within a qualitative case study. *London Review of Education*, 18(1):126-141.

Gupta, D. 2018. FMCG Case Study. In *Applied Analytics through Case Studies Using SAS and R* (pp. 345-396). Berkeley, CA: Apress.

Gupta, M. & Kumar, M. 2018. Impact of ICT usage on productivity of unorganised manufacturing enterprises in India. *The Indian Journal of Labour Economics*, 61(2):411-425.

Gupta, S., Ghardallou, W., Pandey, D.K. & Sahu, G.P., 2022. Artificial intelligence adoption in the insurance industry: Evidence using the technology–organization–environment framework. *Research in International Business and Finance*, 63:101757.

Halpern, E. & Leite, L.C. 2015. The role of the researcher when using the socio-anthropological method to understand the phenomenon of alcoholism. *Open Journal of Social Sciences*, 3(5):76.

Hameed, H., 2020. Quantitative and qualitative research methods: Considerations and issues in qualitative research.

Hazbo, S. Arnela, C. & Chun-yan, H. 2008. ICT adoption model of Chinese SMEs. *International Journal of Business Research*, 44(2008):161-165.

Heale, R. & Twycross, A. 2015. Validity and reliability in quantitative studies. *Evidence-based nursing*, 18(3):66-67.

Hennink, M. Hutter, I. & Bailey, A. 2020. *Qualitative research methods*. London: Sage Publications.

Henriksen, M.G., Englander, M. & Nordgaard, J., 2022. Methods of data collection in psychopathology: the role of semi-structured, phenomenological interviews. *Phenomenology and the Cognitive Sciences*, 21(1):9-30.

Herath, T.C., Herath, H.S. & Cullum, D., 2022. An Information Security Performance Measurement Tool for Senior Managers: Balanced Scorecard Integration for Security Governance and Control Frameworks. *Information Systems Frontiers*, 1-41.

Herselman, M.E. 2003. ICT in rural areas in South Africa: various case studies. *Informing Science Proceedings*, pp.945-955.
http://informing-science.org/proceedings/IS_2003Proceedings/docs/120Herse.pdf
[Accessed 20 September 2019].

Hiteva, R. & Foxon, T.J., 2021. Beware the value gap: Creating value for users and for the system through innovation in digital energy services business models. *Technological Forecasting and Social Change*, 166:120525.

Hong, Q.N., Fàbregues, S., Bartlett, G., Boardman, F., Cargo, M., Dagenais, P., Gagnon, M.P., Griffiths, F., Nicolau, B., O’Cathain, A. & Rousseau, M.C., 2018. The Mixed Methods Appraisal Tool (MMAT) version 2018 for information professionals and researchers. *Education for information*, 34(4):285-291.

Hong, X., Zhang, M. & Liu, Q., 2021. Preschool teachers’ technology acceptance during the COVID-19: An adapted technology acceptance model. *Frontiers in Psychology*, 12:691492.

Hörisch, J. & Johnson, M.P. & Schaltegger, S. 2015. Implementation of Sustainability Management and Company Size: A Knowledge-Based View. *Business Strategy and the Environment*, 24(8):765-779.

Hossain, M. A., & Quaddus, M. 2020. Investigating the factors influencing the adoption of enterprise resource planning (ERP) in the context of Bangladesh: An approach of TOE framework. *International Journal of Information Systems and Project Management*, 8(1):25-40.

Housgard, L., Pytlik, A. & Tzvetkova, P. 2010. How packaging attributes affect purchase decisions: an exploratory study of modern consumers. Unpublished Master’s thesis, Lund University, Sweden.

Huang, Y., Haseeb, M., Usman, M. & Ozturk, I., 2022. Dynamic association between ICT, renewable energy, economic complexity and ecological footprint: is there any difference between E-7 (developing) and G-7 (developed) countries? *Technology in Society*, 68:101853.

Huisamen, A. & Weyers, M. 2014. Do social workers really make a difference? Measuring client satisfaction in an occupational setting. *Social Work*, 50(1):1-18.

Hussain, A., Akbar, M., Shahzad, A., Poulouva, P., Akbar, A. & Hassan, R., 2022. E-commerce and SME performance: The moderating influence of entrepreneurial competencies. *Administrative Sciences*, 12(1):13.

Ikediashi, D.I. & Ogwueleka, A.C. 2016. Assessing the use of ICT systems and their impact on construction project performance in the Nigerian construction industry. *Journal of Engineering, Design and Technology*, 14(2):252-276.

International Monetary Fund. 2016. Global Competitive Index Report, 2012 -2016. <https://www.weforum.org/reports> [13 November 2021].

Investorwords. 2015. Non-durable good. http://www.investorwords.com/6597/non_durable_good.html [9 September 2021].

IOL, 2023. SMMEs had a tough 2023 fighting off many challenges but can look ahead on a positive note for the new year. Available at: www.iol.co.za [Accessed 19 June 2024].

Islam, M.A. & Aldaihani, F.M.F., 2022. Justification for adopting qualitative research method, research approaches, sampling strategy, sample size, interview method, saturation, and data analysis. *Journal of International Business and Management*, 5(1):1-11.

ITU. 2016. ITU releases 2016 ICT figures [Online]. International Communications Union. Available: <https://www.itu.int/en/mediacentre/Pages/2016-PR30.aspx> [Accessed 17/05/2023]

ITU. 2017. *Measuring the Information Society Report: ICT Country profiles*. Geneva Switzerland: International Telecommunication Union.

Jack Jr, C.R., Bennett, D.A., Blennow, K., Carrillo, M.C., Dunn, B., Haeberlein, S.B., Holtzman, D.M., Jagust, W., Jessen, F., Karlawish, J. & Liu, E., 2018. NIA-AA research framework: toward a biological definition of Alzheimer's disease. *Alzheimer's & Dementia*, 14(4), pp.535-562.

Jahanger, A., Usman, M., Murshed, M., Mahmood, H. & Balsalobre-Lorente, D., 2022. The linkages between natural resources, human capital, globalization, economic growth, financial development, and ecological footprint: The moderating role of technological innovations. *Resources Policy*, 76:102569.

Jakovljevic, M., Lamnisos, D., Westerman, R., Chattu, V.K. & Cerda, A., 2022. Future health spending forecast in leading emerging BRICS markets in 2030: health policy implications. *Health Research Policy and Systems*, 20(1):23.

Jayachandran, S., 2021. Microentrepreneurship in developing countries. Handbook of Labor, *Human Resources and Population Economics*, 1-31.

Jere, J.N. & Ngidi, N., 2020. A technology, organisation and environment framework analysis of information and communication technology adoption by small and medium enterprises in Pietermaritzburg. *South African Journal of Information Management*, 22(1):1-9.

Jiang, R., Wu, C., Lei, X., Shemery, A., Hampson, K.D. & Wu, P., 2022. Government efforts and roadmaps for building information modeling implementation: Lessons from Singapore, the UK and the US. Engineering, *Construction and Architectural Management*, 29(2):782-818.

Jili, N.N., Masuku, M.M. & Selepe, B.M. 2017. SMMEs promoting local economic development (LED) in Umlalazi Local Municipality, KwaZulu-Natal. *African Journal of Hospitality, Tourism and Leisure*, 6(1):1-10.

Johnson, M. & Lee, S. 2020. ICT adoption in North American SMMEs. *International Journal of Information Management*, 52:102094.

Johnston, A., Matechou, E. & Dennis, E.B., 2023. Outstanding challenges and future directions for biodiversity monitoring using citizen science data. *Methods in Ecology and Evolution*, 14(1):03-116.

Jonah, C.M.P. & May, J.D. 2019. Evidence of the existence of socioeconomic-related inequality South African diets: A quantitative analysis of the 2017 General Household Survey. *World Nutr.*, 10, 27-42.

Junus, K., Santoso, H.B. & Ahmad, M., 2022. Experiencing the community of inquiry framework using asynchronous online role-playing in computer-aided instruction class. *Education and Information Technologies*, 27(2):2283-2309.

Kabue, L.W., Kilika, J.M. & Waithaka, P.M., 2023. The moderating role of environmental munificence in the relationship between financial resources and the performance of deposit-taking savings and credit co-operative societies in Kenya. *International Academic Journal of Human Resource and Business Administration*, 4(2):442-464.

Kademete, E. 2020. A 4IR framework for ICT evaluation: a case from South African SMEs. Unpublished Doctoral thesis, University of South Africa, South Africa.

Kamau, H.W. & Kyalo, D.J.K., 2022. Integration of Management Information Systems and Performance of Small and Medium Enterprises in Embu County. *East African Scholars Multidisciplinary Bulletin*, 5(11):233-240.

