The role of digital technology in sustaining SMEs in Johannesburg

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ABSTRACT

This research study aimed to investigate the role of digital technology in sustaining small and medium enterprises (SMEs) in Johannesburg, South Africa. SMEs face resource constraints in establishing digital operations in their organisational framework. The reasons behind the constraints are discussed in this report.

A sample group of SME owners was interviewed to gain further insights into the successes and challenges these organizations face. The interviews were conducted across diverse industries to gain multiple perspectives.

The key findings noted that many similarities between the organisations and the challenges they face are quite common. Financial constraints are a key finding, with many financing giants not willing to fund an SME due to the nature of the business. These financial constraints, in turn, have several knock-on impacts for the SMEs as they must focus on revenue generation and less focus on optimisation and growth. The findings demonstrate the impact on the sustainability of the SME due to this key factor, in addition to talent management, competition, economic climate and strict legislation.

The key outcome of the findings documents a sustainability crisis for the SMEs in Johannesburg. These organisations operate in survival mode with moderate exposure to digital technology due to constraints out of their control. Accessibility to digital technology could create limitless potential for SME growth and profitability, increasing sustainability tenfold and driving a positive upswing in the country's economy.

Keywords: Digital technology, small and medium enterprises, SME partnerships, SME platform, SME sustainability

DECLARATION

I, Prema Arunajalam, declare that this research report is my own work except as indicated in the references and acknowledgements. It is submitted in partial fulfilment of the requirements for the degree of Master of Management in the field of Digital Business at the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination in this or any other university.

Name: Prema Arunajalam Signature:

Signed at ………Weltevredenpark……………………………………………

On the ……21……………………. day of ………February………… 2024.

DEDICATION

I dedicate this research paper to my children, Maia Aruna and Kethan Arun. I acknowledge that this work has taken a lot of my time away from you both, and you had to fly solo for some short spells over the past two years. I am dedicating this paper to you because you have been my motivation daily to keep pushing and getting through the tough courses and sail through the easier ones. I also want you to know that anything is possible in this life, and you can achieve anything on which you set your heart. I hope I have inspired you to go out into the world and achieve greatness and know that you can do anything. I will be here guiding you for as long as I can, but I know you are both so strong, capable and intelligent. You make me so very proud always. I hope you know this means so much to me, and having your support throughout my studies has been the wind beneath my wings. I love you, my son and daughter, more than life itself.

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CRM	Customer relationship management
IoT	Internet of things
SEO	Search engine optimisation
SMEs	Small and medium enterprises
TOE	Technological, organisational, environmental framework

CHAPTER 1. INTRODUCTION

1.1 Statement of purpose

This qualitative study explores the role of digital technology in sustaining small and medium enterprises (SMEs) in Johannesburg. To determine the role of digital technologies in sustaining SMEs, why digital technologies should be established to sustain SMEs, and how digital technologies can add value and uplift SMEs. Finally, the study investigates the effective digital platform to improve sustainability for SMEs.

1.2 Background of the study

SMEs play an integral role in the growth and development of most economies worldwide. The problem faced by most SMEs is the ability to take their businesses to the next level and ensure continuity and long-term survival of the business. According to (Santoso & Ardianti, 2023), challenges faced by SMEs include economic downturns and the impact that natural disasters, load shedding, and looting have on SMEs. Natural disasters, load shedding, and looting have a dire impact on the economy, but SMEs felt the biggest impact, with most having to shut their doors (Schoeman, 2018). SMEs were not able to manage the transition to an online platform or have the technology required to keep doing business virtually (Schoeman, 2018). In South Africa, research has shown that 91% of formalised businesses are made up of SMEs, employ up to 60% of the country's labour force and are accountable for 34% of GDP(Nyakala, 2022).

Whilst SMEs are an important economic contributor, these smaller organisations are challenged by factors that inhibit sustainable growth and profitability.

Some of the main factors that impact small businesses are the acquisition of finance to support the start-ups, repeated credit approvals, crime, poor management skills, and poor entrance into competitive markets due to a lack of digital technology (Santoso & Ardianti, 2023). It is essential to consider small businesses' inability to develop relationships or find partnerships to leverage and ensure growth, stringent regulations, and recognition by larger organisations. A possible key challenge is the lack of technology and digital resources to bring the company to a powerful, sustainable position.

With these challenges in mind, the result is that SMEs are unable to leverage the benefits of e-commerce, social media marketing, and other digital technologies, which are essential for sustainable growth and profitability. BASA (2022) mentions that there is a clear need to create a digital technology to cater to the needs of SMEs, enabling them to remain relevant in a digital context through digital technologies, creating opportunities for them to access finances, connect with other similar businesses to leverage ventures, make partnerships, and access support services. Such a platform can help SMEs overcome their digital challenges and unlock their full potential, contributing to the overall economic growth of the country (BASA, 2022). This study explores the role of digital technologies in sustaining SMEs in organisations in Johannesburg.

1.3 Research problem

SMEs have many resources but have limited exposure to digital technology to streamline their operations, processes, and interactions with other businesses, posing a sustainability threat to SMEs and economic growth (Stawicka, 2021). The sustainability threat could be significantly positively impacted by the ability of these organisations to thrive in ever-changing economic climates by investing in digital technology.

Banking institutions offer SMEs business loans to start up their ventures with a view on the return on investment being that the SMEs anticipate turning over huge profits in the future (BASA. 2022). This could be further enhanced by providing the SME with an interactive platform that allows them opportunities to network with other SMEs, and potential business opportunities and partnerships could be born from this.

SMEs that do not have digital technologies may potentially face challenges in today's business environment. Investigating some of these challenges, this research paper provides insights into the level at which digital technologies can help to resolve the limited reach and lack of visibility that leads to challenges in the sustainability of SMEs. Stawicka (2021) mentions that without a digital platform, SMEs may have limited reach to potential customers beyond their immediate geographic area. Furthermore, restricted access to customers limits SMEs' ability to expand their customer base and increase their revenue. Research suggests that there is an impact on inefficient processes, which translates into manual processes being time-consuming and error-prone, which can lead to inefficiencies and reduced productivity. Digital technologies can automate many of these processes, allowing SMEs to operate more efficiently and effectively.

Stich, V., Zeller, V., Hicking, J., & Kraut, A.(2020) posit that the lack of digital technologies has an impact on the difficulty of competing. In today's digital age, many customers expect businesses to have an online presence. SMEs without digital technologies may find it challenging to compete with larger businesses that have robust online marketing and sales strategies. Stich et al. (2020) further mention that the absence of digital technologies leads to limited data insights. Digital technologies can provide valuable insights into customer behaviour, market trends, and other important metrics that can help SMEs make informed business decisions. Without these insights, SMEs may miss opportunities to improve their business operations and customer experience.

Nabila (2014) posits that SMEs experience cybersecurity challenges; with the increasing prevalence of cyberattacks, SMEs without security-type digital technologies may be at greater risk of data breaches and other security threats. Overall, SMEs that do not have digital technologies may face several business challenges in today's competitive environment. However with this in mind, many resources are available to help SMEs establish an online presence, such as website builders, social media platforms, digitised security methods, data privacy technology and e-commerce solutions. Digital technologies seek to improve SME interaction, network and business connections. The problem that remains is SMEs have limited exposure or capital to adopt digital technologies.

1.4 Research objectives

- To determine the role of digital technologies in sustaining SMEs.
- To investigate how digital technologies can add value to the upliftment of SMEs.
- To investigate effective digital solutions to sustain SMEs.

1.5 Rationale

This study explores a digital platform for sustaining SMEs. The study investigates how a digital platform can be adopted in organisations for business engagements and business networks. The study explores how SMEs connect for multiple mutually beneficial opportunities whilst understanding the challenges they face in the tough economic climate in which they currently operate. The study explores the success factors of thriving SMEs in Johannesburg, South Africa and how these factors can be leveraged to provide key insights into developing the technology solution for SME engagement. The study aimed to provide thought leadership into how financial organisations can become service providers in creating and solving the current constraints that SMEs experience. The expectation is that the solution investigated could provide SMEs with new thinking about an operating model that could encourage business development, which in turn leads to revenue generation through digital connection and partnerships in Johannesburg.

1.6 Delimitations of the Study

This study on SMEs focused on the role of digital technology in the upliftment of SMEs in Johannesburg. This focus excluded large corporate organisations. The study did not delve into any other type of digital solutions except for investigating the potential advantage SMEs could have with the adoption of digital technologies. The study was limited geographically to only SMEs and organisations in Johannesburg.

1.7 Definition of terms

Small and medium enterprises (SMEs): SMEs are businesses that meet specific criteria based on their annual turnover or number of employees. The definitions of SMEs in South Africa stipulate that a business that employs less than ten people and has an annual turnover of less than ZAR 1 million. Kleyn (2017) mentions that a small enterprise is a business that employs between ten and 50 people and has an annual turnover of between ZAR 1 million and ZAR 20 million. A medium enterprise business employs between 50 and 250 people and has an annual turnover of between ZAR 20 million and ZAR 300 million. In South Africa, these definitions can also differ depending on the sector or industry (Kleyn, 2017).

Digital SME platform: A digital platform for SMEs points to the scalability and opportunity created by an interactive digital application to connect SMEs, allowing them multiple opportunities to interact and leverage each other's businesses to grow and become more sustainable. The development of such an engagement platform could generate economic stability for SMEs who have little to no opportunity to connect or limited resources to do so (Nabila, 2014).

SME partnerships: A partnership is an association between two or more people in a collaboration, alliance, or coalition. In a business where two or more people share ownership of the business, they also share the responsibilities for managing the company and the income or losses that the company may incur.

Business networks: A business network is a group of companies that form a complex network that works together to accomplish specific objectives. These objectives defined by these companies could be either or both strategic and operational, and they are implemented by business networks based on their role in the market.

Sustainability: A business's strategic plan to ensure the future survival of their companies through long-term goal setting and strategic planning.

Business engagement: Business engagement in the context of this study defines the relationships and interactions between SMEs to build positive, mutually beneficial relationships to the point that results can be measured and there is a display of desired outcomes for both parties.

1.8 Assumptions

The assumptions of this study are that:

- SMEs do not have a digital engagement platform to connect and develop relationships with each other. However, some organisations provide SMEs with start-up capital and no other follow-through.
- Use of digital technologies such as engagement platforms to connect and develop relationships would add value to SMEs.
- Digital technologies do add value and uplift SMEs.
- There may be participant SME owners who did not want to participate in the study.
- Leadership in organisations would recognise the importance of using digital technologies to sustain SMEs.
- Digital technologies should be established to sustain SMEs.
- The study proposes that digital technologies could add value and improve the sustainability of SMEs.

1.9 Chapter outline

Chapter 1: This chapter provides the background to the study, an overview of the problem statement, and the research questions. It also defines the scope and delimitations of the research, the research questions the research method, as well as the rationale of the study.

Chapter 2: This chapter consists of the literature review, which deals with various concepts in the research areas of SMEs, the role of these business types in the current economy, and how a digital platform could transform the way SMEs do business and interact with each other. This chapter also outlines the benefits and challenges faced by SMEs and how longevity can be created for these businesses.

Chapter 3: This chapter covers the qualitative research methodology and how data was collected. The chapter also provides an overview of the various sources of information and how data was analysed and interpreted. Results were achieved through qualitative research based on the instruments' transferability, credibility, and dependability.

Chapter 4: This chapter comprises the collected data using one-on-one interviews with SME owners. This chapter elaborates on how a digital platform can enable sustainability for SMEs, how the facilitation of the engagement platform can benefit all stakeholders involved and what the benefits would be from this designed solution.

Chapter 5: This chapter contains a detailed discussion, interpretation, and analysis of the study's findings about the role of digital technology in the upliftment of SMEs in Johannesburg. This chapter presents how the digitisation of the engagement of SMEs can enhance the ability to diversify, connect, and grow with alliances formed through the connection platform.

Chapter 6: This chapter presents the conclusion, makes recommendations, and offers solutions for the requirements for the successful implementation of a digital platform to add value to SMEs in Johannesburg. The chapter also notes limitations experienced during the research process. The limitations suggest how these elements relate to the objectives and suggest future research possibilities.

CHAPTER 2. LITERATURE REVIEW AND THEORETICAL FRAMEWORK

2.1 Introduction

Previous chapter outlined an introduction and background to the study. This chapter provides the literature review, which deals with various concepts in the research areas of SMEs, the role of digital technologies in organisations in the current economy, and how digital technology could transform the way SMEs do business and interact with each other to build collaborative relationships which could potentially lead to sustainability. This chapter outlines the benefits and challenges faced by SMEs and how longevity can be created for these businesses. Lastly, this chapter suggests effective digital technologies to improve the sustainability of SMEs.

The literature review provides key insights into the studies previously done on SMEs and what has been discovered about these types of businesses.

The review places a strong emphasis on understanding the knowledge gained on these types of businesses and establishing the foundation of these three objectives, which outline the structure of the study.

1. *To determine why digital technologies should be established to sustain SMEs.* The main aim of this objective is to understand the current sustainability of SMEs and what keeps SMEs in business. Most importantly, this study explores the available digital solutions by delving deeper into understanding the research done on digital solutions for SMEs and why it would be pertinent t for SMEs to implement and adopt digital technologies.
2. *How digital technologies can add value and uplift SMEs.* The study aimed to demonstrate the value digital technologies could add to SMEs by creating an environment where SMEs could find each other and collaborate via online engagement platforms. The platform could allow the businesses to leverage each other’s strengths and create opportunities to develop partnerships with other like-minded businesses.

3. *To investigate the effectiveness of digital technologies in improving the sustainability of SMEs.* The study investigated the SMEs' potential to use digital technologies to improve and sustain their businesses.

2.2 Background

The SME landscape has been written about quite extensively, and many topics were covered while doing the literature review. The theories reviewed explain the fundamentals of SMEs, how they function, and the funding models. This study discusses frameworks and models developed for industries that are keen to investigate the implementation of relevant technologies.

The South African government has identified the significance of SMEs in improving the country’s economic growth and development through the business activities implemented by entrepreneurs (Visser & Chiloane-Tsoka, 2014). The theories and analysis of the literature review seek to understand these SMEs in a South African contexts and how to digitally elevate the SMEs in Johannesburg.

Furthermore, the concept of digital transformation for these enterprises is outlined in the literature. The study investigated the viability of digital technologies which aims to connect these businesses. The process undertaken was to first understand the SME landscape in Johannesburg and then to explore how digital technologies can enhance the survival of the SMEs.

Mkhonza and Sifolo (2022) found that SME owners in Johannesburg demonstrated knowledge of strategic planning, an understanding of the socio-political landscape, and basic economics of the country. Mkhonza and Sifolo (2022) further acknowledge that even though this knowledge was found to be there, these SMEs require further strategic planning to prioritise technology and invest in the necessary skills in their workforces to bring this to fruition. According to Chiloane-Phetla and Mathipa (2021), SMEs play a significant role in the country's overall economic revenue generation. Moreover, when these businesses fail, this has a knock-on impact on the economy, thus making it crucial for SMEs to make strategic decisions on technology enhancements to their business plans.

2.3 Digital Technologies Role in Sustaining SMEs

2.3.1 To what extent do digital technologies have a role in sustaining SMEs?

The study explores digital technologies which are crucial for sustaining SMEs. *How do digital technologies add value to SMEs? How do digital technologies enable SMEs to gain broader access to markets, develop their reach into existing markets, and be exposed to a bigger customer base?*

Understanding SMEs

SMEs are businesses that fall within a specific size range, typically with fewer resources and employees than larger corporations (Muriithi, 2017). There are specific criteria for defining an SME, which can vary based on the country and industry. However, typically, SMEs are characterised by their relatively small scale of operations and their contribution to the economy of any country(Massaro, M., Handley, K., Bagnoli, C., & Dumay, J. 2016).

Most countries define SMEs based on factors such as the number of employees, annual turnover or revenue, and balance sheet total. Radas et al. (2015) mention that SMEs play a crucial role in most economies because of their contribution to employment, job creation, revenue generation through innovative business ideas, and the constant new interest that they bring to the different markets in which they operate (Visser & Chiloane-Tsoka, 2014).

Elements affecting SMEs (what, size, how to identify them)

Several things can have an impact on SMEs. These variables can change depending on the business's industry, geography, and unique circumstances.

Figure 2.1 outlines some of the most prevalent elements that can affect SMEs.

Figure 2.1: Elements affecting SMEs (Author's construct)

Market influences: SME performance can be impacted by the status of the overall economy, market demand, competition, and industry developments. For SMEs, changes in consumer tastes, technical improvements, or regulatory changes might present opportunities or difficulties.

Environment regulations and policies: Government can have a significant impact on SMEs. For small firms, complying with rules, licensing requirements, tax duties, and labour laws can be a hassle. Regulation changes may also impact the competitiveness and dynamism of the market (Olarewaju & Msomi, 2021).

