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The effects of adopting digital technologies on Small Micro and Medium Enterprises (SMMEs) growth: A case of SMMEs in clothing retail sector operating in Tshwane

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The effects of adopting digital technologies on Small Micro and Medium Enterprises (SMMEs) growth: A case of SMMEs in clothing retail sector operating in Tshwane

A research report submitted to the Faculty of Commerce, Law and Management, University of the Witwatersrand, in partial fulfilment of the requirements for the degree of Master of Management in Entrepreneurship and New Venture Creation

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ABSTRACT

The research examines how adopting digital tools affects Small Micro and Medium Enterprises (SMMEs) growth in the clothing retail sector. This study examines the integration of digital technology in the operations of SMMES and its impact on three key indicators of business growth: competitive advantage, financial performance, and customer satisfaction. Many SMMEs experience challenges with growing into successful businesses, yet they are seen as solutions to several problems, which include poverty, unemployment and development. Conducting this study was imperative to assess the extent to which adopting digital technology promotes SMME growth. The main aim of study is to determine the relationship between the adoption of digital technologies and the growth of SMMEs operating in the clothing retail industry in Tshwane. The current study employed a quantitative cross-sectional survey research design. Data was collected from a sample of 384 respondents representing SMMEs engaged in the clothing retail business in Tshwane. The sample was selected using the convenience sampling technique. The study found that SMMEs adopting digital technologies have a significant positive relationship with competitive advantages, financial performance and customer satisfaction. Managers and practitioners who want to promote business growth by improving competitive advantage, financial performance, and customer satisfaction should consider investing in adopting digital technology. The research adds empirical evidence demonstrating how digital technologies can be leveraged to promote SMMEs growth in emerging economies like South Africa.

Key words: *competitive advantage, financial performance, customer satisfaction, SMMEs*

DECLARATION

I, **Yanga Ntombizodidi Tantsi**, 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 Entrepreneurship and New Venture Creation at the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination in this or any other university.

Yanga Ntombizodidi Tantsi

Signed at ……On the …….. day of ……..…… 2025.

DEDICATION

With deep gratitude, I dedicate this research to my family, whose unwavering support, sacrifices, and encouragement have been my greatest source of strength. Your belief in me has been a guiding light throughout this journey, and I am forever grateful for your love and understanding.

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CHAPTER ONE

1.1 Introduction

Small, Micro and Medium Enteprises (SMMEs) are increasingly attracting the attention of various stakeholders such as the government, international development institutions, private sectors, researchers, economists and ordinary citizens (Necoechea-Porras et al., 2021). Attention is given to SMMEs in South Africa and beyond because they are considered critical in addressing challenges such as inequality, unemployment, underdevelopment and slow economic growth (Gagilo et al., 2022). Furthermore, SMMEs serve as a foundation for the development of multinational enterprises, which have the potential to generate foreign currency for the country. Additionally, small businesses act as catalysts for technology transfer and innovation. With the emergence of the fourth industrial revolution, SMMEs are set to benefit from efficiencies and other opportunities that come with the use of technologies. Despite their potential, recent statistics indicate that the majority of SMMEs fail within the first two years of establishment (Nasution et al., 2022).In the mist of this reality, there is a significant body of literature which indicates the adoption of digital technologies promotes SMMEs growth (Canhoto et a.,2021; Joao et. Al..,2024). Digital technologies are associated with efficiency and innovation which have the potential to improve SMME performance and growth. However, as the adoption of digital technologies continues to rise in South Africa, its impact on growth of SMMEs in the clothing retail sector remains scanty. This study sets to bridge the knowledge gap concerning the impact of digital technologies on SMMEs growth.

1.2 Background of the study

The nexus between the adoption of digital technologies and growth of SMMEs remains a critical of scholary inquiry, particularly within the broader efforts to promote their development and growth. In South Africa, the National Small Business Act (NSB) defines a small business as an independently operated entity, encompassing cooperatives and non-governmental organisations, and managed by one or more owners. This definition also includes branches or subsidiaries functioning across different sectors or sub-sectors

of the national economy (Republic of South Africa, National Small Business Amendment Act, 2004).Due to their important role, SMMEs are increasingly drawing the attention of academics, government, and international development agencies (Akpan et al., 2020). Several researchers have noted the immense contribution of SMMEs in driving economic growth, promoting industrial and economic diversity, increasing citizen economic participation, reducing inequality, and creating employment. (Ramasobana et al., 2017; Gongxeka, 2020; Civelek et al. 2021; Yadgarova,2024).

In South Africa, SMMEs account for 60% of employment and 50% of the country's Gross National Product (GNP) (Muriithi, 2018). In addition, SMMEs in South Africa are estimated to generate between 52% to 57% of the country's Gross Domestic Product (GDP) (Muriithi, 2018; Kibuuka & Tustin, 2019). In light of these statistics, it is clear that SMMEs play an essential role in creating new markets and producing goods and services. However, despite the vital role that small businesses play, SMMEs in South Africa experience high failure rates. The high failure rates have generated interest in exploring strategies for ensuring the sustainability of SMMEs.According to Ramasobana et al. (2017), the failure rate for SMMEs in South Africa is estimated to be 70% to 80%. Similarly, Muriithi (2018) estimates the small business failure rate to be approximately 50% to 90%. Further, Ramraj (2018) claims that 90% of SMMEs in South Africa fail within the first year of their establishment, whilst approximately 80% fail in the second year of their establishment. Notable factors contributing to the high failure rates of SMMEs in South Africa include high business costs, limited access to reliable data, poor management skills, lack of skilled personnel and limited access to loans (Iwu, 2021).

In recent years, the concept of digital transformation has gained significant traction across industries, revolutionising traditional business models and practices (Palmie, et.al.,2022, Pansara,2023).While sectors like technology and finance have embraced digital innovation, many non-digital sectors such as manufacturing, healthcare and retail, are now recognising the imperative to adapt (Canhoto,et., al., 2001,Iyanna, et.al,2022). The ongoing transition of the South African economy to the fourth industrial revolution presents clothing retailers with an opportunity to integrate digital technologies in their operations to achieve business growth.

The fourth industrial revolution is defined as transforming society and the economy, spearheaded by emerging technologies such as artificial intelligence, robotics, cloud computing, big data, and the internet of things (Adamik, 2020). The fourth industrial revolution continues from the information technology-driven third industrial revolution. Essentially, the fourth industrial revolution combines information technology, the internet, and production (Matt & Rauch, 2020). The fourth industrial revolution presents numerous opportunities for SMMEs to improve customer experience and customer satisfaction, reach new markets at a lower cost and develop new and customised products and services. Iwu (2021) suggests that emerging technologies such as artificial intelligence and automation have the potential to help SMMEs address the challenge of lack of skills.

Given the performance and growth challenges faced by SMMEs during the establishment phase, the adoption of fourth industrial revolution technologies is identified as a key strategy to improve their growth prospects (Bettiol et al., 2020).Due to contextual variations, gaining insights into context-specific realities regarding technology adoption and small business sustainability is imperative. To this end, this study investigates the relationship between the adoption of digital technologies and the growth of SMMEs operating in the clothing industry, with a specific focus on Tshwane.

1.3 Problem statement

SMMEs are increasingly considered crucial in socio-economic development and transformation (Van der Spuy, 2019). However, their dismal performance remains a cause for concern. Available statistics show that approximately 80% to 90% of SMMEs in South Africa fail within two years of their establishment (Moos & Sambo, 2018). As the South African economy transforms into the fourth industrial revolution, SMMEs are expected to leverage digital technologies to enhance their performance and growth (Ericson et al., 2020). While the adoption of digital technologies has significantly contributed to the success and growth of SMMEs in developed regions such as the European Union and North America, there is a lack of comprehensive empirical research examining the relationship between digital technology adoption and the growth of SMMEs within the South African context. Venter and Tustin (2020) investigated the impact of

digital technology on SME growth and collected from multiple sectors and recommended that future studies should focus on specific sector. Furthermore, Ngibe and Lekhanya (2019) established that there were differences in how sectors such as agriculture, manufacturing, service sector and retail sectors are impacted by adoption of mobile based application. However, there has been little or no research that has been conducted to comprehensively understand the effects of technology adoption on the growth of clothing retail SMMEs. The current study focuses on clothing retail SMMEs in South Africa, a sector underrepresented in digital transformation literature (Mutula & Brakel, 2006). While broader economic context could enrich the introduction, the sectoral focus is justified by the need for targeted policy and strategic insights (OECD, 2021). Hence, this proposal attempts to close this knowledge gap by focusing on the adoption of digital technologies and its subsequent impact on the growth of SMMEs operating in the clothing retail industry in Tshwane, South Africa.

1.4 Aim of the study

The main aim of this study is to determine the relationship between the adoption of digital technologies and the growth of SMMEs operating in the clothing retail industry in Tshwane.

1.5 Objectives

This research sought to achieve the following objectives-:

i. To assess the relationship between the adoption of digital technologies and the development of sustainable competitive advantages of SMMMEs operating in the clothing industry in Tshwane.
ii. To determine the relationship between the adoption of digital technologies and financial performance of SMMEs operating in the clothing retail industry in Tshwane.
iii. To establish a relationship between the adoption of digital technologies and customer satisfaction of clients for SMMEs operating in retail clothing industry in Tshwane.

1.6 Research questions

This research sought to answer the following questions at its conclusion-:

i. What is the relationship between adopting digital technologies and developing sustainable competitive advantages for SMMEs operating in the clothing retail industry in Tshwane?
ii. What is the relationship between adopting digital technologies and the financial performance of SMMEs operating in the clothing retail industry in Tshwane?
iii. What is the relationship between adopting digital technologies and customer satisfaction of clients for SMMEs operating in the retail clothing industry in Tshwane?

1.7. Significance of the study

This study adds empirical knowledge regarding adopting digital technologies for the growth of SMMEs in the retail clothing sector enterprise in Tshwane. Several studies have been conducted to ascertain the effects of technology (Maisiri & van Dyk, 2021) and incubation (Lose, 2016; Li et al., 2020; Lose & Khuzwayo, 2021; Mhlongo & Mzyece, 2023) on SMMEs in South Africa. However, a review of the available literature shows that studies that focus on investigating the relationship between the adoption of digital technologies and SMMEs are either non-existent or scanty. This study addresses the existing knowledge gap by exploring the relationship between the adoption of digital technologies and the growth of SMMEs, with a particular focus on those operating in the retail clothing industry in Tshwane, where such research has been either limited or nonexistent.

1.8 Delimitation of the study

The proposed study was confined to the city of Pretoria. In addition, data was collected from SMMEs that have gone through the incubation processes and operate in the clothing retailing sector. This study followed the quantitative research approach, and data collection was limited to easily accessible participants selected through the convenience sampling technique.

1.9 Definition of key terms

SMME: A Small, Medium and Micro Enterprise(SMME) refers to a separate and distinct business entity, together with its branches or subsidiaries, if any, including cooperative enterprises, managed by one owner or more predominantly carried on in any sector or subsector of the economy (National Small Enterprise Act, 1996, Act No. 102 of 1996).

Business growth: Business growth is defined as an expansion of a business enterprise in terms of production, sales, market share, assets, competitive advantage, customer satisfaction and profitability (Wach, 2020). In the context of this study, business growth refers to the extent to which a business enhances customer satisfaction, competitive advantage and financial performance.

Clothing retailing: Refers to dealers who sell clothing to final consumers of clothes. In the context of this study, clothing refers to all items that are worn on one's body protect and cover it. These items include footwear, garments, headgear and accessories (Gonzalo et al., 2020).

Digital technologies: Digital technologies refer to systems, platforms and/or tools that are useful in generating, storing, sharing, transferring and processing data in digital forms (Canhoto et al., 2021). Notable digital technologies include e-commerce platforms, internet, social media applications computing devices, cloud computing and storage, artificial intelligence, online marketing and advertising as well digital analytics (Ajayi-Nifise et al., 2024).

1.10 Conclusion

The chapter provided key introductory information on the research project. The chapter provided a discussion on the background that generated the researcher's interest into investigating the relationship between digital technologies and SMME growth. Furthermore, the chapter highlighted the problem statement and the objectives derived from problem statement. The chapter also discussed the significance of the study and provided definitions of key concepts in the study.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The previous chapter provided an introduction of the of the research, highlighting key aspects such as the background, problem statement, objectives, aim of the study, significance and the hypotheses of the study. This chapter discusses and explains literature relevant to the current research. This includes exploring extant literature on SMMEs in South Africa and SMMEs in clothing sector in particular. Since the study is partly premised on the assumption that digital technologies presents opportunities for growth, the chapter also explores literature that relates to technology and the growth prospects that its adoption brings SMMES. The chapter also discusses the link between technology adoption by SMMEs and how this influence SMMEs growth. Furthermore, a discussion on the relationship between technology adoption and SMME growth follows. Finally, the study examines the theoretical framework underpinning the research and subsequently presents a conceptual framework derived from these discussions.

2.2 Small Micro and Medium Enterprises (SMMEs)

SMMEs are defined in various ways, with a review of existing literature indicating that their definitions differ across countries (Chu & Chen, 2020).This means that there is no consensus on what constitute an SMME across the world. Although there is no universal definition for SMMEs, extant literatures show that most definitions are provided in terms of number of employees, capital, and revenue and turnover bands (Drnovsek & Cater, 2020). Economically inclined definitions of SMMEs encompass aspects such as market share, management structures and formalization status (Guerrero & Urbano, 2020). Conversely, statistical definition of SMMEs is based on quantifiable business metrics such

as gross domestic product, exports , employment created as well as comparison of an enterprises economic contribution versus the contribution of other businesses. Commonly considered aspects of business which are factored in when defining SMMEs include number of employees, revenue and capital (Khan & Saleh, 2023). There is however no agreement on how many employees or how much capital or revenue that constitutes an SMME.

For instance, Eggink (2021) notes that majority of European Union countries definitions put forward by academics and business development practitioners classify SMMEs as entrepreneurial ventures employing up to 250 employees. Similarly, in a study carried out by the World Bank (2020), it was found out that out on the 132 countries that were surveyed, a third (46 countries) defined SMMEs as enterprises that employ 250 employees or less. To that end, it is imperative to acknowledge the context biases associated with definition of SMMEs. In other words a SMME definition varies from economy to economy and from context to context. Lencho (2019) posits that what is classified as a small business in one country might be classified as a medium or large business in another country. For example, the United States of America considers enterprises employing up to 499 employees to be small business, South Korea classify an entity with 199 employees as a small business whilst the in South Africa a business regarded as an SMME if it employee 100 to 200 employees depending with sector (World Bank, 2020). This shows the diversity of definition of SMMEs across different countries. Table 2.1 provides information on how business are classified as micro, small, medium and large enterprises in terms of employees.

Table 2.1 Enterprise definitions based on number employees employed by business

	Micro	Small	Medium	Large
EU countries, Iceland, Norway and Switzerland	1-9	10-49	50-249	250+

Australia	0-9	10-49	50-199	200+
Canada	0-9	10-49	50-499	500+
Japan	4-9	10-49	50-249	250+
Korea	5-9	10-49	50-199	200+
Mexico	0-10	11-50	51-250	251+
New Zealand	1-9	10-49	50-99	100+
Turkey	1-19	20-49	50-249	250+
United States	1-9	10-99	100-499	500+

Source: (Berisha & Pula, 2015 :23).

Although the number of employees has been considered a reliable metric for defining SMMEs, Biloslavo and Lombardi (2021) warns that defining SMMEs according to the number of employees they employ might be problematic for two reasons. First, there are a growing number of businesses relying on part time employees with the aim of reducing labour costs (Acs & Szerb, 2020). Secondly, advancements in technology and the adoption of innovations such as automation and robotics have resulted in reduced employment opportunities in certain sectors, including manufacturing (Raza & Jawad, 2023).Endris and Kassegn (2022) support this perspective, asserting that the proportion of full-time employment has declined, necessitating the consideration of additional criteria for defining and categorising SMMEs.

Hironaka, Ashhari, and Faizal (2017) highlighted that another way to define SMMEs is through their financial standing. However, this approach has certain limitations that must be considered. Financial criteria, such as annual turnover, may not always be reliable in defining SMMEs due to inconsistencies in reporting standards, which can lead to a lack of comparability (Dar, Ahmed, & Raziq, 2017). For instance, fluctuations in exchange rates and inflation can impact the comparability of financial data across different countries and time periods. Berisha and Pula (2015) argued that annual turnover remains the most

dependable quantitative measure for defining an SMME. In the context of developing economies, where employment figures and profit margins are often influenced by tax regulations, sales revenue can also serve as an indicator of enterprise size (Indrawati, 2020).

2.2.1 South African perspective of an SMME

In South Africa, the National Small Business Act (NSB) of 2003 and 2004 defines an SMME as an independent and distinct business entity, which may include co-operatives and non-governmental organisations. Such entities are owned and managed by one or more individuals and operate primarily within a specific sector or sub-sector of the South African economy, including any associated branches or subsidiaries (South African Government Gazette, 2003). The NSB (2003) categorises SMMEs into four groups: micro, very small, small, and medium enterprises. This classification is based on key criteria such as the number of employees, annual turnover, and gross assets.

According to the NSB, a business entity with an annual turnover of less than R150,000 is classified as a micro-enterprise (NSB, 2003).Small business enterprises such as taxis, spaza shops and other sole proprietorships employing less than 5 people fall into the micro-enterprise category . Additionally, business entities employing less than 10 people, except those operating in manufacturing, construction and other labour intensive sectors in which the number of employees is a maximum of 20, are classified as very small businesses.

Furthermore, NSB (2003) states that a business enterprise employing a maximum of 50 people, having annual turnover of R25 million rands and gross assets worth up to 4.5 million rands depending on industry is classified as a small business. Finally, the NSB (2003) defines a medium enterprise as a business that employs a maximum of 100 workers. However, businesses operating in the electricity, mining, construction, and manufacturing sectors may have up to 200 employees. Medium enterprises are normally formalised, characterised by decentralisation power and delegation of authority to management. Table 2.2 illustrates different business entities falling under the SMME category in terms of number of employees, employee turnover and gross assets.

Table 2.2: SMMEs definitions according to the NSB Act (2003)

Enterprise size	Number of employees	Annual turnover (Rand)	• Gross assets, excluding, fixed property
Small	Fewer than 50	Less than R2m to R25 m depending on Industry	Less than R2m to R4.5 m depending on Industry
Medium	Fewer than 100 to 200,depending on Industry	Less than R4 million to R50 m depending upon Industry	Less than R2 m to R18 m depending on Industry
Very small	Fewer than 10 to 20 depending on Industry	Less than R200 000 to R500 000 depending on Industry	Less than R150 000 to R500 000 depending on Industry
Micro	Fewer than 5	Less than R150 000	Less than R100 000

Source: (South African Government Gazette, 2003. p 25).

Whilst the above is the foundational definition of SMMEs in South Africa since the inception of the democratic government, the definition has been amended as outlined in the new SMME classifications (Department of Small Business Development, 2020). The

latest classification indicates that micro enterprises have are those business entities with less than 10 employees, annual turnover that is equal or less than 10 million rands and annual turnover that is equal or less that 50 million rands. Small enterprises are those business entities with 11 to 50 or less employees, and annual turnover amounting to or less than 50 million rands. In addition, medium enterprises are business entities with more than 50 employees to 250 or less employees as well as turnover more than 50 million rands to 220 million rands or less.

Although general classification of SMMEs is widely accepted in South Africa, it is complimented by the standard industrial classification, which also define business entities in terms of the industry or sector from which they operate. Table 2.3 show how businesses are categoriesed according to sector in terms of number of employees, total annual turnover and the gross asset value.

Table 2.3: Standard Industrial Classification definition of SMMEs

Sector	Employees (full time equivalents)	Total annual turnover	Total gross asset value (without fixed property)
Agriculture	<=100	5m	5m
Mining and quarrying	<=200	39m	23m
Manufacturing	<=200	51m	19m
Electricity, gas and water	<=200	51m	19m
Construction	<=200	26m	5 m
Retail, motor trade and repair services	<=200	39m	6m
Wholesale trade, commercial agents and	<=200	64m	10 m

allied services			
Catering, accommodation and other trades	<=200	13m	3 m
Transport, storage and communications	<=200	26m	6m
Finance and business services	<=200	26m	5m
Community, social and personal services	<=200	13m	6m

Source: (Edinburg Group, 2016. p 28).

Defining SMMEs is important in the context of the current study because it allows for clear identification of what constitute an SMME. This study focuses on SMMEs operating in the clothing retail industry hence; it falls under the definition of SMMEs operating in the retail sector. As SMMEs operate, they may register growth enabling them to move from category to the next category (Saleh & Majunath, 2023). Growth of business enterprises is important because it enables an economy to achieve its various objectives (Enwereji, 2023). These include but not limited to employment creation, economic growth, bridging inequalities, promoting innovations and generation of foreign currency (Tsatsenko, 2020). Business growth is discussed in detail in the next session.

2.3 Business growth

Business growth is defined as an expansion of a business enterprise in terms of production, sales, market share, assets and profitability (Wach, 2020). Business growth is an important for SMMEs as it enables the business to exploit new opportunities, enhance value of the business as well as improving its competitiveness (Mutalimov, 2021). To grow their businesses, entrepreneurs and business managers follow various strategies. Porter (1998) advances that there are three main strategies for achieving business growth. These three are focus, differentiation and cost leadership. Digital technologies have turned out to be a key tool that can be leveraged to effectively pursue any of these three growth strategies. Digital technologies promote innovation hence they

are an important resource for business growth because they allow business enterprises to develop new services, business models, processes and products (Aldrich et al., 2023).

Metrics for measuring business growth can be classified into finance and non-financial metrics. Financial metrics includes, profits growth rate, return on investment (ROI) and revenue growth rate (Kraus, 2022). On the other hand, non-financial metrics for measuring business growth includes market share, competitive advantage and customer satisfaction. In this study business growth was measured through three variables which are financial performance, competitive advantage and customer satisifaction. Financial performance refers to a measure of a business's financial growth over a specific period (Hart, 2021). A business with a positive performance should be in a position to meet its financial obligations, generate revenue and value for the owners (Farida & Setiawan, 2022). Sustainable competitive advantage refers to lasting and unique benefit that an enterprise offers better than its competitors, allowing it to achieve lasting success and maintain market position (Burns, 2022). Customer satisfaction refers to the extent to which a business's offerings meet or exceed a customer's expectations (Aldrich et al., 2023). Put differently, customer satisfaction is a measure of the extent to which a business is able to meet customer's standards and provide them with expected.