Kamau, H.W., 2022. Management Information System Integration And Performance Of Small And Medium Enterprises In Embu County, Kenya (Doctoral Dissertation, Kenyatta University).

Kamutuezu, E.U., Winschiers-Theophilus, H. & Peters, A., 2021. An exploration of factors influencing the adoption of ICT enabled entrepreneurship applications in Namibian rural communities. arXiv preprint arXiv:2108.09789.

Kano, K., Choi, L.K. & Subhan Riza, B., 2022. Implications of digital marketing strategy the competitive advantages of small businesses in Indonesia. *Startupreneur Bisnis Digital (SABDA Journal)*, 1(1):44-62.

Kapurubandara, M. & Lawson, R. 2006. Barriers to Adopting ICT and e-commerce with SMEs in developing countries: an Exploratory study in Sri Lanka. *University of Western Sydney, Australia*, 82(1):2005-2016.

Kaware, S.S. & Sain, S.K. 2015. ICT application in education: an overview. *International Journal of Multidisciplinary Approach & Studies*, 2(1):25-32.

Kenton, W. Fast-Moving Consumer Goods (FMCG) Article. <https://www.investopedia.com/terms/f/fastmoving-consumer-goods-fmcg.asp> [3 March 2022].

Khalil, A., Abdelli, M.E.A. & Mogaji, E., 2022. Do Digital Technologies Influence the Relationship between the COVID-19 Crisis and SMEs' Resilience in Developing Countries? *Journal of Open Innovation: Technology, Market, and Complexity*, 8(2):100.

Khan, N., Ray, R.L., Kassem, H.S., Khan, F.U., Ihtisham, M. & Zhang, S., 2022. Does the Adoption of Mobile Internet Technology Promote Wheat Productivity? Evidence from Rural Farmers. *Sustainability*, 14(13):7614.

Khrais, L.T. & Alghamdi, A.M., 2022. Factors That Affect Digital Innovation Sustainability among SMEs in the Middle East Region. *Sustainability*, 14(14):8585.

Kim, J., Park, J.C. & Komarek, T., 2021. The impact of Mobile ICT on national productivity in developed and developing countries. *Information & Management*, 58(3):103442.

Koonin, M. 2014. Chapter 17: Reliability and Validity. In F. Du Plooy-Cilliers, C. Danis, and R. Bezuidenhout, 2014. *Research Matters*. Cape Town: Juta.

Kowal, J. & Roztocki, N. 2013. Information and communication technology management for global competitiveness and economic growth in emerging economies. *The Electronic Journal of Information Systems in Developing Countries*, 57(1):1-12.

Kozinets, R.V., 2023. Immersive netnography: a novel method for service experience research in virtual reality, augmented reality and metaverse contexts. *Journal of Service Management*, 34(1):100-125.

Kuckertz, A., Brändle, L., Gaudig, A., Hinderer, S., Reyes, C.A.M., Prochotta, A., Steinbrink, K.M. and Berger, E.S., 2020. Startups in times of crisis—A rapid response to the COVID-19 pandemic. *Journal of Business Venturing Insights*, 13:e00169.

Kumar, A., Singh, R. & Gupta, H. 2022. ICT adoption during COVID-19 in Indian SMMEs. *Technology in Society*, 68:101820.

Kumar, A., Srivastava, S.K. & Singh, S., 2022. How blockchain technology can be a sustainable infrastructure for the agrifood supply chain in developing countries. *Journal of Global Operations and Strategic Sourcing*.

- Kumar, R., Sindhwani, R. & Singh, P.L., 2022. IIoT implementation challenges: analysis and mitigation by blockchain. *Journal of Global Operations and Strategic Sourcing*, 15(3):363-379.
- Kumar, V., Verma, P., Mittal, A., Tuesta Panduro, J.A., Singh, S., Paliwal, M. & Sharma, N.K., 2023. Adoption of ICTs as an emergent business strategy during and following COVID-19 crisis: evidence from Indian MSMEs. Benchmarking: *An International Journal*, 30(6):1850-1883.
- Kusumaningtyas, N. & Suwanto, D.H., 2015. ICT adoption, skill and use differences among small and medium enterprises managers based on demographic factors. *Procedia-Social and Behavioral Sciences*, 169:296-302.
- Lamb, B., Kunene, L.N. & Dyili, N.F., 2019. Lessons from foreign owned spaza shops in South African townships. *Journal of Reviews on Global Economics*, 8:1351-1362.
- Lang'at, C.K. 2016. Influence Of Information Communication Technology On Management Of Trading Businesses In Ainamoi Sub-County, Kericho County, Kenya. *Unpublished Doctoral dissertation, University of Nairobi, Kenya.*
- Langley, D.J., van Doorn, J., Ng, I.C., Stieglitz, S., Lazovik, A. & Boonstra, A., 2021. The Internet of Everything: Smart things and their impact on business models. *Journal of Business Research*, 122:853-863.
- Leboea, S.T. 2017. The factors influencing SME failure in South Africa. *Unpublished Master's thesis, University of Cape Town, Cape Town, South Africa.*
- Lee, J.Y., 2022. A qualitative study of latent reasons for internet non-and limited user. *Communication Research and Practice*, 8(4):364-382.
- Lee, V. H., Hew, T. S., Leong, L. Y., & Ooi, K. B. 2019. A global perspective of mobile commerce adoption: A meta-analysis approach. *International Journal of Information Management*, 45:117-128.
- Leedy, P.D. & Ormrod, J.E. 2001. *Practical Research: Planning and Design*. Prentice Hall: Upper Saddle River.

Lekhanya, L.M. 2016. Determinants of survival and growth of small and medium enterprises in rural KwaZulu–Natal. *Unpublished PhD thesis, University of the Western Cape, Cape Town.*

Lekhanya, L.M. 2016a. Business characteristics of small and medium enterprises in rural areas: a case study on the southern region of KwaZulu-Natal province of South Africa. *Problems and Perspectives in Management*, 14(3):108.

Lekhanya, L.M. 2016b. Determinants of survival and growth of small and medium enterprises in rural KwaZulu–Natal. *Unpublished PhD thesis, University of the Western Cape, Cape Town.*

Lekhanya, L.M. Olajumoke, N.G. & Nimara, D. 2017. Exploring fast-moving consumer goods (FMCG) small, medium and micro enterprises manufacturers' need for innovation to achieve growth.

https://www.researchgate.net/publication/316321047_Exploring_fast_moving_consumer_goods_FMCG_small_medium_and_micro_enterprises_manufacturers'_need_for_innovation_to_achieve_growth [9 September 2021].

Lemon, A., 2021. The apartheid city. In *South African Urban Change Three Decades After Apartheid: Homes Still Apart?:1-16*. Cham: *Springer International Publishing*.

Leonardi, P. 2020. You're going digital-now what? *MIT Sloan Management Review*, 61(2):28-35.

Lesejane, L.A., 2021. An assessment of tax compliance costs among Small Medium and Micro Enterprise in South Africa Doctoral dissertation, *North-West University South Africa*.

Leszkiewicz, A., Hormann, T. & Krafft, M., 2022. Smart business and the social value of AI. In *Smart Industry–Better Management (Vol. 28:19-34)*. *Emerald Publishing Limited*.

Li, W., Feng, T., Timmermans, H.J. & Zhang, M., 2020. The public's acceptance of and intention to use ICTs when participating in urban planning processes. *Journal of Urban Technology*, 27(3):55-73.

- Liljevern, J. & Karlsson, E. 2017. ICT Investment and the Effect on Economic Growth: A Comparative Study across Four Income Groups. *Unpublished Master's thesis. Jönköping University, Sweden.*
- Lim, C., Lee, H. & Lee, S. 2020. ICT adoption in Malaysian SMMEs. *Journal of Business and Industrial Marketing*, 35(8):1299-1312.
- Lim, W.M. & Ting, D.H. 2012. *Research methodology: a toolkit of sampling and data analysis techniques for quantitative research.* GRIN Verlag.
- Lin, H.F., 2022. IT resources and quality attributes: The impact on electronic green supply chain management implementation and performance. *Technology in Society*, 68:101833.
- Logeshwaran, J., 2022. The control and communication management for ultra dense cloud system using fast Fourier algorithm. *ICTACT Journal on Data Science and Machine Learning*, 3(2):281-284.
- Lukács, E. 2005. The economic role of SMEs in world economy, especially in Europe. *European Integration Studies*, 4(1):3-12.
- Lukacs, P.M. & Burnham, K.P. 2005. Review of capture–recapture methods applicable to noninvasive genetic sampling. *Molecular Ecology*, 14(13):3909-3919.
- Lutfi, A., Alshira'h, A.F., Alshirah, M.H., Al-Okaily, M., Alqudah, H., Saad, M., Ibrahim, N. & Abdelmaksoud, O., 2022. Antecedents and impacts of enterprise resource planning system Adoption among Jordanian SMEs. *Sustainability*, 14(6):3508.
- Lutfi, A., Alsyouf, A., Almaiah, M.A., Alrawad, M., Abdo, A.A.K., Al-Khasawneh, A.L., Ibrahim, N. & Saad, M., 2022. Factors influencing the adoption of big data analytics in the digital transformation era: case study of Jordanian SMEs. *Sustainability*, 14(3):1802.
- Maduku, D. K., Mpinganjira, M. & Duh, H. 2016. Understanding mobile marketing adoption intention by South African SMEs: A multi-perspective framework. *International Journal of Information and Management*, 36(5):711-723.