Technology and innovation: Adoption of technology in these SMEs is a crucial factor to consider. Technology can significantly influence the success of SMEs. Adopting digital tools, automation, and online platforms can boost operational effectiveness, expand customer reach, and provide businesses with a competitive advantage.

Technology developments, though, can also upend tried-and-true business models, forcing SMEs to adapt and change.

Human resource function: SMEs play a significant role in that it is crucial to consider the accessibility of trained workers, talent retention, workforce productivity, training and development programmes, retention of qualified workers, and upholding a pleasant workplace culture.

Networking and collaboration: Interaction among businesses is an opportunity for mutually beneficial relationships highly favourable for SMEs. Developing connections with vendors, clients, trade groups, and other companies can open doors to resources, knowledge exchange, and potential business alliances (Olarewaju & Msomi, 2021).

Country economic and political stability: These factors can create favourable environments for SMEs to flourish. Through economic stability and a supportive political climate, SMEs could potentially be affiliated with growth and development-assisted programmes to elevate them, thus providing opportunities for continued success. The business climate and the growth prospects of SMEs can be impacted by elements that include inflation, political unpredictability, policy changes, and trade obstacles.

Entrepreneurial skills and management: These refer to SME competencies and managers' and entrepreneurs' skills in these businesses. Effective management, strategic planning, budgeting, marketing, and agility are crucial elements that can affect SMEs' success.

Access to funding: Having access to capital and the availability of financing choices can have a significant impact on SMEs. A lack of funding may hamper their capacity to invest in expansion, extend operations, or innovate. The funding environment for SMEs can be impacted by variables like interest rates, credit availability, and investor confidence.

These elements interact with one another and may impact SMEs in both favourable and unfavourable ways. Successful SMEs frequently deal with these impacts by remaining flexible, learning constantly, and tailoring their plans to changing conditions.

Assessment of the current SME environments

This section assesses and analyses the current functioning landscape of the SME business. The focus is on understanding the variables that are frequently contemplated while evaluating the SME environment. It is vital to remember that these variables can change depending on the nation, industry, and particular situation.

Economic aspects may impact SMEs via the general economic conditions, such as GDP growth, inflation rates, interest rates, and currency stability. SMEs typically have better chances of thriving in a good economic climate with steady growth and low inflation (Esther, O. N., David, E. T., & Scholastica, E. U., 2018). Market industry developments, market competitiveness, and consumer demand all have an impact on SMEs. For SMEs to find opportunities and make wise business decisions, it is essential to evaluate the size of the market, its development potential, client preferences, and the competitive environment (Mmbengeni, N. V., Mavhungu, M. E., & John, M. 2021).

Regulatory frameworks are a crucial aspect to explore regarding the legal and regulatory systems that oversee SMEs. Factors such as business registration requirements, taxation policies, licensing procedures, labour laws, and compliance obligations can shape the SME environment (Bouazza, A. B., Ardjouman, D., & Abada, O. 2015). A transparent and supportive regulatory environment often facilitates SME growth.

The availability and accessibility of financing options are crucial for SMEs to fund their operations, invest in growth, and manage cash flow. Difficulties arise in assessing the financial support system for SMEs regarding the availability of bank loans, venture capital, government grants, crowdfunding platforms, and other funding sources (Abe, M., Troilo, M., & Batsaikhan, O. 2015).

Furthermore, assessing the adoption of technology and digital infrastructure in the SME environment is essential, as it enables businesses to enhance productivity, expand market reach, and drive innovation (Mmbengeni et al., 2021). The infrastructure and technology support SME operations and require adequate infrastructure, including transportation networks, telecommunications, energy supply, and internet connectivity (Ebert & Duarte, 2018).

The presence of support services, business development programmes, mentorship networks, and industry associations can contribute to a favourable SME environment. These resources provide guidance, training, networking opportunities, and access to expertise that can help SMEs overcome challenges and foster growth (Mittal, S., Khan, M. A., Romero, D., & Wuest, T.2018). Considering talent in the marketplace, assessing the availability of skilled labour, educational institutions, vocational training programmes, and workforce demographics is important for SMEs. Access to a talented and adaptable workforce is essential for SMEs to meet their staffing needs and drive innovation (Eller, R., Alford, P., Kallmünzer, A., & Peters, M. 2020).

Government support with initiatives, policies, and programmes designed to support SMEs can provide insights into the overall environment. Supportive policies can contribute to a thriving SME ecosystem. The policies include tax incentives, simplified administrative procedures, export promotion, and business development initiatives (Mashavira, N., Chipunza, C., & Dzansi, D. Y. 2021).

What are the challenges faced by SMEs?

SMEs often face diverse challenges that can hinder their growth and sustainability. While the specific challenges can vary depending on factors such as industry, location, and business model, some familiar challenges are noteworthy:

Financial resource availability impacts SMEs that have limited access to capital and face challenges in securing financing. The financial institutions may consider them to be higher-risk borrowers, making it harder to obtain loans (Wang, 2016). Limited financial resources can restrict SMEs’ ability to invest in technology, expand operations, or market their products/services effectively (Horváth & Szabó, 2019).

Market competition is also a common challenge, as the SMEs typically operate in highly competitive markets. They often must compete against larger corporations with more significant resources and established market presence. Building brand awareness, capturing market share, and differentiating themselves from competitors can be challenging for SMEs (Mutyenyoka & Madzivhandila, 2014; Visser & Chiloane-Tsoka, 2014).

Stiff regulations can pose many concerns for SMEs, as compliance with these rules can be difficult. Compliance obligations related to taxes, licences, permits, health and safety standards, data protection, and employment regulations can pose challenges, particularly for small businesses with limited administrative capacity (Johnson, 2015)

The ability to identify and retain talent is a general concern and is difficult for SMEs, given that they are smaller industries and job seekers are always looking for security (Boštjančič & Slana, 2018). SMEs often struggle to attract and retain skilled employees due to assorted reasons such as limited budgets for competitive salaries, fewer opportunities for career advancement, and the allure of larger companies. Access to a talented workforce and ensuring employee satisfaction and development can be challenging for SMEs (Whysall, Z., Owtram, M., & Brittain, S. 2019).

SMEs may face limited resources and limited expertise can result in manual or outdated systems, insufficient automation, and inefficient workflows. Streamlining operations and optimising productivity can be a challenge for SMEs (Eggers, 2020).

Rapid technological advancements and digital transformation pose challenges for SMEs. Limited resources and expertise create difficulties in adapting to innovative technologies, integrating digital tools, and leveraging e-commerce platforms require investments, skills development, and change management (Vuță, D. R., Nichifor, E., Chițu, I. B., & Brătucu, G. 2022).

According to Horváth and Szabó (2019), SMEs may struggle to identify and access market opportunities, especially in global markets. Limited networks, marketing budgets, and knowledge of export procedures can hinder their ability to expand beyond their local or regional markets. SMEs are often more vulnerable to business risks and external shocks, and political instability can have a significant impact on SMEs. Lack of resources to mitigate risks and insufficient contingency planning can make SMEs more susceptible to adverse events (Shirokova, G., Osiyevskyy, O., Laskovaia, A., & MahdaviMazdeh, H. 2020).

SME owners and managers may face problems such as problem-solving, finance, marketing, strategic planning, and human resources. The need for multi-tasking and limited access to professional expertise can be a challenge for SMEs (Eniola & Entebang, 2017).

Causes of the challenges faced by SMEs

The main challenges faced by SMEs can be summarised as follows:

Limited financial resources: SMEs often face difficulties accessing capital and securing financing. They may have limited financial reserves, making it challenging to invest in business expansion, research and development, marketing, or technology upgrades (Lonial & Carter, 2015).

Market competition: SMEs operate in highly competitive markets alongside larger corporations with more resources and an established market presence. Competing against these larger entities can be challenging for SMEs in terms of market share, customer acquisition, and differentiation (Stellenbosch University, 2016)

Regulatory compliance: Compliance with regulations and bureaucratic procedures can be burdensome for SMEs, especially when they lack dedicated legal and administrative teams. Meeting regulatory requirements related to taxes, licences, permits, health and safety, data protection, and employment laws can be time-consuming and costly (Bouazza et al., 2015).

Talent acquisition and retention: Attracting and retaining skilled employees can be difficult for SMEs. They may struggle to offer competitive compensation packages, career growth opportunities, and other benefits compared to larger organisations. Limited resources and smaller teams may also result in increased workloads and stress for existing employees (Stokes, P., Liu, Y., Smith, S., Leidner, S., Moore, N., & Rowland, C. 2016).

Operational efficiency: SMEs may encounter challenges in optimising their operational processes and systems. Limited resources can lead to manual and inefficient workflows, inadequate technology infrastructure, and outdated systems (Rizos, V., Behrens, A., Van der Gaast, W., Hofman, E., Ioannou, A., Kafyeke, T., Flamos, A., Rinaldi, R., Papadelis, S., & Hirschnitz-Garbers, M. 2016). Improving operational efficiency becomes crucial for SMEs to remain competitive and cost-effective (Chiloane-Phetla & Mathipa, 2021; Fatoki, 2014).

Technological adaptation: Rapid technological advancements require SMEs to continuously adapt and integrate innovative technologies. However, limited resources, lack of IT expertise, and resistance to change can hinder the adoption of technology and digital transformation. The limited resources can limit their ability to innovate, automate processes, and leverage digital marketing channels (Mittal et al., 2018).

Access to market opportunities: Expanding into new markets, both domestic and international, can be challenging for SMEs. Limited marketing budgets, lack of networks, and unfamiliarity with export procedures can impede their ability to identify and seize market opportunities beyond their local or regional boundaries (Love & Roper, 2015).

Business risks and uncertainty: SMEs are susceptible to various risks and uncertainties. Economic downturns, market fluctuations, supply chain disruptions, and natural disasters can have a disproportionate impact on SMEs due to their limited resources and resilience. Proper risk management and contingency planning become crucial for their survival and sustainability (Parnell, J. A., Long, Z., & Lester, D.2015).

Lack of expertise: SME owners and managers often wear multiple hats and may lack expertise in key business areas such as finance, marketing, strategic planning, and human resources (Rizos et al., 2016). This lack of expertise can impede their decision-making, growth strategies, and overall business performance. Seeking external expertise or investing in professional development becomes essential (Fatoki, 2014).

Addressing these challenges often requires strategic planning, innovation, collaboration, and seeking support from relevant business networks, industry associations, and government initiatives (Bertello, 2021). SMEs that can overcome these challenges are better positioned to thrive and contribute to economic growth and employment generation.

The theory has proven that there are similarities and relationships between small business enterprise factors and digital technologies that have a role in sustaining SMEs.

2.3.2 How digital technologies can add value and uplift SMEs

Understanding digital solutions

A digital solution refers to a technological or software-based approach that leverages digital tools and capabilities to address a particular problem or fulfil a specific need (Telukdarie, A., Dube, T., Matjuta, P., & Philbin, S.2023). A digital solution involves the use of digital technologies, such as software applications, online platforms, data analytics, cloud computing, artificial intelligence, and the internet of things (IoT), to create innovative solutions.

Digital solutions can be diverse and varied, ranging from simple mobile applications to complex enterprise systems. They are designed to streamline processes, enhance productivity, improve efficiency, enable better decision-making, enhance customer experiences, and drive digital transformation across industries. These solutions can be developed to address a wide range of challenges and opportunities in various sectors, such as healthcare, finance, logistics, marketing, education, manufacturing, and more. For example, a digital solution could be an e-commerce platform that enables businesses to sell their products online, a CRM software that helps companies manage and track customer interactions or an IoT-enabled system that optimises energy consumption in buildings (Gani & Fernando, 2023; Telukdarie et al., 2023).

Digital solutions often involve the integration of multiple technologies, data analysis, and automation to deliver a comprehensive solution. They can be customised to meet specific business needs or can be off-the-shelf products that are readily available for deployment.

Overall, a digital solution harnesses the power of digital technologies to provide innovative, efficient, and effective solutions to challenges or to enhance existing processes, workflows, and experiences in a digitised environment.

Basic components of the digital platform

A digital platform refers to an online or digital framework that facilitates interactions and transactions between different parties, often acting as an intermediary or facilitator. It serves as a virtual space where users can connect, collaborate, exchange information, and conduct various activities.

Digital technologies typically leverage technology, such as the internet, mobile applications, cloud computing, and data analytics, to enable seamless communication, data sharing, and transactions (Stergiou & Psannis, 2017). Digital technologies provide a foundation for users to access and utilise services, products, or content. Social media platforms like Facebook, X, Instagram, and LinkedIn enable users to connect, share content, and interact with others. Oliveri, L. M., Chiacchio, F., D'Urso, D., Munnia, A., & Russo, F.(2023) and Yang, L., Zou, H., Shang, C., Ye, X., & Rani, P. (2023) find that e-commerce platforms are online marketplaces like Amazon, eBay, and Alibaba that enable businesses and individuals to buy and sell products or services. Ride-sharing platforms like Uber and Bolt connect passengers with drivers, facilitating transportation services. Content streaming platforms like Netflix, Spotify, and YouTube provide access to digital media content, such as movies, television shows, music, and videos.

Crowdfunding platforms like Stokvel in South Africa allow individuals or businesses to raise funds from many people for projects or ventures. Digital technologies often function as intermediaries, connecting supply and demand or enabling collaboration and sharing among users. They may employ various business models, such as commission-based transactions, subscription fees, advertising revenue, or data monetisation. Digital technologies have transformed many industries and disrupted traditional business models. They offer scalability, reach, and efficiency by leveraging digital technologies, data analytics, and user-centric design. They have become a fundamental part of the digital economy, enabling innovation, creating new marketplaces, and driving economic growth.

Uses of digital solutions

Digital solutions have a wide range of uses across various industries and sectors. Figure 2 outlines the common applications and uses of digital solutions.

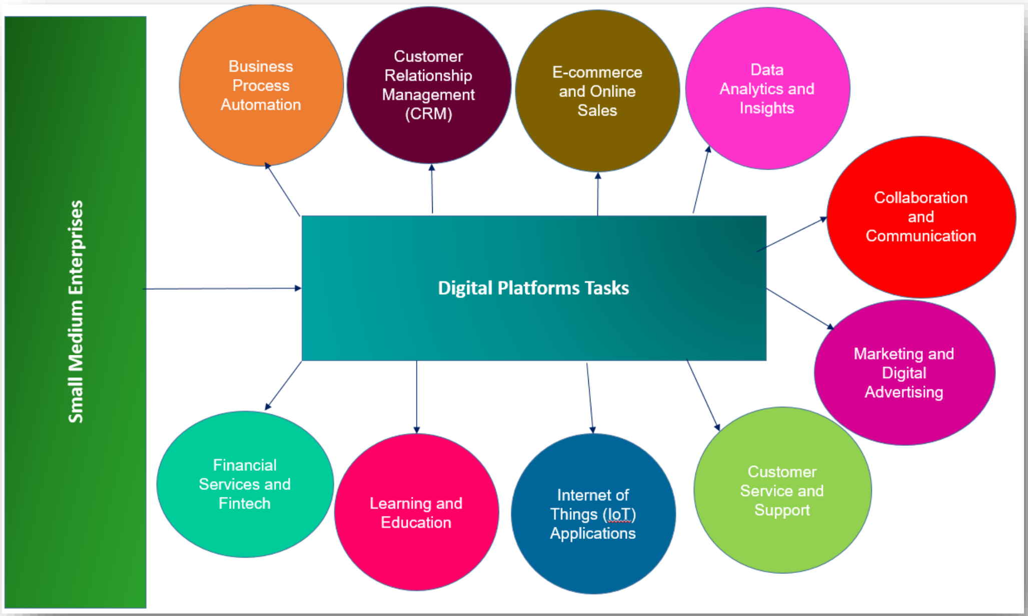

Figure 2.2: Digital technologies: Tasks (Author's construct)

Business process automation: Digital solutions can automate repetitive and manual tasks, streamlining business processes and improving operational efficiency. This includes automating data entry, document management, inventory tracking, and workflow management.

Customer relationship management (CRM): Digital solutions can help businesses manage and analyse customer data, track interactions, and provide personalised customer experiences. CRM systems enable businesses to enhance customer relationship management, sales processes, and customer service (Oliveri et al., 2023; Yang et al., 2023).

E-commerce and online sales: Digital solutions enable businesses to establish online stores, manage inventory, process online payments, and facilitate e-commerce transactions. This allows companies to reach a broader customer base, offer personalised shopping experiences, and optimise sales processes.

Data analytics and insights: Digital solutions leverage data analytics tools and techniques to process and analyse large volumes of data. This helps businesses gain insights into customer behaviours, market trends, and operational performance, enabling data-driven decision-making and strategy development.

Collaboration and communication: Digital solutions, such as collaboration platforms, project management tools, and virtual communication tools, facilitate remote teamwork, real-time collaboration, and communication across teams and departments. This is particularly valuable in today's increasingly remote and distributed work environments.