Given the high failure rate of SMMEs in South Africa, researchers and policymakers are interested in gaining insights into how SMMEs can achieve growth for their businesses (Leboea, 2017). Hence, this study focuses on how adoption of digital technologies influences the growth of SMMEs operating in the clothing retail sector in Tshwane.

2.4 Importance of SMME growth

SMMEs play a crucial role in any economy, contributing significantly through various functions (Chu & Chen, 2020). This section explores the key contributions of SMMEs to economic development. Their most notable roles include job creation, poverty reduction, generating foreign currency, fostering economic growth, and driving innovation (Guerrero & Urban, 2020).

2.4.1 Employment creation

SMMEs play a crucial role in employment creation and poverty reduction, particularly in emerging economies such as South Africa.It is increasingly accepted that SMMEs play a critical role in creating employment for the owners and other people who get employed by the entities (Nofrantia et al., 2024). Jayasekera (2020) points that SMMEs growth is important because they play a role in solving some social problems such as poverty and unemployment. In South Africa, unemployment remains high and currently sits at 33.5% in the second quarter of 2024 (Statistics South Africa, 2024). To promote SMME growth and development, the South African government through its agencies which include Small Enterprise Development Agency (SEDA), National Youth Development Agency (NYDA), National Empowerment Fund and the Small Enterprise Finance Agency (SEFA) promotes SMMEs growth by providing funding and incubation services to entrepreneurs and small business.

These efforts to promote SMMEs growth are encapsulated in the National Development Plan which states that small business should create 90% of employment opportunities for South Africans by 2030 (NDP, 2015). According to SEDA (2020), 93% of South African business enterpises fall under SMMEs which account for 53,9 % all employment created and contribute about 34,8 % to the national gross domestic product. Similarly, a study by World Bank (2021) show that 91% of business enterprises found in South Africa are classified as SMMEs accounts for approximately 57% of GDP and provides employment to around 61% of economically active South African. The employment creation role of SMMEs is not unique to South Africa alone buts exists in other countries as well. For instance, in Bangladesh, SMMEs constitute 99% of private sector industrial establishments. In addition to this, SMMEs in Bangladesh create 70% to 80% of employment opportunities outside agriculture (Rahaman et al., 2021). In the same way, Madhavan et al. (2022) established that SMMEs constituted 98,5% of all business enterprises found in Thailand and created 80.4% of employment opportunities in the country. The discussion above demonstrates the critical role that SMMEs play in employment creation, thus illustrating the importance of positive growth for SMMEs.

2.4.2 Economic growth and development

SMMEs growth is important because it stimulates economic growth and development at local and national level. According to Tsatsenko (2020) SMMEs growth is important because they are a source of novel products and services and production of huge volumes of goods because of their huge number thus contributing significantly to national GDP. Taigbenu (2019) states that SMMEs allow individuals to develop entrepreneurial skills and the foundation on which large business enterprises are developed. Making a case for SMMEs growth, Sishuba (2020) states that SMMEs are the engines through which an emerging economy can achieve its objectives.

SMMEs are essential drivers of employment generation and poverty alleviation, particularly in emerging economies like South Africa. As SMMEs grow they are able to contribute to poverty alleviation and provision on incomes to local households (Word Bank, 2020). According to Batran et al (2022) SMMEs have played a critical role in transforming the Central and Eastern European nations from planned to market oriented economies. Eggink (2021) states that SMMEs constitute about 95% of all businesses found in the European Union. This shows how much SMMEs are an important sector in an economy. Due to the envisaged benefits of SMME growth, international development agencies such as the International Labour Organisation(ILO) and United Nations (UN) have initiated various programs to support their growth (Maziliauske, 2024). According to ILO (2020), SMMEs account for a third of all global employment. This confirms the critical role played by SMMEs in fostering economic growth through transforming economies, creating employment and innovations.

2.4.3 Foreign currency earning

SMMEs growth is important because due to their large numbers, they produce more goods and services which can be exported to earn foreign currency (Boso et al., 2019). Khan and Mihaisi (2023) states that SMMEs earn foreign currency by internationalizing those operations and exporting goods and services. With advancements in information communication technologies which led to improved efficiency in transport logistics coupled with globalisation, doing business beyond borders has been made easier than before (Loo, Ramachandran & Raja-Yusof, 2023). SMMEs can exploit exporting opportunities earning foreign currency for the country in the process. It is important for

SMMEs to export because they play a role in achieving a positive balance of payment, which is a significant challenge for most emerging economies (Njanike, 2019).

Although SMMEs have an opportunity to internationalise their business, the number of SMMEs in the international space remain low (Oduro, 2019). According the Organisation for Economic Co-Operation and Development (OECD) (2021), while SMMEs from emerging economies play a pivotal role in local economies, their participation in the international business arena remains limited compared to large co-operations. This signals the need for them to grow. Abdul-Azeez et al. (2024) recommends that SMMEs from emerging economies need to be exposed to international business platforms so that they can adopt and learn best business practices and adopt technology for improved efficiency and productivity. While it is beneficial for SMMEs from emerging economies to go international, literature show that SMMEs struggle to internationalise their businesses due to lack of knowledge about global markets, lack of adequate skills and technology for improving efficiency necessary to effectively compete (Sommer, 2024). On the other hand, Steinhauser et al. (2021) observe a general reluctance among SMMEs in emerging economies to acquire the information and knowledge necessary for effective participation in international markets. It is important for SMMEs to participate in global markets and value chains to improve their role as foreign currency earners (Zahoor et al., 2020). SMMEs growth is therefore important because it leads to creation of entities that participate in international markets thereby earning foreign currency.

2.4.4 Development of new innovations

SMMEs play a crucial role in driving innovation, disrupting traditional practices and generating positive change. According to Subgja et al. (2022), many of the most revolutionary technological and product advancements stem from innovations introduced by start-up businesses. The agility of SMMEs enables them to experiment with new methods, processes, and ideas, leading to the development of novel products and services in the market (Klucnikov et al., 2021). Their flexibility and significant presence within the economy further enhance their role in the national innovation system (Zastempowski et al., 2021). SMMEs tend to be more innovative than larger corporations,

with research showing that many large companies rely on SMMEs for new ideas and innovations (Ouma-Mugabe et al., 2021). This is confirmed by Matekenya and Moyo (2020), who note that some larger corporations focus heavily on acquiring innovations from external sources, with SMMEs often being the primary providers.

Bolosha et al. (2023) highlight that the absence of a vibrant group of innovative SMMEs could make an economy less appealing to larger corporations, which are key contributors to foreign direct investment. Mugano (2024) notes that many large South African companies now recognise that individuals and SMMEs can be just as innovative as larger firms, opening the door to innovation partnerships.

SMMEs are involved in various types of innovation to maintain competitiveness and growth in today's business environment. Bertanzetti et al. (2024) identify two primary types of innovation: open and closed. Open innovation is described as a two-way process in which companies both acquire external ideas and resources to develop their own business, while also out-licensing or selling their own innovations (Bissola, Imperatori & Biffi, 2017). In contrast, closed innovation involves generating new ideas, products, processes, and services based on internal concepts (Bissola, Imperatori & Biffi, 2017).
Abisuga-Oyekunle (2020) found that companies engaging in innovation are more likely to be large employers. Supporting this, Brixiova et al. (2020) discovered that innovative enterprises in the industrial and services sectors employed 90% of the workforce. This highlights the vital contribution of SMMEs to innovation and their positive economic impact. For SMMEs to remain innovative, they require platforms that foster creativity and collaboration (Gherghina et al., 2020). Digital technologies have become integral to supporting innovation and enabling business growth (Urbano et al., 2024), as will be discussed in the next section.

2.5 Digital technologies

Digital technologies are as systems, platforms and/or tools that are useful in generating, storing, sharing, transferring and processing data in digital forms (Canhoto et al., 2021). Notable digital technologies include e-commerce platforms, internet, computing devices,

cloud computing and storage, artificial intelligence, online marketing and advertising as well digital analytics (Ajayi-Nifise et al., 2024). These digital technologies have revolutionised the way business is done across the world and there has been increased adoption of digital technologies world-wide. Adoption of digital technologies involves integrating digital platforms and system into all aspects of business operations. According to Ebirim et al (2024), integrating digital technologies and reimagining business processes, business enterprises enhance operational efficiency, improve customer experience, and develop competitive advantage. Essentially, adopting digital technologies encompass leveraging digital technologies to transform business, operations, processes and customer experience.

Although adoption of digital technologies is on the rise across the world, the rate of adoption and impact varies with geographical context (Pansara, 2023). As the fourth industrial revolution takes over from the third industrial revolution, there have been calls for businesses to embrace digital technologies to improve their growth prospects (Van Veldhoven & Vanthienen, 2022). Adoption of digital technologies has been associated with efficiency and enhanced productivity. In some instances it has been linked to the general growth of SMMEs (Joao, et al., 2024)

2.6 Fourth industrial revolution

The fourth industrial revolution is a term that refers to the ongoing transformation of the economy and society brought about by the widespread adoption of new technologies like robotics, artificial intelligence, the Internet of things, and big data (Signe, 2023). The fourth industrial revolution builds on the third industrial revolution, driven by increased information and communication technology use. The inception of the fourth industrial revolution is traced back to around 2010 and 2011 and was made possible by the emergence of more affordable, connected and powerful technologies such as the Internet of things, robotics, machine learning, big data, virtual reality and artificial intelligence (Rauch et al., 2018). Bettiol et al.(2021) state that the fourth industrial revolution is characterised by intelligent machines that leverage wireless connections for communication and are linked to a system that can independently perform tasks or make decisions without human effort. By enabling interconnectedness between the virtual and

physical, the fourth industrial revolution technologies allow for flexible collaboration between the two realms (Ericson et al., 2020).

The emergence of the fourth industrial revolution has opened a window of opportunities for business enterprises that adopt the technologies to improve product offerings, customer experience, and efficiency and reduce the costs of running a business. Although the fourth industrial revolution is widely seen as a catalyst for growth in some business enterprises (Matt & Rauch, 2020; Aghimien et al., 2021), it is viewed by some as a source of disadvantage for some business enterprises, especially SMMEs which do not have enough resources to fully adopt and utilise the fourth industrial revolution technologies (Prisecaru, 2016; Ayentimi & Burgess, 2018). However, digital technologies are affordable making them easily accessible to SMMEs. SMMEs can therefore leverage them to achieve business growth (Tafotie, 2020). In addition, the South African government has also put in place various policies to promote adoption and use of technology across South Africa. These policies are discussed in the next section.

2.6 Policies for technology adoption in South Africa

Whilst it remains an individual enterprises prerogative to incorporate technology in their business processes and operations, the national government plays an integral part in promoting adoption of technology by creating an enabling environment. The South African government has implemented various policies to promote technological advancement and adoption, aiming to enhance economic growth (Andreoni & Trgenna, 2020).Notable policies include The National Industrial Policy, National Development Plan and the White Paper on Science, Technology, and Innovation 2019.

2.6.1 The National Industrial Policy

The National Industrial Policy is a significant driver of long-term economic growth within the Industrial Policy Action Plan (IPAP) and plays an important role in fostering technological progress in South Africa (Marule, 2022). This policy aims to encourage the adoption of technology by individuals and organisations across the country. It acknowledges that technological innovation is essential for transforming the economy

through industrialisation, aligning with the goals set out in the National Development Plan 2030 (DTI, 2011). The key aim of the National Industrial Policy Framework (NIPF) is to diversify South Africa's economy, moving away from its reliance on raw mineral exports and non-tradable services through industrialisation (DTI, 2011; Mondliwa & Roberts, 2019).

The NIPF highlights that the industrialisation process can be accelerated by leveraging existing technologies to promote innovation and the development of domestic technologies (Fofana et al., 2021). It identifies three critical technological channels to achieve this: domestic research and development that generates home-grown technologies, embodied technology in the form of foreign direct investment (FDI), and technologies imported from abroad that are adapted to local conditions (Pandey et al., 2022). Among these, domestic research and development is recognised as the most challenging yet potentially the most rewarding approach, as it requires long-term planning, substantial investment, and a willingness to take risks on new technologies or innovations (Feijóo et al., 2020; Department of Trade and Industry, 2011). However, the benefits of domestic research and development include owning the technology, developing local expertise, and creating manufacturing capabilities based on locally sourced materials (Centre for Science, Technology and Innovation Indicators, 2017).

2.6.2 National Development Plan

The National Development Plan (NDP) aims to eradicate poverty and reduce inequality by 2030. To achieve these objectives, the NDP advocates for harnessing the potential of South Africa's population, fostering an inclusive economy, building capabilities, strengthening the state's capacity, and encouraging leadership and partnerships across society (NDP, 2015). The plan also emphasises the role of technology in building these capabilities and promoting greater equality among South Africans (Auriacombe & Sithomola, 2020).

Furthermore, the NDP asserts that South Africa must enhance its innovative capacity and continue to contribute to global advancements in science and technology (Aliu et al., 2021). This requires substantial investment in technology, research, and development, as

well as improved utilisation of existing resources and more agile institutions that can foster innovation. It also highlights the need for stronger cooperation between public science and technology institutions and the private sector (NDP, 2015). To this end, the NDP encourages the broader adoption and utilisation of technology to help realise the vision for 2030 (Boomgaard et al., 2022). The plan recognises science, technology, and innovation as essential drivers of economic growth, job creation, and socio-economic transformation (Habiyaremye, 2022). The introduction of the 2019 White Paper on Science, Technology, and Innovation is a significant move in outlining the government's long-term policy framework for these sectors (Soete, 2019). This White Paper, which was endorsed by the Cabinet, was developed following comprehensive reviews of the National System of Innovation (NSI) and consultations with various stakeholders, including government departments, civil society, businesses, and academia (NDP, 2015).

2.6.3 White Paper on Science, Technology, and Innovation 2019

The White Paper on science, technology, and innovation was adopted as a policy by the cabinet of SA in 2019 (Platinga & Adams, 2021). The policy builds on the White Paper on science and technology of 1996. The White Paper on science and technology of 1996 was formulated soon after attaining freedom for South Africa (DST, 2019). The policy aimed to use technology to address past inequalities caused by segregation. Apartheid policies systematically privileged the white population while economically and socially marginalising Black communities.Even though remarkable progress has been registered in the technology sector, South Africa is still a highly unequal society, and the legacy of apartheid is significantly reflected in today's society (Ashley-Cooper et al., 2019) Hence the 2019 White Paper on science, technology, and innovation strives to address challenges such as poverty, unemployment, and economic growth through technological innovations.

The 2019 White Paper on science, technology, and innovation outlines the South African government's long-term policy framework aimed at enhancing the role of these sectors in fostering a more prosperous and inclusive society. It focuses on leveraging science, technology, and innovation to help South Africa capitalise on developments such as rapid

technological progress, as well as demographic and geopolitical shifts, while also addressing the challenges posed by these global trends (Mustapha & Ralphs, 2022). Notably, the White Paper addresses the implications of the fourth industrial revolution.

The 2019 White Paper aims to harness the full potential of science, technology, and innovation to enable South Africa to succeed in a dynamic and challenging global environment. Building on previous achievements, it introduces several policy adjustments to achieve this vision. These include enhancing inclusivity, promoting transformation, and strengthening linkages within the National System of Innovation, fostering a culture of innovation within society and government, improving policy coherence and budget alignment across government departments, and creating a more supportive environment for innovation (DST, 2019).

Additionally, the White Paper seeks to develop local innovation ecosystems and support social and grassroots innovations. In contrast, it also aims to expand the research system, build human capabilities, fast-track the implementation of the Pan-African science, technology, and innovation agenda, and increase investments in these sectors (Jegede, 2021).

2.5 Clothing retailing

Clothing retailing refers to dealers who sell clothing to final consumers of clothes. In the context of this study, clothing refers to all items worn on the body for the purpose of protection and coverage (Department of Trade, Industry and Competition, 2022). These items include footwear, garments, headgear and accessories. The clothing industry is fraught with numerous uncertainties (Gonzalo et al., 2020). These uncertainties stem from variations caused by fluctuating fashion trends, shorter product life cycles and difficult to predict product demand. Due to these variables, retail clothing industry maybe difficult for SMMEs to survive. To this end, researchers (Cheung, et. al., 2019; Kalbaska & Cantoni, 2019; Lenoir, 2019; Noris, et al. 2021) , have recommended the adoption digital technologies to enhance various aspects of clothing retail industry.

As South Africa emerges from challenge slow economic growth and increasing unemployed partly caused partly by the COVID-19 pandemic, clothing retailers are presented with opportunities by an increase in demand for online shopping and fast fashion (Statista, 2022). The World Bank (2020) indicates that there is a growing middle class in South Africa which has seen an increase in disposable income and spending. In addition, the government of South Africa has shown support to the clothing retailing sector through enacting Clothing and Textile Action Plan (Department of Trade, Industry and Competition, 2022).

2.7 Adoption of digital technologies and business growth

This section discusses the relationship that exists between digital technologies and business growth. Extant literature is explored in this section to inform conclusions on the assumed relationship between digital technologies and business growth. In the context of this study, the dimensions of business growth which include competitive advantage, financial performance and customer satisfaction were considered. As the study focuses on investigating whether embracing digital tools results in tangible growth metrics, such as financial performance, sustainable competitive advantage. To deepen understanding of the relationship between digital technology and business growth outcomes the study borrows dynamic capabilities framework by Warner and Wäger (2019), which emphasizes the organizational skills needed to extract value from digital tools, beyond just adopting them. For clothing retailers, these skills include detecting customer trends via digital platforms, capitalizing on opportunities through swift assortment changes, and evolving business models with innovations like omnichannel strategies. Equally important is the SME adoption roadmap by Maroufkhani et al. (2020), which combines the Technology–Organisation–Environment (TOE) framework with the Resource-Based View (RBV). Furthermore Matarazzo et al. (2021), recommends that evaluating digital transformation in terms of customer value creation. This viewpoint is crucial in the clothing retail industry, where consumer loyalty depends on personalization, convenience, and trend responsiveness. In addition to the digital transformation frameworks, the digital entrepreneurship theory advanced by Nambisan (2017) is also considered for this research. This perspective explains how digital technologies act as enablers of

entrepreneurial processes, influencing opportunity recognition, new value creation, and venture growth. In the Tshwane clothing retail sector, this is particularly relevant, as many SMMEs are not only adopting technology to improve efficiency but also leveraging digital tools to explore new business models, such as online boutiques, social media ridven marketing, or influencer collaborations.

The relationship between adoption of digital technologies and business growth is discussed below in light of existing related literature.

2.7.1 Digital technologies and sustainable competitive advantage in SMMEs

Adopting digital technologies is considered to positively affect SMMEs' development and maintenance of competitive advantage (Keiningham et al., 2020). Available literature shows that SMMEs leverage digital technologies to build, deliver, and capture value (Akpan et al., 2020; Bahador & Ibrahim, 2021). Adoption of digital technologies presents opportunities for SMMEs to develop new services, products and processes (Bican & Brem,2020).Digital technologies promotes business growth through enabling collaborations with local and external partners (Gartner et al, 2024). Technology-driven businesses consistently utilise disruptive technologies to create new products and improve customer experience and satisfaction better than competitors, thus leading to the creation of a sustainable competitive advantage (Guo et al., 2020). SMMEs operating in the clothing retailing industry can capitalise on opportunities presented by such innovations as e-commerce and online shops to position themselves better than competitors.Through fourth industrial revolution technologies such as artificial intelligence, big data and cloud computing, SMMEs can create a competitive advantage by reducing costs, improving efficiency, and creating new sources of income and unique value propositions (Seu & Park, 2020).

Furthermore, Matt and Rauch (2020) state that SMMEs can use technology to create niche markets, personalise their offerings and develop close customer relationships. These strategies can help them attract and retain customers and build a strong brand which is preferred over other competing brands. Similarly, Shah (2022) submits that businesses which integrate digital technologies into their processes and operations

stands to gain competitive advantage over competitors. Competitive advantage is essential for business growth because it enables a business to remain relevant in highly dynamic business environment (Gharbaoui & Boukhari, 2023).

Based on all this, it can be hypothesised that:

H1*: There is a significant relationship between adopting digital technologies (TA) and developing sustainable competitive advantages (CA) for SMMEs operating in the clothing industry in Tshwane.*

2.7.2 Digital technologies and SMMEs financial performance

As South Africa and the world move into the fourth industrial revolution, technology is widely seen as a significant catalyst for SMMEs growth through enhanced financial performance (Yu et al., 2023). In particular, digital technologies have contributed to improved efficiency and cost reduction in businesses (Daud et al., 2022).In addition, through online marketing and advertising, SMMEs stand to reach more customers at a lower cost than platforms such as radio, billboards and television. Reaching more customers results in increased sales and increased revenue. Incorporating digital technologies into business operations and processes improves business performance by enhancing technological and innovation capabilities (Jorge et al., 2022; Peng & Tao, 2022).

Digital technologies promote financial sustainability amongst SMMEs through reduced costs and improved efficiency (Aksin-Sivrikaya & Bhattacharya, 2017; Tsou & Chen, 2023). For instance, SMMEs can use artificial intelligence to build customer relationships, which is cheaper than employing customer relations officers. Reduction of costs also leads to increased profits, which are then invested back into the business, resulting in the expansion of the business (Anwar, 2018; Ruiz-Alba et al, 2022). Based on all this, it can be hypothesised that:

H2: *There is a significant relationship between adopting digital technologies (TA) and the financial performance (FP) of SMMEs operating in the clothing retail industry in Tshwane.*

2.7.3 Digital technology and customer satisfaction amongst SMME customers

As competition in the business environment becomes intense due to technological advancements and globalisation, it has become imperative to grow business based on customer loyalty (Sabihaini et al., 2021). One way of achieving customer loyalty is through customer satisfaction. Adoption and deployment of digital technologies improves relationships with customers and enhanced customer experience leading satisfaction (Awadhi et al., 2021). In the context of the clothing sector, digital technologies are changing the way clothes are sold, designed and delivered to the final consumer. Bertola and Teunissen (2018) advance that digital technologies have enabled easy collection of customer data, provision of e-commerce services, charging competitive prices and customisation of products in line with customer needs and preferences. Digital technologies, such as artificial intelligence-powered chatbots, enable interactions with customers by answering inquiries and recommending solutions, thereby enhancing customer relations, experience, and satisfaction (Adam et al., 2020).