Magoro, A.M., Mtileni, B., Hadebe, K. & Zwane, A., 2022. Assessment of Genetic Diversity and Conservation in South African Indigenous Goat Ecotypes: A Review. *Animals*, 12(23):3353.

Mahapatra, M. & Krishnan, S., 2017. Adoption of open source ERP in small and medium-sized enterprises. *PACIS 2017 Proceedings*:171. <https://aisel.aisnet.org/pacis2017/171> [9 September 2021].

Makaleng, M.S.M. & Hove-Sibanda, P., 2022. Reverse Logistics Strategies and Their Effect on the Competitiveness of Fast-Moving Consumer Goods Firms in South Africa. *Logistics*, 6(3):56.

Maksimov, V., Wang, S.L. & Luo, Y. 2017. Reducing poverty in the least developed countries: The role of small and medium enterprises. *Journal of World Business*, 52(2):244-257

Makwara, T., 2019. Taking on the challenge: small, micro and medium enterprises (SMMEs) and socioeconomic development in South Africa. *African Journal of Hospitality, Tourism and Leisure*, 8(1):1-14.

Malgas, M. & Zondi, W.B., 2020. Challenges facing small business retailers in selected South African townships. *The Southern African Journal of Entrepreneurship and Small Business Management*, 12(1).

Manueli, K., Latu, S. and Koh, D. 2007. ICT adoption models. Proceedings of the 40th Annual Hawaii International Conference on System Sciences (HICSS'07), pp. 95-104. IEEE.

Markowitz, C., 2019. Harnessing the 4IR in SADC: *roles for policymakers*.

Marnewick, C. 2014. Information and communications technology adoption amongst township micro and small business: The case of Soweto. *South African Journal of Information Management*, 16(1):1-12.

Maroyi, A., 2022. Traditional uses of wild and tended plants in maintaining ecosystem services in agricultural landscapes of the Eastern Cape Province in South Africa. *Journal of Ethnobiology and Ethnomedicine*, 18(1):17.

Martín-García, A.V., Redolat, R. & Pinazo-Hernandis, S., 2022. Factors Influencing Intention to Technological Use in Older Adults. The TAM Model Application. *Research on Aging*, 44(7-8):573-588.

Marwanto, I.G.G.H., Rahmadi, A.N. & Yap, N., 2023. Evaluation of Micro, Small And Medium Enterprises (MSMES) Financing Policies For MSME Actors In Yogyakarta. *Return: Study of Management, Economic and Bussines*, 2(05):456-462.

Masama, B., 2018. Revisiting the economic factors which influence fast food South African Small, Medium and Micro Enterprise sustainability. In Revisiting the economic factors which influence fast food South African small, medium and micro enterprise sustainability: Masama, Bruce.

Matekenya, W. & Moyo, C., 2022. Innovation as a driver of SMME performance in South Africa: a quantile regression approach. *African Journal of Economic and Management Studies*, 13(3):452-467.

Matsoso, M.L. & Benedict, O.H. 2016. Financial Performance Measures of Small Medium Enterprises in the 21st Century. *Journal of Economics*, 7(2-3):144-160.

Matsuyama, L., Zimmerman, R., Eaton, C., Weger, K., Mesmer, B., Tenhundfeld, N., Van Bossuyt, D. & Semmens, R., 2021. Determinants that are believed to influence the acceptance and adoption of mission critical autonomous systems. *In AIAA Scitech 2021 Forum*:1156.

Maziriri, E.T. & Chivandi, A., 2020. Modelling key predictors that stimulate the entrepreneurial performance of small and medium-sized enterprises (SMEs) and poverty reduction: Perspectives from SME managers in an emerging economy. *Acta Commerci*, 20(1):1-15.

Mazwai, T. 2017. The great township business summit. *Business Report*, 13 June, University of Johannesburg, Johannesburg.

Mbhele, T.P. 2012. Central supply chain distribution system diffusion in the selected retail grocery industry. *International Journal of Information Technology and Business Management*, 14(1):139-159.

Mbumbo, E., Benedict, H. & Bruwer, J-P. 2019. The influence of management's accounting skills on the existence of their South African Small, Medium and Micro Enterprises. *International Journal of Education Economics and Development*, 10(3):323-334.

Mbuyisa, B. & Leonard, A. 2017. The role of ICT use in SMEs towards poverty reduction: A systematic literature review. *Journal of International Development*, 29(2):159-197.

McFarlane, D., Ratchev, S., Thorne, A., Parlikad, A.K., De Silva, L., Schönfuß, B., Hawkridge, G., Terrazas, G. & Tlegenov, Y., 2020. Digital manufacturing on a shoestring: Low cost digital solutions for SMEs. In Service Oriented, Holonic and Multi-agent Manufacturing Systems for Industry of the Future: Proceedings of SOHOMA 2019 9:40-51. *Springer International Publishing*.

Meyer, A., Niemann, W., Van Pletzen, P.-R. & Smit, D. 2019. *Environmental initiatives: A study of dyadic buyer and supplier relationships in the South African fast-moving consumer goods industry. J. Transp. Supply Chain. Manag.*, 13:1-10.

Mhlanga, D., 2021. Artificial intelligence in the industry 4.0, and its impact on poverty, innovation, infrastructure development, and the sustainable development goals: Lessons from emerging economies?. *Sustainability*, 13(11):5788.

Mkhize, N. (2019). Townships in post-apartheid South Africa. *Development Southern Africa*, 36(4):473-488.

MODIMOGALE, L. & KROEZE, J. H. 2011. The Role of ICT within Small and Medium Enterprises in Gauteng.

Modisane, P. & Jokonya, O., 2021. Evaluating the benefits of cloud computing in small, medium and micro-sized enterprises (SMMEs). *Procedia Computer Science*, 181:784-792.

Modisane, R., & Jokonya, O. 2020. Evaluating the benefits of cloud computing for small and medium enterprises. *Journal of Cloud Computing*, 9(3):112-128.

Mohajan, H.K. 2017. Two criteria for good measurements in research: Validity and reliability. *Annals of Spiru Haret University. Economic Series*, 17(4):59-82.

Mohamed, M. & Weber, P., 2020, June. Trends of digitalization and adoption of big data & analytics among UK SMEs: Analysis and lessons drawn from a case study of 53 SMEs. *In 2020 IEEE international conference on engineering, technology and innovation (ICE/ITMC)*: 1-6. IEEE.

Mokoena, S.L. & Liambo, T.F., 2023. The sustainability of township tourism SMMEs. *International Journal of Research in Business and Social Science* (2147-4478), 12(1):341-349.

Mondejar, M.E., Avtar, R., Diaz, H.L.B., Dubey, R.K., Esteban, J., Gómez-Morales, A., Hallam, B., Mbungu, N.T., Okolo, C.C., Prasad, K.A. & She, Q. 2021. Digitalization to achieve sustainable development goals: Steps towards a Smart Green Planet. *Science of the Total Environment*, 794:148539.

Moreno-Serra, R., Anaya-Montes, M., León-Giraldo, S. & Bernal, O., 2022. Addressing recall bias in (post-) conflict data collection and analysis: lessons from a large-scale health survey in Colombia. *Conflict and health*, 16(1):1-14.

Mouton, J. 2006. *How to succeed in your Master's & Doctoral Studies*. Pretoria: Van Schaik Publishers.

Mthabela, T.E. 2015. Assessing the causal failures of emerging manufacturing SMEs in Johannesburg. *Unpublished Doctoral dissertation, University of the Witwatersrand, Johannesburg, South Africa*.

Mtshali, M., Mtapuri, O. & Shamase, S.P. 2017. Experiences of black-owned small medium and micro enterprises in the accommodation tourism-sub sector in selected Durban townships, KwaZulu-Natal. *African Journal of Hospitality, Tourism and Leisure*, 6(3):130-141.

