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Martino, Sibongile

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University of the Witwatersrand, Johannesburg

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Factors that influence the adoption of fintech by small and medium enterprises in South Africa

Sibongile Martino

0002053T

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Supervisor

Dr Euphemia Godspower-Akpomiemie

ABSTRACT

Adoption of a payment system is considered a steppingstone toward full digital economy participation and has made it simpler for small and medium-sized (SMEs) businesses to acquire financial products and services. However, payment system success strongly relies on merchant involvement, which provides customers with a valued service and contributes to improved customer experience, data collection, and financial performance.

The POS market in South Africa is the largest in Africa, however adoption is slowest among SMEs. This research employs the TOE framework to investigate whether the technological, organisational, and environmental contexts of SMEs in Gauteng, South Africa impact their adoption of POS systems.

Twenty Gauteng-based SMEs were interviewed for this study to address the research question. This objective was achieved by deconstructing the study findings about the primary and secondary components of the TOE framework. In addition, the interpretivist approach used in this study's analysis of the semi-structured interviews shed light on the factors that influence the adoption of POS by SMEs.

This study found that the decision of SME owner-managers to adopt a POS system is influenced by motivating and inhibiting factors that stem from the technological, organisational, and environmental context in which a SME operates. The study also found that the availability of technology, its value proposition, and an enabling organisational structure motivated the adoption of POS systems by SMEs. Nonetheless, the research found that cost, a burdensome regulatory environment, and a lack of infrastructural support, such as lack of a reliable power system, are obstacles to the broad adoption of POS systems.

KEYWORDS: Fintech, Point-of-Sale, merchant adoption Small and Medium-Sized Enterprises (SME), South Africa, Technological-Organisational-Environmental (TOE) framework.

TABLE OF CONTENTS

ABSTRACT ..... **ii**

LIST OF FIGURES ..... **vii**

LIST OF TABLES ..... **viii**

LIST OF ACRONYMS ..... **ix**

CHAPTER 1. INTRODUCTION **11**

1.1. STATEMENT OF PURPOSE 11

1.2. BACKGROUND TO THE STUDY 11

1.2.1. OVERVIEW OF SMES 11

1.2.2. FINTECH LANDSCAPE 12

1.2.3. PAYMENTS LANDSCAPE 14

1.3. PROBLEM STATEMENT 15

1.4. RESEARCH QUESTION 16

1.5. RESEARCH OBJECTIVES 16

1.6. RATIONALE OF THE STUDY 16

1.7. DELIMITATIONS OF THE STUDY 17

1.8. ASSUMPTIONS 17

1.9. CHAPTER OUTLINE 18

1.10. CHAPTER SUMMARY 19

CHAPTER 2. LITERATURE REVIEW AND THEORETICAL FRAMEWORK **20**

2.1 INTRODUCTION 20

2.2 OVERVIEW SMES 20
2.3 ISSUES AND CHALLENGES OF SMES IN SA 21
2.4 EVOLUTION OF POS 22
2.4.1 POS ADOPTION BENEFITS FOR SMES 23
2.5 THEORETICAL BACKGROUND AND RESEARCH MODEL 25
2.6 POS ADOPTION ANALYTICAL FRAMEWORK 28
2.6.1 TECHNOLOGICAL FACTORS 28
2.6.2 THE ORGANISATIONAL FACTORS 30
2.6.3 ENVIRONMENTAL FACTORS 30
2.7 PROPOSITION 32
2.8 CHAPTER SUMMARY 32

CHAPTER 3. RESEARCH METHODOLOGY 34

3.1 RESEARCH APPROACH 34
3.2 RESEARCH DESIGN 35
3.3 DATA COLLECTION METHODS 36
3.4 POPULATION AND SAMPLE 37
3.4.1 POPULATION 37
3.4.2 SAMPLING AND SAMPLING METHOD 37
3.5 RESEARCH INSTRUMENTS 38
3.6 PROCEDURE FOR DATA COLLECTION 38
3.7 DATA ANALYSIS STRATEGIES AND INTERPRETATION 39
3.8 LIMITATIONS OF THE STUDY 39
3.9 QUALITY ASSURANCE 40
3.9.1 TRANSFERABILITY 40
3.9.2 CREDIBILITY 40
3.9.3 DEPENDABILITY 40
3.9.4 CONFIRMABILITY 41
3.10 ETHICAL CONSIDERATIONS 41
3.11 CHAPTER SUMMARY 41