By leveraging digital technologies such as big data, clothing retailers are able to use consumer data to gain insights into their preferences and behaviours (Gelbrich et al., 2021). The retailers then share this date with manufacturers so that they can produce products that adequately match or exceed consumer expectations. Digital technologies, including artificial intelligence, enable retailers to monitor consumer behaviour, such as tracking the amount of time spent reviewing different variations in colours, materials, and designs without making a purchase. This data also assists in identifying which modified designs receive the highest market acceptance as they are launched. With the growing trend towards e-commerce, the collection and analysis of data by these platforms have become integral to the product offering, reflected in the adaptability of designs and delivery (Kitsios et al., 2021).Based on all this, it can be hypothesised that:

H3: *There is a significant relationship between adopting digital technologies (TA) and customer satisfaction (CS) for SMMEs operating in the retail clothing industry in Tshwane.*

2.8 Conceptual framework

Based on the discussions above, the conceptual framework shown in Figure 2.1 is conceived. The conceptual framework depicts that digital technologies are the independent variable which influence business growth as represented by sustainable competitive advantage, financial performance and customer satisfaction. Whilst sustainable competitive advantage (SCA) is the primary dependent variable, additional performance metrics such as financial performance and customer satisfaction were included to provide a multidimensional view of business outcomes (Porter, 1985; Teece, 2007).

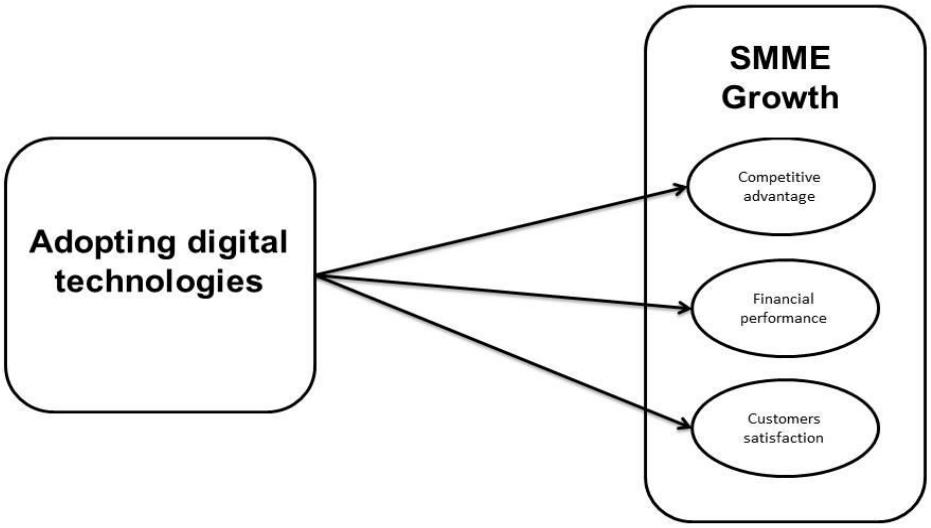

Figure 1: Conceptual framework (Source: Authors own synthesis).

2.9. Underpinning theory

The study was underpinned by the resource based view (RBV) and the unified theory of acceptance and use of technology (UTAUT). The RBV provides a comprehensive strategic lens however it has a weakness of overlooking user-centric factors which requires a complementary theory. As such the UTAUT (Venkatesh et al., 2003) was adopted to complement the RBV by addressing behavioral aspects of technology adoption. The adoption of dual-theoretical framework is academically sound and strengthens theoretical foundation of the study (Dwivedi et al., 2019).

2.9.1. The Resource Based View

This research was be underpinned by the resource-based view (RBV). The RBV explains how a business enterprise can deploy resources to achieve its objectives (Barney, 1991). Digital technologies, such as artificial intelligence, can support objectives such as developing competitive advantage, improving financial performance, and enhancing customer satisfaction.A firm's resources can be tangible or intangible (Barney & Clark, 2007). In this study, resource refers to fourth industrial revolution technology. Specifically, this study focuses on adoption of technologies such as artificial intelligence, digital marketing platforms and e-commerce platforms. Barney (2001) stresses that the RBV gives credence to development of dynamic capabilities. Digital technologies, such as artificial intelligence, present significant opportunities for SMMEs in the clothing retail sector to benefit from the fourth industrial revolution. By embracing these technologies, which are increasingly becoming a global reality, SMMEs can position themselves to capitalize on the opportunities and advantages offered by the new industrial paradigm.This study adopts the RBV as the theoretical lens through which the relationship between adopting digital technologies and growth of SMMEs in the retail clothing industry in Tshwane.

Digital technologies play a crucial role within the Resource-Based View (RBV), a well-established framework in management strategy literature. The RBV seeks to explain the source and nature of capabilities developed from specific resources, addressing the identity of a business (Ince et al., 2016; Ramanathan, Ramanathan & Bentley, 2017;

Vendrell-Herrero et al., 2017). Wernelfelt (1984: 172) described a resource as "anything which could be thought of as a strength or weakness of a given firm whose tangible assets are tied semi-permanently to the firm". In this context, digital technologies serve as a significant source of strength for SMMEs, offering opportunities to promote growth by enhancing efficiency and productivity. Barney (1991: 101) defined resources as "all assets, capabilities, organisational processes, firm attributes, information, knowledge, etc. controlled by a firm". Seppanen and Makinen (2007) suggested categorising organisational resources into tangible resources, procedural and system resources, network resources, knowledge resources, cultural values, and other intangible resources. Furthermore, Barney (1991) classified organisational resources into tangible (e.g., human, physical, organisational, and financial) and intangible (e.g., reputational, regulatory, positional, functional, and social/cultural) resources.

In the context of the fourth industrial revolution, digital technologies have emerged as vital resources for the sustainability and success of businesses (Marule, 2022). This study adopts the RBV to explore how the adoption of digital technologies contributes to the growth of SMMEs.From an RBV perspective, a firm is considered a collection of individuals and unique, enduring resources, which are distributed heterogeneously across the organisation (Grant, 1991). The RBV is inherently intra-organisational and posits that a firm’s performance is influenced by its unique resources (Barney, 2001). The theory argues that successful businesses create a competitive advantage by developing distinctive dynamic capabilities, whether tangible or implicit, through the utilisation of rare resources (Makri, Theodosiou & Katsikea, 2016). Regarding digital technologies, rare resources can be seen in how SMMEs efficiently use these technologies to foster growth. Although Barney (1991) found that not all tangible and intangible resources contribute to a company’s sustainability or competitive advantage, substantial empirical evidence (Jeon, Dant & Baker, 2016; Prange & Pinho, 2017; Blichfeldt & Faullant, 2021; Gyamerah et al., 2023) shows that resources significantly influence organisational performance.

Digital technologies are fundamental resources that underpin competitive advantage and sustainability, both in local and global markets (Almarri & Gardiner, 2014). With

globalisation, the world is becoming a unified market where businesses compete for market share using various resources (Betrán & Huberman, 2016). Organisational resources are central to the development of dynamic capabilities, which are essential to achieving an enterprise's goals (Villar, Alegre & Pla-Barber, 2014). Capabilities refer to the ability to reconfigure and deploy resources to improve productivity and achieve strategic objectives (Pisano, 2017).

Min, Homaid, Minai and Zain (2016) argued that a firm's performance is largely determined by the quality and quantity of key resources it possesses. Barney (1991) further highlighted that if all organisations had equal resources, there would be little to no difference in profitability, as all firms would have the same capacity to implement strategies. In strategic management, the sustainability of a business relies on the cost of capabilities and resources used in executing a strategy (Pisano, 2017).

The RBV suggests that organisational performance and competitive success are directly influenced by unique resources that competitors find costly to replicate (Pee & Kankanhalli, 2016). For resources to be considered unique, Seo and Chae (2016) indicated they must possess special characteristics: they should be valuable, rare, non-substitutable, and capable of increasing efficiency and effectiveness. In the context of SMMEs, leveraging digital technologies in a unique way can provide a competitive edge. Ultimately, an organisation's strategies are defined by its distinctive capabilities and resources (Oura, Zilber & Lopes, 2016). The ability to sustain a profitable market position heavily depends on the underlying capabilities and resources of the organisation (Theriou, Aggelidis & Theriou, 2009).

2.9.2 . Unified Theory of Acceptance and Use of Technology

The Unified Theory of Acceptance and Use of Technology (UTAUT) refer to a theoretical that is used to investigate adoption and use of the technology. The theory was developed by Venkatesh et al. (2003). It is anchored by four constructs which are namely effort expectancy, performance expectancy, facilitating conditions and social influence. These factors affects intention and actual usage if a technology as moderated by other factors

such as age, gender and experiences with technology (Ventatesh, 2012). In the context of this study, adoption of digital technologies by SMMEs is seen as a critical factor for promoting business growth and performance. In the clothing retail sector in Tshwane, where competition is intense and customer preferences evolve rapidly, digital tools such as e-commerce platforms, mobile applications, social media marketing, and inventory management systems can offer significant advantages.

Performance expectancy (PE) refers to advantages which users expect to derive from using new technology (Al-Saedi et al., 2020). Venkatesh et al. (2003) outlines that PE is the magnitude with which using technology will deliver some beneficial outcomes to empower users to execute their jobs better. PE is a vital predictor and antecedent of the behavioural intention to use (Tamilmani et al., 2020). Consumers anticipate enjoying some form of fulfilment and pleasure when using a particular system (Dwivedi, et al., 2017). In the context of this study, PE refers to the degree to which SMME owners believe that using digital technologies will help promote business growth. In the Tshwane clothing retail sector, digital adoption is often driven by the expectation of increased sales, wider market reach, and more efficient customer service. For instance, businesses that integrate social media often experience increased brand visibility and customer engagement (Jadil et al., 2021). Therefore, if entrepreneurs perceive tangible performance gains, they are more likely to adopt digital tools.

Effort expectancy (EE) is defined as the extent of ease of use connected with the operation and use of information systems (Venkatesh et al., 2003). The concept is that the more ease and comfort attached to a particular technology, the greater the possibility that people will be attracted to use them for business operations (Jadil et al., 2021). In the circumstance of this study, EE refers to the extent to which users find it easy, with less effort, associated with the utilisation of a specific technology. The use of technology by SMME owners in Tshwane maybe affected by lack of advanced technical skills, perceived complexities or time-consuming, adoption is likely to be low. However, the availability of user-friendly solutions such as WhatsApp Business, point-of-sale apps, and mobile-friendly e-commerce platforms can lower the entry barrier. Thus Terzias and Economides

(2022) established that training programs and peer learning opportunities enhances digital literacy, making the adoption process easier.

Social influence (SI) is defined as the extent to which individuals are convinced or believe that other believe they should use new technology (Williams, et al., 2015). SI is more relevant in community driven and informal environments. Entrepreneurs are more likely to adopt digital tools if they observe peers, customers, or competitors doing so successfully (Mengistie et al., 2024). For example, customer demand for online shopping and mobile payments can push retailers to digitalize. Likewise, participation in digital business networks or receiving endorsements from local influencers may enhance technology uptake (Tamilmani et al., 2020).

Facilitating conditions (FC) refers to circumstances that promote adoption of technology within a specific context (Venkatesh et al., 2003). Such circumstances include internet availability, affordability of technology, skills and institutional support. While mobile connectivity is high in South Africa, challenges such as high data costs, loadshedding, erratic connectivity and limited connectivity negatively impact technology integration in SMEs. Al-Saedi et al. (2020) posits that the government can address these challenges through targeted interventions such as providing loans to acquire technology, providing training and improving connectivity.

Additionally, moderating variables such as voluntariness, experience, age and gender also influence adoption of behaviours (Venkatesh et al, 2012). Younger and more tech-savvy entrepreneurs tend to adopt technologies more readily, while older or less experienced business owners may resist due to perceived risks or discomfort with change (Terzis & Economides, 2022). Based on all this, the UTAUT presents an appropriate lens through which adoption of digital technologies by SMMEs in Tshwane's clothing retail sector.

2.10 Conclusion

The chapter explored literature shaping the current study. The chapter focused on discussing key concepts for the proposed study. As such, the chapter explored extant

literature on SMMEs in South Africa and SMMEs in clothing sector in particular. This included defining SMMEs and highlighting the importance of their growth. Digital technologies being an independent variable premised to present opportunities for SMMEs growth was also discussed. The chapter also discussed the relationships between technology adoption by SMMEs and how this influence SMMEs growth. Furthermore, a discussion on the relationship between adoption of digital technologies and SMMEs growth is was also provided. The study also provided discussion on the RBV theory and how it informs the current study. Drawing on the key assumption of the research as informed by empirical literature review a conceptual framework was conceived.

CHAPTER THREE

RESEARCH METHODOLOGY AND DESIGN

3.1 Introduction

The previous chapter discussed empirical and theoretical literature shaping this study. This chapter presents the methodology that was followed in conducting the current study. The study's methodological choices were informed by the positivist research paradigm. Accordingly, appropriate and rigorous methodologies were employed in the study. Specifically, a deductive approach was utilised, underpinned by a quantitative research design. In alignment with this framework, a survey design was implemented as the primary data collection strategy. Inferential and descriptive statistics were computed to draw meaning from the collected data. Key principles of validity and reliability were observed to ensure that the study is credible. Standard ethical considerations expected in all studies involving human beings were also observed in the study.

3.2 Research process

Research is defined as a “systematic investigation undertaken in order to discover new facts and obtain additional information” (Saunders et al., 2019, p. 8). The research process, therefore, refers to a structured and systematic approach to uncovering the truth or reality surrounding a particular research topic or question. According to Saunders et al. (2007), once a research problem has been identified, the researcher must select appropriate methods and strategies to effectively address the research question.

3.2.1 Research philosophy

A research philosophy guides scientific inquiry by outlining key assumptions and principles that shape how knowledge is acquired and interpreted, ensuring the rigour and validity of findings (Park et al., 2020). According to Khatri (2020), a research philosophy serves as a broad belief system or framework that informs research design and methodological choices. In line with this, Kamal (2019) highlights that research paradigms enhance the robustness of a study by providing structured ways of interpreting and analysing phenomena.

The current study adopts the positivist research philosophy, which is characterised by the pursuit of objective knowledge through systematic observation and empirical evidence (Kelle & Reith, 2023). The positivist paradigm is grounded in the belief that reality is independent of human perception and can be measured through observable and quantifiable data (Rehman & Alharthi, 2016). The positivist approach is particularly suited to studies that seek to establish causal relationships and generate generalisable findings through empirical analysis (Kankam, 2019).Given that this study examines the adoption of digital technologies for the growth of Small, Micro, and Medium Enterprises (SMMEs) in the clothing retail sector in Tshwane, the positivist paradigm is deemed appropriate, as it enables the collection of objective, quantifiable data to understand trends, patterns, and the impact of digital technology adoption on business growth.

3.2.2 The positivist research philosophy

The positivist research philosophy is a worldview that asserts that reality is objective and can be understood through empirical investigation using established scientific principles (Allen, 2017). Central to positivism is the belief that truth can be measured numerically,

independent of the researcher's influence (Lazar et al., 2017). This philosophy advocates for the use of structured research instruments, such as survey questionnaires, that facilitate the collection of numerical data, which is then statistically analysed to determine relationships between variables (Krauss & Putra, 2005).

The positivist paradigm originated from the work of social scientists who argued that human behaviour can be studied scientifically, much like phenomena in the natural sciences. Auguste Comte, regarded as the father of positivism, proposed that social phenomena should be examined using systematic observation and empirical methods (Potrac, 2014). The positivist approach, therefore, aligns with the application of natural science methodologies in social science research, distinguishing itself from the interpretivist approach, which posits that truth is subjective and that multiple interpretations of social reality exist (Ikram & Kenayathula, 2022). The fundamental assumption of positivism is that social phenomena can be studied through cause-and-effect relationships, generalisations, and observable patterns (Rubin & Babbie, 2010; Mbanaso et al., 2023).

This alignment between scientific inquiry and positivism has been widely acknowledged (Rehman & Alharthi, 2026). The scientific approach to social science research emphasises the formulation of general laws that explain measurable and observable behaviour within human populations (Irshaidat, 2022). Consequently, researchers adopting this paradigm aim to produce generalisable findings that can be applied across different contexts, much like those derived from natural sciences (Gichuru, 2017).

A key characteristic of positivist research is the objectivity of the researcher. Positivist researchers maintain a neutral and non-interactive stance, ensuring that data collection remains independent of personal biases or subjective interpretations (Muijs, 2011; Turyahikayo, 2021). This detachment allows for unbiased data analysis and interpretation, reinforcing the credibility of the findings (Saliya, 2023).

Furthermore, positivism maintains that credible knowledge can only be generated through direct observation and empirical measurement (Pervin & Mokhtar, 2022). In this paradigm, knowledge is based solely on observable phenomena, either directly through

experience or indirectly with the aid of research instruments (Lawler & Waldner, 2023). Consequently, abstract concepts such as thoughts, emotions, and attitudes are not considered valid forms of knowledge unless they can be quantified and measured empirically.

Another defining feature of positivist research is its deductive approach to theory development. Positivist inquiry is grounded in the accumulation of verifiable facts, which serve as the foundation for theoretical advancements within a specific field (Sanchez et al., 2023). Theories developed through empirical research provide the basis for testable hypotheses, which are subjected to rigorous statistical analysis (Corry et al., 2019). This process ensures that research findings contribute to a broader scientific understanding by confirming, refining, or rejecting theoretical propositions (Babbie, 2010).

Research paradigms are differentiated by their ontological, epistemological and axiological views (Irshaidat, 2022). Ontology refers to the nature of being and reality or what is known. Epistemology refers to the study of knowledge. It essentially concerned with explaining how we know what we know or the relation between a research and what is known. Axiology refers to the study of values. It focuses on the role of ethics and values in research (Saliya, 2023).

From an ontology perspective, the positivist research paradigm emphasises that an objective and real world exists and is independent from our own understanding and perceptions (Mbanaso et al., 2023). Additionally, positivists believe that the truth is governed by natural laws which can be measured through systematic investigations (Khatri 2020).

From an epistemology perspective, positivists subscribe to objectivity and puts emphasis on quantifying knowledge to establish the truth and empirical evidence (Kelle & Reith, 2023). The positivist paradigm stresses that knowledge can be attained through application of scientific methods, experimentation and observation (Saliya, 2023). In terms of axiology, positivists adhere to value free research. In other words they believe that the influence of a researchers bias and values should be considered, rather focus should be put on interpretation of available data (Scotland, 2012; Kelle & Reith, 2023).

The methodology for this study was guided by the positivist research philosophy, as it aligns with the study's objective of examining the impact of digital technology adoption on the growth of SMMEs in the clothing retail sector in Tshwane. The positivist approach was deemed appropriate because it enables the quantitative measurement of digital technology adoption and its effects on key growth dimensions, including financial performance, competitive advantage, and customer satisfaction.

By adopting positivism, this study employed structured quantitative methods to establish relationships between variables through hypothesis testing. This approach enhanced the study's reliability, objectivity, and generalisability, ensuring that findings could be applied beyond the specific context of SMMEs in Tshwane. Additionally, the ability to use statistical techniques to identify patterns and causal relationships strengthens the validity of the conclusions drawn, providing empirical insights that can inform policy and business strategies for SMME growth in the digital economy.

3.3 Research approach

A research approach refers to the overall strategy that guides the research process, encompassing the selection of methods, strategies, and techniques to ensure the study's coherence and validity (Pandey & Pandey, 2021). It plays a critical role in shaping data collection and analysis to address the research problem effectively (Verma et al., 2024).There are two primary research approaches: qualitative and quantitative. The qualitative approach seeks to explore social phenomena through the collection of non-numerical data, such as text, images, and narratives, to provide an in-depth understanding of a research problem (Kumari et al., 2023). Conversely, the quantitative approach focuses on collecting numerical data, which is then statistically analysed to test hypotheses, identify patterns, and establish relationships between variables. In some cases, both approaches are combined in mixed-methods research, allowing for the integration of qualitative and quantitative data to gain a more comprehensive perspective (Pandey & Pandey, 2021).

This study follows a quantitative research approach, as it aligns with the objective of examining the adoption of digital technologies and their impact on the growth of SMMEs

in the clothing retail sector in Tshwane. A quantitative approach is appropriate for this study because it facilitates the collection of structured, numerical data, which can be statistically analysed to test hypotheses and establish causal relationships.Through adopting a quantitative methodology, this study ensures objectivity, reliability, and generalisability, enabling findings to be applicable beyond the specific sample. The use of statistical techniques further enhances the validity of the conclusions, allowing for an empirical understanding of how digital technology adoption influences financial performance, competitive advantage, and customer satisfaction among SMMEs.

3.3.1 Quantitative research approach

The quantitative research methodology is a structured approach that involves gathering and analysing numerical data to explore relationships, test hypotheses, and generate generalisable conclusions (Creswell & Poth, 2017). It employs statistical techniques to objectively measure variables, enabling the identification of patterns and causal links within a phenomenon (Creswell, 2014). Islam et al. (2022) describe quantitative research as driven by data, relying on statistical tools, calculations, and computational analysis to yield empirical results. Similarly, Creswell (2004) suggests that this approach involves experiments, systematic measurement, mathematical modelling, and statistical evaluations to ensure the accuracy of research findings.