Mudzamba, R., Van der Schyff, K. & Renaud, K., 2022. The challenges of cloud adoption among South African small to medium enterprises: A thematic analysis. *The Electronic Journal of Information Systems in Developing Countries*, 88:e12235.

Muhwati, C. & Salisbury, R.H., 2022. A framework for closed-loop supply chain adoption by small, medium and micro enterprise fashion retailers in South Africa. The

Southern *African Journal of Entrepreneurship and Small Business Management*, 14(1):12.

Mujahed, H.M.H., Musa Ahmed, E. & Samikon, S.A., 2022. Factors influencing Palestinian small and medium enterprises intention to adopt mobile banking. *Journal of Science and Technology Policy Management*, 13(3):561-584.

Mukherjee, S. & Badola, S., 2022. Estimation of VAT compliance costs of unincorporated enterprises in India: unit-level analysis. *Indian Economic Review*:1-21.

Mukwarami, S., Mukwarami, J. & Tengeh, R.K., 2020. Local economic development and small business failure: the case of a local municipality in South Africa. *International Journal of Business and Globalisation*, 25(4):489-502.

Müller, R. & Wilson, T. 2021. Social media use in UK SMMEs. *Journal of Small Business Management*, 59(3):385-403.

Murithi, S. 2017. African small and medium enterprises (SMEs) contributions, challenges and solutions. *European Journal of Research and Reflection in Management Sciences*, 5(1), 36-48.

Mushi, G.J., Amanuel, P.A. & Munishi, E.J., 2023. The Role of ICT Business Infrastructure in The Provision of Business Development Services to Tanzanian Small and Medium Enterprises. *African Journal of Applied Research*, 9(1):38-50.

Mustafa, H.H. 2015. The role of ICT management to achieve organizational innovation. *International Journal of Organizational Innovation*, 7(4):48-56.

Mustafa, S., Zhang, W., Shehzad, M.U., Anwar, A. & Rubakula, G., 2022. Does health consciousness matter to adopt new technology? An integrated model of UTAUT2 with SEM-fsQCA approach. *Frontiers in Psychology*, 13:81.

Mwangi, M. 2021. ICT adoption in Kenyan SMMEs. *Journal of Information Technology*, 36(2):112-128.

Nagarajan, G. & Sheriff, J.K. 2013. Emerging challenges and prospects of FMCG product development in India. *International Journal of Marketing, Financial Services & Management Research*, 2(1):41-52.

Nagaya, N. (2017). SME impact on output growth, a case study of India. *Palma Journal*, 16(13):11-170.

Nagy, M., Lăzăroiu, G. & Valaskova, K., 2023. Machine Intelligence and Autonomous Robotic Technologies in the Corporate Context of SMEs: Deep Learning and Virtual Simulation Algorithms, Cyber-Physical Production Networks, and Industry 4.0-Based Manufacturing Systems. *Applied Sciences*, 13(3):1681.

Naicker, V., Le Roux, S., Bruwer, J. & Bruwer, J.P. 2017. Knowledge sharing as a value-adding initiative for South African SMME sustainability: A literature review. *Expert Journal of Business Management*, 5(2):51-60.

Naradda Gamage, S.K., Ekanayake, E.M.S., Abeyrathne, G.A.K.N.J., Prasanna, R.P.I.R., Jayasundara, J.M.S.B. & Rajapakshe, P.S.K., 2020. A review of global challenges and survival strategies of small and medium enterprises (SMEs). *Economies*, 8(4):79.

Nayak, B., Bhattacharyya, S.S. & Krishnamoorthy, B., 2021. Explicating the role of emerging technologies and firm capabilities towards attainment of competitive advantage in health insurance service firms. *Technological Forecasting and Social Change*, 170:120892.

Nazir, M.A. & Khan, M.R., 2022. Identification of roles and factors influencing the adoption of ICTs in the SMEs of Pakistan by using an extended Technology Acceptance Model (TAM). *Innovation and Development*,:1-27.

Ndayizigamiye, P. & Khoase, R.G. 2018. Inhibitors of the adoption of e-commerce by SMMES in two South African cities. *International Journal of eBusiness and eGovernment Studies*, 10(1):51-66.

Ndubisi, N.O., Zhai, X.A. & Lai, K.H., 2021. Small and medium manufacturing enterprises and Asia's sustainable economic development. *International Journal of Production Economics*, 233:107971.

Neirotti, P. & Raguseo, E. 2017. On the contingent value of IT-based capabilities for the competitive advantage of SMEs: Mechanisms and empirical evidence. *Information & Management*, 54(2):139-153.

- Nes, A.A.G., Steindal, S.A., Larsen, M.H., Heer, H.C., Lærum-Onsager, E. & Gjevjon, E.R., 2021. Technological literacy in nursing education: A scoping review. *Journal of Professional Nursing*, 37(2):320-334.
- Neumeyer, X., Santos, S.C. & Morris, M.H., 2020. Overcoming barriers to technology adoption when fostering entrepreneurship among the poor: The role of technology and digital literacy. *IEEE Transactions on Engineering Management*, 68(6):1605-1618.
- Newman, W., Mwandambira, N., Charity, M. & Ongayi, W., 2018. Literature review on the impact of tax knowledge on tax compliance among small medium enterprises in a developing country. *International Journal of Entrepreneurship*, 22(4):1-15.
- Niebel, T. 2018. ICT and economic growth—Comparing developing, emerging and developed countries. *World Development*, 104:197-211.
- Nkosi, L. & Kritzinger, E. 2020. Cloud computing in African SMMEs. *South African Journal of Information Management*, 22(1):1045.
- Nunes, M.B. Annansingh, F. Eaglestone, B. & Wakefield, R. 2006. Knowledge management issues in knowledge-intensive SMEs. *Journal of Documentation*, 62:101-119.
- Nunnally, J.C. 1978. *Psychometric Theory*. 2d ed. New York: McGraw-Hill.
- OECD. 2017. Enhancing the contributions of SMEs in a global and digitalised economy. *OECD Publishing*. <http://www.oecd.org/cfe/leed/1918307.pdf> [3 February 2019].
- OECD. 2019a. *OECD SME & Entrepreneurship Outlook 2019 Policy Highlights*. Paris: OECD.
- Ogoi, H.J. 2016. Strategies for accessing credit by small and medium enterprises. *Unpublished PhD thesis, Walden University, Minneapolis, Minnesota, USA*.
- Ojugbele, H.O., Tengeh, R.K. & Ogunlela, O., 2022. COVID-19 bailout nationalism: a predicament in saving small immigrant-owned businesses in South Africa. *International Journal of Research in Business and Social Science* (2147-4478), 11(6):33-42.

Oke, A.E. & Arowoia, V.A., 2022. Critical barriers to augmented reality technology adoption in developing countries: a case study of Nigeria. *Journal of Engineering, Design and Technology*, 20(5):1320-1333.

Okpukpara, B. 2009. Strategies for effective loan delivery to small scale enterprises in rural Nigeria. *Journal of Development and Agricultural Economics*, 1(2):41-48.

Okundaye, K., Fan, S.K. & Dwyer, R.J., 2019. Impact of information and communication technology in Nigerian small-to medium-sized enterprises. *Journal of Economics, Finance and Administrative Science*.

Okundaye, K.E. 2016. Adoption of information and communication technology in nigerian small-to medium-size enterprises. *Published Doctoral thesis, Walden University, Minneapolis, Minnesota*.

Olawale, F. & Garwe, D. 2010. Obstacles to the growth of new SMEs in South Africa: A principal component analysis approach. *African Journal of Business Management*, 4(5):729-738.

Oliveira, T. & Martins, M.F. 2011. Literature review of information technology adoption models at firm level. *Electronic Journal of Information Systems Evaluation*, 14(1):110-121.

Olszak, C.M., 2020. Business intelligence and big data: Drivers of organizational success. CRC press.

Ongori, H. & Migiro, S.O. 2010. Information and communication technologies adoption in SMEs: literature review. *Journal of Chinese Entrepreneurship*, 2:93-104.

Oxford Dictionary. 2019. *Township*. <https://www.lexico.com/en/definition/township> [30 September 2019].

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.

PaperSurvey. 2021. Paper-based surveys advantages and disadvantages. <https://bit.ly/3w8zusr> [7 July 2021].

Patnaik, R.P.K., Hinge, P., Shamina, H., Santhakumar, G., Ishaq, M.M. & Banerjee, D.,2023. A STUDY ON RECRUITMENT FUNCTION IN INFORMATION TECHNOLOGY; EMPHASIS ON THE ROLE OF IT SECTOR.

Patton, M.Q. 2002. Two decades of developments in qualitative inquiry: A personal, experiential perspective. *Qualitative Social Work*, 1(3):261-283.