CHAPTER 4. PRESENTATION OF THE FINDINGS.....43

4.1 INTRODUCTION 43

4.2 SAMPLE CLASSIFICATION 44

4.3 FACTORS INFLUENCING THE ADOPTION OF POS SYSTEMS 45

4.3.1 THEME 1: TECHNOLOGICAL FACTORS..... 46

4.3.1.1. SUB-THEME 1: TECHNOLOGY AVAILABILITY..... 46

4.3.1.2. SUB-THEME 2: TECHNOLOGY VALUE 47

4.3.1.3. SUB-THEME 3: TECHNOLOGY COST..... 51

4.3.2 THEME 2: ORGANISATIONAL FACTORS..... 53

4.3.2.1. SUB-THEME 1: INDUSTRY SEGMENT..... 53

4.3.2.2. SUB-THEME 2: SIZE 53

4.3.3 THEME 3: ENVIRONMENTAL FACTORS. 54

4.3.3.1. SUB-THEME 1: REGULATION AND COMPLIANCE 54

4.3.3.2. SUB-THEME 2: INFRASTRUCTURE SUPPORT..... 55

4.4 CHAPTER SUMMARY 55

CHAPTER 5. DISCUSSION OF THE FINDINGS 58

5.1 INTRODUCTION 58

5.2 THEME 1: TECHNOLOGICAL FACTORS 58

5.2.1 SUB-THEME 1: TECHNOLOGY AVAILABILITY..... 58

5.2.2 SUB-THEME 2: TECHNOLOGY VALUE 59

5.2.3 SUB-THEME 3: TECHNOLOGY COST..... 60

5.3 THEME 2: ORGANISATIONAL FACTORS 61

5.3.1 SUB-THEME 1: SIZE 61

5.3.2 SUB-THEME 2: INDUSTRY SEGMENT 62

5.4 THEME 3: ENVIRONMENTAL FACTORS 63

5.4.1 SUB-THEME 1: REGULATION AND COMPLIANCE 63

5.4.2 SUB-THEME 2: INFRASTRUCTURE..... 63

5.5 CHAPTER SUMMARY 64

CHAPTER 6. CONCLUSIONS & RECOMMENDATIONS.....67

6.1 INTRODUCTION 67

6.2 CONCLUSION 68
6.2.1 KEY FINDINGS ON TECHNOLOGY FACTORS 68
6.2.2 KEY FINDINGS ON ORGANISATIONAL FACTORS 69
6.2.3 KEY FINDINGS ON ENVIRONMENTAL FACTORS 69
6.3 RECOMMENDATIONS 70
6.3.1 IMPLICATIONS FOR PRACTICE 70
I. TARGETED MARKETING STRATEGIES 70
II. SME VALUE-CHAIN APPRECIATION 71
III. GOVERNMENT SUPPORT 71
6.4 SUGGESTIONS FOR FURTHER RESEARCH 72
6.5 CHAPTER SUMMARY 73

REFERENCES……..74

APPENDIX A: Interview Guide 82

APPENDIX B- Participant Consent Form 85

APPENDIX C- Clearance.....87

LIST OF FIGURES

FIGURE 1: SOUTH AFRICA AFRICA'S FINTECH LANDSCAPE (GENESIS ANALYTICS, 2019 13
FIGURE 2: TOE FRAMEWORK (TORNATZKY & FLEISCHER, 1990) 27
FIGURE 3: POS ADOPTION ANALYTICAL FRAMEWORK 28

LIST OF TABLES

TABLE 1: SME CATEGORIES IN SOUTH AFRICA (BASA, 2018)..... 20

LIST OF ACRONYMS

CVP:	Customer Value Proposition
DOI:	Diffusion of Innovation Theory
DSBD:	Department of Small Business Development
EFT:	Electronic Fund Transfers
GDP:	Gross Domestic Profit
GUI:	Graphical User Interface
ICT:	Information Communication Technology
IT:	Information Technology
MPS:	Mobile Payment System
mPOS:	Mobile Point-of-Sales
NFC:	Near Field Communication
OECD:	Organisation for Economic Cooperation and Development
POS:	Point-of-Sales
PASA:	Payments Association of South Africa
PCI SSC:	Payment Card Industry Security Standards Council
PEOU:	Perceived Ease of Use
POS:	Point-of-Sale
SARS:	The South African Revenue Service
SME:	Small and Medium-sized Enterprises

TAM:	Technology Acceptance Model
TOE:	Technology Organisation Environmental
UTAUT:	United Theory of Acceptance and Use of technology
UX:	User Experience

CHAPTER 1. INTRODUCTION

1.1. Statement of purpose

The purpose of this qualitative study is to explore the factors that influence the adoption of fintech by small and medium enterprises (SMEs) in South Africa. As fintech is broad in its discipline and application, this study focuses on the inhibiting and motivating factors that influence the adoption of point-of-sale (POS) systems.