Denscombe (2002) notes that the quantitative approach is grounded in the positivist research philosophy, which applies natural science methods to the study of social phenomena. This aligns with the objectives of the current study, which aims to explore the relationship between the adoption of digital technologies and the growth of SMMEs in the clothing retail sector in Tshwane. As Olivier (2017) points out, quantitative research is especially effective when the goal is to identify causal relationships between variables, making it an ideal choice for this research. Proponents of quantitative research argue that reality exists independently of the researcher, and knowledge should be derived from objective, external factors (Rovai, Baker & Ponton, 2013). Zou and Xu (2023) further assert that breaking down complex social phenomena into smaller, measurable components allows for more efficient data collection and hypothesis testing.

This study employs a quantitative research methodology because it is well-suited to addressing the research objectives. The approach allows the researcher to test pre-defined hypotheses using inferential statistical techniques, such as regression analysis and correlation tests, to explore the relationship between the adoption of digital technologies and SMME growth (Singh, 2022; Vebrianto et al., 2020). Additionally, the study is supported by the Resource-Based View (RBV) theory, which offers a framework for understanding how digital technology adoption influences financial performance, competitive advantage, and customer satisfaction among SMMEs.

One of the key advantages of the quantitative approach is its reliability, validity, and objectivity, ensuring that the findings are replicable and can be generalised beyond the sample studied (Sekaran & Bougie, 2016). Data is collected from a large sample of SMMEs in the clothing retail sector using structured survey questionnaires, allowing the results to be extrapolated to the broader population of SMMEs in South Africa (Babbie, 2010). Moreover, quantitative data analysis is both efficient and time-effective, as advanced statistical software such as SPSS is used to process and interpret the data in a systematic manner (Connolly, 2007).

The decision to adopt a quantitative approach was also influenced by practical considerations, such as the study's limited timeframe, available resources, and cost-effectiveness. In contrast to qualitative research, which requires extensive interviews and thematic analysis, the quantitative approach facilitates faster data collection and analysis, making it the most feasible choice for this study. Furthermore, this method enables the researcher to statistically determine the strength and significance of the relationship between digital technology adoption and SMME growth, ensuring that the findings are empirical, objective, and based on data.

3.4 Data collection methods and sources

3.4.1 Data collection approach

The study adopted a quantitative approach, aligning with its deductive design to test predefined hypotheses. A survey was chosen as the primary data collection method to

ensure the systematic gathering of standardised information from a large sample. Surveys are well-suited to studies like this one, where understanding patterns and relationships between variables is critical(Turale, 2020).Two primary sources of data were utilised in the study. The main data source was responses collected directly from participants in the clothing retail sector of SMMEs. The data was gathered using a structured survey questionnaire, which focused on capturing key variables such as demographic characteristics, business challenges, operational strategies, and performance outcomes.

In addition to the primary data, secondary data sources were employed to provide further insight.These included industry reports, government publications, and academic articles. The secondary data provided background and contextual information, enhancing the interpretation of the primary data findings.

3.5 Research design

A research design serves as a structured framework that guides the overall execution of a research study, outlining the key methodological decisions regarding data collection, measurement, and analysis (Firdaus et al., 2021). It comprises pre-determined procedures that ensure the research process is conducted systematically and efficiently. These procedures include selecting the data collection method, choosing appropriate instruments, and determining the frequency of data collection from the selected sample (Aityan, 2022).In quantitative research, two primary research designs are commonly employed: survey research and experimental research (Iacobucci & Churchill, 2010).

The current study adopts a survey research design, as it is well-suited for examining the relationship between digital technology adoption and the growth of SMMEs in the clothing retail sector in Tshwane.A survey research approach involves systematic data collection from a predefined sample using structured questionnaires (Bryman, 2015). This method is particularly useful for gathering large-scale data efficiently, making it suitable for quantitative studies that seek to explore patterns, relationships, and trends across a population (Saunders et al., 2019).

3.5.1 Survey research design

Survey studies refer to research study that yield numerical description of trends, attitudes or opinions of a target population by collecting data from a representative sample (Djah et al., 2021). The data collected is used to determine the status of the studied phenomenon in relation to specific variables of interest to a researcher. Survey designs are commonly used for self-report research studies (Turale, 2020). Survey designs are seen as systematic tools for data collection utilised for large scale inquiries. Information collected is usually numerical and quantifiable. Additionally, Leavy (2022) states that common instruments for survey research are individual interviews and questionnaires. In the case of this study, a self-administered questionnaire was used to collect data to determine the relationship between adoption of digital technologies and SMMEs growth. Survey questionnaires enable the researcher to collect standard data from all elements in a research sample.

Survey research can be classified into two types. There is cross-sectional survey and longitudinal survey (Lor, 2021). In cross-sectional survey, data is collected once however the data collection process can take up to one month. On the other hand, longitudinal surveys involve collection of data from the same sample more than once (Ikart, 2019). The purpose of this is to enable changes or time-ordered associations to be studied. This research adopted the cross sectional survet approach , meaning that data was collected once. Data collected through surveys can be analysed through description of single variables and description of relationships between one or two variables (Lietz, 2010). This study adopted a survey design because it enabled the researcher to collected numerical data which was used to test hypotheses on the relationship between adoption of digital technologies and SMMEs growth.

3.6 Research population and sample

Research population refers to the total objects or subjects of interest to the researcher (Bryman, 2015). In this study, the population refers to all business enterprises which fall within the definition of SMME as provided for by the National Small Business Amendment Act (26 of 2003). According to the Department of Small Business Development (2023),

there are 2.8 million SMMEs in South Africa. In addition, according to the National Small Business Amendment Act (26 of 2003) an SMME is a business which employs 5 to 200 employees, has an annual turnover that ranges from less than R150 000 to R25 000 000 and assets worth between less than R100 000 and R18 000 000. This classification of SMME varies with sector or industry. According to the standard industrial classification, business enterprises falling under the retail, motor trade and repair services are classified as SMMEs if the employ 5 to 200 employees, have annual turnover of R200 000 to R39 000 as well as assets worth between R100 000 and R6 000 000. A sample was drawn from a population of business enterprises that fall in the definition of SMME operating in the clothing retail sector. A sample is a subset of a research population selected to participate in a research study (Creswell, 2014). An advantage of selecting a sample is that it is less time-consuming, affordable and manageable to deal with a subset of a population (Bryman & Bell, 2015).

3.7 Sampling and sample size

Sampling refers to the procedure or technique that researchers use to select a sample from the more significant population of interest to a researcher (Brannen, 2017). For this study, the non-probability convenience sampling technique was used to select the research sample. The convenience sampling technique involves selecting easily accessible research objects to participate in a study (Maree, 2016). In this study, convenience refers to small business enterprises operating in the clothing retail sector in Tshwane that are easily accessible in terms of geography and availability to respond to a survey questionnaire. Making use of the Raosoft sample size calculator a sample of 384 respondents was used to generalise results for SMMEs in the retail clothing sector. The researcher collected collect data from 384 SMMEs who fit in the description of an SMME as defined by the Small Business Act of 2003 and were engaged in retail clothing business within the confines of Tshwane.

3.7.1. Sampling frame

To ensure methodological rigour, the sampling frame for the current was designed in line with the survey methodology principles outlined by Dillman et al. (2014). Their tailored

design method highlights the importance of clearly defining the target population, establishing inclusion and exclusion criteria, and specifying the procedures for reaching respondents. Applying these principles, the study focused on SMMEs in the clothing retail sector operating within Tshwane, distinguishing them from informal traders to medium enterprise retailers. This clarity enhances transparency and allows future researchers to replicate the study under similar conditions. The sampling frame drawn from the Small Enterprise Development Agency (SEDA) consisted of SMMEs classified as small and medium enterprises and were composed as follows:

Size	**Number**
Medium	131
Small	253
Total	384

3.8. Research instrument

For this study, a questionnaire was employed as the primary research instrument. A questionnaire consists of a set of questions designed to gather data required to achieve the research aims and objectives (Cohen et al., 2013). Survey questionnaires are widely used tools for collecting numerical data. They are particularly effective for large-scale surveys, as they are cost-efficient, require minimal expertise, and can be administered in a relatively short amount of time.Although questionnaires where traditionally mailed or send as hard copies, these days they can be shared electronically through various platforms that include emails and survey monkey among others. For the purpose of this study, paper printed survey questionnaires were printed and distributed to the selected participants.

According to Regmi et al. (2026) when designing a questionnaire, it important to define the research problem and then formulate research objectives or hypotheses to be tested thus significantly influencing questionnaire development. This so because data collected

through a questionnaire used to test hypotheses. In this study the research instrument was developed in light of three objectives which are: (a) to assess the relationship between the adoption of digital technologies and the development of sustainable competitive advantages of SMMEs operating in clothing retail industry in Tshwane; (b) to determine the relationship between adoption of digital technologies and financial performance of SMMEs operating in clothing retail industry in Tshwane and (c) to establish a relationship between the adoption of digital technologies and customer satisfaction of clients for SMMEs operating in retail clothing industry in Tshwane.

The questionnaire used to collect data for this study was made up of two sections. The first section gathered biographical information about the selected participants. The second section of the questionnaire collects data on the independent variable (adoption of digital technologies) and dependent variable (competitive advantage, financial performance and customer satisfaction). The instrument was made up of four scales adapted from existing studies. The scales are technology adoption (Lazar, Panisoara & Panisoara, 2020), financial performance (Acar & Özşahin, 2018) customer satisfaction (Wang & Li, 2019) and competitive advantage (Xu, Yang & Ren, 2020). A summary of the composition of the research instrument is presented in Table 3.3 below.

Table: 3.3 Research instrument

Name of scale	**Number of items**	**Source**
Technology adoption	6	(Lazar, Panisoara & Panisoara, 2020)
Financial performance	5	(Acar & Özşahin, 2018)
Customer satisfaction	8	(Wang & Li, 2019)
Competitive advantage	6	(Xu, Yang & Ren, 2020)
Total	25	

The questionnaire was used in this study because of its appropriateness and advantages. Advantages of survey questionnaires are that that they are affordable and allow for speed data collection (Lietz, 2020). They can also a cover a larger area compared to experiments and interviews (Fife-Schaw, 2020). This is important for this study given the

fact that the study focuses on Tshwane which is a big area. Data collected through questionnaire is easy to analyse given that the researcher is proficient in a quantitative analysis tool. A statistical analysis software known as the SPSS was used to analyse data collected in this study.

3.9 Reliability and validity

A research is considered credible when it passes reliability and validity tests. According to Brannen (2017), research is considered valid if it is reliable. Testing for reliability is one way to check if a study is valid. This study tested for reliability by computing Cronbach's alpha coefficients. As per a recommendation by Nunnally (1978), a research instrument is considered reliable if it yields a consistency threshold of 0.7 or more. Hence, the scales used in this study were tested for reliability and validity through a pilot study.

In addition, the researcher ensured that the research achieved the expected validity by ensuring that there is face validity, construct validity and content validity. To ensure face validity, the researcher conducted a pilot study to perfect the research instrument (Watkins & Gioia, 2015). In addition, constructs in the study were clearly defined. Furthermore, to ensure construct validity, the researcher conducted a thorough literature review to define relevant constructs. Furthermore, confirmatory factor analysis was computed to enhance construct validity. Confirmatory factor analysis (CFA) is a widely utilised method for assessing construct validity. While similar to exploratory factor analysis (EFA) in its ability to condense a large set of observed variables into latent factors by identifying commonalities within the data, CFA is distinct in its capacity to reduce measurement error and facilitate the comparison of different a priori models at the latent factor level. Furthermore, CFA can be employed to statistically evaluate the factor structure across multiple groups. Utilising CFA to investigate the construct validity of hypothesis-driven testing tools enhances statistical precision and assists in the development of abbreviated versions of an instrument or in confirming its potential subdomains. Althought the CFA alone may suffice if the constructs are theoretically established (Hair et al., 2010), the EFA was also conducted to enhance robustness thus aligning with best practices in scale development (Worthington & Whittaker, 2006).

Lastly, the researcher ensured content validity by using existing scales as well as pilot testing the research instrument with a portion of the sample (Halcomb, 2019).

3.10 Data analysis and hypothesis testing

Data analysis involves the process of simplifying collected data into manageable segments, identifying patterns, and applying statistical techniques to extract meaningful insights (Pagano, 2013). According to Burns and Bush (2013), data analysis is the process of converting raw data into information that is easily understood.Data collected analysed using software that processes, analyses and presents numerical data. In the context of this study, the Statistical Package for the Social Sciences (SPSS) was used to analyse raw data. Data was analysed to test for reliability by computing Cronbach's Alpha coefficients. Scales yielding a consistence threshold of 0.7 were regarded as reliable. Descriptive statistics, which include frequencies and percentages, were computed to analyse biographical data. In addition, inferential statistics that include correlation analysis and regression analysis were computed to test the key assumptions/hypotheses of this study. Regression analysis refers to a statistical technique that is used to determine a relationship between variables in which the major objective is to predict the value of a variable based on the value of the other variable(s) (Pallant, 2023).

Correlation analysis refers to a statistical method that is used to measure and determine the direction and strength of linear relationships between continuous variables (Pallant, 2023). The main aim of correlation analysis is to establish if there is a significant relationship between variables.

The normality assumption was assessed using kurtosis and skewness values to examine the relationships among variables. Data was considered normally distributed if kurtosis values fall between -7 to +7 and skewness values between -2 to +2. These thresholds are guided by the criteria established by Hair et al. (2010), Byrne (2010), and Curran et al. (1996). This assessment ensured that the appropriate statistical methods were applied based on the data distribution characteristics.

If the data satisfied the normality assumption, Pearson correlation analysis was used to investigate the strength and direction of linear relationships between continuous

variables. Pearson correlation produced a coefficient (r) ranging from -1 to +1, where values close to -1 indicated a strong negative correlation, values close to +1 indicated a strong positive correlation, and values near 0 suggested no correlation. Statistical significance was evaluated at the 0.05 level. In cases where deviations from normality were observed, Spearman rank correlation was employed as an alternative. Unlike Pearson correlation, Spearman correlation is a non-parametric method that assesses monotonic relationships and is robust to outliers and non-normal distributions, providing a reliable measure of association under such conditions.

To visually complement these analyses, histograms explored the distribution of composite variables, offering insights into their normality. Additionally, scatterplots illustrated the relationships between variables, helping to validate assumptions such as linearity and uncover potential patterns or deviations. These visual tools enhanced the interpretability of statistical findings by providing a clear graphical representation of the data. All analyses were conducted at a significance level of 0.05, and the results included correlation coefficients and their significance levels. By integrating statistical methods and visual evidence, this methodology ensured a comprehensive approach to understanding the relationships among variables, thereby enhancing the validity and reliability of the findings.

3.11 Ethical considerations

Research involving human beings and living organisms should adhere to standard ethical considerations (Merriam & Tisdell, 2015). Ethics are defined as expected norms or principles guiding moral choices about the behaviour of a researcher before, during and after a research process (Bryman, 2015). In the context of this study, this researcher adhered to research ethics by applying for an ethical clearance from the university's research ethics committee.

The researcher ensured that respondents provided informed consent during the data collection process. This was be achieved by ensuring that the purpose of the study was clearly explained to the participants before they consented to participate (Creswell & Porth, 2017). In addition, the researcher ensured participants' anonymity and

confidentiality by not collecting any information that can be linked to participants' real-life identities. In that regard, the researcher used aliases instead of actual names to protect the true identities of participants.

The study also adhered to the Protection of Personal Information Act of 2013 (POPI) dictates. The popi regulates the use, storage, management, and protection of personal information (Singh & Singh, 2022). “The Act sets out legal imperatives for collecting, storing and using personal information belonging to South African citizens” (Raff et al., 2022:279). In compliance with the POPI Act, the researcher did not collect the personal information of the participants.

3.12 Conclusion

The chapter discussed the methods and strategies that were employed in conducting the study. The chapter highlighted that the positivist research philosophy was adopted for the study. Correspondingly, the quantitative research approach was used as the research approach. This meant that strategies for data collection were supposed to be in line with the quantitative approach. Accordingly, the chapter shows that a survey research design was adopted for this study because it allowed the research to collect numerical data in a cheaper and faster way over a larger area. Data was collected from SMMEs operating in the retail clothing industry in Tshwane, South Africa. The chapter indicates that data collected was statistically analysed. Furthermore, the chapter outlined the standard ethics that was observed in carrying out the study.

CHAPTER FOUR

DATA PRESENTATION AND ANALYSIS

4.1 Introduction

This study employed Microsoft Excel and SPSS 29.0 to conduct a comprehensive data analysis and extract meaningful insights. Both descriptive and inferential statistical techniques were systematically applied to ensure rigorous examination of the data. The following sections detail descriptive findings, focusing on participant response rate, data reliability, and hypothesis testing. The research examines how adopting digital technologies impacts the growth of SMMEs in Tshwane's clothing retail sector.

4.2 Response rate

To explore the relationship between digital technology adoption and SMMEs growth, 400 questionnaires were distributed to Tshwane's clothing retail sector employees. This approach ensured a broad representation of perspectives from those actively involved in the industry. Table 4.1 shows the survey distribution breakdown, showing the number of completed responses collected.

Table 4.1: Response rate

Instrument	*Distributed*	*Returned*	*Response rate (%)*
Questionnaire	400	385	96

The results in Table 4.1 reflect a commendable 96% response rate, suggesting high engagement and a strong willingness among employees to share their insights. This robust participation enhances the reliability of the data collected, supporting a comprehensive analysis of the relationship between digital technology adoption and SMMEs growth in Tshwane's clothing retail industry.

4.3 Gender distribution

Understanding the gender composition of respondents is key to evaluating the link between digital technology adoption and SMME growth in Tshwane's clothing retail sector. Displayed in Figure 4.1, the percentage distribution by gender allows for deeper insight into demographic influences on the study's outcomes. This data aids in interpreting patterns and nuances in technology adoption across diverse respondent groups.

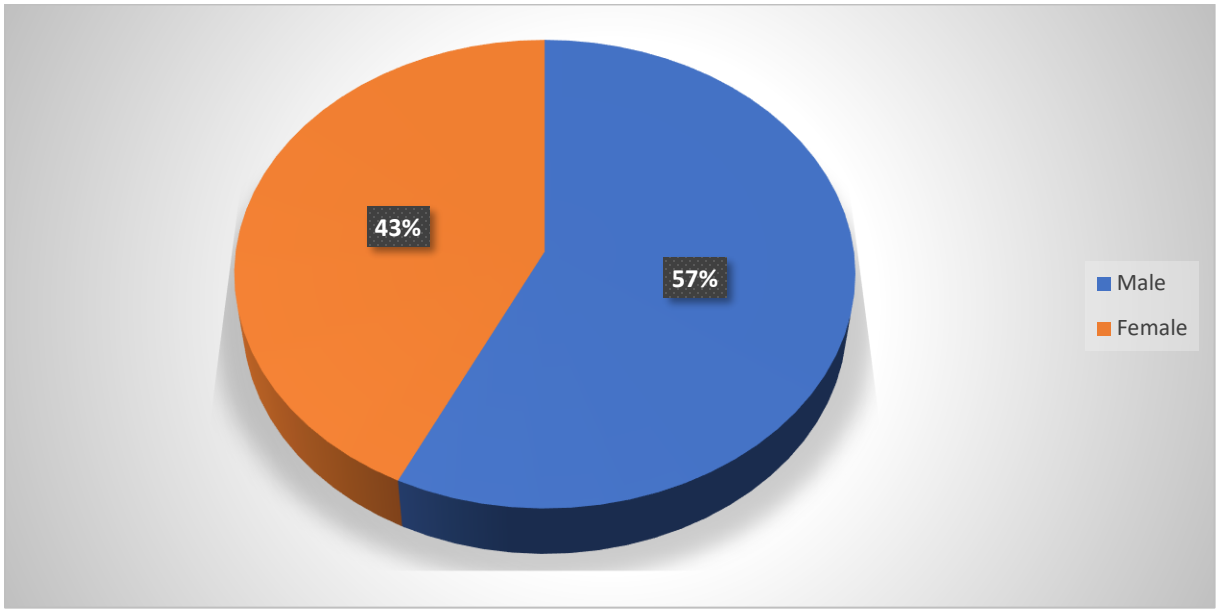

Figure 4.1: Gender distribution

Figure 4.1 shows a gender distribution of 57% male and 43% female respondents. This demographic breakdown is important for understanding potential differences in technology adoption perspectives between genders. Such insights contribute to a more nuanced analysis of SMMEs growth factors within Tshwane's clothing retail industry.

4.4 Age distribution

Figure 4.2 illustrates the age distribution of study participants, offering insight into the workforce's demographic makeup. This distribution is essential for understanding how different age groups may perceive and adopt digital technologies. Such insights can clarify age-related trends impacting SMMEs growth in Tshwane's clothing retail sector.

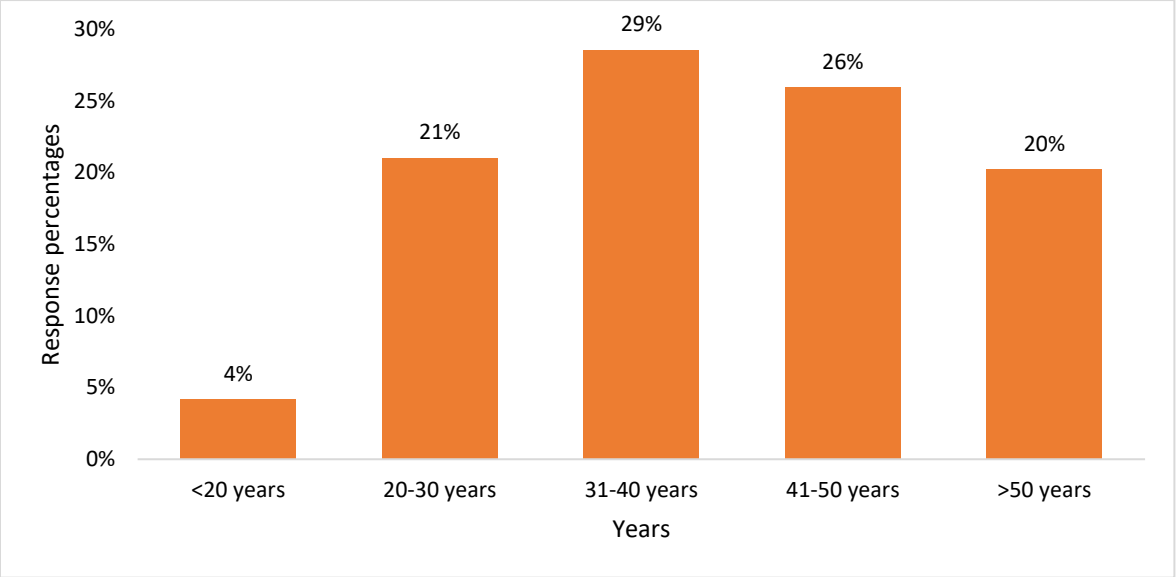

Figure 4.4: Age distribution

The age distribution of respondents, shown in Figure 4.2, is as follows: 4% are under 20 years old, 21% are between 20 and 30, 29% fall within the 31-40 years range, 26% are aged 41 to 50, and 20% are over 50. This spread provides a balanced view across age groups, allowing for a comprehensive analysis of how age may influence the adoption of digital technologies within Tshwane's clothing retail industry.