Pegoraro, D., De Propriis, L. & Chidlow, A., 2022. Regional factors enabling manufacturing reshoring strategies: a case study perspective. *Journal of International Business Policy*, 5(1):112-133.

Penn, J.M., Petrolia, D.R. & Fannin, J.M., 2023. Hypothetical bias mitigation in representative and convenience samples. *Applied Economic Perspectives and Policy*, 45(2):721-743.

Petersen, L.M., Charman, A.J. & Kroll, F.J., 2018. Trade dynamics in Cape Town township informal foodservice—a qualitative and supply chain study. *Development Southern Africa*, 35(1):70-89.

Phaho, D. & Pouris, A. 2008. From Silos to Synergies: An Institutional Framework for the Growth & Sustainability of Innovative SMEs in South Africa. In *ICSB World Conference Proceedings* (p. 1). International Council for Small Business (ICSB).

Pillay, P. 2016. Barriers To Information And Communication Technology (ICT) Adoption And Use Amongst SMEs: A Study Of The South African Manufacturing Sector. *Unpublished Master's thesis, University of the Witwatersrand, Johannesburg, South Africa.*

Polit, D.F. & Beck, C.T. 2010. Generalization in quantitative and qualitative research: Myths and strategies. *International Journal of Nursing Studies*, 47(2010): 1451-1458.

Pongwana, P.K. 2010. Mobile Technology Impacting the Hospitality Industry Small, Micro and Medium Enterprises (SMMEs) in South Africa. *Unpublished Master's thesis, University of South Africa, South Africa.*

Porter, M.E. & Millar, V.E. 1985. How information gives you competitive advantage. *Harvard Business Review*, 63(4):149-160.

Powell, D.J. & Coughlan, P., 2020. Rethinking lean supplier development as a learning system. *International Journal of Operations & Production Management*, 40(7/8):921-943.

Prause, M., 2019. Challenges of industry 4.0 technology adoption for SMEs: the case of Japan. *Sustainability*, 11(20):5807.

Prinsloo, S. 2015. The influence of combined assurance initiatives on the efficiency of risk management in retail small and very small enterprises in Bellville, South Africa. *Expert Journal of Business and Management*, 3 (2):63-81.

Purifoye, G.Y., 2020. Transit boundaries: race and the paradox of immobility within mobile systems. *Mobilities*, 15(4):480-499.

Qureshi, S., 2020. Why data matters for development? Exploring data justice, micro-entrepreneurship, mobile money and financial inclusion. *Information Technology for Development*, 26(2):201-213.

Radebe, P. 2008. Small business is the missing middle in the banks' service target. *The Mercury–Business Report*, October 14, 2008.

Rahman, S. 2017. Comparison of Convenience Sampling and Purposive Sampling. *American Journal of Theoretical and Applied Statistics*, 5(1):1-4.

Rahmani, A.M., Ehsani, A., Mohammadi, M., Mohammed, A.H., Karim, S.H.T. & Hosseinzadeh, M., 2022. A new model for analyzing the role of new ICT-based technologies on the success of employees' learning programs. *Kybernetes*, 51(6):2156-2171.

Rainnie, A. & Dean, M., 2020. Industry 4.0 and the future of quality work in the global digital economy. *Labour & Industry: a journal of the social and economic relations of work*, 30(1):16-33.

Rambe, P., Town, C., Africa, S., Polytechnic, K., & Madichie, N. O. (2017). Breaching Location Silos : An Exploration of social media optimisation by SMMEs in Southern Africa, 2(2):43–59.

Ramzan, M., Raza, S.A., Usman, M., Sharma, G.D. & Iqbal, H.A., 2022. Environmental cost of non-renewable energy and economic progress: do ICT and financial development mitigate some burden?. *Journal of Cleaner Production*, 333:130066.

Rao, M. 2021. Digital marketing in Indian SMMEs. *Journal of Marketing Analytics*, 9(1):47-60.

Ravindran, A., 2022. Will AI Dictate the Future?. *Marshall Cavendish International Asia Pte Ltd*.

Remenyi, D. Williams, B. Money, A. & Swartz, E. 1998. *Doing research in business and management: an introduction to process and method*. London: Sage Publications.

Republic of South Africa. 2004. National Small Business Amendment Act 2004. <https://bit.ly/31HvUX8> [4 November 2018].

Rezaee, Z. Elam, R. & Sharbatoghlie, A. 2001. Continuous auditing: the audit of the future. *Managerial Auditing Journal*.

Risius, M. & Spohrer, K., 2017. A blockchain research framework: What we (don't) know, where we go from here, and how we will get there. *Business & information systems engineering*, 59:385-409.

Ritchie, J., Lewis, J. & Elam, R.G., 2013. Selecting samples. *Qualitative research practice: A guide for social science students and researchers*, 111.

Rodríguez, J. & Martínez, D. (2007). The Role of ICT in the Economic Growth and Productivity of Andalusia.

https://ketlib.lib.unipi.gr/xmlui/bitstream/handle/ket/1103/LFNB22781ENC_002.pdf?isAllowed=y&sequence=2 [9 September 2021].

Rodseth, P. 2018. The importance of manufacturing for SA's economic growth. EE Publishers. <http://www.ee.co.za/article/the-importance-of-manufacturing-for-sas-economic-growth.html> [21 June 2019].

Rogers, E.M. 1995. Diffusion of Innovations: modifications of a model for telecommunications. In *Die diffusion von innovationen in der telekommunikation* :25-38. Berlin, Heidelberg: Springer.

Rose, D. & Sullivan, O. 1996. Introducing Data Analysis for Social Scientists. 2nd ed. *Open University Press. Buckingham, UK: Open University Press.*

Rowley, J. 2002. Using case studies in research. *Management Research News*, 25(1):16-27.

Rozmi, A., Nordin, A. & Bakar, M. 2018. The Perception of ICT Adoption in Small Medium Enterprise: A SWOT Analysis. *International Journal of Innovation and Business Strategy*, 9(1):69-79.

Rozmi, A.N.A., Nohuddin, P.N., Hadi, A., Razak, A., Bakar, A., Izhar, M. & Nordin, A.I., 2020. Factors affecting SME owners in adopting ICT in business using thematic analysis.

Roztock, N. & Weistroffer, H.R. 2016. Conceptualizing and researching the adoption of ICT and the impact on socioeconomic development. *Information Technology for Development*, 22:541-549.

Roztock, N., Soja, P. & Weistroffer, H.R., 2019. The role of information and communication technologies in socioeconomic development: towards a multi-dimensional framework. *Information Technology for Development*, 25(2):171-183.

Ruggiano, N. & Perry, T.E., 2019. Conducting secondary analysis of qualitative data: Should we, can we, and how?. *Qualitative Social Work*, 18(1):81-97.

Rungani, E.C. & Potgieter, M. 2018. The impact of financial support on the success of small, medium and micro enterprises in the Eastern Cape province. *Acta Commercii*, 18(1), a591. <https://doi.org/10.4102/ac.v18i1.591>

Russo, D. 2023. Navigating the Complexity of Generative AI Adoption in Software Engineering. ArXiv, abs/2307.06081.

Saidu, A., Clarkson, A.M., Adamu, S.H., Mohammed, M. & Jibo, I., 2017. Application of ICT in agriculture: Opportunities and challenges in developing countries. *International Journal of Computer Science and Mathematical Theory*, 3(1):8-18.

Samsudeen, S., Thelijjagoda, S., & Sanjeetha, G. 2021. Social media adoption in SMEs: A Sri Lankan perspective. *Journal of Small Business and Enterprise Development*, 28(1): 78-95.

Sancho-Garcia, J.C., Brémond, E., Pérez-Jiménez, A.J., Ciofini, I. & Adamo, C., 2022. Non-empirical double-hybrid density functionals as reliable tools for electronic structure calculations. *Electronic Structure*, 4(4):043001.

Saniuk, S., Caganova, D. & Saniuk, A., 2023. Knowledge and skills of industrial employees and managerial staff for the industry 4.0 implementation. *Mobile Networks and Applications*, 28(1):220-230.

Saputra, F., 2022. The Role of Human Resources, Hardware, and Databases in Mass Media Companies. *International Journal of Advanced Multidisciplinary*, 1(1):47-55.

Sastararujji, D., Hoonsopon, D., Pitchayadol, P. & Chiwamit, P., 2022. Cloud accounting adoption in Thai SMEs amid the COVID-19 pandemic: an explanatory case study. *Journal of Innovation and Entrepreneurship*, 11(1):1-25.

Saunders, M.N.K., Lewis, P. & Thornhill, A. 2000. *Research Methods for Business Students*. London: Pearson Education.