1.2. Background to the study

1.2.1. Overview of SMEs

SMEs are essential to the operations of most economies, notably those of developing nations. Most SMEs play a crucial role in employment generation and global economic development (Najib et al., 2012). SMEs account for over 95% of all registered businesses and over 50% of all jobs globally. 80–90% of global SMEs are in developing countries, contributing 40% of the total GDP (Chimucheka, 2013; Ayandibu & Houghton, 2017; Alibhai et al., 2018).

According to the Organisation for Economic Cooperation and Development (OECD), approximately 37% of South Africa's 2.6 million SMEs are formal. 54% are classified as micro businesses and 15% are restricted to rural areas. Owners may be enterprising individuals or those with no other means of support who are forced to start a business. About two-thirds of the owners of SMEs are sole proprietors. The remaining third generates one to ten employment opportunities. SMEs account for approximately 34% of South Africa’s GDP and 60% of employment (McKinsey, 2020; SEDA, 2020).

Despite their significant contribution, SMEs in developing countries face several challenges, including a lack of financing, market access, and low technological and information communication technology (ICT) penetration. According to

Kwabena et al. (2021), SMEs in developing countries must use digital platforms for their operations to exist, grow, and compete in the global and local digital economies.

1.2.2. Fintech landscape

Fintech is transforming and revolutionising the financial sector and is widely acknowledged as a fundamental enabler in expanding access to banking services for Africa's unbanked and underserved SMEs (Westvig, 2021). Fintechs facilitate strategic disintermediation and democratise access to financial services (Soloviev, 2018). Improved market access, real-time customer transactions, lower costs for consumers, and hyper-personalisation can be achieved by better understanding customer needs and behaviour using this technology.

While fintech has been the topic of much scholarly discussion, there are currently varying meanings of the term among professionals. Ratecka (2020) perceives these variations as a result of fintech's current state and the absence of well-defined constraints on its operation scope. Arner et al. (2015) define "fintech" as any technological advancement in the financial services industry. According to Kim et al. (2016), fintech is a service firm that uses digital technology to improve the efficiency of the global financial system. According to Peek (2020), fintech encompasses online banking, mobile payment applications and distributed ledgers.

According to a KPMG report (2019), China is leading fintech start-ups, while India is seeing new developments and growth. Payment and transaction companies play a vital role and are fast rising among the top twenty-seven fintech firms globally. There are 217 fully operational fintech companies in South Africa. Sixty-eight of these fintech companies are in the financial sector, which is the largest and most established (Genesis Analytics, 2021).