Marketing and digital advertising: Digital solutions enable businesses to conduct targeted marketing campaigns, track user engagement, and measure the effectiveness of marketing efforts. This includes using digital advertising platforms, social media marketing tools, email marketing software, and marketing automation systems (Telukdarie et al., 2023).

Customer service and support: Digital solutions can provide self-service options, chatbots, and customer support ticketing systems to enhance customer service. This allows businesses to manage customer inquiries, provide support, and resolve issues efficiently.

IoT applications: Digital solutions leverage IoT devices and connectivity to enable smart homes, smart cities, industrial automation, and connected devices. This includes applications in sectors like healthcare, manufacturing, transportation, and energy management.

Learning and education: Digital solutions play a significant role in online learning platforms, e-learning tools, and educational applications. They provide access to educational resources, interactive content, virtual classrooms, and personalised learning experiences (Yang et al., 2023).

Financial services and fintech: Digital solutions have transformed the financial services industry, enabling online banking, mobile payment applications, peer-to-peer lending platforms, robot advisors, and digital wallets.

Digital solutions continue to evolve and expand as technology advances, creating new possibilities for all types of businesses across industries.

What is an engagement platform using digital solutions?

An engagement platform using digital solutions refers to a technology-based platform that facilitates interactions, communication, and engagement between businesses and their customers, employees, partners, or other stakeholders. The engagement platform leverages digital tools and features to enhance engagement, collaboration, and relationship-building.

Key features and functionalities of an engagement platform using digital solutions may include:

New communication channels: The platform provides various channels for communication, such as instant messaging, video conferencing, discussion forums, or chatbots. These channels enable real-time interactions and facilitate quick and efficient communication.

Enhanced or improved collaboration tools: The platform offers collaboration features, including document sharing, project management, task assignment, and shared calendars. These tools enable teams to collaborate, work together, and track progress on shared projects or tasks.

Personalisation and customisation: The platform allow users to personalise their experience based on their preferences and needs. It may offer customisable profiles, content recommendations, or user-specific settings to provide a tailored experience.

Feedback and surveys: The platform provide mechanisms for collecting feedback, conducting surveys, or soliciting opinions from users. This helps businesses gather insights, measure satisfaction, and make data-driven improvements based on user feedback.

Gamification: The platform may incorporate gamification elements, such as badges, leader boards, or rewards, to engage and motivate users. Gamification enhances user engagement and adoption by encouraging participation, competition, and rewards.

Analytics and insights: The platform include analytics and reporting capabilities to track user engagement, measure performance, and gain insights into user behaviours. This data-driven approach helps businesses understand user preferences, identify trends, and make informed decisions.

Integration with other systems: The platform integrates with other digital solutions, such as CRM systems, email marketing tools, or project management software. This integration allows for seamless data exchange, centralised information management, and enhanced functionality.

Mobile accessibility: The platform is accessible via mobile devices, ensuring users can engage and interact on the go. Mobile accessibility extends the reach and convenience of the engagement platform, accommodating users who prefer to use smartphones or tablets.

Engagement platforms using digital solutions can be used for various purposes, such as customer engagement and support, employee collaboration and communication, partner relationship management, community building, or stakeholder engagement. The platform aims to foster meaningful interactions, improve relationships, and drive engagement between the organisation and its stakeholders using digital technology.

Digital technology's value adds to sustaining SMEs

Increased visibility and brand exposure: Digital technologies provide SMEs with increased visibility in the online space, allowing them to reach a wider audience. By establishing a strong online presence, SMEs can enhance brand exposure and recognition, leading to increased customer awareness and trust.

Expanded market reach: Digital technologies enable SMEs to transcend geographical boundaries and access new markets. By leveraging e-commerce and online marketing, SMEs can target customers locally and globally, expanding their market reach beyond traditional limitations. This increased market reach creates new growth opportunities and revenue streams for SMEs (Jeza & Lekhanya, 2022).

Cost efficiency and resource optimisation: Digital technologies offer cost-effective alternatives for SMEs compared to traditional business models. They eliminate the need for significant investments in physical infrastructure, reducing operational costs. SMEs can optimise resources by leveraging digital tools and automation, streamlining processes, and reducing manual efforts.

Access to customer insights and data analytics: Digital technologies provide SMEs with valuable customer insights and data analytics capabilities. Through analytics tools, SMEs can gather and analyse data related to customer behaviours, preferences, and purchasing patterns (Jeza & Lekhanya, 2022). This data-driven approach helps SMEs make informed decisions, refine marketing strategies, and tailor their products or services to meet customer demands (Telukdarie et al., 2023).

Improved customer engagement and communication: Digital technologies facilitate direct and personalised communication with customers (Thakur, 2018). SMEs can engage with their target audience through various channels such as social media, email, chatbots, and instant messaging. This direct engagement fosters stronger customer relationships, increases customer satisfaction, and builds brand loyalty (de Oliveira Santini, F., Ladeira, W. J., Pinto, D. C., Herter, M. M., Sampaio, C. H., & Babin, B. J. 2020).

Access to digital marketing tools and strategies: Digital technologies offer SMEs a range of marketing tools and strategies to effectively promote their products or services (Quaye & Mensah, 2019). These tools include search engine optimisation (SEO), content marketing, social media advertising, and influencer marketing (Mogoş, 2015). SMEs can leverage these tools to create targeted marketing campaigns, increase customer acquisition, and compete with larger competitors.

Collaboration and partnership opportunities: Digital technologies facilitate collaboration and partnership opportunities among SMEs. SMEs can connect with suppliers, distributors, and complementary businesses through online platforms, fostering mutually beneficial relationships. Collaborative efforts on digital technologies can lead to shared resources, knowledge exchange, and increased competitiveness for SMEs (Telukdarie et al., 2023).

Access to financial and support services: Digital technologies often provide SMEs with access to financial services such as online banking, digital payment solutions, and crowdfunding platforms (Shofawati, 2019). They also offer support services such as online marketplaces, mentorship programmes, and business networking communities. These services contribute to the overall upliftment of SMEs by providing them with the necessary tools, resources, and support for growth.

In summary, digital technologies add value and uplift SMEs by increasing their visibility, expanding market reach, reducing costs, providing access to customer insights, improving customer engagement, offering marketing tools and strategies, fostering collaboration, and providing access to financial and support services. By embracing digital technologies, SMEs can overcome traditional barriers and thrive in the digital economy.

Digital technologies can create the opportunity for businesses to reach beyond geographical limitations and connect globally, eliminating the limitations of physically connecting. This exposure to digital technology increases the potential for growth and revenue generation (Belitski & Liversage, 2019).

The traditional set-up of businesses is costly and expensive to maintain when considering the brick-and-mortar structures. Digital technologies offer a cost-effective alternative for these SMEs. In addition to saving on expensive building costs, a digital platform significantly reduces the need for additional spending on staff costs, maintenance, electricity and water, and other costly office inventory. By using a digital solution, SMEs can reduce costs on business overheads, improve their operational functions, and improve their profit margins (Belitski & Liversage, 2019).

Digital technologies also allow SMEs to leverage marketing and promotional tools, which could be linked to social media marketing, provide them with opportunities to optimise search engine functionality and provide means to advertise differently than their usual methods (Breckova & Karas, 2020). A digital platform can offer data collection and analysis on the back end to provide the SME with data analytics and insights which encourage the businesses to refine their target audience marketing strategies and cater to their customer’s needs (Bhatti, Ahmed, Ferraris, Hirwani Wan Hussain, & Wamba, 2022).

Faridi and Malik (2019) mention that the level of customer engagement also takes on a whole new meaning of effectiveness via a digital platform because of the ability to connect in real time and almost instantly with customers and peers. This leads to an increased and enhanced customer engagement experience created with the aid of digital technology (Bhatti et al., 2022). According to Yang et al. (2023), digital technologies can facilitate interactive communication through chatbots, instant messaging, and social media platforms. Furthermore, this type of engagement fosters customer loyalty, builds brand reputation, and enables businesses to gather feedback and improve their products or services based on customer needs.

In addition to the enhancement of the customer experience, the other additional benefit is the availability of e-commerce opportunities to the SME. Digital technologies can provide SMEs with the opportunity to manage their businesses online through e-commerce technology and online sales techniques. The SMEs can potentially manage their businesses through online stores with digital payment solutions in place, providing their customers with a unique digital experience that interacts with them.

Digital technologies enable businesses to set up online stores, accept digital payments, and provide seamless customer experiences. E-commerce offers convenience to customers and reveals new revenue streams for SMEs, reducing dependence on physical foot traffic and expanding their market potential (Yang et al., 2023).

Digital technologies also provide access to business tools and other resources. These tools and resources can be tailored to the needs of SMEs and be used as connectivity tools to link to similar types of industries and peers for leveraging partnership opportunities (Ciriello, R. F., Richter, A., & Schwabe, G. 2018). Further useful types of digital tools could be updated inventory management systems, accounting software, CRM tools, and analytics platforms. These types of resources empower SMEs to enhance their business operations, make data-driven decisions, and optimise the business overall (Hein, A., Schreieck, M., Riasanow, T., Setzke, D. S., Wiesche, M., Böhm, M., & Krcmar, H.2020).

One of the most interesting benefits of acquiring a digital tool for SMEs is the opportunities provided for collaboration and networking with like-minded peers in the SME arena (Costa et al., 2020). Digital technologies provide the ideal collaboration and networking opportunities for SMEs. They allow businesses to connect with suppliers, distributors, and other potential business partners or industries, facilitating mutual partnerships and enabling growth through shared resources and knowledge exchange. This type of collaboration and relationship engagement using digital technologies can develop into longevity solutions and can increase competitiveness among similar industries (Oji et al., 2017).

Digital technologies for SMEs can assist these businesses in overcoming various challenges they face and create growth opportunities. The main benefits are the provision of opportunities for extended market reach, cost reduction, improved customer experience and increased engagement in real-time, cross-collaboration with other SMEs, revenue generation and exposure to digital tools for an improved and efficient experience.

Digital technologies can uplift SMEs by improving their sustainability and longevity and improving the country's economic revenue.

2.3.3 Effective digital solutions for sustaining SMEs

SMEs gaining access to a wide range of digital solutions can help them streamline operations, enhance productivity, and improve their overall business performance. The best digital solution for business engagement purposes can vary depending on the specific needs and goals of the business. However, there are a few popular and effective digital solutions that are commonly used for business engagement. These include:

Customer relationship management (CRM) systems: CRM systems are designed to manage and enhance customer engagement. They enable businesses to track customer interactions, manage leads and contacts, automate sales processes, and provide personalised customer experiences. CRM systems help businesses build stronger relationships with their customers and improve customer engagement and satisfaction.

Cloud computing: SMEs can leverage cloud computing services to store and access data and applications remotely. Cloud solutions offer scalability, cost-effectiveness, and flexibility, allowing SMEs to offload IT infrastructure management and focus on core business activities.

Project management software: Project management tools assist SMEs in planning, organising, and tracking projects. These tools help manage tasks, collaborate with team members, track project progress, and ensure timely project completion.

Accounting and financial software: SMEs can use accounting software or online financial platforms for tasks such as bookkeeping, invoicing, expense tracking, and financial reporting. These solutions streamline financial management processes and provide accurate insights into business finances.

Cybersecurity solutions: SMEs can implement cybersecurity solutions to protect their digital assets, customer data, and sensitive information. These solutions include antivirus software, firewalls, encryption tools, and employee training on cybersecurity best practices.

HR management systems: HR management systems automate and streamline HR processes, including employee onboarding, time, and attendance tracking, leave management, and performance evaluation. These solutions help SMEs effectively manage their human resources and improve HR-related processes.

Social media platforms: Social media platforms provide a powerful means of engaging with customers and building a community around a business. Platforms like Facebook, Instagram, X, LinkedIn, and YouTube allow businesses to share content, interact with customers, respond to inquiries, and gather feedback. Social media provides a direct and interactive channel for businesses to engage with their target audience.

Email marketing software: Email marketing remains a popular and effective way to engage with customers. Email marketing software enables businesses to send personalised emails, newsletters, and promotional campaigns to their customer base. These tools often provide features for email automation, segmentation, and analytics to enhance engagement and track the effectiveness of email campaigns.

Customer feedback and survey tools: Collecting feedback from customers is crucial for understanding their needs and improving engagement. Feedback and survey tools allow businesses to gather opinions, conduct customer satisfaction surveys, and gain valuable insights into customer preferences. These tools help businesses identify areas for improvement and make data-driven decisions to enhance engagement.

Live chat and chatbot solutions: Real-time communication tools like live chat and chatbot solutions enable businesses to engage with customers instantly. These tools provide a convenient way for customers to seek assistance, ask questions, or get support. Live chat facilitates immediate interaction, while chatbots can provide automated responses to common queries, improving engagement inside and outside regular business hours.

Virtual events and webinars: Virtual events and webinars provide opportunities for businesses to engage with customers, partners, or employees. These digital solutions allow businesses to host online conferences, seminars, workshops, or product demonstrations. Virtual events facilitate interactive sessions, Q&A sessions, and networking opportunities, enhancing engagement and knowledge-sharing.

Therefore, businesses must evaluate their specific engagement goals, target audience, and available resources to determine the most suitable digital solution for their engagement purposes. It may also be beneficial to integrate multiple digital solutions to create a comprehensive and effective engagement strategy.

The analysis of the theory has proven that there are effective digital solutions to sustain SMEs.

2.4 Analytical framework

The following section outlines the theoretical and conceptual framework of this study.

2.4.1 Theoretical framework

The following section outlines the theoretical framework adopted to support the study.

TOE framework

The technological, organisational, and environmental (TOE) framework was adopted to provide relevant support for digital transformation in organisations. The TOE framework has three main factors that can affect the process of implementing technology for SMEs.

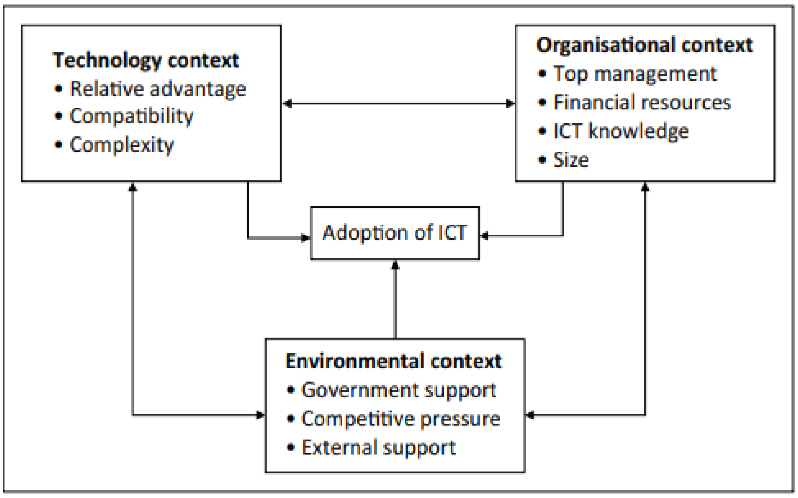

Figure 3: Technological, organisational, and environmental (TOE) framework (Alkhater et al., 2018)

Chiu, Chen and Chen's (2017) TOE framework factors are outlined below.

Technological factor: Digital technologies that SMEs should implement to ensure sustainability. The technology element refers to the tools, systems, and resources used by an organisation to accomplish its objectives and tasks. This is a broad category and can include hardware, software, infrastructure, communication systems, and many other technological components.

Environmental factor: The environmental factors, such as the maturity of the SME to implement digital solutions, including the external factors and influences that impact its operations. This includes the industry in which the SME operates, market conditions, regulatory environment, economic factors, technological advancements, and societal trends.

Organisational factor: The SME's ability/capability to adopt digital solutions that add value to the SME. This element also refers to the structure, culture, processes, and people in an organisation. It encompasses how an organisation is designed and managed, as well as how its people collaborate to achieve common goals.

The relationship between these three components is crucial to understanding how a digital solution can improve the sustainability of SME businesses in Johannesburg. Success and adaptability should be considered in a dynamic and competitive landscape. SMEs must align their technology with their business objectives, incorporate technology into their organisational structure, and be responsive to changes in the external environment.

Digital transformation framework

The framework elements below impact the SME's value chain and system, which outlines why digital technologies should be implemented to ensure sustainability. The digital transformation framework is influential and relevant to the study. The framework addresses all digital transformation elements, such as the operational, human, customers, and network, to improve and further support sustainability (Ismail, M. H., Khater, M., & Zaki, M. 2017).

Operational element: The transformation of operational elements focuses on ensuring that the business operation and processes are streamlined to ensure seamless operation. This further looks at digitally integrating operations and processes into the performance management systems to improve competitive advantage and decision-making through reporting.

Human element: The digital transformation impacts people as they must adapt to the new way of working. This requires a digital mindset. When the SME moves to an agile way of doing things, the environment must be well prepared. Employees must have relevant digital technology knowledge to perform their day-to-day work.