4.5 Ethnic groups

The study included respondents from multiple ethnic backgrounds to capture various perspectives. Table 4.2 summarises these findings, showcasing the diversity within the sample. This variety in ethnic representation strengthens the study's insights into digital technology adoption and SMMEs growth across different demographic groups in Tshwane's clothing retail sector.

Table 4.2: Ethnic groups

Group	*Frequency*	*Percentage (%)*
Black	257	66.80
Coloured	51	13.20
White	47	12.20
Indian	27	7.00
Other	3	0.80
Total	**385**	**100.00**

Table 4.2 displays the ethnic composition of respondents, with Black participants comprising 66.8%, followed by Coloured (13.2%), White (12.2%), Indian (7.0%), and Other (0.8%). This diverse representation enhances the study's ability to analyse the relationship between digital technology adoption and SMMEs growth across various demographic backgrounds in Tshwane's clothing retail industry.

4.6 Firm age

The analysis of firm age, presented in Figure 4.3, provides insights into the longevity of businesses operating within the clothing retail sector. Understanding firm age is important , as it can influence the adoption of digital technologies and subsequent growth patterns. This data further explores how established firms compare to newer entrants in leveraging technology for competitive advantage.

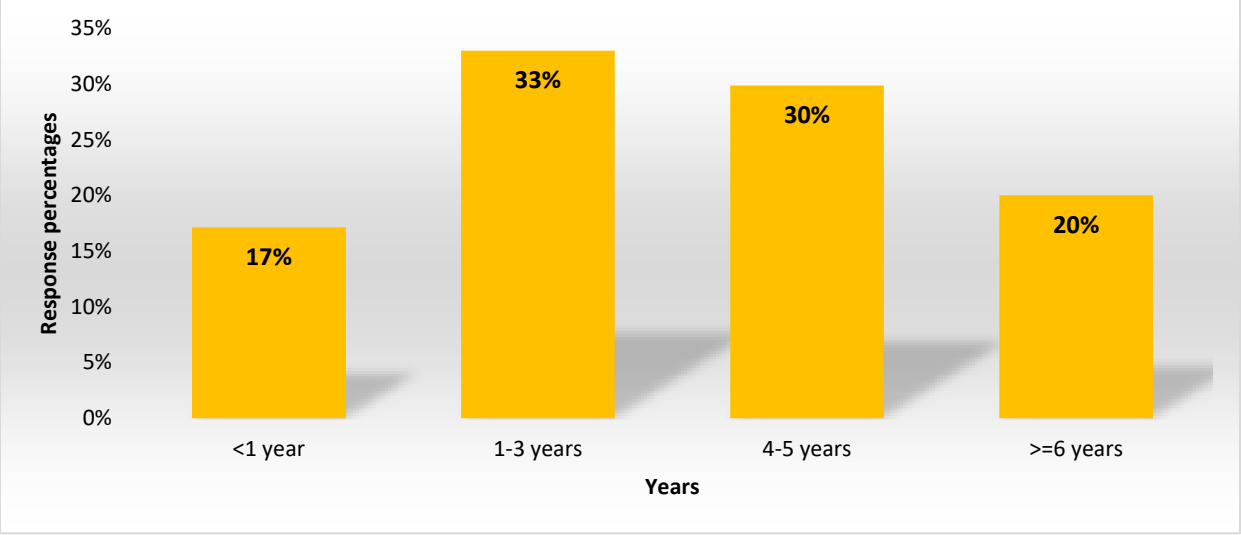

Figure 4.3: Age of firm

The firm age distribution, illustrated in Figure 4.3, reveals the following: 17% of firms are less than 1 year old, 33% fall within the 1–3-year range, 30% are aged 4-5 years, and 20% are 6 years or older. This distribution highlights a mix of new and established businesses, allowing for a comparative analysis of how age influences digital technology adoption and growth in Tshwane's clothing retail industry.

4.7 Firm's capital size by Rand

The firm's capital size, measured in Rand, is vital in determining its capacity for growth and technological adoption. Table 4.3 presents a detailed overview of capital size distribution among the participating firms. This information is essential for understanding how varying levels of financial resources impact the ability of SMMEs in the clothing retail sector to implement digital technologies effectively.

Table 4.3: Firm's capital size

Capital (Rands)	*Frequency*	*Percentage (%)*
<10 000 rands	112	29.10
10 000-50 000 rands	141	36.60
51 000-100 000 rands	95	24.70
>100 000 rands	37	9.60
Total	**385**	**100.00**

Table 4.3 outlines the capital size of firms, indicating that 29.1% have less than 10,000 Rands, 36.6% fall between 10,000 and 50,000 Rands, 24.7% have between 51,000 and 100,000 Rands, and 9.6% exceed 100,000 Rands. This distribution illustrates the varying financial capabilities of SMMEs in the clothing retail sector, which can significantly influence their ability to adopt digital technologies and drive growth.

4.8 Firm's total employees

The analysis of the firm's total employees, illustrated in Figure 4.4, provides insights into the workforce size within the clothing retail sector. Understanding employee numbers is essential, as it can reflect the scale of operations and potentially correlate with the firm's capacity to adopt digital technologies. This data further explores how workforce size impacts operational efficiency and growth among SMMEs in Tshwane.

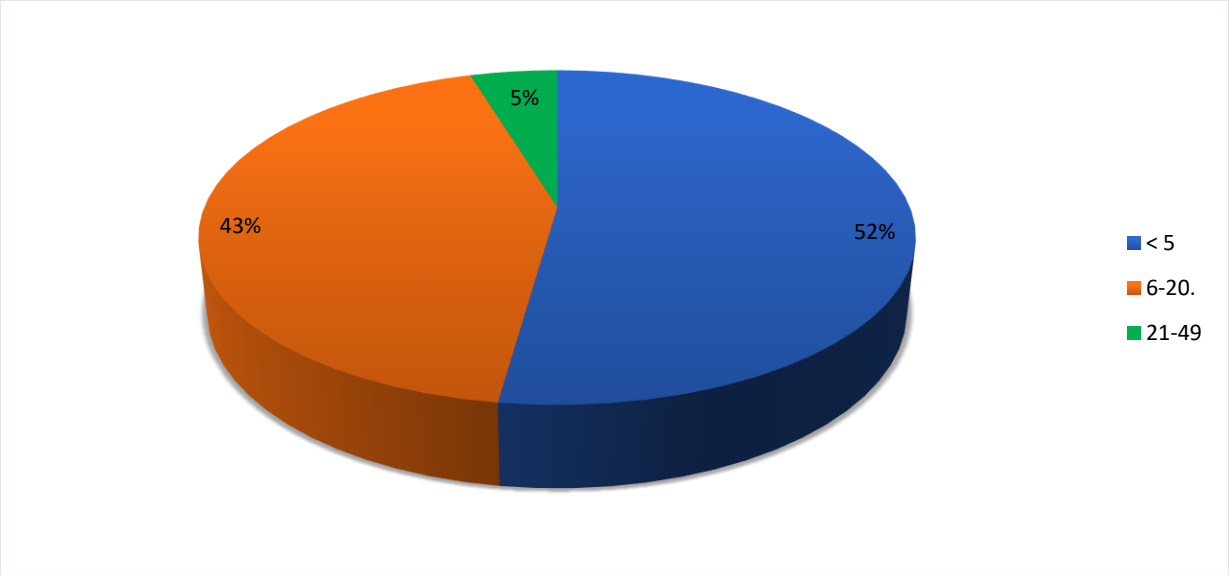

Figure 4.4: Firm's total employees

The distribution of total employees per firm, as shown in Figure 4.4, indicates that 52% of firms have fewer than five employees, 43% employ between 6 and 20, and 5% have 21 and 49 employees. This data highlights that most firms in Tshwane's clothing retail sector are small-scale, which may influence their approach to digital technology adoption and growth strategies.

4.9 Firm's total annual turnover

The firm's total annual turnover, measured in Rand, is a crucial indicator of financial performance and growth potential. Table 4.4 provides a detailed breakdown of turnover levels among the participating firms. Understanding turnover helps to assess the financial health of SMMEs in Tshwane's clothing retail sector and offers insight into their capacity for adopting digital technologies to support growth.

Table 4.4: Firm's total annual turnover

Turnover (Rands)	*Frequency*	*Percentage (%)*
150 000 rands	157	40.80
150 000-500 000 rands	160	41.60
500 001-4 000 000 rands	66	17.10
4 000 001-50 000 000 rands	2	0.50
Total	**385**	**100.00**

Table 4.4 shows the annual turnover distribution of firms, with 40.8% generating less than 150,000 Rands, 41.6% between 150,000 and 500,000 Rands, 17.1% between 500,001 and 4,000,000 Rands, and 0.5% exceeding 4,000,000 Rands. This range highlights the varied financial scales within Tshwane's clothing retail SMMEs, affecting their potential for growth and technology investment.

4.10 Construct responses

To assess the relationship between digital technology adoption and SMME growth in Tshwane's clothing retail sector, respondents rated their agreement with several statements on a 5-point Likert scale, from "Strongly Disagree" (1) to "Strongly Agree" (5). The mean and standard deviation (SD) of responses were calculated to summarise the data, with mean score ranges categorised as follows: Strongly Agree (4.51 - 5), Agree (3.51 - 4.50), Neutral (2.51 - 3.50), Disagree (1.51 - 2.50), and Strongly Disagree (1 - 1.50), per Lindner and Lindner (2024). These categorised mean scores enable a more straightforward interpretation of respondents' overall attitudes toward digital technology's impact on business growth.

4.10.1 Technology Adoption (TA)

Respondents were asked various questions regarding Technology Adoption (TA) to capture their perspectives on integrating digital technologies within their firms. Table 4.5 summarises the responses, including the mean and standard deviation, providing insights into overall attitudes and variability in opinions on technology adoption within Tshwane's clothing retail industry.

Table 4.5: Technology Adoption (TA) Summary statistics

	TA items	*Mean*	*SD*

As a business we are generally open to the incorporation of new technologies	4.210	0.604
Our business offers training support to use new technology effectively	4.242	0.551
Our business is open to changes associated with use of new technology	4.221	0.582
Our employees are ready to embrace new technology	4.270	0.53
New technology will improve the quality of our products/services	4.273	0.578
It is important for our business to use new technologies	4.343	0.597

The results in Table 4.5 reveal a favourable outlook toward technology adoption among firms in Tshwane's clothing retail sector. Each Technology Adoption (TA) item falls within the “Agree” range (3.51 - 4.50), demonstrating widespread support for digital integration. Notably, “New technology will improve the quality of our products/services” has the highest mean score (4.273), indicating that firms believe technology adoption enhances the quality of offerings. Additionally, statements such as “Our employees are ready to embrace new technology” and “Our business offers training support to use new technology effectively,” with mean scores of 4.270 and 4.242, underscore a proactive approach to preparing employees for technological changes. The lowest mean score, at 4.210, relates to a general openness to incorporating new technologies, showing a slightly more reserved stance but still within the “Agree” category. Low standard deviations across all items reflect a high level of response consistency, indicating a cohesive organisational culture supportive of digital advancements. These findings suggest that firms are not only open to adopting new technologies but are actively investing in practices that facilitate technology-driven growth and operational improvement.

4.10.2 Financial Performance (FP)

Respondents were presented with several items related to Financial Performance (FP) to assess their perspectives on the financial outcomes influenced by various business practices. Table 4.6 summarises these responses, including the mean and standard deviation for each item, offering insights into the perceived financial impact of strategies within Tshwane's clothing retail sector.

Table 4.6: Financial Performance (FP) summary statistics

FP items	Mean	SD
As a business we have managed to maintain positive cash flows	4.387	0.602
As a business we have managed to increase our profits	4.4	0.609
As a business our sales volume has been continuously rising	4.426	0.578
As a business we have managed to maintain our market share	4.371	0.59
As a business we have managed to maintain a positive return on investment	3.582	1.02

The results in Table 4.6 illustrate respondents' perceptions of Financial Performance (FP). Each item, except for the last, falls within the “Agree” range (3.51 - 4.50), indicating a strong belief in the effectiveness of business strategies for maintaining financial health. Notably, “Our sales volume has been continuously rising” has the highest mean score of 4.426, suggesting that respondents feel confident about their sales growth. Similarly, the items concerning positive cash flows (4.387) and profit increases (4.400) also reflect positive sentiments toward financial stability and growth.

However, the item regarding maintaining a positive return on investment (3.582) presents a contrasting picture, as it falls into the “Neutral” category (2.51 - 3.50). The higher standard deviation for this item (1.020) further indicates variability in opinions, suggesting that some respondents may have concerns about return on investment despite overall positive financial perceptions. This variability highlights the need for further exploration into factors affecting investment performance. Overall, the findings suggest that while firms in the clothing retail sector generally perceive positive financial outcomes, there are areas, particularly in return on investment, that may require attention and improvement.

4.10.3 Competitive Advantage (CA)

To assess the factors contributing to Competitive Advantage (CA), respondents were asked to rate their agreement with several statements related to their business's competitive positioning. Table 4.7 summarises the results, showing the mean and standard deviation for each CA item, which offers insights into how firms perceive their ability to stand out in Tshwane's competitive clothing retail industry.

Table 4.7 Competitive Advantage (CA) Summary statistics

CA items	*Mean*	*SD*
Compared with competitors, the business's cost control is very good	3.917	0.789
Compared with competitors, the quality of the business's products or services is very good	4.049	0.704
Compared with competitors, the profitability of this business is very high	4.057	0.775
Compared with competitors, the business's product market share has grown rapidly	4.016	0.938
Compared with competitors, the business has a better reputation	4.114	0.792
Compared with competitors, our products are in an advantageous position in the market	4.081	0.754

The results in Table 4.7 reveal generally favourable perceptions regarding Competitive Advantage (CA) among businesses in Tshwane's clothing retail sector. Each item in this category falls within the "Agree" range (3.51 - 4.50), indicating a shared view that firms maintain a competitive edge across several dimensions. The statement "Compared with competitors, the business has a better reputation" has the highest mean score (4.114), suggesting that a strong reputation is a key differentiator. Similarly, "Our products are in an advantageous position in the market" (mean 4.081) and "The profitability of this business is very high" (mean 4.057) also scored highly, reflecting positive sentiments toward market position and profitability.

Moreover, the relatively high score for "The quality of the business's products or services is very good" (mean 4.049) reinforces confidence in product quality as a competitive asset. The item with the lowest mean, "Compared with competitors, the business's cost control is very good" (3.917), while still in the "Agree" range, suggests that cost control may be an area with a slightly less perceived advantage compared to other CA factors. These results indicate that firms perceive strong competitive positioning supported by reputation, product quality, and advantageous market presence.

4.10.4 Customer Satisfaction (CS)

Respondents provided their perspectives on several items related to Customer Satisfaction (CS), assessing their views on customer experiences and satisfaction levels. Table 4.8 summarises the responses, showing the mean and standard deviation for each item, which reflects how businesses in Tshwane's clothing retail sector perceive their effectiveness in meeting customer expectations.

Table 4.8: Customer Satisfaction (CS) Summary statistics

CS items	*Mean*	*SD*
Our customers are satisfied with the quality of our products	4.135	0.659
Our customers are satisfied with the price of our products	4.088	0.667
Our customers are satisfied with the appearance of our products	4.010	0.794
Our customers are satisfied with the cooperation we give them	3.540	0.954
Our customers are satisfied with our sales service	3.873	0.811
Our customers are satisfied with the way we handle their complains	3.935	0.796
Our customers are satisfied with the way we manage relationships with them	4.052	0.671
Our customers are happy with the experience we offer them	3.984	0.848

Table 4.8 presents the mean and standard deviation (SD) of Customer Satisfaction (CS) responses. The highest mean score, 4.135 (SD = 0.659), indicates strong customer satisfaction with product quality, while satisfaction with pricing also rates highly (mean = 4.088, SD = 0.667). Customer satisfaction with product appearance and relationship management scores were similarly high, with means of 4.010 (SD = 0.794) and 4.052 (SD = 0.671), respectively. Lower mean scores are observed for customer satisfaction with cooperation (mean = 3.540, SD = 0.954) and sales service (mean = 3.873, SD = 0.811), suggesting these areas may benefit from improvement. Satisfaction with complaint handling (mean = 3.935, SD = 0.796) and overall customer experience (mean

= 3.984, SD = 0.848) also reflect relatively positive feedback, with means closer to the upper end of the “Agree” category.

4.11 Scale Reliability Analysis

The scale reliability test assesses the consistency of responses within each variable construct. This test is essential for constructs measured by multiple items, as inconsistent or confusing items can weaken reliability. Cronbach’s alpha (CA), calculated here for each construct, indicates internal consistency, with a value of 0.70 or higher considered acceptable (Hair et al., 2019; Murphy & Davidshofer, 1988). Corrected Item-Total Correlation (CITC) further examines individual item reliability, with suggested minimum thresholds ranging from 0.3 to 0.5 (Nunnally & Bernstein, 1994; Cristobal et al., 2007). Table 4.9 presents the results of both CCA and CITC tests.

Table 4.9: Reliability Test Results

Variable	Item	CITC	CA if Item Deleted	CA
TECHNOLOGY ADOPTION (TA)	TA1	0.724	0.864	0.887
	TA2	0.705	0.867	
	TA3	0.734	0.862	
	TA4	0.732	0.863	
	TA5	0.690	0.869	
	TA6	0.632	0.879	
FINANCIAL PERFORMANCE (FP)	FP8	0.573	0.810	0.823
	FP9	0.734	0.734	
	FP10	0.697	0.754	
	FP 11	0.586	0.803	
COMPETITIVE ADVANTAGE (CA)	CA12	0.456	0.867	0.857
	CA13	0.757	0.816	
	CA14	0.721	0.820	
	CA15	0.694	0.826	
	CA16	0.682	0.827	
	CA17	0.605	0.841	

CUSTOMER SATISFACTION (CS)	CS18	0.624	0.857	0.871
	CS19	0.664	0.853	
	CS20	0.565	0.862	
	CS21	0.542	0.869	
	CS22	0.724	0.844	
	CS23	0.718	0.845	
	CS24	0.754	0.844	
	CS25	0.513	0.869	

According to Table 4.9, all Cronbach's Alpha (CA) values exceed the 0.70 threshold set by Hair et al. (2019), confirming the reliability of the scales for each construct. Specifically, the CA value for Technology Adoption (TA) is 0.887, for Financial Performance (FP) is 0.823 after removing one item with a low CICT value, for Competitive Advantage (CA) is 0.857, and for Customer Satisfaction (CS) is 0.871. Additionally, the CITC values range from 0.456 to 0.757 across the items, meeting the thresholds proposed by Nunnally and Bernstein (1994) and Cristobal et al. (2007). This range indicates strong relationships within each construct, supporting the reliability of the measurement items. The reliability of these scales suggests that responses to similar questions within each construct are consistent. This robustness in reliability supports the overall validity of the constructs measured in this study.

4.12 Descriptive statistics

Before conducting hypothesis testing, it is essential to examine the descriptive statistics of the study variables, including the mean, standard deviation, skewness, and kurtosis of the composite scores. These statistics provide insights into the data distribution and help determine the appropriate statistical tests for hypothesis evaluation. Table 4.10 presents the descriptive statistics for key study variables: Technology Adoption (TA), Financial Performance (FP), Competitive Advantage (CA), and Customer Satisfaction (CS).

Table 4.10: Descriptive statistics

Variables	Mean	SD	Skewness	Kurtosis	Median

TA	4.260	0.459	-0.200	-0.127	4.167
FP	4.396	0.481	-0.643	0.183	4.500
CA	4.039	0.608	-0.955	1.125	4.000
CS	3.952	0.566	-0.266	0.436	3.875

The mean Technology Adoption (TA) score is 4.260, indicating a high level of openness and willingness to integrate new technologies. Financial Performance (FP) has an even higher mean of 4.396, reflecting favourable financial outcomes, such as positive cash flow and profit increases. Competitive Advantage (CA) and Customer Satisfaction (CS) also have relatively high means of 4.039 and 3.952, respectively, showing that respondents perceive a competitive edge and reasonable customer satisfaction within their businesses.

The standard deviations for all variables are low, ranging from 0.459 to 0.608, which suggests that responses were fairly consistent. Financial Performance (FP) and Technology Adoption (TA) have the lowest standard deviations, indicating particularly high agreement levels among participants.

The median values in Table 4.10 represent the central tendency of the variables. For TA (4.167), FP (4.500), CA (4.000), and CS (3.875), the median indicates that the middle value of the responses is slightly below or at the higher end of the scale, suggesting a general tendency toward positive perceptions or agreement for all variables.The skewness and kurtosis values for all variables fall within the recommended range of -2 to +2 for skewness and -7 to +7 for kurtosis, as per Kline (2011). These values confirm that the data distributions for each variable approximate normality, satisfying an essential assumption for conducting parametric tests. Thus, normality can be confirmed, validating the reliability of further statistical analyses based on these variables. Refer to the histogram plots in the Appendix 1 for a visual representation of the distributions.