Scherer, R., Siddiq, F., & Tondeur, J. 2019. The technology acceptance model (TAM): A meta-analytic structural equation modeling approach to explaining teachers' adoption of digital technology in education. *i*, 128:13-35.

Schilirò, D. 2020. Towards digital globalization and the Covid-19 challenge. *International Journal of Business Management and Economic Research*, 11(2):1710-1716.

Schindler, D.R. & Cooper, P.S. 2001/2003. *Business Research Methods*. London: McGraw-Hill.

Schutte, D., Labuschagne, D., Georgescu, M.A. & Pop, C. 2019. An evaluation of the turnover tax system in South Africa. *Theoretical and Applied Economics*, 26(3): 62-70.

Schwab, K. 2016. The Fourth Industrial Revolution.

<https://www.weforum.org/about/the-fourth-industrial-revolution-by-klaus-schwab> [9 Septmeber 2021].

SEDA (Small Enterprise Development Agency). 2018. 1st Quarter. *SMME Quarterly Update*. South Africa.

Segkouli, S., Giakoumis, D., Votis, K., Triantafyllidis, A., Paliokas, I. & Tzovaras, D., 2021. Smart Workplaces for older adults: Coping 'ethically'with technology pervasiveness. *Universal Access in the Information Society*:1-13.

Selmi, S.A., 2023. Use of ICT to promote literacy in sub-Saharan Africa. *American Journal of Multidisciplinary Research and Innovation*, 2(1):49-64.

Setiawati, N.P.A., Sunarsi, D., Nurjaya, S., Manan, A., Nurhadi, A., Erlangga, H., Dwiwarman, D.A., Dharmayuni, L., Indrawan, Y.W., Maddinsyah, A. & Purwanto, A., 2021. Effect of Technology Acceptance Factors, Website Service Quality and Specific Holdup Cost on Customer Loyalty: A Study in Marketing Departement of Packaging Industry. *Annals of the Romanian Society for Cell Biology*,:12685-12697.

Sharma, D.N.K., 2022. Instruments Used in the Collection of Data in Research. *Available at SSRN 4138751*.

Shehzadi, S., Nisar, Q.A., Hussain, M.S., Basheer, M.F., Hameed, W.U. & Chaudhry, N.I., 2021. The role of digital learning toward students' satisfaction and university brand image at educational institutes of Pakistan: a post-effect of COVID-19. *Asian Education and Development Studies*, 10(2):276-294.

Sheth, J., 2020. Impact of Covid-19 on consumer behavior: Will the old habits return or die?. *Journal of business research*, 117:280-283.

Shutaleva, A., 2023. Epistemic Challenges in Neurophenomenology: Exploring the Reliability of Knowledge and Its Ontological Implications. *Philosophies*, 8(5):94.

Sibiya, A., van der Westhuizen, J. & Sibiya, B., 2023. Challenges Experienced by SMMEs and Interventions by the South African National and Provincial Government: A Literature Review. *African Journal of Inter/Multidisciplinary Studies*, 5(1):1-11. doi: 10.51415/ajims.v5i1.1224.

Silva, P. & Alves, R. 2020. Social media use in Brazilian SMMEs. *Journal of Business Research*, 109:32-44.

Šimberová, I., Korauš, A., Schüller, D., Smolíková, L., Straková, J. & Váchal, J., 2022. Threats and Opportunities in Digital Transformation in SMEs from the Perspective of Sustainability: A Case Study in the Czech Republic. *Sustainability*, 14(6):3628.

Sindakis, S. & Aggarwal, S., 2022. E-business Adoption by Small Businesses: Benefits and Drawbacks. In *Small Business Management and Control of the Uncertain External Environment*. Emerald Publishing Limited.

Singh Dubey, R., Paul, J. & Tewari, V., 2022. The soft skills gap: a bottleneck in the talent supply in emerging economies. *The International Journal of Human Resource Management*, 33(13):2630-2661.

Small Enterprise Development Agency (SEDA). 2018. Annual Reports. <http://www.seda.org.za/Publications/Pages/Annual-Reports.aspx> [3 August 2018].

Small Enterprise Development Agency (SEDA). 2019. Annual Reports. <http://www.seda.org.za/Publications/Publications/SMME%20Quarterly%202019-Q1.pdf> [3 August 2019].

Smith, J. & Jones, A. 2020. Digital tools in European SMEs. *European Journal of Information Systems*, 29(5):431-448.

Snyder, H. 2019. Literature review as a research methodology: An overview and guidelines. *Journal of Business Research*, 104:333-339.

Soja, E. & Soja, P., 2020. Fostering ICT use by older workers: Lessons from perceptions of barriers to enterprise system adoption. *Journal of Enterprise Information Management*. South Africa. 1996. National Small Business Act, No. 102 of 1996. Pretoria, South Africa: Government Printer.

South Africa. 2004. National Small Business Amendment Act, No. 29 of 2004. Pretoria, South Africa: *Government Printer*.

South Africa. 2018. National Small Enterprise Act of South Africa. Pretoria, South Africa: *Government Printer*.

South Africa. 2019. National Small Enterprise Act of South Africa. Government Gazette, 399(42304):110-111, March 15.

South Africa. 2023. National Integrated Small Enterprise Development (NISED) Strategic Framework (Masterplan). Government Gazette, 3054(48063):1-72, February 17.

Spiteri, M. & Chang Rundgren, S.N., 2020. Literature review on the factors affecting primary teachers' use of digital technology. *Technology, Knowledge and Learning*, 25:115-128.

Statistics South Africa. 2019. Quarterly Labour Force Survey. <http://www.statssa.gov.za/publications/P0211/P02114thQuarter2018.pdf> [25 May 2021].

Stentz, J.E. Clark, V.L.P. & Matkin, G.S. 2012. Applying mixed methods to leadership research: A review of current practices. *The Leadership Quarterly*, 23(6):1173-1183.

Sunday, C.E. & Vera, C.C.-E. (2018) 'Examining information and communication technology (ICT) adoption in SMEs', *Journal of Enterprise Information Management*, 31(2):338-356.

Tajpour, M., Hosseini, E., Ratten, V., Bahman-Zangi, B. & Soleymanian, S.M., 2023. The role of entrepreneurial thinking mediated by social media on the sustainability of small and medium-sized enterprises in Iran. *Sustainability*, 15(5):4518.

Tang, L., Li, J., Du, H., Li, L., Wu, J. & Wang, S., 2022. Big data in forecasting research: a literature review. *Big Data Research*, 27:100289.

- Tarhini, A., Hone, K., & Liu, X. 2017. A cross-cultural examination of the impact of social, organizational and individual factors on educational technology acceptance between British and Lebanese university students. *British Journal of Educational Technology*, 48(2):111-135.
- Tavakol, M. & Dennick, R. 2011. Making sense of Cronbach's alpha. *International Journal of Medical Education*, 2:53.
- Taylor, D. & Procter, M. 2008. The literature review: A few tips on conducting it. *Health Sciences Writing Centre*. <http://utoronto.ca/writing/litrev.html> [3 May 2021].
- Taylor, P. 2019. Information and Communication Technology (ICT) adoption by small and medium enterprises in developing countries: The effects of leader, organizational and market environment factors. *International Journal of Economics, Commerce and Management United Kingdom*, 7(5).
- Teixeira, A.C., Tenório, N., Pinto, D., Matta, N. & da Cruz Urpia, A.G.B., 2022. The critical success factors' investigation during knowledge management implementation within SME enterprises: a Participatory Design opportunity. *SN Computer Science*, 4(1):25.
- Teoh, M.F., Ahmad, N.H., Abdul-Halim, H. & Ramayah, T., 2022. Is Digital Business Model Innovation the Silver Bullet for SMEs Competitiveness in Digital Era? Evidence from a Developing Nation. *Vision:09722629221074771*.
- Thabela, T., Kabanda, S., Chigona, W. & Villo, Z., 2019, August. CHALLENGES OF USING ICTS FOR SMMES IN RURAL AREAS. In Digital Innovation and Transformation Conference: Digital Skills 2019:1.
- Thottoli, M.M., 2020. Knowledge and use of accounting software: evidence from Oman. *Journal of Industry-University Collaboration*, 3(1):2-14.
- Toader, E., Firtescu, B.N., Roman, A. & Anton, S.G. (2018). Impact of Information and Communication Technology Infrastructure on Economic Growth: An Empirical Assessment for the EU Countries. Sustainability, MDPI. *Open Access Journal*, 10(10):1-22.

Twycross, A. & Shields, L. 2004. Validity and reliability - What's it all about? Part 2 Reliability in quantitative studies. *Paediatric Nursing*, 16(10):36.