Customer element: The implementation of digital technologies positively impacts customer experience. Customers would appreciate the analytics and engagement from ordering to where the service or product is delivered. Digital technologies can introduce improved digital communication channels for effective communication.

Network element: SMEs can use digital technologies to allow interactions with other organisations or networks in their industries. These networks allow the organisations to form strategic relationships and leverage the broader network.

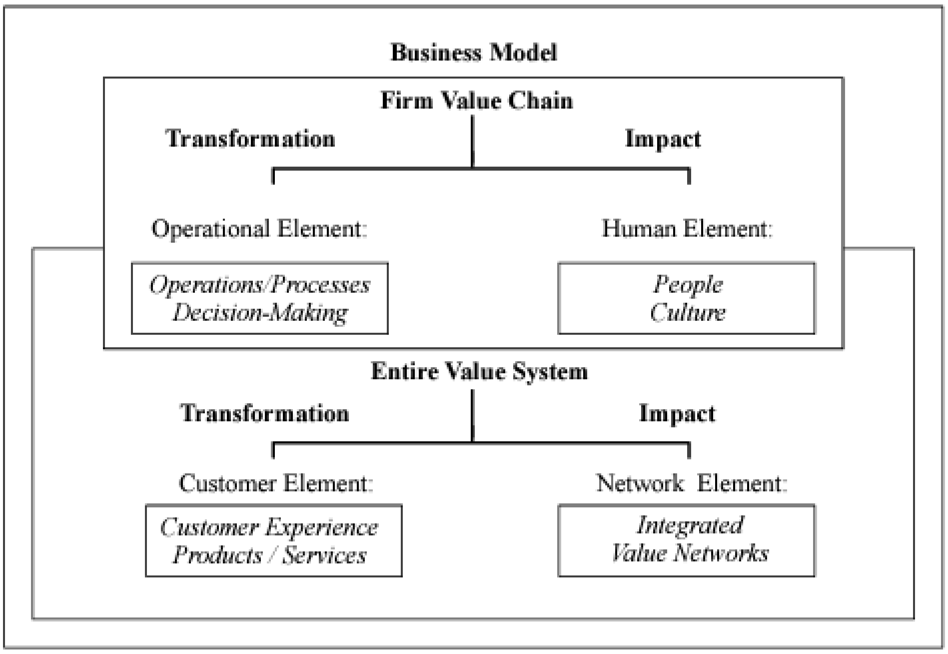

Figure 2.4: Digital transformation model (Ismail et al., 2017)

The next section discusses the conceptual framework.

2.4.2 Conceptual framework

The theoretical framework guides the conceptual framework. The conceptual framework outlines the advantages of digital technology and related concepts being researched. The conceptual framework depicts an exploration of the role of digital technologies in SMEs and how digital technologies can potentially influence and improve sustainability. The conceptual framework is outlined in Figure 5.

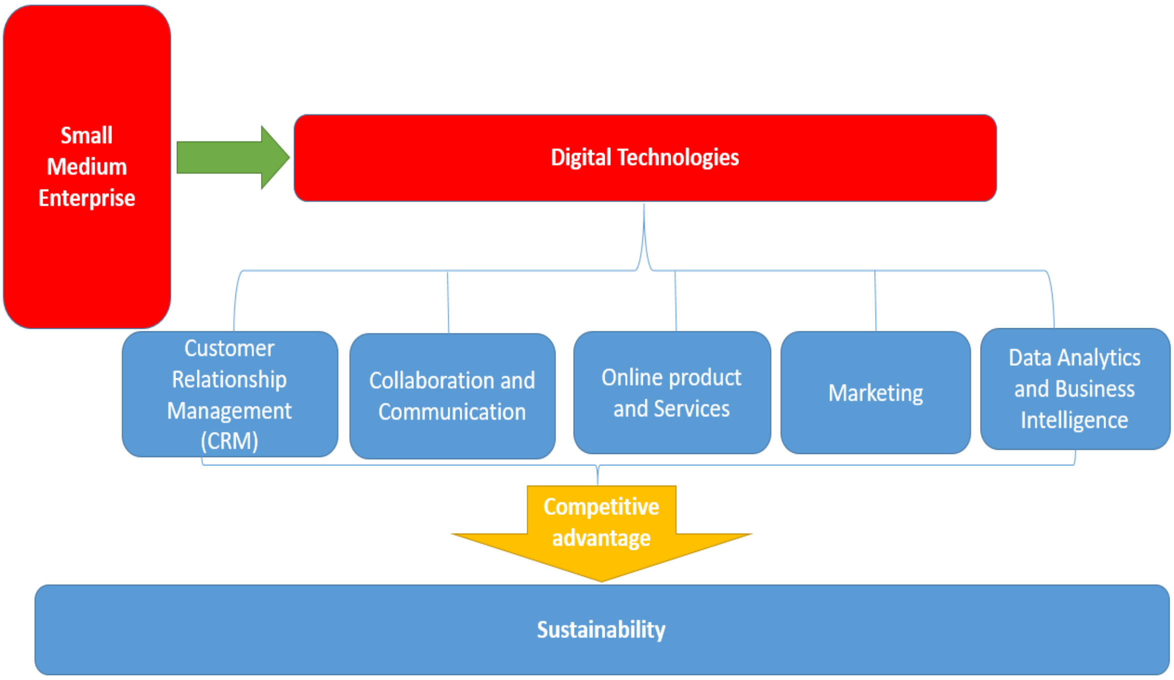

Figure 2.5: Digital transformation for SME sustainability model

The following elements derived from digital technology can add significant value to SMEs. Each element is discussed in detail below.

Customer relationship management (CRM): CRM systems enable SMEs to manage customer interactions, track leads, automate sales processes, and analyse customer data. CRM solutions help SMEs improve customer service, enhance sales performance, and strengthen customer relationships.

Collaboration and communication: SMEs can employ collaboration and communication tools such as team messaging platforms, video conferencing software, and shared document management systems. These tools facilitate remote collaboration, internal communication, and information sharing among team members.

Online products and services: SMEs can establish online stores using e-commerce platforms, allowing them to reach a broader customer base and sell products or services online. These platforms provide features for inventory management, online payments, order fulfilment, and customer engagement.

Marketing: SMEs can use various digital marketing tools such as email marketing software, social media management platforms, SEO tools, and analytics platforms. These tools help SMEs promote their products or services, target specific customer segments, and track marketing performance.

Data analytics and business intelligence: SMEs can leverage data analytics and business intelligence tools to gain insights from their data. These tools enable SMEs to analyse sales trends, customer behaviours, and operational performance, as well as enable data-driven decisions that optimise business strategies.

2.5 Summary

SMEs play a role in the economy. However, there is a high business failure rate. Most SMEs fail due to limited resources. The literature reviews supported the analysis of the factors that influence SME sustainability which showed how digital technologies are relevant for this study. The digital transformation model used for this research was established as the most suitable methodology for ensuring that digital technologies are implemented in SMEs.

It is important to note that the specific digital solutions adopted by SMEs can vary based on their industry, size, budget, and specific needs. SMEs should assess their requirements and choose the digital solution that best aligns with their business goals and objectives.

The following chapter outlines the research methodology and design that was used in this study and the data collection and analysis instruments. Additionally, the chapter includes a presentation on the sampling strategy, reliability, validity, and ethical considerations for the study.

CHAPTER 3. RESEARCH METHODOLOGY

3.1 Introduction

The methodology chosen for this study is an interview-based qualitative research method. The study interviewed SME owners in and around Johannesburg. The investigation covered the current ways these businesses operate and what they require to become sustainable and remain relevant in tough economic climates.

The most important aspect of the study was to investigate how a digital platform can enhance the way their business currently functions and how the added benefit could improve business and increase opportunities in and outside of the markets in which they operate.

This chapter focused on the research methodology chosen for the study. A research methodology is a calculated approach used by researchers to understand the elements of the problem they are trying to solve. The research work consists of a formulation of a hypothesis, collection of data, analysis of the data and a conclusion derived from the investigations.

This chapter detailed the components and outlines these crucial components that was included during researching. This chapter describes the research tools and the logic behind why this method was chosen for the study. The research process included all the aspects covering the targeted audience, the strategy to research this group of people, the sampling method, how the data was collected, which area was chosen for the pilot research, and how the data collected was analysed and validated. This section also covers how the research eliminated biases, considered all limitations of the research work, and ensured that ethics were at the centre of the way the study was conducted.

3.2 Research approach

The approach to the research was qualitative, which the researcher believes provided the most beneficial way to understand the problem the research aimed to solve.

According to Johnson et al. (2020), qualitative research best practices must include steps of designing, conducting, and reporting the qualitative research. A strong conceptual framework must support the work, must be clear and focused, and must aim to minimise researcher bias, which can be prevalent in qualitative methodologies. The chosen research method allowed the researcher to understand the SME landscape in Johannesburg, how digital platforms can enable SMEs to be sustainable, and what the challenges facing SMEs are. The study aimed to further unpack the success factors in the chosen SMEs and how these can be digitally enhanced to uplift these businesses to maximise profit and improve business longevity.

The following key assumptions can be derived from this qualitative approach:

- SMEs interviewed for this study provided the researcher with sufficient evidence to support the study aim to prove that implementing digital technologies for SMEs is currently a missed opportunity that could resolve partnerships and other sustainability opportunities and be a significant way to reciprocation of trade.
- SMEs are missing the opportunity to trade with other SMEs in similar industries due to not understanding the proximity of these businesses. The SME sizes could be a limitation as they have restricted budgets and restricted exposure to the market. The SMEs have little to no opportunity to advertise in media due to a lack of exposure to social media or a lack of digital marketing budget.
- Quantity, customisation, and unlimited options of product ancillaries would ensure the longevity of SME businesses. Digital platforms can connect SMEs, creating the ability to trade in the smaller quantities preferred by businesses to procure and expedite with efficiency. Digital platforms promote exposure to a variety of suppliers of ad hoc services and product add-ons that allow for product customisation.

3.3 Research design

The research design describes the process of data collection and the method used to analyse the data. When this data was arranged, it provided relevance to the research purpose and the procedure (Akhtar, 2016).

The qualitative research design strategy for this study allowed the researcher to gain an in-depth understanding of the SME landscape in Johannesburg, the fundamental core challenges faced by SMEs, the role of digital platforms in SMEs, and how these factors influence SME sustainability.

The study followed a structured interview process with selected participants who are business owners of SMEs. The participants interviewed were able to provide key insights into the challenges faced, details on what technology is available and being used by their businesses, and the future needs that would ensure their businesses' success and sustainability.

3.3.1 Advantages

The immediate advantage of this approach to data collection is that the information was gathered directly from participants who were close to the study. The SMEs had a personal stake in participating as they provided the researcher with detailed feedback on current challenges and what they would require to be successful in the future. The study gained knowledge about SME business owners and what can be done to assist by highlighting their needs. The participants provided constructive feedback with potential solutions arising from the discussions.

3.3.2 Disadvantages

The disadvantages of this type of research method and the target participants could be that the SMEs would not be keen to use a digital platform or did not see the benefits of transitioning towards digital solutions. Another disadvantage could be that when presented with potential solutions, SME owners did not see the long term benefit of investing in digital technology to improve sustainability. They may not buy into the long-term vision through the initial conceptual idea of the digital platform as the strategic vision for digital improvement was not part of their business design.

3.4 Data collection methods

This study followed a qualitative interview data collection method in the form of one-on-one interviews. The data collection process is shown in Figure 6.

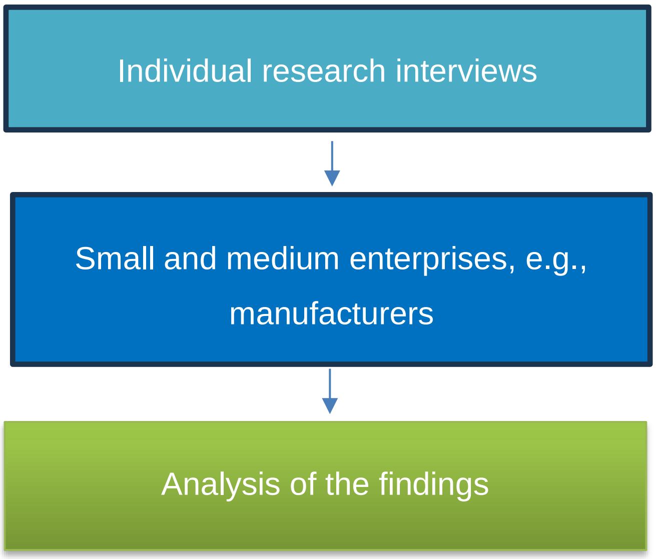

Figure 3.1: Depiction of the data collection process

The data was collected via one-on-one team video call interviews with key participants from SME industries. The participants were selected based on the roles they played in the businesses. Most of the participants are entrepreneurs or senior business partners in these SMEs. Their core functions are strategic and tactical due to the nature of SMEs, where the business is typically smaller and requires all staff to perform multiple functions. The interview questions were structured to understand the pain points and provide solutions to the challenges identified.

The participant SME owners, suppliers, and manufacturers were selected as they are in business in various industries. This selection aimed to understand the broadest number of pain points and identify how to solve the challenges identified. The specific industries were chosen as known financial organisations fund them and they have expressed an interest in introducing digital technology into their some of their businesses. The study investigated the proposed solution of introducing a digital platform for SMEs to interact with each other.

3.4.1 One-on-one Interviews

The interview process followed was a detailed one-on-one interview with each participant in a structured format to gain an in-depth perspective of the business during the data collection. Participants were interviewed about their understanding of the role of digital platforms in their industry, why there should be digital technology advancements and the value it could potentially add to SMEs.

The interviews explored the challenges that SMEs face and how digital technologies could potentially enhance their businesses. The study aimed to identify opportunities that digital technology can provide and address existing challenges for SMEs. A comprehensive set of questions was developed to ensure that all pertinent areas of interest were covered, and participants were asked to provide insights into their views on digital technology. The interviews were conducted and recorded in English using the Microsoft Teams application, with voice recording applications used to capture feedback and notes accurately.

3.5 Sampling method and sample

The participant sample consisted of SME business owners or senior business partners in these organisations. The participants were selected because of their strategic decision-making roles in these businesses. The study only followed a one-on-one interview method and did not have any triangulation as the topic required focused answers to the study.

3.5.1 Sampling method

Sampling is the process of selecting a representative group of participants from the population of interest for the study (Majid, 2018). Following a purposive sampling process provides the researcher with the opportunity to gather effective, clear, relevant data from a smaller group of participants. The data was collected from distinct types of industries that operate as SMEs. The group of participants were from diverse types of businesses, although they shared similar business interests. The diverse types of participants had distinct roles to play in contributing towards the study, as the core reason they are considered SMEs is that they share similar strategic thinking. The type of sampling method used was purposive for the researcher to use their expertise in selecting the sample most appropriate for this study. Purposive sampling is a common method used in qualitative research to assist the researcher in gaining detailed knowledge about the subject matter rather than using statistical data.

3.5.2 Participant sample

The study was conducted with ten participants from SMEs in diverse industries in the form of one-on-one interviews via Microsoft Teams. The participants were at the executive level in SMEs.

The participants were from diverse types of SMEs and were chosen as they have expressed interest in introducing digital technology into their industry. The study investigated the proposed solution of introducing a digital platform for SMEs to interact with each other and key business partners in the industry or similar industries. The study also investigated the advantages of digital technology for SMEs. Initial size of the sample group was 15 participants to be interviewed, however only 10 participants were interviewed. Many participants were not accessible due to annual leave, work or family commitments.

3.6 Research instruments

The research instrument was individual interviews conducted via Microsoft Teams. The researcher ensured that the interview questions guided the data collection so that refined key themes could be extracted.

3.6.1 Interview process

The interviews were conducted via the online Microsoft Teams application and recorded to acquire a transcript after the interviews to validate the data collection. The interviews also guided the participants to consider reasons why and how digital technology could improve their businesses. The interview questions were structured to ensure that participants were guided in answering in the range of the study, as there could have been a perception that the study would extend further than the confines of the investigation. The focus of the study was: *What are the benefits of implementing digital technology in their businesses as well as leveraging a digital platform that can connect SMEs?*

3.7 Procedure for data collection

The interviews were conducted via the online Microsoft Teams application and recorded to acquire a transcript after the interviews to validate the data collection.

3.8 Data analysis strategies and interpretation

According to Boikhutso (2013), a researcher's approach to data analysis impacts how data is selected, evaluated, simplified, and transformed before the interpretation and findings of the research are produced. The researcher is required to develop conceptual frameworks and categorise data, which assist in the data interpretation and explanation (Boikhutso, 2013).

Qualitative data analysis was adopted for this research to describe the data characteristics, organise the data into groups, and retrieve and understand relations between the phenomena observed (Mayer, 2015).

A thematic data analysis strategy was used to identify, analyse, and report the patterns that participants repeated during interview sessions. The data was analysed to identify patterns and key themes that emerged. The advantage of using thematic analysis is that it is one of the most accessible forms of analysis, and the participants did not have to be trained on what to expect or how to answer. There were potentially large amounts of important data that could be easily obtained from the raw data and effectively processed into digestible themes.