4.13 Correlation analysis

Pearson correlation analysis was performed to explore the relationships among key variables in this study. Specifically, the analysis aimed to assess the relationship between

the adoption of digital technologies (TA) and the development of sustainable competitive advantages (CA) for small, medium, and micro enterprises (SMMEs) in the clothing industry in Tshwane. Additionally, the analysis sought to determine the connection between the adoption of digital technologies and the financial performance (FP) of these SMMEs, as well as to establish the relationship between digital technology adoption and customer satisfaction (CS) among clients of retail clothing SMMEs in Tshwane. Examining these correlations provides insights into how digital technology influences competitive positioning, financial outcomes, and consumer perceptions in clothing retail. The results provide a clearer understanding of the dynamics in integrating digital technologies within SMMEs and their overall impact on business success.

4.13.1 Relationship between the adoption of digital technologies and the development of sustainable competitive advantages of SMMEs operating in the clothing industry in Tshwane

The first hypothesis of this study investigates the relationship between the adoption of digital technologies (TA) and the development of sustainable competitive advantages (CA) among small, medium, and micro enterprises (SMMEs) in the clothing industry in Tshwane. A Pearson correlation coefficient analysis was conducted to test this hypothesis.

The hypotheses tested are as follows:

H0: There is no significant relationship between adopting digital technologies (TA) and developing sustainable competitive advantages (CA) for SMMEs operating in the clothing industry in Tshwane.

H1: There is a significant relationship between adopting digital technologies (TA) and developing sustainable competitive advantages (CA) for SMMEs operating in the clothing industry in Tshwane.

Table 4.11 summarises the results of the correlation analysis, providing insights into the strength and direction of the relationship between these two variables.

Table 4.11: Relationship between TA and CA

	TA	CA

TA	Pearson Correlation	1	0.430**
	Sig. (2-tailed)		<0.001
	N	385	385
CA	Pearson Correlation	0.430**	1
	Sig. (2-tailed)	<0.001	
	N	385	385

*p<0.05, **p<0.01.

Table 4.11 demonstrates that adopting digital technologies (TA) significantly and positively impacts the development of sustainable competitive advantages (CA) for SMMEs in the clothing industry in Tshwane. This is supported by a correlation coefficient 0.430 and a small p-value ($p < 0.01$). Refer to the scatter plot in the Appendix 2 for a visual representation of this relationship. Consequently, we reject the null hypothesis, concluding that there is a significant relationship between TA and CA for these SMMEs. This suggests that enhancing the adoption of digital technologies will lead to improved competitive advantages within the industry.

4.13.2 Relationship between adopting digital technologies (TA) and the financial performance (FP) of SMMEs operating in the clothing retail industry in Tshwane

The second hypothesis of this study investigates the relationship between the adoption of digital technologies (TA) and the financial performance (FP) of SMMEs operating in the clothing retail industry in Tshwane. A Pearson correlation coefficient analysis was conducted to explore this relationship, leading to the following hypotheses:

H0: There is no significant relationship between adopting digital technologies (TA) and the financial performance (FP) of SMMEs operating in the clothing retail industry in Tshwane.

H2: There is a significant relationship between adopting digital technologies (TA) and the financial performance (FP) of SMMEs operating in the clothing retail industry in Tshwane.

The results of this analysis are summarised in Table 4.12.

Table 4.12: Relationship between TA and FP.

		TA	FP
TA	Pearson Correlation	1	0.743**
	Sig. (2-tailed)		<0.001
	N	385	385
FP	Pearson Correlation	0.743**	1
	Sig. (2-tailed)	<0.001	
	N	385	385

* p< 0.05, ** p< 0.01

The findings in Table 4.12 reveal a strong positive correlation between adopting digital technologies (TA) and financial performance (FP), reflected by a Pearson correlation coefficient of 0.743. This correlation is statistically significant, with a p-value of less than 0.001, indicating it is well below the conventional threshold of 0.05. These results suggest that higher levels of TA are linked to improved FP. Refer to the scatter plot in the Appendix 2 for a visual representation of this relationship. Consequently, the findings provide robust evidence to reject the null hypothesis (H0) and support the alternative hypothesis (H2), confirming a significant relationship between TA and FP in the clothing retail sector in Tshwane.

4.13.3 Relationship between adopting digital technologies (TA) and customer satisfaction (CS) for SMMEs operating in the retail clothing industry in Tshwane

The third hypothesis aimed to assess the relationship between adopting digital technologies (TA) and customer satisfaction (CS) among clients of SMMEs operating in the retail clothing industry in Tshwane. A Pearson correlation analysis was conducted to investigate this relationship, framed by the following hypotheses:

H0: There is no significant relationship between adopting digital technologies (TA) and client satisfaction (CS) for SMMEs operating in the retail clothing industry in Tshwane.
H1: There is a significant relationship between adopting digital technologies (TA) and client satisfaction (CS) for SMMEs operating in the retail clothing industry in Tshwane.

The findings from this analysis are summarised in Table 4.13.

Table 4.13: Relationship between TA and CS.

		TA	CS
TA	Pearson Correlation	1	0.445**
	Sig. (2-tailed)		<0.001
	N	385	385
CS	Pearson Correlation	0.445**	1
	Sig. (2-tailed)	<0.001	
	N	385	385

* p< 0.05, ** p< 0.001.

The results in Table 4.13 reveal a moderate positive correlation between adopting digital technologies (TA) and customer satisfaction (CS) in the clothing industry, indicated by a Pearson correlation coefficient of 0.445. This correlation is statistically significant, with a p-value of less than 0.001, well below the 0.05 threshold. These findings imply that higher levels of TA are linked to increased CS. Refer to the scatter plot in Appendix 2 for a visual representation of this relationship. Therefore, there is strong evidence to reject the null hypothesis (H0) and support the alternative hypothesis (H1), confirming a significant relationship between TA and client satisfaction (CS) among SMMEs operating in the retail clothing industry in Tshwane.

4.14 Simple Regression Analysis

To further validate the hypotheses and evaluate the predictive strength of digital technology adoption (TA) on key business outcomes, simple linear regression analysis was conducted. This analysis helps determine the extent to which TA can predict

sustainable competitive advantage (CA), financial performance (FP), and customer satisfaction (CS) among SMMEs in the retail clothing sector in Tshwane.

4.14.1 Regression Analysis: TA and Sustainable Competitive Advantage (CA)

Factor analysis was not initially conducted due to the use of validated scales. However, simple linear regression was added to test the predictive effect of technology adoption on each dependent variable. This approach is statistically valid and aligns with Hair et al. (2010) and Field (2013) on regression analysis best practices.. This section explores whether the adoption of digital technologies (TA) significantly predicts the development of sustainable competitive advantage (CA) among small, medium, and micro enterprises (SMMEs) operating in the clothing industry in Tshwane. Following the correlation analysis, a simple linear regression was performed to assess the extent to which TA influences CA.

Hypotheses tested:

- **H0:** TA does not significantly predict CA.
- **H1:** TA significantly predicts CA.

Table 4.14 summarises the regression model results.

Table 4.14: Regression Results – Predicting CA from TA

R	R Square	Adjusted R Square	Std. Error of the Estimate
0.430[a]	0.185	0.183	0.54931

ANOVA[a]

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	260.238	1	260.238	860.954	<0.001[b]
Residual	1150.567	383	0.302		
Total	1410.804	384			

Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	10.613	0.262		60.166	<0.001
TA	0.569	0.061	0.430	90.325	<0.001

The results of the simple linear regression analysis presented in Table 4.14 indicate that the adoption of digital technologies (TA) is a significant predictor of sustainable competitive advantage (CA) among SMMEs operating in the clothing industry in Tshwane. The model is statistically significant, as shown by the ANOVA results ($F(1, 383) = 86.954$, $p < 0.001$), indicating that the regression model provides a better fit to the data than a model without the independent variable. The R value of 0.430 reflects a moderate positive correlation, while the R^2 value of 0.185 indicates that approximately 18.5% of the variance in sustainable competitive advantage can be explained by the level of technology adoption.

Further, the coefficients table shows that TA has a positive and statistically significant effect on CA ($\beta = 0.569$, $p < 0.001$). This suggests that for every one-unit increase in TA, there is an expected increase of 0.569 units in CA, holding all else constant. The constant term is also significant ($\beta = 1.613$, $p < 0.001$), representing the expected value of CA when TA is zero. Given the strength and significance of the model, the null hypothesis (H0) is rejected. These results affirm that greater adoption of digital technologies leads to a measurable and significant improvement in the sustainable competitive advantage of SMMEs in the clothing sector in Tshwane.

4.14.2 Regression Analysis: TA and Financial Performance (FP)

This section investigates the extent to which the adoption of digital technologies (TA) predicts the financial performance (FP) of small, medium, and micro enterprises (SMMEs) in the clothing retail industry in Tshwane. Building on the results of the Pearson correlation analysis, a simple linear regression was conducted to further assess the predictive power of TA in explaining financial performance outcomes. This analysis allows for a more precise understanding of how increased digital technology usage can influence revenue generation, profitability, and overall economic health in this sector.

Hypotheses tested:

- **H0:** TA does not significantly predict FP.
- **H2:** TA significantly predicts FP.

Table 4.15: Regression Results – Predicting FP from TA

R	R Square	Adjusted R Square	Std. Error of the Estimate
0.743[a]	0.552	0.551	0.32226

ANOVA[a]

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	480.945	1	480.945	4710.301	<0.001[b]
Residual	390.775	383	0.104		
Total	880.719	384			

Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	10.083	0.153		70.057	<0.001
TA	0.778	0.036	0.743	210.709	<0.001

The regression analysis in Table 4.15 reveals that the adoption of digital technologies (TA) is a highly significant and strong predictor of financial performance (FP) among SMMEs in the clothing retail industry in Tshwane. The model is statistically significant, as indicated by the ANOVA results ($F(1, 383) = 4710.301$, $p < 0.001$), showing that TA explains a substantial portion of the variance in FP.

The R^2 value of 0.552 indicates that 55.2% of the variability in financial performance can be explained by the level of technology adoption, reflecting a strong effect size. This confirms a strong, positive linear relationship between TA and FP, meaning that higher levels of digital adoption are associated with better financial outcomes.

Furthermore, the coefficient for TA ($\beta = 0.778$, $p < 0.001$) implies that for each one-unit increase in TA, financial performance is expected to rise by approximately 0.778 units, holding all else constant. The constant value ($\beta = 10.083$, $p<0.001$) represents the predicted financial performance score when technology adoption is zero.

Given the large F-value, high R^2, and highly significant p-value, we reject the null hypothesis (H0) and conclude that the adoption of digital technologies significantly and positively predicts financial performance among clothing retail SMMEs in Tshwane. These findings suggest that investment in digital tools and systems is a key driver of economic success in the sector.

4.14.3 Regression Analysis: TA and Customer Satisfaction (CS)

This section evaluates the extent to which the adoption of digital technologies (TA) predicts customer satisfaction (CS) among clients of small, medium, and micro enterprises (SMMEs) operating in the clothing retail sector in Tshwane. Building on the previously established positive correlation, this regression model aims to determine whether TA significantly influences customer satisfaction outcomes in a statistically meaningful way.

Hypotheses tested:

- **H0:** TA does not significantly predict CS.
- **H3:** TA significantly predicts CS.

Table 4.16: Regression Results – Predicting CS from TA

R	R Square	Adjusted R Square	Std. Error of the Estimate
0.445[a]	0.198	0.196	0.50789

ANOVA[a]

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	240.407	1	240.407	940.618	<0.001[b]
Residual	980.794	383	0.258		
Total	1230.201	384			

Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	10.613	0.242		60.667	<0.001
TA	0.549	0.056	0.445	90.727	<0.001

The regression results in Table 4.16 demonstrate that technology adoption (TA) is a statistically significant and positive predictor of customer satisfaction (CS) among SMMEs in the clothing retail industry in Tshwane. The model is statistically robust, as evidenced by the ANOVA results ($F(1, 383) = 940.618$, $p < 0.001$), indicating that TA explains a significant proportion of the variance in CS.

The R^2 value of 0.198 suggests that approximately 19.8% of the variation in customer satisfaction can be explained by the adoption of digital technologies. This indicates a

moderate effect. The unstandardized coefficient ($\beta = 0.549$, $p < 0.001$) confirms a positive linear relationship, suggesting that for each one-unit increase in TA, customer satisfaction increases by 0.549 units, assuming all other factors remain constant.

The constant ($\beta = 10.613$, $p < 0.001$) represents the predicted baseline value of CS when TA is zero. Given the strength of these results, the null hypothesis (H0) is rejected. The findings confirm that greater adoption of digital technologies significantly enhances customer satisfaction for SMMEs operating in the clothing retail sector of Tshwane.

4.15 Chapter Summary

This chapter presents a comprehensive analysis of the relationship between the adoption of digital technologies and the growth of SMMEs in the clothing retail industry in Tshwane. It examines various factors, including response rates and social demographic variables, as well as reliability analyses and descriptive statistics. The correlation analyses indicate significant positive relationships, underscoring the importance of digital technology adoption in fostering growth among SMMEs in this sector. Overall, the findings provide valuable insights into how digital technologies can enhance performance and customer satisfaction in the clothing retail industry.

CHAPTER FIVE

DISCUSSION OF RESULTS

5.1. Introduction

The previous chapter presented research results and their interpretations. This chapter discusses the results of this study, identifying similarities and differences with extant empirical research. The results are discussed in line with the specified aims and objectives of the study. The main aim of this study was to determine the relationship between the adoption of digital technologies and the growth of SMMEs operating in the clothing retail industry in Tshwane. The main objective was broken down into three sub-objectives which read as follows: (a) To assess the relationship between the adoption of digital technologies and the development of competitive advantages of SMMEs operating in the clothing industry in Tshwane; (b) to determine the relationship between the adoption of digital technologies and financial performance of SMMEs operating in the clothing retail industry in Tshwane; (c) to establish a relationship between the adoption of digital technologies and customer satisfaction of clients for SMMEs operating in retail clothing industry in Tshwane. The results presented in the previous chapter show that there were significant relationships between adopting digital technologies and the three dependent variables which included competitive advantage, financial performance and customer satisfaction. The chapter is structured as follows: The first section of this chapter discusses the demographic profiles of research subjects. Thereafter, a discussion relating to each of the three hypotheses follows.

5.2. Demographic profile of respondents

The research focused on various demographic aspects of respondents which included response rate, gender and age of SMMEs representatives, ethnic group, age of the

SMME, size of firm by capital and employees as well as annual turnover. Demographic data of the respondents is important in this research because it provides insights into the context from which data was collected thus allowing for appropriate generalisations. Profiling respondents by their demographic characteristics enabled the researcher to establish the distribution of the respondents by specified characteristics. This was important because it provides the basis for which a similar study can be replicated in similar contexts.

The respondent response rate for the study was 96%, which is the acceptable threshold for a general population survey. This shows that the hybrid strategy of distributing survey questionnaires, which included physical and online distribution, enhanced the response rate. Furthermore, the results show that most of the respondents were men compared to women. The dominance of men in business was expected as it confirms what has been widely published regarding the gender gap in entrepreneurial participation in the South African context. For instance, the Global Entrepreneurship Monitor (2020) indicates that only 14% of women are engaged in start-up activities against 24%. Similarly, a small business survey focusing on South Africa showed that 70% of SMMEs are owned by men whilst women account for only 30% ownership of SMMEs in South Africa (Meyer & Egan, 20190. The study, therefore, confirms the long-existing dominance of men in the business realm. The study further confirms that clothing retail SMMEs in Tshwane are dominantly male-owned. Given that the distribution of respondents by gender is skewed in favour of men, there is a high probability that the respective businesses represented are more likely to use digital technologies in line with empirical evidence which shows that men have access to digital technologies more than their female counterparts (Van Der Mere & Spies, 2020).

The study showed that majority of the participants were aged 40 years and below. This shows that there is increased participation of young people in entrepreneurial activities. Young people face high unemployment rates and have resorted to entrepreneurship for employment. On the other hand, the South African government has made deliberate efforts to enhance young people's participation in entrepreneurship. Whilst young participation in entrepreneurship may differ with sector, this study show that youth are

significant participants in the clothing retailing sector. Young people are often referred to as digital natives due to their inclination to incorporate digital technologies in their day today actives.

Additionally, the study established that half of the SMMEs represented in this study were aged four years and more. This result contradicts the current statistics which show that more than 70% of SMMEs in South Africa fail within 2 years of establishment (Fatoki, 2014; Makhitha & Ladzani, 2021). Alternatively, the results may suggest that the average failure rate in clothing retailing is lower compared to the average rate across other sectors. Digital technologies are expected to promote sustainable growth among SMMEs and extend their lifespan beyond the widely publicised 24 months lifespan. Furthermore, the results show that 80% of the businesses have been in existence for 5 years and below. This period coincides with transition of the South African economy to the fourth industrial revolution which has resulted in increased adoption of digital technologies for business purposes. Accordingly businesses established in this era have potential to integrate digital technologies in their activities in line with emerging digital trends.

The research also established that the respondents who took part in this study represented SMMEs with varying capital sizes ranging from below R10 000 to more than R100 000. These varying financial capabilities of SMMEs in the clothing retail sector can significantly influence their ability to adopt digital technologies for growth purposes. Whilst capital size may impact the extent to which SMMEs adopt digital technologies it should be noted that digital technologies are relatively affordable thus increasing chance of adoption SMMEs of all sizes.

The research also established there were variations with regards to the number of employees employed by SMMEs engaged in clothing retailing. These variations represent the SMMEs varying capacity to employ personnel with digital skills. Digital skills are a significant factor that influences intention to adopt technology and the actual adoption digital technology (Kapur & Sood, 2021). Lastly, the results of this study indicate that there are variations in total annual turnover for clothing retailing SMMEs that were surveyed in this research. These results suggest that clothing retailing SMMEs operating in Tshwane have varying potential to adopt digital technologies.

5.3. Respondent's perceptions on measured variables

The research tested respondent's perceptions of digital technology adoption for business growth. Results show that clothing retail SMMEs operating in Tshwane perceive adopting digital technologies favourably. This is confirmed by the fact that the majority of the participants agreed that adopting digital technologies leads to improved product offerings, their businesses offer digital technologies training and that employees are open to embracing new technologies. Further, the research established consistency and consensus on the view that adopting new technologies has positive implications for businesses. Moreover, the results indicate that there is a deliberate and active organisational culture which is conducive to technological advancements amongst SMMEs operating in the clothing retail sector. Drawing from these results, it can be inferred that SMMEs operating in the clothing retail sector in Tshwane are open to embracing digital technologies and investing in activities promoting technology-driven growth. By actively engaging in activities that promote the adoption of digital technologies for business growth, SMMEs confirm assertions by Mutalimov (2021) who states that business growth is an important phenomenon for SMMEs as it enables the business to exploit new opportunities, improve financial outcomes, enhance the value of the business as well as improve its competitiveness.

The research also measured respondent's perceptions of financial performance as a measure of business growth. The financial performance variable in this study was designed to reflect the prominence of financial performance metrics such as sales volume, return on investments, market share, profits and cash flows. Whilst there were indications that SMMEs operating in the clothing retailing sector perceived positive financial performance outcomes, it emerged that return on investments require improvement. The dimensions of financial performance measured in this study are in agreement with submissions by Kraus (2022), indicating that some of the key metrics for measuring financial performance include profit growth rate, return on investment (ROI) and revenue growth rate, among others.

Furthermore, the research measured the extent to which SMMEs operating in the clothing retailing sector in Tshwane perceive competitive advantage as a measure of business

growth. The results showed that there was a shared view amongst SMME clothing retailers that competitive advantage measures business growth through various dimensions such as product quality, profitability, reputation, market position and operating efficiency. This confirms the assertion by Bican and Brem (2020), who point out that there are various aspects of a business that SMMEs can outperform competitors to develop a sustained competitive advantage. Additionally, Seu and Park (2020) advance that adopting digital technology presents opportunities for SMMEs to develop novel avenues to compete. The results also indicated consistency amongst responses shared by SMMEs in the clothing retailing business in agreeing that their business was in a better competitive position compared to competitors in terms of product quality, profitability, reputation, market position and operating efficiency.

The research also measured SMMEs in clothing retailer's general perceptions of customer satisfaction in their business. The study established that clothing retailing SMMEs positively perceived customer satisfaction for their businesses' growth prospects. This suggests that the business believes that its customers are satisfied with product quality, appearance, relationship management and the way customer complaints are handled. Customer satisfaction is important for business success as it generates customer loyalty, positive brand image and positive word of mouth (Kitsios et al., 2021).

In line with the objectives of this study, the research measured the relationship between adopting digital technologies and business growth. Business growth was represented by three dimensions: competitive advantage, financial performance, and customer satisfaction. The next section discusses the relationship between adopting technologies and business growth based on the results presented in chapter four.

5.4 Relationship between adopting digital technologies and growth of SMMEs growth

The section discusses the findings of this research in relation to the existing reality with regards to the connection between the adoption of digital technologies and SMME growth. This entails discussing the findings on the relationship between adopting digital technologies and financial performance; relationship between digital technology adoption and customer satisfaction among as well as the relationship between adopting digital

technologies and development of competitive advantage amongst SMMEs engaged in clothing retailing business in Tshwane. The findings allow conclusions to be drawn regarding how digital technology influences competitive advantage, financial performance, and consumer satisfaction for SMMEs engaged in clothing retailing. The findings provide an understanding of the dynamics of integrating digital technologies within SMMEs and their overall impact on business success. Conclusions on the relations between adopting digital technologies and dimensions of business growth are provided below.