Urban, B. & Ndou, B. 2019. Informal entrepreneurship: A focus on South African township entrepreneurs. *Journal of Developmental Entrepreneurship*, 24(4):1950021.

Vanwoerden, S., Chandler, J., Cano, K., Mehta, P., Pilkonis, P.A. & Sharp, C., 2023. Sampling methods in personality pathology research: Some data and recommendations. *Personality Disorders: Theory, Research, and Treatment*, 14(1):19.

Venkatesh, V., Thong, J. Y., & Xu, X. 2016. Unified theory of acceptance and use of technology: A synthesis and the road ahead. *Journal of the Association for Information Systems*, 17(5):328-376.

Vogt, W.P. Gardner, D.C. & Haeffele, L.M. 2012. *When to use what research design*. London: Guilford Press.

Vrontis, D., Chaudhuri, R. & Chatterjee, S., 2022. Adoption of Digital Technologies by SMEs for Sustainability and Value Creation: Moderating Role of Entrepreneurial Orientation. *Sustainability*, 14(13):7949.

Walaza, R., Looock, M., & Kritzing, E. 2020. Enhancing ICT security in SMMEs through education, training, and awareness. *Journal of Information Security and Applications*, 50:102-116.

Walliman, N. 2017. *Research methods: The basics*. New York: Routledge.

Wang, B., Liu, Y. & Parker, S.K., 2020. How does the use of information communication technology affect individuals? A work design perspective. *Academy of Management Annals*, 14(2):695-725.

Washington, DC. Burgelman, R.A. Christensen, C.M. & Wheelwright, S.C. 2004. *Strategic Management of Technology and Innovation*. 4th ed. New York: McGraw Hill.

Watkins, J.A. 2008. *Theses/Dissertations/Research Reports: a Practical guide for students to the preparation of written presentations of academic research*. Cape Town: Content Solutions.

- Wdowik, A., & Ratnayake, R. M. C. 2019. Application potential of open access digital tools in SMMEs. *Journal of Manufacturing Technology Management*, 31(4):567-585.
- Webster, J. & Watson, R.T. 2002. Analyzing the past to prepare for the future: Writing a literature review. *MIS quarterly*, pp. xiii-xxiii.
- Welman, C. Kruger, F. & Mitchell, B. 2005. *Research Methodology*. Cape Town: Oxford University Press.
- Wendt, C., Adam, M., Benlian, A. & Kraus, S., 2021. Let's connect to keep the distance: How SMEs leverage information and communication technologies to address the COVID-19 crisis. *Information Systems Frontiers*:1-19.
- Wentzel, L., Fapohunda, J.A. & Haldenwang, R., 2023. A Corporate Social Responsibility (CSR) Model to Achieve Sustainable Business Performance (SBP) of SMEs in the South African Construction Industry. *Sustainability*, 15(13):10007.
- Williams, C. 2007. Research methods. *Journal of Business & Economics Research (JBER)*, 5(3):65-72.
- Williams, M. D., Rana, N. P., & Dwivedi, Y. K. 2015. The unified theory of acceptance and use of technology (UTAUT): A literature review. *Journal of Enterprise Information Management*, 28(3):443-488.
- Williams, V., Boylan, A.M. & Nunan, D., 2020. Critical appraisal of qualitative research: necessity, partialities and the issue of bias. *BMJ Evidence-Based Medicine*, 25(1):9-11.
- Willig, C., 2019. What can qualitative psychology contribute to psychological knowledge?. *Psychological Methods*, 24(6):796.
- Won, D., Hwang, B.G. & Binte Mohd Samion, N.K., 2022. Cloud computing adoption in the construction industry of Singapore: Drivers, challenges, and strategies. *Journal of Management in Engineering*, 38(2):05021017.
- Yanti, A., Suryana, A. & Anwar, A. 2021. ICT competency development in Bandung SMMEs. *Journal of Enterprise Information Management*, 34(3): 678-695.

Yin, R. K. 2013. *Case study research: Design and methods*. Thousand Oaks, CA: SAGE.

Yousfani, K., Aslam, Y., Mahar, Q. & Kazi, H., 2019. The impact of microfinance on growth of women entrepreneurship in Pakistan. *Journal of Entrepreneurship, Business and Economics*, 7(1):133-152.

Yuan, Y.H., Tsai, S.B., Dai, C.Y., Chen, H.M., Chen, W.F., Wu, C.H., Li, G. & Wang, J., 2017. An empirical research on relationships between subjective judgement, technology acceptance tendency and knowledge transfer. *PloS one*, 12(9):e0183994.

Yuen, K.F., Cai, L., Qi, G. & Wang, X., 2021. Factors influencing autonomous vehicle adoption: An application of the technology acceptance model and innovation diffusion theory. *Technology Analysis & Strategic Management*, 33(5):505-519.

Yunis, M., Tarhini, A. & Kassar, A., 2018. The role of ICT and innovation in enhancing organizational performance: The catalysing effect of corporate entrepreneurship. *Journal of Business Research*, 88:344-356.

Zafar, M.W., Zaidi, S.A.H., Mansoor, S., Sinha, A. & Qin, Q., 2022. ICT and education as determinants of environmental quality: The role of financial development in selected Asian countries. *Technological Forecasting and Social Change*, 177:121547.

Zamani, S.Z., 2022. Small and Medium Enterprises (SMEs) facing an evolving technological era: a systematic literature review on the adoption of technologies in SMEs. *European Journal of Innovation Management*, (ahead-of-print).

Zastempowski, M., 2022. What shapes innovation capability in micro-enterprises? New-to-the-market product and process perspective. *Journal of Open Innovation: Technology, Market, and Complexity*, 8(1):59.

Zhang, L., Wang, X. & Li, Y. 2021. E-commerce adoption in Chinese SMMEs. *Journal of Business Research*, 125: 105-117.

Zhang, T., Luo, J., Zhang, C.Y. & Lee, C.K., 2020. The joint effects of information and communication technology development and intercultural miscommunication on international trade: Evidence from China and its trading partners. *Industrial Marketing Management*, 89:40-49.

Zikmund, W.G., Babin, B.J., Carr, J.C. & Griffin, M. 2012. *Business Research Methods*.
Boston, MA.: Cengage Learning

APPENDIX A: QUESTIONNAIRE



Cape Peninsula University of Technology
Faculty of Business and Management Sciences
Consent to partake in an academic research study

Research conducted by: Asanda Jonginamba (Student number: 207178208)

Dear Sir/Madam,

Invitation to participate in an academic research study

You are kindly invited to participate in a research study titled “**The adoption of information and communication technology (ICT) within fast-moving consumer goods (FMCG) small, medium and micro enterprises (SMMEs) within townships in the Cape Town Metropole**”. This study is conducted by Mr Asanda Jonginamba, a Master's candidate in Business Information Systems at the Cape Peninsula University of Technology (CPUT). The primary objective of this study, using a critical lens, is to determine the extent to which information and communication technology (ICT) is adopted in fast-moving consumer goods (FMCG) small, medium and micro enterprises (SMMEs) within townships in the Cape Metropole.

As a decision-maker of an SMME in the FMCG industry operating in Cape Metropole townships, your opinion is highly valuable to this study. Your contribution to this study is optional, and you are free to withdraw from it at any time with no obligations. Furthermore, there are no risks related when contributing to this study, and any information given by our respondents will be confidential and will be kept anonymous. The information that will be collected will be used to provide recommendations to township SMMEs on how ICT could be adopted to improve the growth and sustainability of these businesses.

Your consent to contribute to this study will be highly appreciated.

For further inquiries, you may contact me on 065 923 4972 or via email jonginambaa@mycput.ac.za.

If you provide your consent to participate in this research study, please complete and sign the form below.

- You have read and understood the information provided above.
- You hereby provide consent to participate in this study voluntarily.

Name of the enterprise/business: _____

Respondent's signature: _____ Date: _____



DETAILS OF RESEARCHER

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RESEARCH TITLE

The adoption of information and communication technology (ICT) within fast-moving consumer goods (FMCG) small, medium and micro enterprises (SMMEs) within townships in the Cape Town Metropole

WHAT IS INFORMATION AND COMMUNICATION TECHNOLOGY (ICT)?

Information and Communication Technology (ICT) refers to a collection of hardware, software, and services within an organisation used to process information to achieve a business goal.

ETHICAL CONSIDERATIONS

Please note that ALL information provided by respondents will be kept strictly confidential and that the anonymity of the respondent is also guaranteed. The information provided will strictly be used for research purposes only. As participation in this research study is voluntary in nature, respondents may withdraw from the research study at any time they should so wish.