The steps that were followed in the thematic analysis were as follows:

- Step 1: Gathering and collecting the qualitative data via one-on-one interviews.
- Step 2: Organising and categorising the interview data.
- Step 3: Coding the interview data to find keywords or statements used by participants.
- Step 4: Analysing the interview data for key insights and common themes.
- Step 5: Reporting on the insights derived from the analysis.

3.9 Limitations and challenges of the study

There were four limitations to the study:

1. SME owners would not be receptive to digital technology solutions.
2. Participants' receptiveness to the line of questioning and discussing details of their business.
3. Participants' honesty in answering the interview questions.
4. Participants' engagement levels during the interview process.

3.10 Quality assurance

Quality assurance refers to activities implemented during research, including techniques, processes, systems, and resources used (Zychla, 2019).

3.10.1 Transferability

The study is based on the role of digital technology in sustaining SMEs in Johannesburg, with participants from SMEs. The study is transferable as qualitative study results can be used to reach a conclusion that applies to other SMEs from various industries (Connelly, 2016).

3.10.2 Credibility

The study followed a standard qualitative process to ensure its credibility (Noble & Heale, 2019). Data was collected from the individual interviews. Participants were given the opportunity to answer questions asked by the researcher to ensure credibility, as the questions were based on their knowledge and experience of their current industries, their perceived understanding of digital technologies, and the impact digital technologies could have on SMEs regarding sustainability. Participants were drawn from the SME industries at the owner or senior business partner level. Some of the SME participants are at the executive management level in these industries or typically are the CEOs of these companies (Nassaji, 2020).

3.10.3 Dependability

The study's findings are consistent and reliable as individual interviews were recorded and exact transcripts were obtained from Microsoft Teams. Furthermore, records were captured and documented to ensure that they were easily accessible for future audits should there be a need for findings to be audited or even if any relevant participant wanted to view the results. All participants were asked the same questions for consistency, and further probing questions ensured that the researcher investigated all possible data points. The data's stability was ensured by storing research data in the cloud so that the information is accessible for as long as it is required, including when the research process is over (Connelly, 2016).

3.10.4 Trustworthiness

In qualitative research, a key aspect of content analysis is the trustworthiness of the data, which is often related to terms such as dependability, comfortability, authenticity, and credibility. According to Satu Elo et al. (2014), it is important to scrutinise the trustworthiness of every phase of the analysis process, including the preparation, organisation, and reporting of the results. These three phases consist of collecting suitable data, understanding the data, and selecting a unit of analysis of the data. The aim of trustworthiness in a qualitative study is to support the findings of the study and ensure they are worthy of being included or considered.

3.11 Ethical considerations

Research must have a professional code of ethical principles; professional societies should formulate this to ensure that they are protected. The principles should include information about participation being voluntary (meaning participants must not be forced to participate in the research) and include how their confidentiality and anonymity were maintained (Manamela et al., 2016). The informed consent forms were emailed to participants to obtain their agreement to participate in the study and to assure them that their responses would not be linked to them.

Confidentiality, anonymity, and informed consent are key aspects of a study that maintains ethical considerations throughout the interview process. Participants were provided with consent forms that specified that the feedback would only be used for the study. Participant confidentiality and anonymity were maintained. All participants were required to sign a consent form agreeing to their feedback being used for the study and that they consented to participate and have their information recorded by the researcher. The study only commenced once all these standards were met.

3.11.1 Individual interviews

Letters were sent via email to participants that clearly defined the purpose, objectives, and topic of the study, as well as what the participants were required to do. They were notified that research is an official study activity. Participants were assured that their data would be protected and that they and their family members would not be affected negatively by the study, including a guarantee to not be exposed to any physical harm or stressful conditions (Husband, 2020).

The detailed Wits Business School ethics form was completed accordingly and sent to its Post-Graduate Committee (PGC) for approval purposes before data collection. Ethical clearance was granted prior to any data collection.

Table 3.1 Consistency table: research questions, propositions, data collection and data analysis

RO #	State research objective	Prop #	Proposition	Theoretical framework	Research methodology	Data collection	Data analysis method
1	To what extent do digital technologies have a role in sustaining SMEs?	1	The theory has proven that there are similarities and relationships between SME factors and digital technologies that have a role in sustaining SMEs.	The infrastructure and technology that support SME operations: having adequate infrastructure, including transportation networks, telecommunications, energy supply, and internet connectivity (Ebert & Duarte, 2018). Assessing the adoption of technology and digital infrastructure in the SME environment is essential, as it enables businesses to enhance productivity, expand market reach, and drive innovation (Mmbengeni et al., 2021).	Qualitative	Document and literature review Interview guide Questions 1, 2, 3	Thematic analysis
2.	How can digital technologies add value and uplift SMEs?	2	Digital technologies can uplift SMEs by improving their sustainability and longevity and improving the country's economic revenue.	**Increased visibility and brand exposure:** Digital technologies provide SMEs with increased visibility in the online space, allowing them to reach a wider audience. By establishing a strong online presence, SMEs can enhance brand exposure and recognition, leading to increased customer awareness and trust.	Qualitative	Document and literature review Interview guide Questions 4, 5, 6, 7, 8	Thematic analysis

				Expanded market reach: Digital technologies enable SMEs to transcend geographical boundaries and access new markets. By leveraging e-commerce and online marketing, SMEs can target customers locally and globally, expanding their market reach beyond traditional limitations. This increased market reach creates new growth opportunities and revenue streams for SMEs (Jeza & Lekhanya, 2022)			
	Effective digital solutions for sustaining SMEs?	3	The analysis of the theory has proven that there are effective digital technology solutions to sustain SMEs.	SMEs have access to a wide range of digital solutions that can help them streamline operations, enhance productivity, and improve their overall business performance. The best digital solution for business engagement purposes can vary depending on the specific needs and goals of the business. However, there are a few popular and effective digital solutions that are commonly used for business engagement.	Qualitative	Document and literature review Interview guide questions 8, 9, 10, 11, 12, 13, 14, 15, 16, 17	Thematic analysis

3.12 Summary

In this chapter, the research methodology used for this study is outlined. The study was conducted using a qualitative research method comprising a set of research questions used to interview participants. Reflecting on the process followed to gather research data, a qualitative approach was the most appropriate method to inform the study. Participants were taken through the interview steps using the tools and methods described in this chapter. Data was collected and analysed in line with the thematic analysis process while ensuring ethics was the guiding principle throughout the research work. This section also covered the advantages and disadvantages alongside key considerations of the participants that were required during the research study. The interviews were conducted successfully with most of the participants and the data collected was sufficient to complete the thematic analysis and conclude the study.

CHAPTER 4. PRESENTATION OF RESULTS/FINDINGS

4.1 Introduction

This chapter presents the findings gained through the participants' interview data and describes the analysis of the responses to the research questions. The researcher followed a process of conducting one-on-one interviews with participants from diverse types of SME industries, focusing on the business owners, entrepreneurs, and directors of these companies. The qualitative data gathered during the interviews was analysed using a thematic analysis method.

The outcomes of the research are organised based on the primary themes outlined in Section 2.3 of this study. This chapter delves into sub-related themes identified during individual interviews with participants. Noteworthy items in one-on-one interviews identified were the sustainability of SMEs due to lack of funding for SMEs, talent management, little or no exposure to digital technology, economic downturn overall and dependence on manual operation processes. These findings are correlated with the theories discussed in Section 2.4.1, which encompasses the literature review.

4.2 Demographics of participants

4.2.1 Industries

In this section, the demographics of the participants are discussed, providing more information on the types of industries and the participants' feedback. Figure 4.1 shows the split of the participants industries.

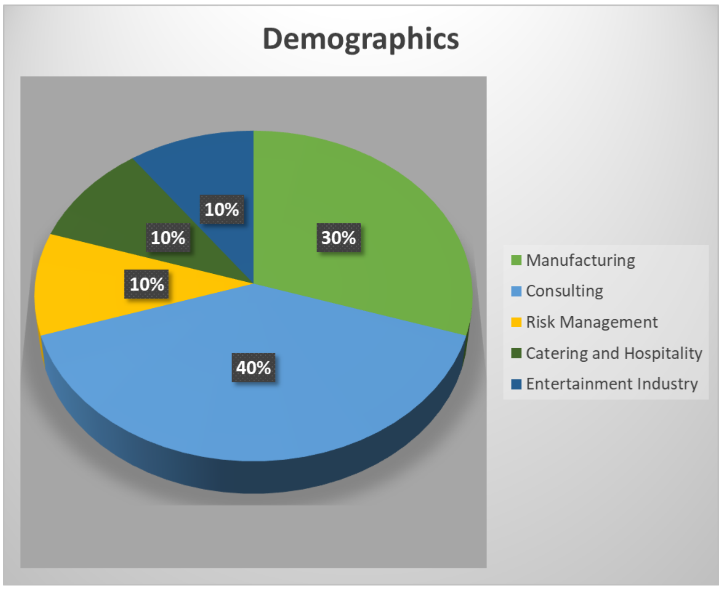

Figure 4.1: Split of the participant industries

The participants were selected from varying industries to generate different perspectives on SME challenges and possible solutions. The participant sample comprises 30% from a niche manufacturing industry, 40% from entrepreneurial consulting services, 10% from the entertainment industry, 10% in risk management services, and 10% in catering and hospitality. The sample size was sufficient to gain a wealth of insights into the landscape of the SME owner.

4.2.2 Understanding the participants

In this section, the discussion unpacks the organisational role of the participants in the SMEs that were interviewed for the study. All participants are indeed owners or entrepreneurs of their businesses. The largest number of participants were from the consulting field. These entrepreneurs started their consulting services businesses for a variety of reasons. One participant indicated she started her consulting business to supplement the cash flow of another business she owns that offers personalised home service to families. During a tough period when business was not doing very well, this participant, formerly a corporate professional, found herself going back into the corporate environment to increase personal cash flow to inject back into her other business.

The participants included manufacturing businesses where owners were start-up entrepreneurs. These businesses were founded based on a niche industry identified and capitalised. As suppliers to larger organisations, these manufacturers built their businesses on the market gap they saw. The remaining participants were from the risk management, hospitality, and entertainment industries. These business owners founded their businesses through a passion for the craft in addition to identifying potential opportunities to be successful in the market.

4.3 Thematic analysis of research findings

This section provides feedback on the themes that were discovered during the participant interview process, highlighting the core successes and challenges faced by SMEs. The following key themes were prevalent throughout the interview process. Thematic analysis of the findings provided the researcher with an understanding of the concerns of SME owners across multiple industries. The interview questions were structured to engage the participants on their views and experiences with digital technology. The broad categories identified in Table 4.1 are real perspectives from the participants' viewpoints which are further discussed in Section 4.3.1 linking the categories to the propositions.

Table 4.1: Thematic analysis of the themes

Networking and Collaboration	Access to Funding or Financial Resources	Technology Innovation and Adoption	Business Growth and Development	Staff Skills Training	Sustainability
Scalability	Collateral Limitations	Budget Limitation	Financial Constraints	Budget Constraints	Funding Issues
Training and Adoption	Credit History	Employee Resistance	Market Competition	Time Constraints	Market Competition
Resources Limitations	Risk Perception	System Integration Issues	Talent Retention	Training Needs Analysis	Consumer Perception
Proximity to partners	Lack of Financial History	Security Concerns	Operation Constraints	Employee Resistance	Staff Education and Engagement
	Market Volatility	Skills Gap	Technology Adoption	High Employee Turnover	Supply Chain Sustainability
	High Cost of Borrowing	Technical Support Limitations	Customer Retention	Language and Culture	Customer Needs Changing
			Access to resources		

The research methodology outlined in Chapter 3 was intended for use when interviewing 14 participants, comprising ten business owners and four participants from the financial services sector.

During the research data collection, it became apparent that the contributions of the SME owners were more valuable and offered depth in understanding their industries. Several participants withdrew from the interview process due to unforeseen circumstances such as work commitments or personal reasons. In order to gain the maximum value of participant feedback from SME owners, new participants were recruited and added to the study. Given the nature of the study, which involved voluntary participation, SME owners had to be sought and offered the opportunity to participate. The intended participants from the financial sector were excluded to allow the study to focus on diverse SME owners' perspectives. The researcher decided that the content of the study should be limited to and focus on an in-depth understanding of the non-financial sectors of the economy run by SMEs. Participants were informed before the interviews began. The interviewed participants are entrepreneurs in each of their businesses, and they play a pivotal role in the management and execution of the leadership and strategy in the SMEs.

Table 4.2 depicts the code classifications used to identify the exact comments or quotations from the participants while keeping their identities anonymous. The participants were also made aware that excerpts would be taken from the interviews and that their identities remained completely confidential.

Table 4.2: Classification of the interview participants

Classification of one-on-one interview participants	Code classification
Interview Participant 1: Entrepreneur, Managing Director	P01
Interview Participant 2: Entrepreneur, Managing Director	P02
Interview Participant 3: Partner, Managing Director	P03
Interview Participant 4: Entrepreneur, Managing Director	P04
Interview Participant 5: Entrepreneur, Managing Director	P05
Interview Participant 6: Entrepreneur, Managing Director	P06
Interview Participant 7: Entrepreneur, Managing Director	P07
Interview Participant 8: Partner, Managing Director	P08
Interview Participant 9: Entrepreneur, Managing Director	P09
Interview Participant 10: Entrepreneur, Managing Director	P10

Interview process

The interviews were conducted via Microsoft Teams, with all participants made aware that they were being recorded and a transcript of the meeting would be taken. The one-on-one interviews were conducted via Microsoft Teams. Each participant was informed ahead of the interview how long it would be and what the topic would be. Participants were also given consent forms to sign and return before being interviewed. The feedback was connected to each of the three research objectives outlined at the beginning of the study to make sense of the data collected. Participants were asked questions about their business entities, their daily operations, business engagement model, their exposure to digital technologies and plans to bring this into their businesses.

The study surfaced the following themes: networking and collaboration, access to funding or financial resources, staff skills and training, sustainability, technology innovation and adoption, business growth and development, manual processes versus digital processes, societal norms, economic climates, and regulatory restrictions. The key themes were framed in the context of each business owner's understanding of the question as it relates to their business. During the interviews, these themes emerged with similarities and some original aspects among the various SMEs.

Analysing the interview data

This part of the research focuses on the analysis of the data and the comments from the participants related to each of the research questions. Figure 8 depicts the interconnected relationships between the key themes and the research propositions. It is evident from this analysis that SME owners have value to add to the economy in terms of their new ideas and original concepts. However, there are several hurdles participants experienced in reaching their full potential.

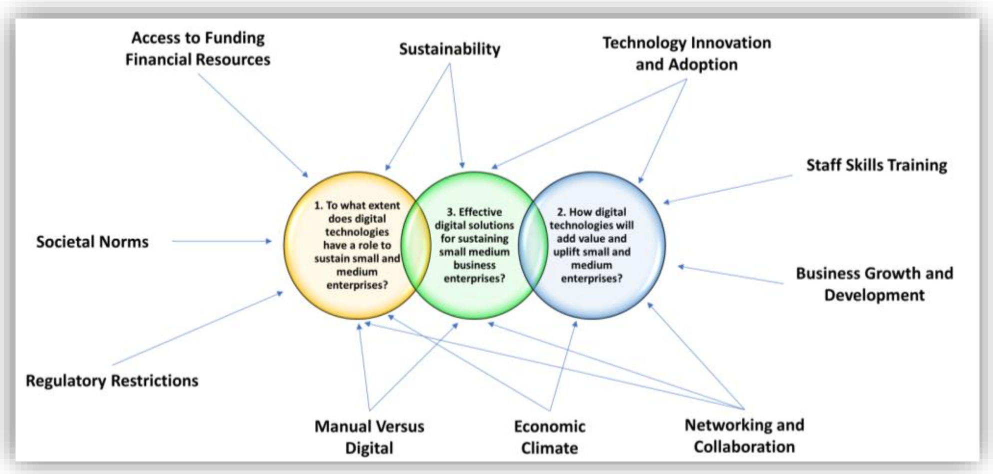

Figure 4.3: Relationship between key themes from the SME interviews and research questions

4.3.1 Proposition 1: Digital technologies have a role in sustaining SMEs

When asked questions relating to this theme, participants were able to share detailed information regarding their views on embracing digital technologies. Commentary alluded to digital technologies allowing SMEs to enhance their competitiveness, expand their market reach, improve operational efficiency, and adapt to the dynamic business landscape. Digital technologies play a pivotal role in sustaining and growing SMEs in the modern business environment.