5.4.1. Adopting digital technologies and the development of competitive advantages

The research established that adopting digital technologies by SMMEs operating in the retail clothing sector positively impacts competitive advantage development. This implies that integrating digital technologies in business operations leads to enhanced competitive position compared to competitors. Digital technologies such as social media platforms (Facebook, Whatsapp, Instagram, Tick tock and X) enable businesses of all sizes to connect, reach and build relationships with clients from various geographical locations (Kapur & Sood, 2021; Chong, Li & Tan, 2021). Furthermore, artificial intelligence, cloud computing, and the Internet of things have shown potential for enhancing competitive advantage for businesses of all sizes. Notable competitive advantage dimensions considered in this study include cost efficiency, product quality, profitability, market share, brand reputation and brand positioning. For instance, existing research shows that businesses can achieve operational efficiency compared to competitors by automating business processes (Liu & Zhang, 2021). Furthermore, literature shows that by engaging in e-commerce, SMMEs are able to reduce costs associated with having a physical shop, enabling the business to charge competitive prices along the way. The results indicate that adopting digital technologies positively impacts competitive advantage, and it proves that if SMMEs in clothing retailing adopt digital technologies, they are likely to register growth through enhanced competitive advantage development. These findings concur with a study by Keiningham et al. (2020), whose study revealed that adopting digital technologies helps SMMEs develop and maintain a competitive advantage. The consistency amongst SMMEs in clothing retailing in confirming the positive impact of

digital technologies on product and service quality aligns with existing literature, which shows that the incorporation of digital technologies in business actives presents opportunities for SMMEs to develop new services, products, processes and customer experience (Bican & Brem, 2020; Akpan et al., 2020; Bahador & Ibrahim, 2021). Furthermore, Gartner et al. (2024) assert that adopting digital technologies for the purpose of relationship management and communication improves customer experience and satisfaction, resulting in a broader base of loyal customers. The emergence of customer relationship management software's has improved businesses abilities to accurately product and service personalise offerings leading to enhanced (Lopez & Garcia, 2020). The findings of this study also demonstrate that digital technologies enhance competitive advantage through increasing market share compared to competitors. This is supported by existing literature, as reflected in Gartner et al (2024), who highlight that there are digital platforms which enable a business to grow its market share by enabling collaborations with local and foreign businesses with similar interests. While adopting digital technologies is perceived positively in terms of promoting competitive advantage development, there are concerns that challenges such as lack of digital literacy, poor connectivity and high cost of accessing digital technologies may negatively affect SMMEs' ability to develop and maintain competitive advantage compared to larger corporations. Regardless of this contrasting view, a growing body of literature asserts that digital technologies are an important factor for building competitive advantage in this era of the fourth industrial revolution. This is because digital technologies such as artificial intelligence, big data and cloud computing enhance SMMEs competitive advantage by reducing costs, improving efficiency, and creating unique value propositions (Seu & Park, 2020). Based on the above discussion, it can be inferred that incorporating digital technologies in the business activities and processes of SMMEs engaged in clothing retailing business help them enhance their competitive advantage.

5.4.2. Adopting digital technologies and financial performance

This study also demonstrates that there is a significant and positive relationship between adopting digital technologies and financial performance by SMMEs in clothing retailing. The results in this instance imply that adopting digital technologies leads to an

improvement in financial outcome for SMMEs engaged in clothing retailing businesses in Tshwane. In particular, the results suggest that commonly used financial performance metrics among SMMEs in South Africa include profitability, sales revenue, cash flows and return on investment can be enhanced by integrating digital technologies in their business activities. The findings of this study, which indicate a positive correlation between the adoption of digital technologies and the financial performance of SMMEs in the clothing retail sector, align with the assertions of Yu et al. (2023). Their research suggests that, as economies transition into the fourth industrial revolution, technology serves as a key driver of SMME growth by improving financial performance.Findings of this study regarding the relationship between adopting digital technologies and financial imply that SMMEs in clothing retailing are inclined to achieve financial performance if they integrate digital technologies into their business activities. In particular, as measured by this study, adopting digital technologies improves various financial performance aspects, including return on investment, profitability, cash flows, sales volume and market share. Accordingly, Daud et al. (2022) established that digital technologies increase profitability by improving efficiency as well as reducing costs.

Additionally, the findings are supported by Tsou and Chen (2023), who established that digital technologies improve SMMEs' financial performance by enabling them to electronically advertise market and sell their products and services at a lower cost compared to other platforms, such as brick and mortar shops, billboards, television and radio among others. The finding that adopting digital technology improves financial performance through increased sales volume and market share is consistent with empirical assertions made by Peng and Tao (2022), who state that digital technologies promote positive financial performance by enabling SMMEs to reach more clients, resulting in increased sales at an affordable cost. Although this study shows that adopting digital technologies is perceived positively in terms of improving financial performance, it should be noted that digital technology-powered sales accounted for only 4.5% of total retail sales in South Africa in the year 2023 (Digital Commerce Africa, 2023). Whilst this highlights the potential of online sales, the amount of online sales in South Africa may still be too low to support significant business growth. Existing evidence shows that growth amongst SMMEs in South Africa remains depressed even amid significant technological

advancements. This suggests that whilst hope is pinned on the adoption of digital technologies to improve financial performance, other factors should be given due consideration to achieve business growth amongst clothing retailing SMMEs operating in Tshwane. Although these contrary facts exist, overwhelming literature has supported this study's findings, indicating that integrating digital technologies promotes business growth through enhanced financial performance (Anwar, 2018; Ruiz-Alba et al., 2022; Tsou & Chen, 2023). Based on the above discussion, the research concludes that clothing retail SMMEs financial outcomes are positively influenced by adopting digital technologies

5.4.3. Adopting digital technologies and customer satisfaction

This research also investigated the relationship between adopting digital technologies and customer satisfaction for SMMEs clothing retailers operating in Tshwane. As presented in chapter four, the study established that by adopting digital technologies, SMMEs in retail clothing enhance the satisfaction of their customers which in turn leads to business growth. Dimensions of customer satisfaction considered in this study included measuring the extent to which the SMMEs perceive their clients to be satisfied with their products, price, product appearance, complaints handling, relationship management and the level of customer experience provided. The results of the study imply that adopting digital technologies enhances dimensions of customer satisfaction mentioned above. The findings of this study concur with those of Awadhi et al. (2021), who found that the deployment of digital technologies such as chatbots improves customer relationships and customer experience, leading to customer satisfaction. Further to this, Adam et al. (2020) states that with the integration of digital technologies such as artificial intelligence-powered chatbots, which can interact with customers any time of the day, answering their questions and recommending solutions, SMMEs can improve customer relations and experience and satisfaction as well (Adam et al., 2020). Moreover, Gelbrich et al. (2021) opine that using digital technologies enables businesses to collect data that can be leveraged to gain important insights into consumer preferences. This allows for personalisation and customisation of product and service offerings, enhancing customer satisfaction in the process. For instance, clothing retail SMMEs can measure the time spent looking at variations in colours, materials and designs, enabling them to draw insights into a customer’s preferences. Whilst customisation of product and service

offerings based on data analysis may enhance customer satisfaction, leading to business growth, there are concerns about data protection and privacy, which may hinder the attainment of customer satisfaction through the integration of digital technologies in business operations. Furthermore, Van-Dijk (2020) accepts the potential of digital technologies to enhance customer satisfaction and warns that they are currently more effective in developed countries with advanced information communication infrastructure compared to developing countries. South Africa has made significant strides to promote the adoption of digital technology, thus providing an opportunity for SMMEs in clothing retailing to grow their businesses through leveraging digital technologies for customer satisfaction. Based on the above, the research concludes that clothing retail SMMEs in Tshwane stands to enhance customer satisfaction by integrating digital technologies in their business activities which include customer relation management, advertising, selling and inventory management among others. Based on the above discussions regarding the conclusions of this study on the three tested hypotheses, the following framework for promoting business growth by adopting digital technology is proposed.

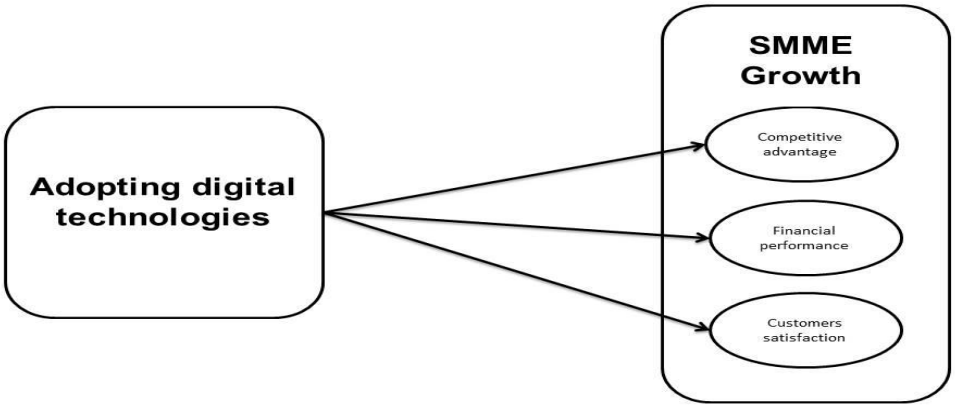

Figure 5.1: Framework for promoting SMME growth through adopting digital technology (Source: Authors own synthesis).

5.5. Conclusion

This chapter presented the study's findings and compared them with existing literature. The main conclusion drawn from the discussion is that the adoption of digital technologies fosters growth among SMMEs in the clothing retail sector in Tshwane. The analysis reveals a significant positive relationship between the independent and dependent variables. The research confirms a notable link between adopting digital technologies and the creation of sustainable competitive advantages for SMMEs in the Tshwane clothing industry. Furthermore, the findings highlight a strong correlation between the use of digital technologies and improvements in both financial performance and customer satisfaction among SMMEs in the clothing retail sector in Tshwane.

CHAPTER SIX

CONCLUSIONS, IMPLICATIONS AND RECOMMENDATIONS

6.1. Introduction

The preceding chapter outlined the study's findings. This chapter focuses on the conclusions, implications, and recommendations arising from the study. The first section provides a summary of the results and the conclusions derived from the discussion of the findings. The second section explores the implications and offers recommendations based on the study. The third section highlights the limitations of the research, while the final section presents suggestions for future research.

6.2. Conclusions of the study

The research findings provide a basis for evidence-backed conclusions. In particular, based on the study's results, it can be concluded that SMMEs engaged in clothing retailing businesses who adopt digital technologies stand to develop a sustainable competitive edge over the competition by leveraging the capabilities of digital technologies. Digital technologies are able to improve efficiency, reduce costs and allow for easy streamlining of operations. These findings concur with a study by Keiningham et al. (2020), which revealed that adopting digital technologies helps SMMEs develop and maintain a competitive advantage.

The research also concludes that clothing retailing SMMEs that integrate digital technologies in their business processes and activities are more likely to achieve positive financial outcomes. These outcomes can be in the form of increase sales, profits, return on investment and positive cash flows. The positive outcomes can be attributed to reduced costs, increased revenue streams and improved financial management, which

can be facilitated by the use of specific digital platforms and tools. This conclusion supports the findings by Daud et al. (2022), who established that digital technologies increase profitability by improving efficiency, diversifying revenue streams as well as reducing costs.

Furthermore, the research concludes that clothing retailing SMMEs that incorporate relevant digital technologies in their business are more inclined to report increased customer satisfaction levels. In other words, adopting digital technologies enables SMMEs to improve their understanding of customer needs and how to meet those needs. The end result of this is enhanced product and service quality, effective communication and personalised customer experiences. These results align with existing literature, which shows that the incorporation of digital technologies in business activities presents opportunities for SMMEs to develop new services, products, processes and customer experiences (Bican & Brem, 2020; Akpan et al., 2020; Bahador & Ibrahim, 2021). Similarly, Gartner et al. (2024) support this view by asserting that adopting digital technologies for the purpose of relationship management and communication improves customer experience and satisfaction, resulting in a broader base of loyal customers.

Based on the conclusions above, it can be deduced that a key contribution of this study is that it empirically demonstrates that adoption of digital technologies leads to more chances of business growth through improvement of competitive advantage, customer satisfaction and financial performance. The study contributes to the growing body of knowledge regarding the adoption of digital technologies by SMMEs, through demonstrating practical benefits that can be realised from adopting digital technologies. This evidence backed claim can be used by SMMEs to justify investments into digital technologies.

Furthermore, the study adds onto the existing theory on factors influencing SMMEs growth in emerging countries. SMMEs growth is an important phenomenon in emerging economies like South Africa where more than 60% of SMMEs fail within 24 months of their establishment. Consequently, research over the years has focused on examining and analysing the factors that influence SMME growth and performance (e.g., Lekhanya, 2015; Furawo & Scheepers, 2018; Bowmaker-Falconer & Herrington, 2020; Matekenya

& Moyo, 2020).This demonstrates that digital technologies can be integrated into business operations to promote business growth through improved customer satisfaction, competitive advantage and financial performance.

By demonstrating that there is a significant and positive relationship between adopting digital technologies and growth of clothing retail SMMEs, the study brings in novel theoretical knowledge which proves that SMMEs who adopt digital technologies perform better than those that do not incorporate digital tools in their operations. The study also adds knowledge on how digital technology is perceived within a specific industry (clothing retailing) in relation to business growth. This provides insights that allows for formulation of context specific pathways for promoting growth amongst SMMEs by adopting digital technologies. Whilst many studies on adoption of digital technologies and their impacts on businesses are concentrated in developed countries, the current study provides empirical evidence from an emerging market perspective.

6.3. Recommendations and implications of the study

The study presents several implications for informing policy and practical recommendations**.** Based on the findings of this research on the relationship between adopting digital technologies and SMMEs growth, the following recommendations are made. Drawing on the findings indicating that adopting digital technologies significantly and positively influences competitive advantage amongst SMMEs in the clothing retailing industry, the study recommends that relevant policies should be developed to promote the effective adoption of digital technologies amongst SMMEs in the retail clothing business. Policies should be developed to promote an enabling digital ecosystem. Specific areas that can be addressed by the policies include providing grants and loans for SMMEs to finance adoption of digital technologies.

In addition, the study recommends that deliberate policies should be made to ensure and promote equal access to digital technologies by subsiding specific digital technologies meant to reduce operating costs, build relationships with clients and develop distinct product and service offerings. Furthermore, access to digital technologies can be enhanced by improving information and communication technology infrastructure across

all locations to bridge the digital divide that currently exists in South Africa, particularly between SMMEs and large enterprises as well as between rural and urban businesses.

The government should also introduce policies to promote capacity building amongst SMMEs so that they can attain the necessary skills for the effective utilisation of digital technologies for the growth of their businesses. Literature shows that lack of adequate and relevant skills is one of the challenges that hinders the incorporation of technology in SMMEs. It is, therefore, important for the government to prioritise capacity building so that businesses can align with the fourth industrial revolution demands.

For practitioners, the research recommends that entrepreneurs owning SMMEs should actively implement practices that promote technology adoption in their organisations. These practices include training employees so that they can develop digital skills. In addition, SMMEs owners should be on the lookout for new and transformative digital technologies so that they can harness the advantages of the technology to the benefit of their businesses. As a result, the business will be able to compete effectively and improve financial performance and customer satisfaction. Whilst adopting digital technology for business purposes might be an expensive exercise, SMMEs should explore affordable options that they can adopt and implement. For instance, social media platforms have proven to be effective tools for advertising and selling products by businesses of all sizes. In addition, SMMEs should identify digital platforms that are applicable to their contexts so that they can deploy digital technologies that help their business achieve their business growth objectives. It is, therefore, important for SMMEs to evaluate the effectiveness of their digital strategies from time to time through research so that they can identify what works and what does not work.

Through lens of the Resourse Based View, the study framed digital technologies as an important resource that can leverage to promote business growth. Whilst the resource-based view is traditionally used to explain how business can gain competitive advantage by leveraging inimitable resources, the current study extends the application of the RBV to explain how adopting digital technologies can be deployed to develop competitive advantage and also to improve financial performance and customers satisfaction. This

sets the tone for academics to further explore other contexts through which RBV can be utilised in business research.

The overall recommendation of this study is that both practitioners and policymakers must prioritise measures that promote the easy adoption of digital technologies amongst SMMEs. The envisioned result is that adopting digital technology improves competitive advantage, financial performance and customer satisfaction, resulting in positive growth prospects for SMMEs, which often struggle to survive for more than 24 months of their establishment.

6.4. Limitations of the study

Whilst care was taken to ensure that the study was conducted in a manner that enhances its reliability and validity, the following limitations were noted.

- The study was limited in Tshwane hence the sample of respondents who participated in this was drawn from this location alone. Restricting the study to Tshwane was due to time and resource limitations.
- The study sample was selected through the convenience sampling technique, meaning the research only focused on those who were easily accessible to the research thus denying all population elements an equal chance to participate in the study
- The other limitation of the study was that the study utilised only the quantitative research methodology, hence the study was not able to collect data to explain why the respondents responded the way they did to the survey questionnaire

6.5. Recommendation for future research

Drawing and building on the findings of this research, adopting digital technologies such as online marketing, ecommerce, customer relationship management systems and artificial intelligence improves SMMEs growth through enhancing competitive advantage, financial performance and customer satisfaction, opportunities for future research have been identified.

First, the current study was located in Tshwane and only focused on SMMEs engaged in the clothing retailing sector; this presents an opportunity for similar studies to be conducted on SMMEs operating in other industries as well as SMMEs in other cities. This would allow for the assessment of industry-specific issues and regional economic environment, for instance, may shape the adoption of digital technologies by SMMEs and the subsequent effect that adoption of digital technologies might have on the growth of SMMEs.

Second, this current research adopted a cross-section research design. There is, therefore, an opportunity for future research to be longitudinal. This would allow the researcher to determine the extent to which the incorporation of digital technologies impacts dimensions of business growth. Third, the current study was conducted through the lens of the RBV. The current study recommends that future research be conducted to assess the nexus between the RBV and other complementary theories such as the Technology-Organisation-Environment framework and the Dynamic Capabilities Theory.

Lastly, the research recommends that a similar study should be conducted using a mixed-method approach. This would allow the research to determine to only the nature of relationships between variables but also to unearth reasons why such relationships between variables exist. Mixed methods research methods are advantageous in that they improve research rigour by reducing the weaknesses of each methodology used in conducting a specific research study.

6.6. Conclusion

The study demonstrated that SMME growth can be realised by adopting digital technologies. In particular, the study indicates that digital technologies have the potential to drive business growth amongst SMMEs engaged in clothing retailing through specific growth metrics which include financial performance, customer satisfaction and competitive advantage. This is achieved by improving efficiency, enhancing quality and managing relations with customers. As such a conclusion was drawn that digital technologies are an important resource that SMMEs can leverage to achieve growth and develop resilience. Noting the crucial role that digital technologies play in fostering SMME

growth, the research recommended policies that promote easy adoption of digital technologies such as capacity building, skills development, improving information and technology and digital infrastructure, subsidising digital technologies and bridging digital technology access gaps that exist in the country.

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Appendix A: Ethical Clearence

Graduate School of Business Administration
University of the Witwatersrand, Johannesburg

Wits Business School Ethics Committee
Constituted under the University Human Research Ethics Committee (Non-Medical)

Ethics Clearance Certificate

Ethics protocol number: WBS/EN2787265/140
This certificate is only valid with a legitimate ethics protocol number and signed by the Researcher (below).

Project title	Adoption of digital technologies for Small Micro and Medium Enterprises (SMMEs) growth: A case of SMMEs in clothing retail sector operating in Tshwane
Investigator / Researcher	Ms Yanga Tantsi
Nature of Project	MM in Entrepr & New Venture Creation
Decision of the Committee	Approved, provided stakeholders and participants are guaranteed anonyr and confidentiality.
Issue Date of Certificate	26/08/2024
Expiry date	Date of submission of the project / research report
Chairperson	Dr Ayanda Magida ☎ +27 11 717 3953 ayanda.magida@wits.ac.za

Declaration by Researcher

One copy must be signed by the Researcher and returned to the Chairperson of the Wits Business School Eth Committee.

I fully understand the conditions under which I am authorized to carry out the abovementioned research an guarantee to ensure compliance with these conditions. Should any departure to be contemplated from the research procedure as approved I undertake to resubmit the protocol to the Committee.

Signature

27 August 2024
Date:

Appendix B: Research Instrument

SECTION A: BUSINESS AND PERSONAL INFORMATION

Place an X against your desired response and print answer where necessary.

Please indicate with an 'x' on the correct response.					
Gender	Male	Female			
Ethnic group	Black (African)	Coloured	White	Indian	Other
Age	Below 20 years	20-30 years	31-40 years	41-50 years	Above 50 years
Age of the firm	Below 1 year	1-3 years	4-6 years	7 and more years	
Firm's capital size by Rand	Less than 10 000	10 000-50 000	51 000-100 000	More than 100 000	
Firm's total employees	Less than 5	6-20	21-49	50-99	100-200
Firm's total annual turnover	Less than R150 000	150 000-500 000	500 001-4 million	5 million -50 million	

SECTION B

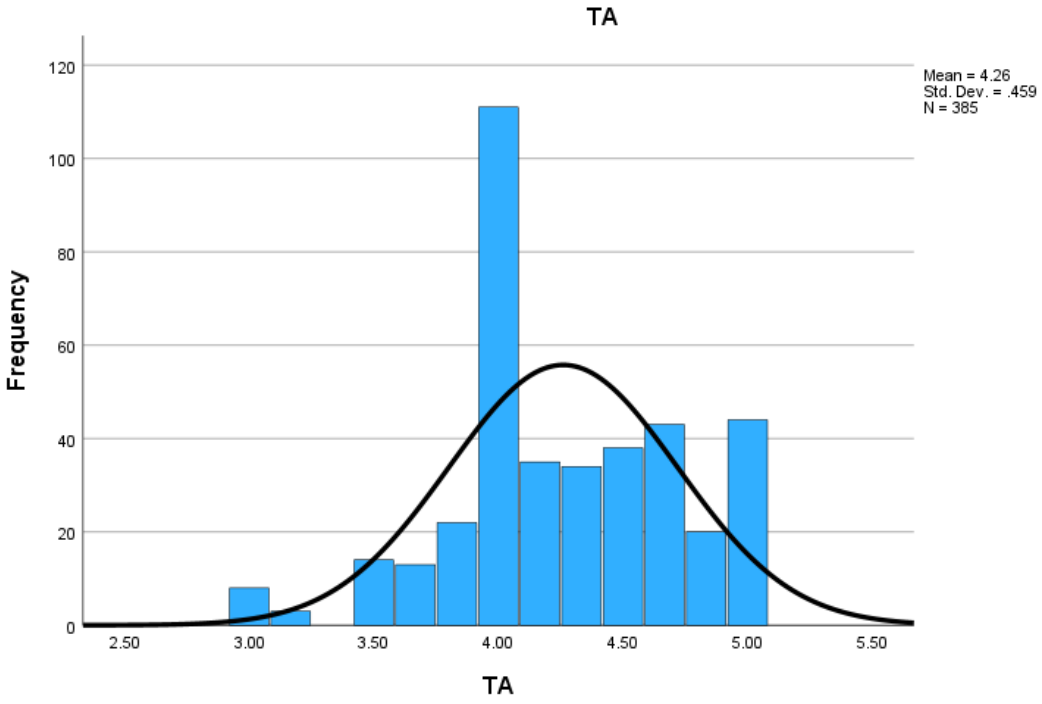
Please put a cross in the appropriate block indicating whether you strongly disagree=SD, disagree=D, neutral=N, agree= A or strongly agree= SA with each of the following statements provided below.