HOW TO COMPLETE THIS SURVEY

This survey comprises mostly of closed-ended questions, which require the respondent to select the most appropriate answer with an 'X'. Clear instructions for each question are given under each section. Should you require any assistance in completing this survey, you are welcome to contact the researcher and/or supervisor (see details on the cover page).

PRIMARY OBJECTIVES OF THE SURVEY

The primary objective of this research study is to determine what ICT factors influence the adoption of ICT by FMCG SMMEs within townships in the Cape Metropole.

The secondary objectives of this study are:

1. To determine what ICTs are adopted in FMCG SMMEs within townships.
2. To determine the perceived value of ICT adoption in FMCG SMMEs within townships.
3. To determine the key driving forces of ICT adoption in FMCG SMMEs within townships.
4. To determine the barriers to ICT adoption in FMCG SMMEs within townships.

I confirm that I have given my consent to participate in this research study.

Yes [] No []

SECTION A – DEMOGRAPHICS

Answer the following questions by selecting the most appropriate answer with an 'X'.

1. In the business, you are the ...

Owner [] Manager [] Owner and Manager []

2. Do you have decision-making power within the business?

Yes [] No []

3. Which of the following options best describe your business?

Convenience store [] Fast-food business [] Restaurant []
 Caterer [] Tuck shop [] Pharmacy [] Spaza shop []
 Liquor store [] Fruit and vegetable store [] Convenience store []
 Other []

If other, please specify: _____

4. How long has your business been in existence?

Years [] Months []

5. How many full-time employees do you employ?

0 – 10 [] 11 – 50 [] 51 – 250 []

6. What is the annual turnover of your business?

Less than 10 million rand [] 10 – 49 million rand [] 50 – 169 million rand []

7. How much business experience do you have?

Years [] Months []

8. What is your highest qualification?				
Lower than Grade 12 [] Grade 12/Senior Certificate/Matric []				
National Higher Certificate/Higher Certificate/National Certificate []				
Higher Diploma/Diploma/National Diploma []				
Bachelor's Degree/Advanced Diploma []				
Honours degree/Postgraduate Diploma [] Master's degree []				
Doctoral degree [] Other []				
If other, please specify: _____				
9. What is your gender?				
Male [] Female []				
10. What is your age?				
Younger than 21 years [] 21 – 30 years [] 31 – 40 years []				
41 – 50 years [] Older than 50 years []				
SECTION B – ICT TOOLS USED				
Answer the following questions by selecting the most appropriate answer with an 'X'.				
11. How frequently are the following ICT tools used in your business?				
	Frequently used	Used	Rarely used	Never used
Desktop computer (PC)				
Laptop				
Tablet				
Smartphone				
Printer				
Scanner				
Copy machine				

	Frequently used	Used	Rarely used	Never used
Internet (via mobile phone)				
Internet (via ADSL line)				
Internet (via fibre line)				
E-mail				
SMS				
Websites				
Social media (e.g., Facebook, Twitter, Instagram, WhatsApp etc.)				
Voice over Internet Protocol (VoIP)				
Landline telephone				
Fax				
Business applications/software (e.g., Word, Excel, QuickBooks, Outlook etc.)				
If other, please specify: _____				
12. How do you rate your use of ICT tools in the business?				
Novice [] Advanced beginner [] Competent [] Proficient []				
Expert []				

SECTION C – DRIVING FORCES OF ICT ADOPTION

Answer the following questions by selecting the most appropriate answer with an 'X'.

13. The most common driving forces in adopting ICT in the business include ...

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Pressure from competitors who use ICT					
Requirements from customers					
Intentions to improve work efficiency and quality					
Incentive and mandatory policies from the government					
Support the strategic direction of the business					

SECTION D – PERCEIVED VALUE OF ICT ADOPTION

Answer the following questions by selecting the most appropriate answer with an 'X'.

14. How would you rate your experience regarding the below aspects in adopting ICT in your business? The use of ICT ...

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Decreased operational costs					
Increased the efficiency of tasks					
Increased the accurateness of stock levels					
Improved the quality of service provided					
Improved productivity					
Increased revenue					
Increased customer satisfaction					
Improved turnaround time					
Improved work effectiveness					
Ensured that business goals are met with more ease					
Ensured that short-term targets are achieved					
Improved product quality					

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Increased staff morale					
Improved communication within and outside the business					
Provided better access to information					
Allowed employees to work from remote locations					
Increased the competitiveness of the business (competitive advantage)					
Increased quality control in the business					
Improved business sustainability					
Enhanced the image of the business					
Increased profit from online sales					

SECTION E – BARRIERS TO ADOPTING ICT					
Answer the following questions by selecting the most appropriate answer with an 'X'.					
15. How would you rate your experience regarding the below barriers preventing the business from adopting ICT?					
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Shortage of knowledge and skills hinder the business from using ICT					
Limited access to ICT prevents my business from using ICT					
Limited or no ICT technical support for businesses in townships discourages me from using ICT in the business					
Societies' negative views about ICT hinder the business from using ICT					
Competitors' negative views about ICT hinder the business from using ICT					
Limited time available to learn how to implement ICT hinders the business from using ICT					
Frequent power outages (load shedding)					

The complexity associated with ICT implementation hinders the business from using ICT					
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Lack of interest in adopting ICT					
Unsure about the benefits or return on investment from ICT adoption					

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Expensive investment in ICT					
Expensive Internet connection					
Slow Internet speed					
Lack of security in using ICT					
Unawareness of ICT benefits					
Business partners do not make use of ICT					
Lack of financial resources					
ICT does not address business needs					
Lack of strategies to adopt ICT					
Resistance to changing work practices due to ICT adoption					
Incompatibility between current technical infrastructure and ICT					

Poor telecommunication infrastructure					
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SECTION F –THANK YOU			
Thank you for your time and effort in completing this survey.			
RESPONDENT DETAILS			
Name:			
Surname:			
E-mail:			
Business name:			
Suburb:		Area	
Would you like to receive feedback regarding this research study via e-mail?			
Yes [] No []			

APPENDIX B: ETHICAL CLEARANCE CERTIFICATE



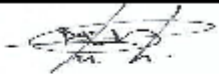
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Email: fbmsethics@cput.ac.za

Office of the Chairperson Research Ethics Committee	FACULTY: BUSINESS AND MANAGEMENT SCIENCES
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The Faculty's Research Ethics Committee (FREC) on 20 October 2020 ethics APPROVAL was granted to Asanda Jonginamba (207178208) for a research activity for M Tech: Business Information Systems at Cape Peninsula University of Technology.

Title of dissertation / thesis / project:	The adoption of Information and Communication Technology within fast-moving consumer goods SMEs within townships in the Cape Metropole Lead Supervisor (s): Dr S Le Roux
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Decision: APPROVED

	13 August 2021
Signed: Chairperson: Research Ethics Committee	Date

The proposed research may now commence with the provisions that:

1. The researcher(s) will ensure that the research project adheres to the values and principles expressed in the CPUT Policy on Research Ethics.
2. Any adverse circumstance arising in the undertaking of the research project that is relevant to the ethicality of the study requires that the researcher stops the study and immediately informs the chairperson of the relevant Faculty Ethics Committee.
3. The researcher(s) will conduct the study according to the methods and procedures set out in the approved application.
4. Any changes that can affect the study-related risks for the research participants, particularly in terms of assurances made with regards to the protection of participants' privacy and the confidentiality of the data, should be reported to the Committee in writing accompanied by a progress report.
5. The researcher will ensure that the research project adheres to any applicable national legislation, professional codes of conduct, institutional guidelines and scientific standards relevant to the specific field of study. Adherence to the following South African legislation is important, notably compliance with the Bill of Rights as provided for in the Constitution of the Republic of South Africa, 1996 (the Constitution) and where applicable: Protection of Personal Information Act, no 4 of 2013; Children's act no 38 of 2005 and the National Health Act, no 61 of 2003 and/or other legislations that is relevant.
6. Only de-identified research data may be used for secondary research purposes in future on condition that the research objectives are similar to those of the original research. Secondary use of identifiable human research data requires additional ethics clearance.
7. No field work activities may continue after two (2) years for Masters and Doctorate research project from the date of issue of the Ethics Certificate. Submission of a completed research ethics progress report (REC 6) will constitute an application for renewal of Ethics Research Committee approval.

Clearance Certificate No | 2021 FBMSREC 048

APPENDIX C: RELIABILITY TESTING USING CRONBACH ALPHA*

APPENDIX D: DESCRIPTIVE STATISTICS*

APPENDIX E: INFERENTIAL STATISTICS*

APPENDIX F: VARIABLE NAMING CONVENTIONS*

**Please refer to the attached document for Appendices C – F.*