Theme 1: Access to funding or financial resources

Participants were asked to discuss some of their most significant challenges. The researcher noted that a common challenge shared by several SME owners was funding from financial institutions and private lenders. It is important to note that most of participants mentioned financial concerns as a key challenge. There were several references made to financial constraints, implying there is a significant challenge for SME owners to note. One of the human elements that is a sore point for these business owners is that there appears to be a lack of trust in financial institutions and other funding resources. Participants referred to having to produce evidence of financial stability and three years of financials in some instances, even though some of the businesses are newly established. Refreshing to note, however, that even though funding may present some concerns for the participants, they manage to create other revenue-generating avenues to finance their businesses, or they save up capital to cater for the large expenses.

Participants noted the following when asked what the biggest challenges as an SME are:

> *And every time you go to the financial institutions, they just want to look at your funding and they just say ohh, look, 'look at your balance sheet' or they say' come with your […] three years financials'. (P01)*

> *So in the beginning, you know when one starts a business you don't get any financial help, unfortunately. (P04)*

And I just think that the SMEs are under pressure to do that and the support in that area makes them uncomfortable ‘cause it's low. So we just do not go through financial institutions itself. We would rather do what we can on our own and manage it on our own. (P09)

It would be a big change because it's gonna come with a lot of funding that's going to be required. (P10)

A lot of funding needs to come from government, really, for worthy ideas. Someone who comes to you with a business plan, you know, like you see on Shark Tank. (P05)

Theme 2: Networking and collaboration

Networking and collaboration emerged as a central theme throughout the interviews. Participants made references to this being a solid requirement for them to evolve and grow their businesses. Building key relationships and working with similar types of businesses provides the opportunity for SMEs to size up the competition, learn and grow. In addition to leveraging knowledge from other businesses, they are also able to develop partnership opportunities.

Yes, I would say as a means we don't network, we don't have access to network and, basically, the opportunity as a means to collaborate in terms of, you know, multiple business opportunities that might be for you, basically, their relationships as a means are not at the level that, you know, this ever-changing environment is demanding us to be, you know, so that on its own it's a problem. (P07)

I spoke about challenges such as a collaboration and lack of networking with digital platforms. (P07)

We don't, sort of, communicate that often with our competition and I think it it would be nice to speak to your oppositions. (P01)

> *And I think that we would use them as perhaps from a bouncing perspective, of course being an entrepreneur is a lonely place to be, right. So when you're working on your own business, so it's nice to bounce things off somebody else on a platform or whatever or if you've got new business ideas just to bounce it off. (P04)*

Theme 3: Technology innovation and adoption

The adoption of new technologies poses various challenges for SMEs, impeding their capacity to harness the advantages provided by modern technologies. Findings show that participants share a view that the future world of work requires technology to thrive and remain relevant. Most participants are aligned with the thinking that innovation is required, and technology is one of the key drivers regardless of the industry. The adoption aspect was also touched on by the participants, noting that technology is viewed as a threat by some and embraced by others who do not view it as a threat. Some participants expressed the view that technology could assist them in growing their business exponentially through the reduction of physical activity and mundane tasks being done by automation.

Other participants noted that collation of several technologies can reduce time spent on many systems. Building such platforms requires significant investment and time. This theme was discussed by six participants, and there were 36 references to aspects of this theme. Below are extracts from some of these one-on-one interviews that demonstrate the importance of technology for SMEs.

> *I think any sort of industry without any sort of apps is not using, you know some sort of accounting system or using if you still working all pen and paper and just working with people and know sort of technology in your business that business is not gonna survive. (P01)*

> *So, we use data to determine my own stuff that I've put together, so I can't tell you I use this system or that system or whatever. (P04)*

Uh, and we need platforms that allow us a stepping stone through technology. That way it makes things so much easier, especially if it affects our business in a positive growth and for me and my specific product. WOW, I would churn out, I would churn out units. (P09)

So, for my business, I would like to see lot of similar technologies like what I've seen not in South Africa, but overseas, like in terms of making a lot of what we do automated, like building, like what we would love to do, but it's in a cost above and investment is we would love to build our own technologies that are not reliant on America, the UK or whatever like bold platforms that we can we wanna sell software as a solution. (P06)

And to, but we need to build them and have ownership of them so we can sell them on right now, we'll just resell if we do it, we reselling from. Other suppliers. And we wanna build this technology ourselves. So, it's understanding like but, that's a lot of time and investment. (P06)

I've seen an issue in this market. I've seen where technology can automate this. It can make it easier, but right now we're using four different technologies and we using them for different reasons, but my vision is to kind of build it all into one platform that we own and then can use for each client with slight minor tweaks. (P06)

I utilise the relevant technology to be productive, because that will help, you know, innovation technology will help us to be productive in a way, you know and simplify our processes. (P07)

I will say, really, because I'm sitting here as an SME. I'm sitting with that mindset of being ready, but I can tell you that my staff members are not that ready to, basically, be. Because it's a change on its own and it's going to be a process as change that will need to be properly introduced and people need to be well engaged and buy into that. And people will have to be well trained, you know, for them to be able to use their technology. And also the other thing is, you know, there's this mindset of the people that believes that technology will replace. (P07)

They will be without jobs if they do not allow themselves to be upskilled or to be trained to be technology savvy. To be, you know, aligned with the relevant technologies, because the only thing that might be a challenge is that their jobs might not be relevant because we are moving. We are sitting in the fourth industrial revolution. (P07)

Theme 4: Business growth and development

Participants were asked questions related to the growth and development of their businesses. The interviews focused on understanding the reality of SMEs and the role of digital technologies in their organisations. Participants discussed many reasons for the stagnation of their businesses and what could potentially be useful in uplifting the sustainability of these SMEs. Participants spoke about ideas ranging from optimising parts of their operations to going digital, including how this would improve their market share and profitability. Some business owners discussed the value of being in a healthy, competitive industry. It stimulates new idea generation and creativity. Participants in industries that have a continuous stream of business due to the nature of what they do are in a fortunate position to be able to focus energies on innovation. Businesses in competitive fields experience challenges with further business enhancements due to factors such as financial constraints, speed to market from competitors, and lack of skills.

If I had to choose something, it would be maybe like a business management support or a system support or workshops that teach you to run your business better, how to grow your business because it's never really about the money itself. Yes, you wanna make money out of being an SME, but it's how you expand and how you get better at you. (P09)

I also believe that competition, healthy competition, is also extremely good because sometimes people capitalise, or sort of, you know, when they know they got the monopoly in the business. Like, you know, in the sense that they know you're not gonna go somewhere else. (P01)

> *I wanna grow like this and I wanna get that recipe to get there. So are we growing, yes, but we're growing way too slow for my expectation. And you know, now I wanna try my street pole because Facebook is coming. (P04)*

Theme 5: Staff skills and training

Participants rated this aspect of their business as a key component of business success or potential failure. The findings reveal that when implementing new technology, staff have to be reassured that the new technology is not a threat but an improvement addition to the business. Participants noted that even though technology may improve turnaround times and speed of delivery to market, there is a deeper layer of concern for staff who resist this kind of change. Noted in the findings, some participants partnered with differently skilled business owners to ensure diversification of skill sets. These diversified skills enable them to have a wider range of offerings to their customers and leverage each other’s skill sets.

> *We have an equal split in terms of shareholding in the business and the reason for that is that we each bring different sets of skills and expertise to the table and we are responsible for different things in the business. (P08)*

> *We are saying, I mean, a human element will be required and the reason why I believe that they technology can never replace human, it's because the technology, it receives what you give it. So people will need to be trained on technology, in technology, for them to be able to work together, you know, or that I utilise the relevant technology to be productive, because that will help, you know, innovation technology will help us to be productive, in a way, you know, and simplify our processes. (P07)*

> *So, I want to optimise everything that's not working, but when I started the business, I didn't know what I didn't know. So I had to learn as we went along and with process optimisation comes change for people and people don't adapt that easily. (P04)*

Theme 6: Sustainability

Paramount to SMEs' survival is the theme of sustainability. Participants discussed their understanding of sustainability relative to implementing new concepts, ideas, and technology. Findings indicate that most SMEs are receptive to implementing new technology to improve their businesses' longevity and relevance. They may, however, be in situations where they are faced with a lack of resources. SMEs typically have limited resources in terms of finances, personnel, and expertise. Engaging in sustainable initiatives may be challenging due to these strong constraints on time, human resources, and capital. Participants also mentioned the need to stay abreast of competition by pivoting and changing goalposts. Imperative to these business strategies is effective agile inclusion.

> *So, I think that in terms of, you know, where the companies are, you know, from an operational perspective in the current landscape right across businesses, even global companies, there's a very strong drive to digitise. (P08)*

> *This is also because if you're not adapting and moving and pivoting all the time, you're going to be dead in the water. I mean, you know, you can't be an agent. Like when I started off in this industry, which was, you know, but it's almost 30 years ago, but you know we, you know, still used to send personalised letters to customers. Like, you know, as part of the communication channel and, you know, you don't do that anymore. (P06)*

4.3.2 Proposition 2: Digital technologies add value and uplift SMEs

Digital technologies play a crucial role in adding value and uplifting SMEs in several ways. Digital tools and software streamline processes, aiding in improving efficiency, automating repetitive tasks, enhancing productivity, and potentially allowing businesses to operate more efficiently with fewer resources. SMEs can expand their market share through digital platforms, social media marketing, and online advertising and reach a wider range of global customers, thereby increasing revenue turnover.

Customer engagement is also enhanced through digital technology by enabling SMEs to communicate with customers through online tools and quicker response times with the implementation of chatbots or the availability of information via social media, helping the SME build more trusting and stronger relationships with customers. Customer engagement is enhanced through online capabilities and social media reach, making visibility to customers easier. Engagement enables the business to strengthen its brand and build stronger relationships.

Digital technology can enable businesses to gain insights into customer data that are crucial to understanding customers' behaviour, trends, and requirements. These insights provide the SME with the power to make strategic business decisions based on solid data. Among these strategic decisions could be implementing digital tools to manage communication, online activities, and other time-consuming functions that can significantly reduce costs for any business.

> *But then I can stop the report and I can discuss, can get distracted because, you know, a client calls me and I'm on the phone for five minutes with the client. And then I go back to the report and then I get distracted again. So instead of delivering the report to you in ten minutes, it takes me 20 minutes, which is the additional lag that you didn't, you know, originally provisioned for and then has either a direct or an indirect impact on your business, right? But if you had a reliance on a system or a tool that you wanted the information and it's able to, you know, you can take that function and move it to a digital platform. You, sort of like, don't have to deal with those kinds of lags as part of their process. (P08)*

> *So there are things that we are already looking at to say, OK, like, what are the things that we can do that will enable us to digitise a lot of the things. You see, the current challenge in our business, for example, our data source. I mean, like, for all the bureaus, any data provider in South Africa where this Experian, TransUnion, CPB, XDS. Their data source from a business perspective is manual, it's not digitised, it's a manual process, their data. They input data. (P08)*

4.3.3 Proposition 3: Effective digital solutions for sustaining SMEs

The findings reveal that SMEs would utilise digital solutions to enhance their businesses. Participants noted the level of digital technology currently in their SMEs and expressed their vision for enhancing this in the future. Participants were asked to describe their manual functions versus digital functions, with a larger percentage of the sample indicating they use digital tools more often than manual tools. The common constraint experienced by a significant number of participants is the cost of digital tools in addition to the digital technology in the business operations. Findings also indicate that SMEs would make use of a digital platform to engage with other SMEs. Digital technologies provide scalable solutions that can adapt to the evolving needs and growth of SMEs, enabling them to expand their operations efficiently and cost-effectively. The findings provide sufficient evidence indicating that leveraging digital technology has a multitude of benefits to enable SMEs to be successful and, more importantly, drive sustainability.

> *I'd say 70% is digital. (P01)*

> *So, 60% of our process is manual and 40% is digitised. (P08)*

> *But it's so all of that gets done digitally and that is where you place the orders. We get all of that done and then the last final 50% is where you physically go and install it at the end of the day and that forward. So, at the moment, it's a 5050. (P02)*

> *Think 80% digital and 20% manual. (P04)*

4.4 Summary

The participants provided an insightful view into the realities of the SME construct. The research findings were summarised into key themes that covered aspects of small businesses that are not common factors for larger organisations. Hence, these are unique and specific to understanding SMEs. When delving deeply into each of the themes, it becomes apparent why some themes have more reference points than others, and the participants provided detailed insights into these. SMEs often face unique challenges that can impact their overall efficiency and productivity.

The research objectives stated at the beginning of this study aimed to provide potential solutions to these challenges experienced by SMEs. Some of these key challenges were collated and categorised by themes (see Table 4.1). With this collective analysis and a deeper understanding of the SME environments, the findings validate the proposition that digital technology can make a significant positive difference to SME businesses. Therefore, by embracing digital technology, SMEs can enhance their competitiveness, improve operational efficiency, and unlock new opportunities for growth in today's increasingly digital-driven marketplace.

CHAPTER 5. DISCUSSION OF THE RESULTS/FINDINGS

5.1 Introduction

The findings from Chapter 4 are briefly discussed in this chapter, connecting them to the research questions and literature review from Chapter 2. The discussions show support for the propositions and demonstrate how the participant's feedback bolstered the research questions.

5.1.1 Research findings: Key themes

Main themes were identified during the research, which contributed to a detailed understanding of the future of digital technology in SMEs. Digital technology can revolutionise the operations and growth of SMEs in various ways. By embracing digital technology, SMEs can enhance their competitiveness, improve operational efficiency, and unlock new opportunities for growth in today's increasingly digital-driven marketplace(Jeza & Lekhanya, 2022). The research work intentionally focused on first understanding the reality of the participant's business environments before delving into the future strategic direction in which they are moving.

The interview process covered a significantly important part of the research study focusing on the influence of digital technology on SME sustainability(Bugwandin & Bayat, 2022). Participants provided context for the study by sharing their perceptions on the transformation process for including digital technologies and the consequent effect of digitising part of their businesses. Participants demonstrated that they are aware of the need to move with the ever-changing landscape, and a crucial component of embracing change is including digital technology (Chandra, 2022).

Participants shared positive thoughts and knowledge on technology specific to their environments relating to optimisation. The findings confirm that technology can add value to SMEs, drive sustainability through efficiencies, and reduce human error in some tasks. Participants recommended automation of repetitive tasks, reducing time spent through manual interventions, thereby increasing time to be spent in other areas like business development or marketing(Vrontis et al., 2022).

> *So, I think that in terms of, you know, where, the companies are, you know, from an operational perspective in the current landscape. Right across businesses, even global companies, there's a very strong drive to digitise. You know, a lot of the things and, you know, either using or AI and all of that to achieve that. Yes, that will create a lot of efficiencies because, you know, the one thing that when you have a human fulfilling certain function, there's an element of lag that always comes in. (P08)*

> *But if you had a reliance on a system or a tool that if you wanted the information and it's able to, you know, you are able to take that function and move it to a digital platform. Sort of like, you don't, have to deal with those kind of lags as part of their process. It removes, you know, the human element. So margin for error is reduced drastically. (P08)*

In the following sections, the key themes are further discussed in detail in alignment with the propositions.

5.2 Discussion pertaining to Proposition 1: To what extent do digital technologies have a role in sustaining SMEs?

This research study delved into the essential digital technologies necessary for supporting SMEs. It investigated how these digital tools can enhance the value proposition of SMEs, broaden their market access, extend their reach to existing markets, and expose them to a larger customer base. In addition to understanding what the SMEs require from digital technology to remain relevant, other factors that affect sustainability were raised by interview participants.

5.2.1 Factors influencing sustainability of the SMEs

Participants agree that the performance of SMEs can be influenced by various factors such as the state of the economy, market demand, competition, and industry advancements. In addition, factors that can create both opportunities and challenges for SMEs include changes in consumer preferences, technological advancements, or regulatory shifts (van Staden, 2022). A challenge acknowledged by participants was that competition in most industries is tough and ruthless. Innovation is key to maintaining market share coupled with remaining close to customer requirements(Ungerer & Buys, 2021).

Environmental regulations and government policies can exert considerable influence on SMEs (Bahri M, Sakka O, Kallal R. 2021). Small businesses often find it challenging to adhere to regulatory requirements that can pose destructive obstacles to existing businesses or new business ventures. The regulatory obstacles include rules on licencing, taxation, and labour laws**.** Regulation changes may also impact the competitiveness and dynamism of the market (Olarewaju & Msomi, 2021). Participants noted challenges from unionised environments as a human resources challenge where legislation plays an integral role.

Findings supported the view that market competition poses a well-known challenge for SMEs, as they frequently must operate in fiercely competitive environments (Musara & Nieuwenhuizen, 2021).They most often contend with larger corporations that have significantly greater resources and established market dominance. Ensuring they build brand awareness, capture market share, and differentiate themselves from competitors can be challenging for SMEs (Mutyenyoka & Madziv, 2014; Visser & Chiloane-Tsoka, 2014). Participants discussed the value of digital technology in supporting them in driving innovation, speed to market, and other operational efficiencies that could catapult their businesses ahead of the competition. Based on the findings, a strong case for SMEs focusing on digital technology implementation was made (Battistoni et al., 2023). The findings revealed that technology, innovation, and adoption play a pivotal role in the success of SMEs to ensure they stay ahead of the market or in line with competitors.