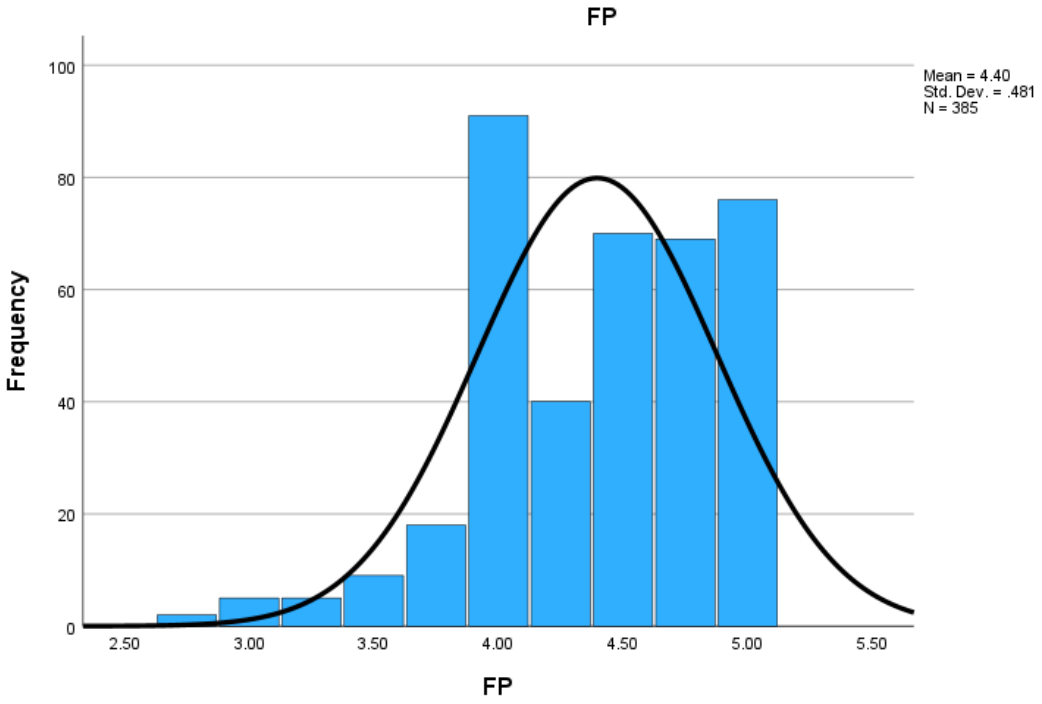
	TECHNOLOGY ADOPTION	**SD**	**D**	**N**	**A**	**SA**
1	As a business we are generally open to the incorporation of new technologies	1	2	3	4	5
2	Our business offers training support to use new technology effectively	1	2	3	4	5
3	Our business is open to changes associated with use of new technology	1	2	3	4	5
4	Our employees are ready to embrace new technology	1	2	3	4	5
5	New technology will improve the quality of our products/services	1	2	3	4	5
6	It is important for our business to use new technologies	1	2	3	4	5
	FINANCIAL PERFOMANCE	**SD**	**D**	**N**	**A**	**SA**
7	As a business we have managed to maintain positive cash flows	1	2	3	4	5
8	As a business we have managed to increase our profits	1	2	3	4	5
9	As a business our sales volume has been continuously rising	1	2	3	4	5
10	As a business we have managed to maintain our market share	1	2	3	4	5
11	As a business we have managed to maintain a positive return on investment	1	2	3	4	5
	COMPETITIVE ADVANTAGE					
12	Compared with competitors, the business's cost control is very good	1	2	3	4	5
13	Compared with competitors, the quality of the business's products or services is very good	1	2	3	4	5
14	Compared with competitors, the profitability of this business is very high	1	2	3	4	5
15	Compared with competitors, the business's product market share has grown rapidly	1	2	3	4	5
16	Compared with competitors, the business has a better reputation	1	2	3	4	5

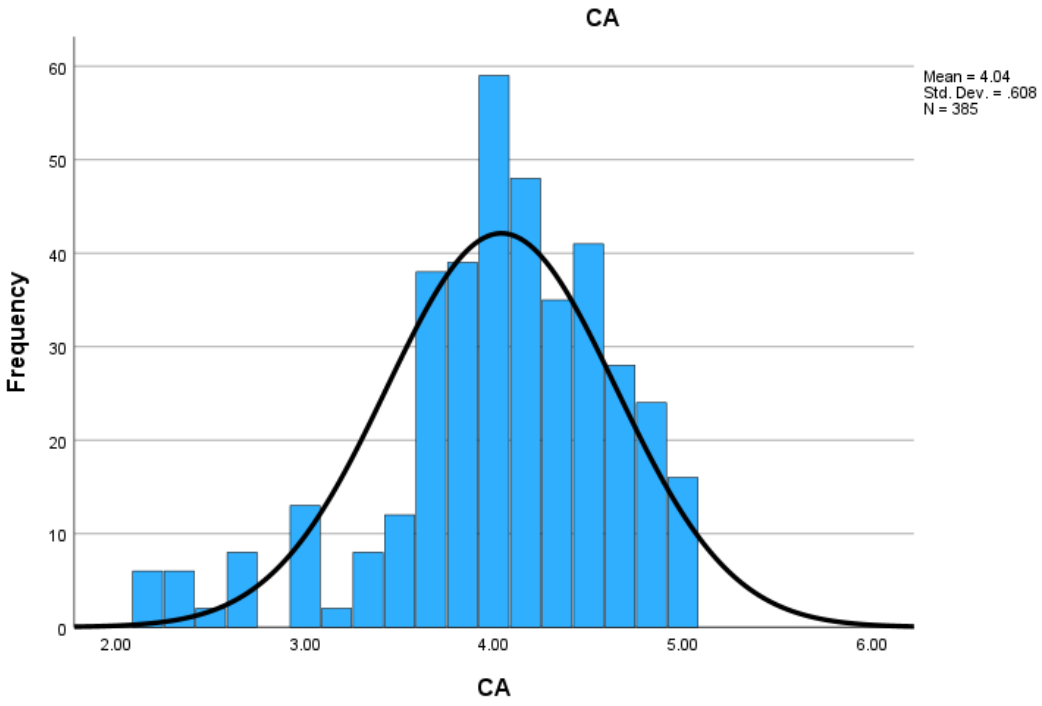
17	Compared with competitors, our products are in an advantageous position in the market	1	2	3	4	5
	CUSTOMER SATISFACTION					
18	Our customers are satisfied with the quality of our products	1	2	3	4	5
19	Our customers are satisfied with the price of our products	1	2	3	4	5
20	Our customers are satisfied with the appearance of our products	1	2	3	4	5
21	Our customers are satisfied with the cooperation we give them	1	2c	3	4	5
22	Our customers are satisfied with our sales service	1	2	3	4	5
23	Our customers are satisfied with the way we handle their complains	1	2	3	4	5
24	Our customers are satisfied with the way we manage relationships with them	1	2	3	4	5
25	Our customers are happy with the experience we offer them	1	2	3	4	5

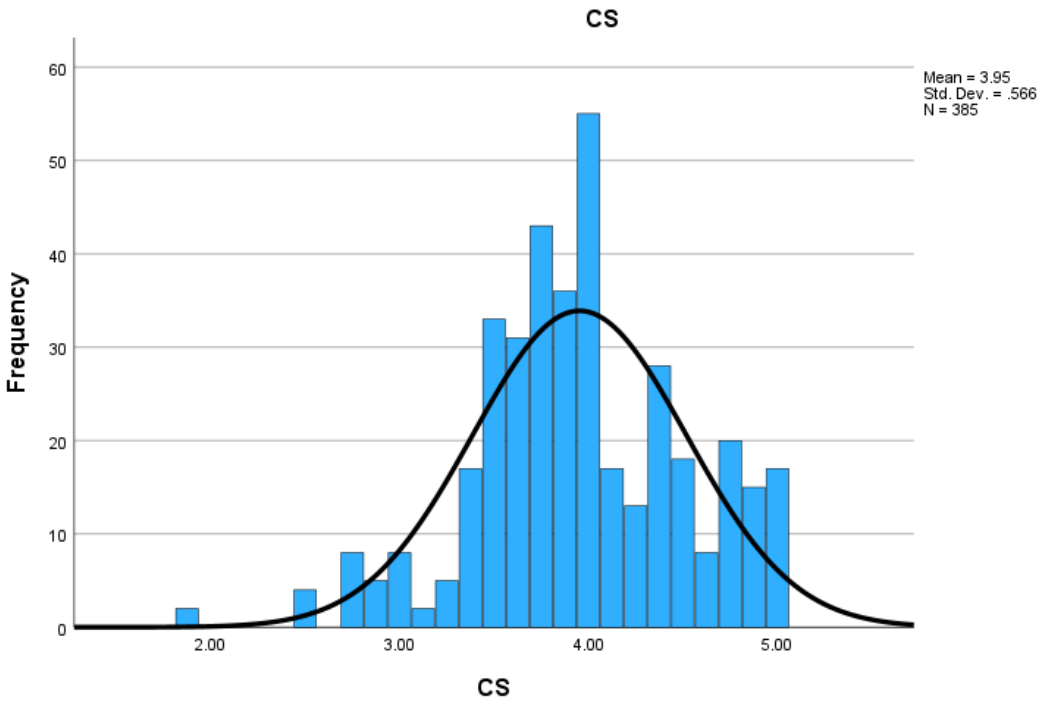
Thank you for completing the questionnaire!!

Appendix C: Histograms for the variables






CA
Mean = 4.04
Std. Dev. = .608
N = 385
Frequency
60
50
40
30
20
10
0
2.00
3.00
4.00
5.00
6.00
CA


CS
Mean = 3.95
Std. Dev. = .566
N = 385
Frequency
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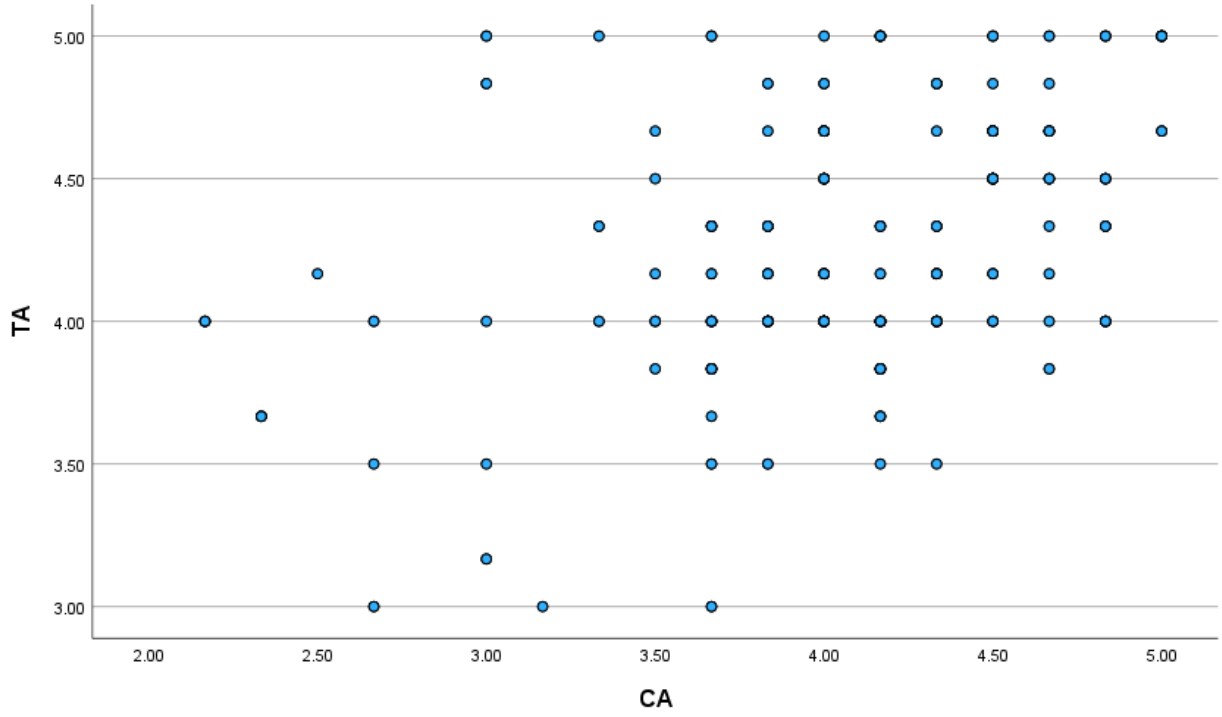
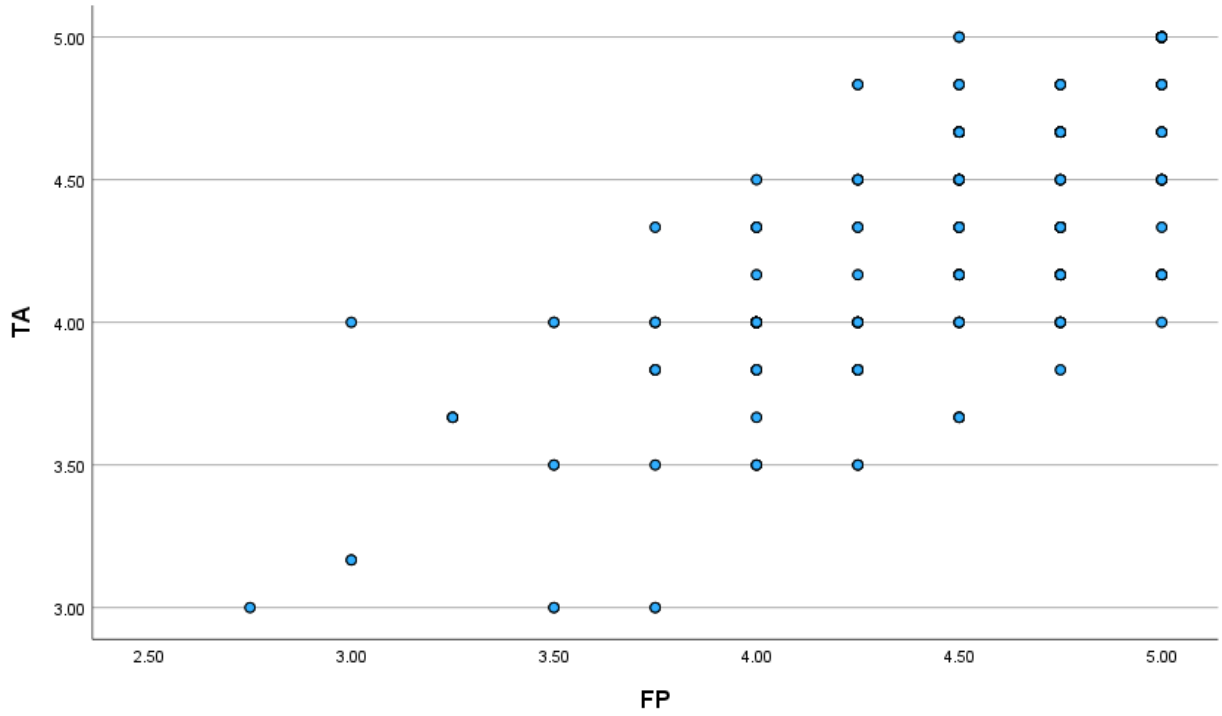
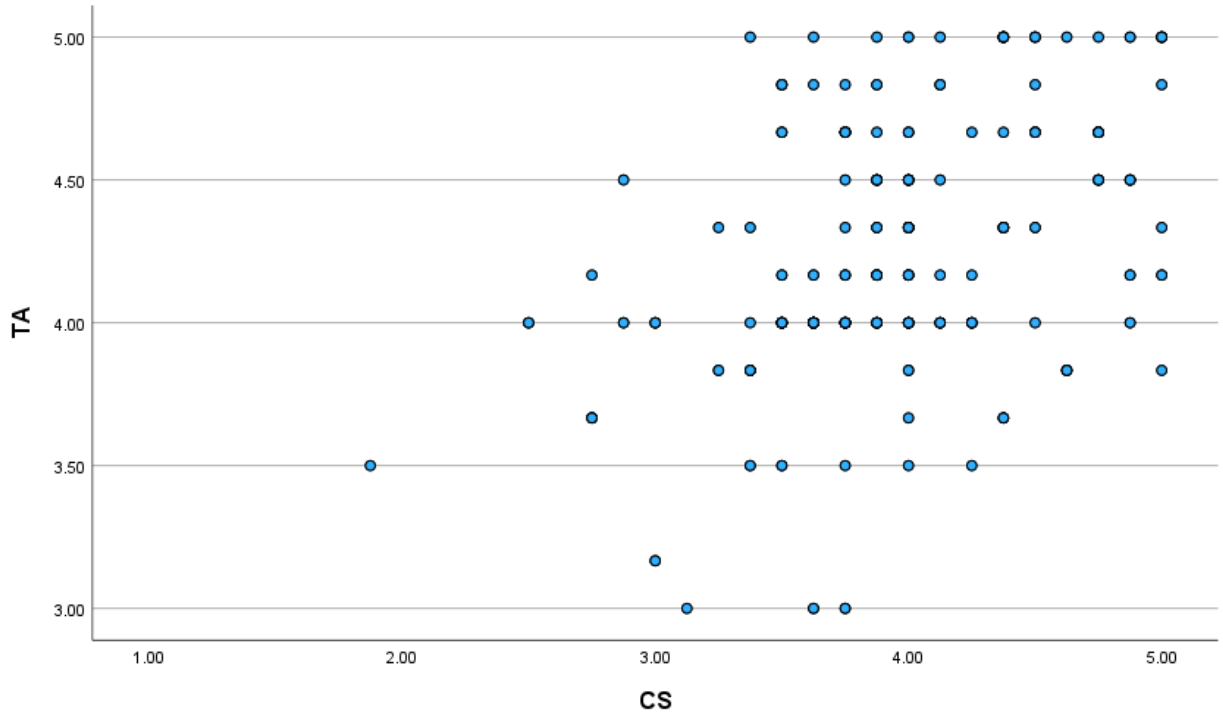
40
30
20
10
0
2.00
3.00
4.00
5.00
CS

Appendix D: Scatter plots for the relationships






5.00
4.50
4.00
3.50
3.00
TA
1.00
2.00
3.00
4.00
5.00
CS

Appendix E: Consistency Matrix

Adoption of digital technologies for Small Micro and Medium Enterprise (SMMEs) growth: A case of SMMEs in clothing retail sector operating in Tshwane							
Main Objective: The main aim of this study is to determine the relationship between adoption of digital technologies and growth of SMMEs operating in the clothing retail industry in Tshwane.							
Sub-Aims/Objectives	**Literature Review**	**Hypotheses /Propositions**	**Research questions**	**Variables(Independent & Dependent)**	**Source of data**	**Type of data**	**Analysis**
To assess the relationship between the adoption of digital technologies and the development of sustainable competitive advantages of SMMEs operating in clothing retail industry in Tshwane.	Gharbaoui and Boukhari (2023). Shah (2022), Matt and Rauch (2020), Seu and Park (2020), Guo et al. (2020). Bican and Brem, (2020).). (Akpan et al., 2020; Bahador & Ibrahim, 2021). (Keiningham et al., 2020).	There is a significant relationship between adopting digital technologies (TA) and developing sustainable competitive advantages (CA) for SMMEs operating in the clothing industry in Tshwane.	What is the relationship between adopting digital technologies and developing sustainable competitive advantages for SMMEs operating in the clothing retail industry in Tshwane?	IV1= **Adoption** of technology-driven business models DV1= Financial performance	Questionnaire Q1 to Q6 Q7 TO Q11	Ordinal Data (5 point likert Scale)	1. Descriptives 2. Correlation analysis 3. Multiple Regression
To determine the relationship between the adoption of digital technologies and the	Yu et al. (2023). Daud, et al. (2022). Jorge et	There is a significant relationship between	What is the relationship between adopting	**IV2= Adoption** of technology-driven	Questionnaire	Ordinal Data (5 point	

financial performance of SMMEs operating in the clothing retail industry in Tshwane.	al., (2022); Peng and Tao (2022). Aksin-Sivrikaya and Bhattacharya, (2017); Tsou and Chen (2023). Anwar (2018) Ruiz-Alba et al. (2022).	adopting digital technologies (TA) and the financial performance (FP) of SMMEs operating in the clothing retail industry in Tshwane.	digital technologies and the financial performance of SMMEs operating in the clothing retail industry in Tshwane?	business models DV2=Competitive Advantage	Q1 to Q6 Q12 to Q17	likert Scale)	
To establish a relationship between the adoption of digital technologies and customer satisfaction of clients for SMMEs operating in the retail clothing industry in Tshwane	(Sabihaini et al., 2021) (Awadhi et al., 2021). Bertola and Teunissen (2018) (Adam et al., 2020). (Gelbrich et al., 2021). (Kitsios et al., 2021).	There is a significant relationship between adopting digital technologies (TA) and customer satisfaction (CS) for SMMEs operating in the retail clothing industry in Tshwane.	What is the relationship between adopting digital technologies and customer satisfaction of clients for SMMEs operating in the retail clothing industry in Tshwane?	IV3= Adoption of technology-driven business models DV3=Customer satisfaction	Questionnaire Q1 to Q5 Q18 to Q25	Ordinal Data (5 point likert Scale)	