Thus, the adoption of technology is a crucial consideration for staff in SMEs. Embracing digital tools, automation, and online platforms can enhance operational efficiency, broaden customer outreach, and ensure a competitive edge (Romanov, 2021). The challenges with the implementation of technological advancements could potentially also disrupt traditional business models, necessitating adaptation and evolution for SMEs. Infrastructure and technology play a crucial role in supporting SME operations, encompassing essential elements such as transportation networks, telecommunications, energy provision, and internet connectivity (Ebert & Duarte, 2018). Moreover, evaluating the integration of technology and digital infrastructure in the SME sector is crucial, as it empowers businesses to boost efficiency, broaden market presence, and stimulate innovation (Mmbengeni et al., 2021).

> *I’ve seen an issue in this market. I’ve seen where technology can automate this. It can make it easier, but right now we're using four different technologies, and we are using them for different reasons, but my vision is to, kind of, build it all into one platform that we own and then can use for each client with slight minor tweaks. (P06)*

The stability of a country's economy and political landscape can foster favourable conditions for the growth of SMEs. With economic stability and supportive political environments, SMEs may have access to growth and development initiatives that elevate their prospects for continued success (Vrontis et al., 2022). However, factors such as inflation, political volatility, policy shifts, and trade barriers can influence the business climate and growth potential of SMEs. The economic conditions, including GDP growth, inflation rates, interest rates, and currency stability, can affect SMEs financially. SMEs generally fare better in favourable economic environments characterised by stable growth and low inflation (Esther et al., 2018). Findings indicate that changes in market trends, industry dynamics, and consumer demand significantly influence SMEs. To identify opportunities and make informed business choices, SMEs must assess market size, growth potential, customer preferences, and competitive landscapes (Mmbengeni et al., 2021).

Networking and collaborating with other businesses present valuable opportunities for mutually beneficial relationships, which are highly advantageous for SMEs. Building relationships with vendors, clients, trade associations, and fellow companies can facilitate access to resources and exchange of knowledge and foster potential business partnerships (Olarewaju & Msomi, 2021).

> *And I think that we would use them as perhaps from a bouncing perspective, of course being an entrepreneur is a lonely place to be, right. So, when you're working on your own business, so it's nice to bounce things off, somebody else on a platform, or whatever, or if you've got new business ideas just to bounce it off. (P04)*

Participants referred to the crucial importance of leadership and entrepreneurial skills for staff to manage the businesses effectively. Leadership staff in any organisation are responsible for creating strategy and leading employees to achieve organisational targets and goals. In SMEs, these skills are doubled as entrepreneurial skills and management capabilities. Entrepreneurs develop core leadership competencies and expertise of running a small business on their own as a necessity (Sathe & Bhupatkar, 2017). Effective management, strategic planning, budgeting, marketing, and adaptability are crucial factors that can significantly impact the success of SMEs.

The findings indicate that the ability to pivot and add new technology to SMEs is a significant consideration for these business owners. However, many constraints make this a difficult one. Technology is a costly investment, and adding to this is the time delay in getting the staff ready to accommodate new software, for example. Training is a crucial component (Jackson & Allen, 2023). The need for training impacts the demand and supply chain in smaller businesses, which causes strain on customer expectations and services. When evaluating talent in the market, SMEs must assess the availability of skilled labour, educational institutions, vocational training programmes, and workforce demographics. Access to a skilled and versatile workforce is vital for SMEs to fulfil their staffing requirements and foster innovation (Eller et al., 2020).

Access to funding plays a vital role in the success of SMEs, as it influences their ability to invest in expansion, extend operations, or innovate. The availability of financing options and capital can significantly impact SMEs' capacity to grow. Factors such as interest rates, credit availability, and investor confidence affect the funding environment for SMEs (Amadasun & Mutezo, 2022). Participants voiced many concerns about the lack of support from financial institutions and other funding sources, as SMEs are seen as potentially higher-risk investments. Ensuring SMEs have access to various financing avenues is vital for funding their activities, fuelling expansion, and maintaining cash flow (Erdogan, 2019). Evaluation of the accessibility of bank loans, venture capital, government grants, crowdfunding platforms, and other funding sources helps gauge the strength of the financial support infrastructure for SMEs (Abe et al., 2015).

In this section, the findings of the current reality for SMEs are discussed. Components identified by participants and presented were environmental regulations and government policies, market competition, staff adoption of technology, economic and political environment, networking and collaborating, leadership and entrepreneurial skills for staff, training staff and pivoting to new technology, and access to funding. These components interact with each other and can influence SMEs in various ways, both positively and negatively. Successful SMEs often navigate these influences by maintaining flexibility, continuously learning, and adapting their strategies to evolving circumstances (Neagu, 2016).

The researcher determined the importance of gaining insight into the SME environments for closely analysing the factors that influence them while remaining cognisant that different businesses have independent variables that influence their operations.

The findings brought to light several challenges faced by SMEs, a mildly considerable one being the regulatory frameworks in which SMEs must operate. Many legal and administrative structures govern these businesses (Furawo & Scheepers, 2018). Elements like business registration protocols, tax regulations, licencing criteria, labour laws, and compliance standards play a significant role in shaping the SME landscape.

South Africa operates with stringent regulations for SMEs, which makes it difficult for small businesses to grow. In a supportive regulatory atmosphere, the expansion of SMEs can be fostered (Bouazza et al., 2015).

Support services, business development initiatives, mentorship networks, and industry associations play a pivotal role in cultivating a favourable environment for SMEs. These resources offer guidance, training, networking avenues, and expert assistance, enabling SMEs to surmount obstacles and stimulate growth (Mittal et al., 2018).

Government assistance (through initiatives, policies, and programmes tailored to support SMEs) offers valuable insights into the broader environment. Favourable policies like tax incentives, streamlined administrative processes, export promotion, and business development initiatives can enhance the vitality of the SME ecosystem (Mashavira et al., 2021).

5.2.2 Challenges identified in the study

SMEs frequently encounter a multitude of challenges that can impede their growth and long-term viability. While these challenges may vary depending on factors like industry, location, and business model, there are several common hurdles worth highlighting.

SMEs often confront a daunting challenge in accessing financial resources, primarily due to their limited access to capital and the hurdles they encounter in securing financing. Financial institutions frequently perceive SMEs as higher-risk borrowers, which can significantly impede their ability to obtain loans (Rajamani et al., 2022). This perception stems from various factors, such as limited financial history, smaller asset bases, and higher volatility compared to larger corporations. Consequently, SMEs encounter barriers when attempting to access traditional financing avenues, such as bank loans or lines of credit (Ackah & Vuvor, 2010). These challenges exacerbate the difficulties faced by SMEs in acquiring the necessary funds to fuel business growth, invest in innovation, expand operations, or navigate through periods of financial instability. As a result, SMEs often find themselves at a disadvantage in competing with larger enterprises that have easier access to capital markets and financial resources (Wang, 2016).

The scarcity of financial resources severely constrains SMEs in their endeavours to invest in essential technologies, scale up their operations, and effectively promote their products or services. Without adequate funding, SMEs struggle to adopt cutting-edge technologies that could enhance efficiency, improve product quality, or streamline processes(Rajamani et al., 2022). Furthermore, the lack of financial resources limits their capacity to expand operations into new markets or diversify their product or service offerings. Additionally, SMEs find it challenging to allocate sufficient funds for marketing and advertising initiatives, which are crucial for raising brand awareness, attracting customers, and competing effectively in crowded marketplaces(Amadasun & Mutezo, 2022). As a result, the financial constraints faced by SMEs not only hinder their immediate growth prospects but also impede their ability to innovate, remain competitive, and achieve long-term sustainability in dynamic business environments (Horváth & Szabó, 2019).

Stringent regulatory frameworks often present significant challenges for SMEs due to the complexities involved in adhering to these regulations. Compliance with a myriad of obligations related to taxes, licences, permits, health and safety standards, data protection, and employment regulations can prove to be especially arduous for SMEs, particularly those with limited administrative resources and expertise.(Bugwandin & Bayat, 2022) Navigating through these regulatory requirements demands considerable time, effort, and financial resources, diverting SMEs' focus away from core business activities and impeding their growth aspirations (Bahri et al., 2021). SMEs, with their constrained administrative capacity, often find it challenging to keep pace with the evolving regulatory landscape, risking non-compliance penalties and reputational damage. Consequently, SMEs face a continuous struggle to strike a balance between fulfilling regulatory obligations and pursuing their business objectives in a competitive marketplace (Johnson, 2015).

The findings highlighted that the task of identifying and retaining talent poses a common challenge, with SMEs facing difficulty due to their smaller scale and the persistent demand for job security among potential hires. As smaller entities in their respective industries, SMEs often encounter heightened competition from larger corporations when vying for skilled professionals. Moreover, job seekers frequently prioritise stability and longevity, which larger companies may appear better equipped to provide (Krishnan & Scullion, 2017). Consequently, SMEs find themselves in a precarious position, grappling with the dual challenge of attracting top talent and retaining them amidst the allure of more established firms. This dynamic underscores the importance for SMEs to develop compelling recruitment strategies and foster workplace environments that attract and incentivise talented individuals to remain committed to their organisation's growth and success (Boštjančič & Slana, 2018).

SMEs frequently face significant hurdles in attracting and retaining skilled employees, stemming from a variety of factors, including constrained budgets for offering competitive salaries, limited prospects for career progression, and the allure of larger, more established companies (Jooss et al., 2023). These challenges compound the difficulty for SMEs in accessing a talented workforce and maintaining high levels of employee satisfaction and development in their organisations (Furawo & Scheepers, 2018). In addition to financial constraints, SMEs may struggle to provide comprehensive benefits packages or invest in ongoing training and professional development initiatives that can be key drivers for retaining top talent. Furthermore, the perceived lack of stability and growth opportunities in SMEs can deter prospective employees from committing to these organisations over larger competitors (Stokes et al., 2016). Consequently, SMEs must adopt innovative strategies to overcome these challenges, such as emphasising the unique advantages of working in smaller, more agile environments, offering non-monetary incentives, and providing clear pathways for career advancement and skill enhancement. By prioritising employee satisfaction, development, and engagement, SMEs can enhance their attractiveness as employers and cultivate a loyal and skilled workforce capable of driving sustained growth and success (Whysall et al., 2019).

Limited resources and expertise often lead SMEs to rely on manual or outdated systems, inadequate automation, and inefficient workflows. Consequently, streamlining operations and maximising productivity pose significant challenges for

SMEs. The absence of robust technological infrastructure and specialised knowledge can hinder SMEs' ability to adopt modern business practices and leverage cutting-edge tools for process optimisation (Lukhele & Soumonni, 2021). As a result, SMEs may struggle to keep pace with competitors and meet evolving market demands efficiently. Overcoming these challenges requires SMEs to prioritise investments in technology and talent development, fostering a culture of innovation and continuous improvement. By embracing digital transformation initiatives and implementing streamlined workflows, SMEs can enhance their operational efficiency, drive cost savings, and position themselves for sustainable growth in today's dynamic business landscape (Eggers, 2020).

The swift progression of technology and the ongoing digital transformation present hurdles for SMEs. Embracing innovative technologies, integrating digital tools, and capitalising on e-commerce platforms demand investments, skill enhancement, and effective change management processes (Oliveri et al., 2023). These tasks prove particularly daunting for SMEs grappling with constrained resources and limited expertise. Overcoming these challenges necessitates a concerted effort to prioritise technological investments, foster skill development among employees, and implement robust change management strategies. By doing so, SMEs can position themselves to adapt to technological advancements effectively, seize new opportunities, and remain competitive in an increasingly digital-centric business environment (Vuță et al., 2022).

SMEs might encounter challenges in recognising and accessing market prospects, particularly in global markets (Horváth & Szabó, 2019). Constraints such as restricted networks, marketing budgets, and familiarity with export protocols can impede their expansion beyond local or regional boundaries. Additionally, SMEs are often more exposed to business risks, where external factors like political instability can exert considerable influence. Insufficient resources for risk mitigation and inadequate contingency planning further heighten SMEs' vulnerability to adverse occurrences (Shirokova et al., 2020).

SME owners and managers often encounter a variety of tasks, including problem-solving, finance management, marketing, strategic planning, and human resources. Juggling these responsibilities and dealing with limited access to specialised expertise can pose significant challenges for SMEs (Almahry et al., 2018). These multifaceted duties demand versatility and adaptability, as individuals in SME leadership roles must navigate diverse challenges across various domains of business operations. However, the complexity of these tasks is often compounded by limited access to professional expertise and specialised resources. SMEs typically operate with constrained budgets and smaller teams, which may restrict their ability to engage external consultants or hire specialised staff to address specific needs (Hatthakijphong & Ting, 2019).

Consequently, SME owners and managers find themselves wearing multiple hats, often concurrently managing disparate functions in the organisation. This requirement for multitasking can be both demanding and overwhelming, especially when coupled with the imperative to maintain a competitive edge in dynamic market environments. Despite these challenges, SME leaders must continually strive to enhance their skills, leverage available resources efficiently, and seek innovative solutions to overcome obstacles and drive sustainable growth for their businesses (Eniola & Entebang, 2017).

5.2.3 Causes of the challenges faced by SMEs

The key challenges faced by SMEs can be summarised as follows:

Restricted financial means: SMEs frequently encounter hurdles when seeking capital and obtaining funding. With modest financial reserves at their disposal, SMEs confront challenges in allocating funds for initiatives such as business expansion, research and development endeavours, marketing campaigns, and technology enhancements (Lonial & Carter, 2015).

Market competition: SMEs navigate fiercely competitive market landscapes, often contending with larger corporations possessing greater resources and established market dominance. Challenged by these formidable competitors, SMEs face difficulties in securing market share, acquiring customers, and establishing distinctive brand positioning(Oecd, 2000).

Regulatory compliance: SMEs often grapple with the complexities of regulatory adherence and bureaucratic processes, particularly in the absence of dedicated legal and administrative support. Addressing regulatory mandates about taxes, licencing, permits, health and safety protocols, data protection, and employment regulations can consume significant time and financial resources (Bouazza et al., 2015).

Talent acquisition and retention: SMEs often encounter challenges in both recruiting and retaining qualified personnel. Competing with larger enterprises, SMEs may find it arduous to provide competitive compensation packages, advancement prospects, and supplementary perks. Additionally, constrained resources and smaller teams may lead to heightened workloads and stress among current employees (Stokes et al., 2016).

Operational efficiency: SMEs may face obstacles in enhancing their operational effectiveness. Constrained resources can result in manual and inefficient workflows, insufficient technology infrastructure, and antiquated systems (Rizos et al., 2016).

Technological adaptation: SMEs must constantly adjust and incorporate innovative technologies to keep pace with rapid advancements. Nevertheless, constraints such as limited resources, insufficient IT knowledge, and reluctance to embrace change can impede technology adoption and digital transformation efforts. Consequently, this can restrict their capacity for innovation, process automation, and utilisation of digital marketing platforms (Mittal et al., 2018).

Access to market opportunities: SMEs often face hurdles when venturing into new markets, whether local or global. Constrained marketing budgets, limited networks, and unfamiliarity with export protocols can hinder their capacity to recognise and capitalise on opportunities beyond their immediate geographical scope (Love & Roper, 2015).

Business risks and uncertainty: SMEs face a multitude of risks and uncertainties. Economic downturns, market volatility, supply chain interruptions, and natural calamities can disproportionately affect SMEs because of their constrained resources and resilience. Effective risk management and contingency planning are essential to ensure their survival and long-term viability (Parnell et al., 2015).

Limited expertise: Owners and managers of SMEs frequently juggle multiple responsibilities and may possess limited expertise in crucial business domains, such as finance, marketing, strategic planning, and human resources (Rizos et al., 2016). This can hinder their decision-making processes, growth strategies, and overall business performance. Seeking external expertise or investing in professional development becomes imperative in such circumstances (Fatoki, 2014).

Tackling these challenges typically demands strategic planning, innovation, collaboration, and leveraging support from pertinent business networks, industry associations, and governmental initiatives (Bertello et al., 2022). SMEs capable of surmounting these obstacles are in a stronger position to prosper and make substantial contributions to economic growth and job creation.

The findings have a strong case to prove that there are similarities and relationships between small business enterprise factors and that digital technologies have a role in sustaining SMEs.

5.3 Discussion pertaining to Proposition 2: Digital technologies add value and uplift SMEs

5.3.1 Understanding digital solutions

A digital solution uses technology and software to tackle a specific issue or meet a particular requirement. It harnesses digital tools like software applications, online platforms, data analytics, cloud computing, artificial intelligence, and the IoT to devise inventive solutions (Telukdarie et al., 2023).

Digital solutions encompass a broad spectrum, spanning from basic mobile apps to intricate corporate systems. They are crafted to streamline operations, boost productivity, refine efficiency, foster informed decision-making, enhance customer journeys, and propel digital evolution across sectors. These solutions can be tailored to tackle a myriad of challenges and opportunities in diverse fields like healthcare, finance, logistics, marketing, education, manufacturing, and more. For instance, a digital solution might take the form of an e-commerce platform facilitating online product sales for businesses, customer relationship management (CRM) software aiding in customer interaction management, or an IoT-enabled setup optimising building energy consumption (Gani & Fernando, 2023; Telukdarie et al., 2023).

Digital solutions frequently entail amalgamating various technologies, conducting data analysis, and implementing automation to create a holistic resolution. They may be tailored to fit business requisites or procured as off-the-shelf solutions ready for implementation. In essence, a digital solution harnesses digital technology's potency to furnish inventive, efficient, and proficient resolutions to obstacles or to elevate prevailing processes, workflows, and encounters in a digitalised milieu.

5.3.2 Benefits of digital platforms

A digital platform denotes a virtual or online structure enabling interactions and transactions among diverse entities, typically functioning as a mediator or facilitator. It provides a digital arena where users can engage, cooperate, share information, and conduct assorted tasks (Broekhuizen et al., 2021).

Digital technologies are instrumental in leveraging a wide array of tools and platforms to enhance communication, data sharing, and transactions. The internet, serving as the backbone of digital connectivity, enables global communication and information exchange at unprecedented speeds. Mobile applications extend the reach of digital interactions, providing convenient access to services and resources on the go. Cloud computing empowers businesses and individuals to store, process, and access data remotely, facilitating scalability and flexibility (De Reuver et al., 2018). Data analytics harnesses the power of data to derive insights, inform decision-making, and optimise processes. Together, these technologies create a dynamic ecosystem that fosters seamless interactions and transactions in the digital realm. Digital technologies commonly use tools like the internet, mobile apps, cloud computing, and data analytics to facilitate smooth communication, data exchange, and transactions (Stergiou & Psannis, 2017).

These technologies establish a framework for individuals to access and use services, products, or content. Social media platforms such as Facebook, X, Instagram, and LinkedIn facilitate user connections, content sharing, and interactions with others.

Oliveri et al. (2023) and Yang et al. (2023) find that these tools create a structure for individuals to access and make use of services, products, or content. Social media platforms like Facebook, X, Instagram, and LinkedIn facilitate connections between users, sharing of content, and interaction with others.

Crowdfunding platforms like Stokvel in South Africa provide avenues for individuals or businesses to gather funds from a vast number of people for projects or ventures (Yasar, 2021). Digital technologies often serve as intermediaries, linking supply with demand or facilitating collaboration and sharing among users. These platforms may adopt diverse business models, including commission-based transactions, subscription fees, advertising revenue, or data monetisation (Iwara & Netshandama, 2020). The advent of digital technologies has revolutionised numerous industries and challenged traditional business models. They offer scalability, broad reach, and enhanced efficiency through the utilisation of digital tools, data analytics, and user-centric design. Integral to the digital economy, these technologies foster innovation, forge new marketplaces, and propel economic expansion.

5.4 Discussion pertaining to Proposition 3: Effective Digital Solutions for sustaining SMEs

Across various industries, digital solutions have a broad range of uses. The uses can be broken down into the following solutions (see Figure 5.1).

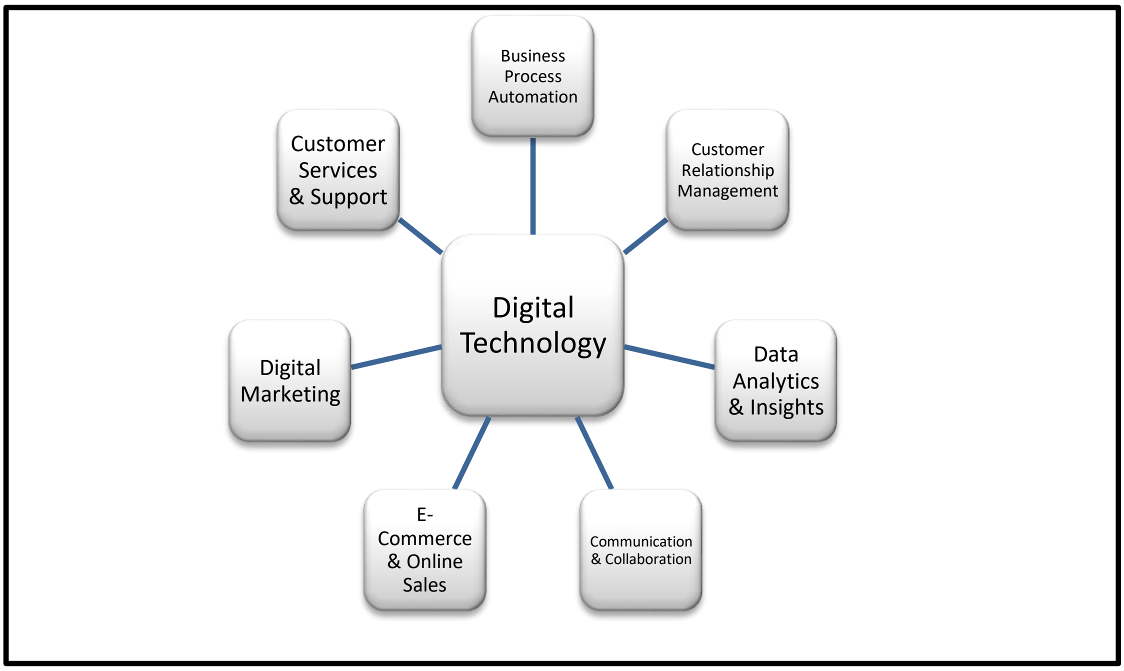

Figure 5.1: Relationship between digital technology and business solutions

Through business process automation, repetitive and (some) manual tasks can be automated. Automation, in turn, streamlines business processes and improves operational efficiency. Other functions like data processing, document management, stock control and workflow management can also be automated.

A digital CRM tool can enable businesses to manage their customer data and get the maximum benefit from data analysis. Managing customer relationships, sales processes, customer service, and personalising services can be efficiently managed via a digital tool. Findings revealed that most SMEs are keen to invest in a tool that could assist them in managing relationships with customers and connecting with business partners or similar industry counterparts (Oliveri et al., 2023; Yang et al., 2023).

> *And I think that we would use them as perhaps from a bouncing perspective, of course being an entrepreneur is a lonely place to be, right. So, when you're working on your own business, so it's nice to bounce things off, somebody else in on a platform, or whatever, or if you've got new business ideas just to bounce it off. (P04)*

Having technology infrastructure as part of an SME business has the potential to catapult these businesses into international arenas when considering the vast exposure of the internet and social media. Digital marketing campaigns, advertising, and monitoring and tracking user engagement are just some examples of the benefits. Findings during the research process support the view that the customer global village is so much more accessible once technology is integrated into a business (Telukdarie et al., 2023). E-commerce and online sales tools help manage operational activities while facilitating customer engagement at an optimised level.

In the current business landscape, data is gold. Using advanced data management, organisations can accurately capture, track, manage and utilise the data analytics and insights to develop or optimise business strategy (Lee, 2013). The opportunities to manipulate data to generate insights into customer trends, behaviours, and performance tracking are endless. Most importantly, data outputs enable informed decision-making and strategy development (Chernova et al., 2023).

The findings also support the view that SMEs have a dire need for collaboration. Virtual communication tools facilitate the building of relationships, collaboration with other businesses and real-time communication with customers. Business owners can have more time to spend on business growth with digital tools in place that enable self-service for customers (Susanta et al., 2021). Collaboration with customers allows businesses to manage customer inquiries, provide support, and resolve issues efficiently. The use of IoT devices enables smart connectivity in homes, offices, and industrial automation across multiple sectors, including manufacturing, transportation, healthcare, and many others. Technology has fundamentally transformed the financial services industry through online banking, mobile payment applications, peer-to-peer lending solutions, chatbots, digital wallets, and customer interaction platforms (Audretsch et al., 2023).

5.5 Proposed Solution for SMEs

The findings support a need for an engagement platform using digital technology to facilitate communication and engagement between SMEs for sharing, collaborating, and building relationships. Participants passionately expressed the need for collaboration with similar types of businesses, suppliers, or customers in each of the various industries. The business benefits of having such an engagement platform are endless for the small business owner. The expressed need is to have a way of contacting other similar businesses in proximity to leverage tools and techniques, share ideas or potentially partner with each other. The functionalities of a digital engagement platform include the ability to video conference, instant messaging, online forums or chatbots, and real-time interactions fostering efficient communication.

SMEs can benefit from an engagement platform that offers collaboration features, feedback mechanisms that are efficient and quick, and the ability to locate suppliers or manufacturers at the touch of a button, for example. The next level of creating such a platform for small businesses would be optimising the tool to include mobile accessibility, extending the reach even further and making it convenient for businesses that do not use computers in the workplace frequently to also access the services offered via smartphones (Kato-Vidal, 2019).

In essence, digital technologies enhance and empower SMEs by enhancing their visibility, broadening market reach, cutting costs, accessing customer insights, enhancing customer engagement, providing marketing tools and strategies, facilitating collaboration, and accessing financial and support services. Embracing these technologies enables SMEs to overcome conventional obstacles and prosper in the digital age. By leveraging digital technologies, businesses can transcend geographical constraints and connect globally, thereby eliminating the need for physical presence. Expanded exposure amplifies growth potential and revenue generation opportunities (Belitski & Liversage, 2019).

A digital platform can uplift SMEs by improving their sustainability and longevity and, in turn, add to the upliftment of the country’s economic revenue.

5.6 Summary

In conclusion, it is crucial to highlight that the results suggest a significant need for and potential benefits of integrating technology into SMEs. After examining the findings presented in the chapter, it becomes evident that there is a clear requirement for technology integration in SMEs. These findings likely demonstrate various ways in which technology could enhance operations, productivity, and competitiveness in their businesses. The adoption of technology encompasses a range of advantages, such as improved efficiency, cost savings, better decision-making, enhanced customer experiences, and potential business growth. Acknowledging the importance of these findings underscores the significance of embracing technology as a strategic tool for growth and sustainability in the context of SMEs. It suggests that ignoring or underestimating the role of technology could hinder the potential for success and growth in today's rapidly evolving business landscape. The findings emphasise the imperative for SMEs to recognise and leverage the opportunities presented by technological advancements to thrive in their respective markets.

CHAPTER 6. CONCLUSIONS, LIMITATIONS & RECOMMENDATIONS

6.1 Introduction

This chapter consolidates the study's findings, encompassing the key contributions to the research problem and the literature review on SMEs and digital technology. The chapter provides a summary of findings about the research questions. Furthermore, the chapter delves into pertinent recommendations for addressing the research problem and questions, along with proposing avenues for future research to bolster the study.

The research objectives for this study are the following:

- To determine the role of digital technologies in sustaining SMEs.
- To investigate how digital technologies can add value to the upliftment of SMEs.
- To investigate effective digital solutions to sustain SMEs.

One-on-one interviews were conducted with ten participants from SMEs. The level of participants were all entrepreneurs or senior managing partners in these businesses.

6.2 Conclusions regarding Research Objective 1

- To determine the role of digital technologies in sustaining SMEs.

In response to the research objective, the findings have built a strong case supporting the idea that digital technologies play a pivotal role in sustaining SMEs by offering a considerably wide range of benefits that contribute to their longevity and success. Sustainability can be achieved through the adoption of these technologies, which enable SMEs to enhance their operations, streamline processes, and remain competitive in today's rapidly evolving business landscape. Improved efficiencies, increased productivity, and business and customer growth are benefits that can be achieved because they reduce manual functions and optimise the workplace, so customers are managed better. Customers are given more priority and attention using digital technology like digital customer tools and data-driven decision making. The customer is also evolving, and this is an important consideration for SMEs to keep up with the pace of the evolution of new customers and new generations of techno-savvy customers. Overall, digital technologies are indispensable for sustaining SMEs in today's digital-driven economy, offering them the tools and capabilities needed to thrive amidst competition and uncertainty.

6.3 Conclusions regarding Research Objective 2

- To investigate how digital technologies can add value to the upliftment of SMEs.

Digital technologies provide numerous avenues for adding value and uplifting SMEs across various aspects of their operations and business functions. Cost reduction is a significant consideration for optimising businesses and technology. Even though an initial investment is required upfront, it provides substantial cost reduction in the future, as seen through the return on investment. Visibility is improved through digital presence and enhanced online marketing strategies. Customers can be better understood through valuable data analytics and insights. These are some of the key considerations for SMEs to consider regarding the impact of digital technology on their businesses. Overcoming traditional constraints allows them to compete more effectively in the market and open new revenue streams with unlocked potential for innovation and opportunities.

6.4 Conclusions regarding Research Objective 3

- To investigate effective digital solutions to sustain SMEs.

SMEs should invest in digital technology with a phased-in approach, considering the investment required. The findings have suggested the advantages of implementing some form of technology that can elevate these businesses to unlimited potential and beyond. Adopting a phased approach to investing in digital technology is a prudent strategy for SMEs, especially considering the investment required and the potential benefits. By taking incremental steps, SMEs can manage costs, minimise risks, and gradually integrate technology into their operations, ultimately maximising the advantages it offers. The findings suggest that implementing some form of technology can significantly enhance SMEs' potential and propel them towards unlimited growth opportunities. By strategically prioritising investments based on their specific needs and goals, SMEs can gradually harness the power of digital technology to streamline processes, expand their market reach, improve customer engagement, and drive overall business growth.

Additional benefits to adopting a phased approach allow SMEs to adapt to technological changes more effectively, as they can gradually train employees, refine strategies, and address any challenges or obstacles along the way. This iterative process fosters a culture of continuous improvement and innovation in the organisation, positioning SMEs for long-term success in today's digital-driven economy. In essence, while the initial investment in digital technology may seem daunting for SMEs, adopting a phased approach ensures a smoother transition, mitigates risks, and ultimately unlocks the limitless potential that technology offers for business growth and sustainability.

6.5 Limitations

Several limitations were noted during the research study. Participants commitment to attending the interview was one of the initial limitations. Interviews were scheduled with some participants who did not attend due to work constraints or family matters at the time. The literature review was time consuming and gathering of information was an extended process. The study was geographically focused on SMEs in Johannesburg , that limits the larger view of other provinces in the country. Some of the participants provided feedback with limited knowledge of digital technology and the impact to their business.

6.6 Recommendations for further research

The research study produced many possible avenues to enrich the lives and operations of SME owners. Many opportunities for growth and advancement in their organisations using technology were discovered during the interviews. With the inclusion of digital technology, these businesses could have endless opportunities to grow with unlimited potential. Herein lies the potential for further research to unpack industry-specific needs and how transformational digital technology could be a strategic need for SMEs.

Based on the research findings, the following options for further research would be relevant for SMEs looking into digital technology as the future requirement for sustainability:

- Digitally powered engagement platform for SME owners. Investigate the potential application development of an engagement platform powered by digital technology for SME owners.
- Investigating the depth of each digital solution in detail depicted in Figure 4.3, the benefits and opportunities for SMEs.
- Geographically based study of each province of SMEs in South Africa and the differences between their successes and challenges. This study could show the economic differences between the provinces and the influence they have on the growth potential of SMEs.
- Technology funding process improvements for start-up businesses, delving into the challenges and potential solutions to help SMEs acquire funding.

6.7 Final Reflection

SMEs are an important contributor to the growth of the economy and an integral part of socio-economic landscape. The study revealed the major challenges faced by SME organisations in Johannesburg, South Africa. The highlights were deep understanding of the operations of the organisations, current needs and future strategic visions for SMEs. Key findings noted the rise of digital technology interest within SME businesses along with the challenges of financing, implementing and maintaining new age digital infrastructure. SMEs contribute significantly to the economy, yet face a considerable amount of business failures, primarily stemming from resource constraints. Through literature reviews and research interviews, an investigation of factors impacting SME sustainability was conducted. In addition to the fieldwork, an exploration of digital technologies pertinent to SMEs was discussed in detail. Participants provided much needed depth of insights into aspects of SME business that leads the advocation for digital technology to be an essential addition to their organisations.

Reflecting on the full study of digital technology's role in sustaining small and medium enterprises (SMEs), it becomes evident that embracing technology is not merely a choice but a necessity in today's dynamic business landscape. The findings highlight the transformative power of digital tools in enhancing the competitiveness, resilience, and longevity of SMEs. Important to also note the journey forward into a digitally transformed business will encounter some obstacles such as limited resources, employee resistance to change, and technology incompatibility. However, with adequate planning, training and support these obstacles can be overcome and the full potential of digital technology can be harnessed and maximised to aid in the sustainability of SMEs.

In conclusion, the study creates momentum for SMEs to embrace digital technology as a strategic initiative for sustainability and to remain competitive in todays every changing business landscape, unlocking new opportunities for growth and positioning themselves for success and longevity.

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