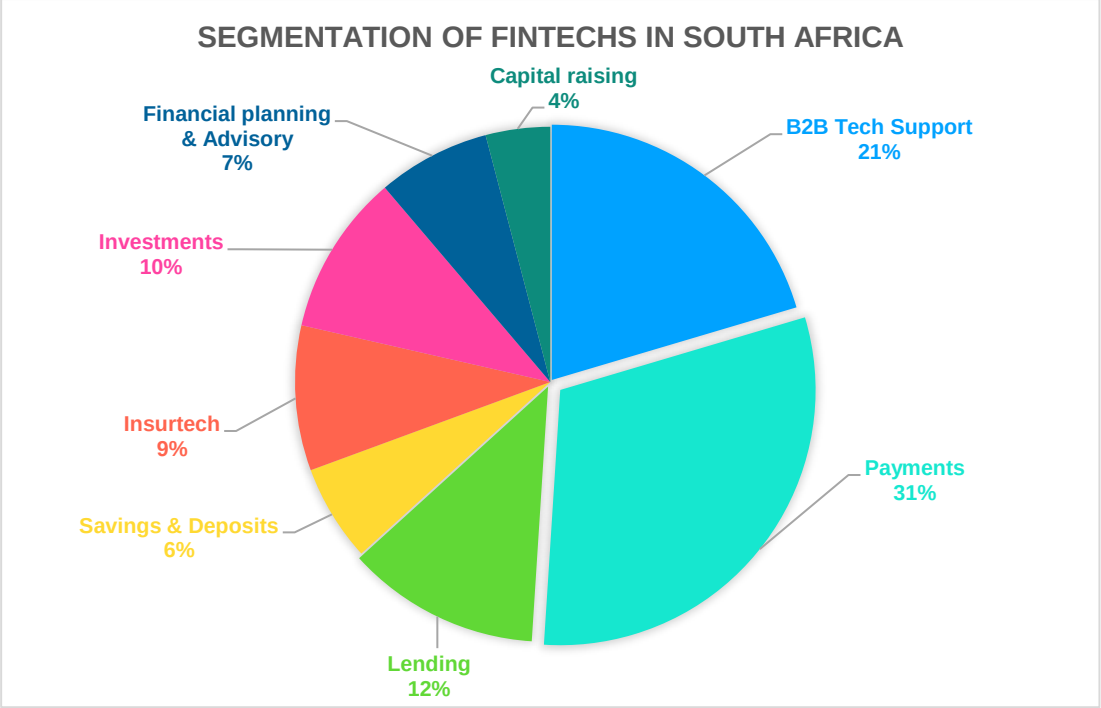


Figure 1: South Africa Africa's fintech landscape (Genesis Analytics, 2019)

The significant increase in investment in recent years demonstrates fintech's considerable growth and opportunities for small businesses and the economy. According to the Fintech Scoping Report (2021), $210 billion was invested in fintech enterprises in 2021, with $2 billion explicitly earmarked for African fintech start-ups.

Fintech aids SMEs in creating, developing, and prospering by providing business concepts and technologies that allow them to participate in the digital economy. For example, peer-to-peer (P2P) lending, Insuretech, and payments business models enable entrepreneurs to establish a digital footprint and have access to financial services that were previously unavailable due to traditional banks' capital constraints (Lee & Shin, 2019).

1.2.3. Payments Landscape

The global payments landscape is rapidly changing. New technologies are being used in the payments environment, traditionally the unique domain of banks and financial institutions, to supply services that increase consumer value and create a superior customer experience. As a result, in the new payment ecosystem, fintech businesses are expanding the distribution network, adding value, and improving the user experience (Deloitte, 2019). One example of a fintech service expansion for SMEs is the availability of merchant POS systems.

According to Coffie et al. (2020), notwithstanding the accessibility of POS systems to SMEs, the introduction of cloud-based payment systems (e-payments) has influenced the payments environment in Sub-Saharan Africa. POS systems are widely accessible and offer SMEs easy and cost-effective payment processing options. Furthermore, using POS systems allows SMEs to expand their business potential, reduce information technology (IT) infrastructure expenses, and improve customer service (Mallat & Tuunainen, 2008; Dahlberg et al., 2015; Liu et al., 2015; Akerejola et al., 2019).

Among the fintech-enabled cloud-based payment and POS systems accessible to African SMEs are Vodafone's M-Pesa in Kenya, Vodapay, Entersekt, Jumo, Yoco, and iKhokha in South Africa. The number of transactions made outside the regular banking environment is expanding due to the ease POS systems provide (Kwabena et al., 2021). Despite the growing use of POS systems and government initiatives to encourage cashless economies, SMEs in developing nations such as Ghana, Nigeria, and South Africa remain reliant on cash due to the nature of their businesses (Olasojumi et al., 2018; Akerejola et al., 2019; Kwabena, 2021).

Cash is the predominant method of payment for 97% of South African SMEs, according to a Genesis Analytics (2001) report. However, South African SMEs have been hesitant to implement POS systems compared to developed countries (Nyawo, 2017; Pidugu, 2015). Although the conventional card acceptance approach may be more convenient, the Payments Association of South Africa

(PASA) reports that several small businesses in the country prefer to be paid in cash due to a lack of reliable digital acceptance options.

1.3. Problem statement

While there is a strong emphasis on the SME sector for job creation, economic development, poverty alleviation, and economic growth, there is also a considerable disagreement over the supply side's lack of assistance to enable them to grow. According to Chimucheka (2013), the key challenges that SMEs face include, but are not limited to, a lack of capital, managerial skills, technology and ICT penetration, and limited market access.

South Africa has a higher adoption rate of financial technology than the rest of Africa (Evans & Oni, 2022). According to Genesis Analytics' (2021) survey of South African SMEs, more than 58% have implemented digital technologies into their everyday business procedures. In 2018, Statista found that South Africa had 403,000 POS terminals in operation, significantly higher than any other African country surveyed. It was predicted that by 2022, the mobile POS payments sector would be worth $4 billion. Despite the industry's expected exponential expansion this decade and the emerging fintech payments environment, SMEs have been slow to adopt POS systems (Pidugu, 2015; Nyawo, 2015; Nkosana & Skinner, 2016).

Prior research on POS systems primarily analysed adoption from the end user's standpoint (the consumer), ignoring the merchants' perspective (Dahlberg et al., 2015; Nyawo, 2015). Researchers have paid little attention to the factors influencing POS system adoption by SMEs in South Africa, where cash reigns supreme and makes up over 80% of SME transactions (PASA, 2021). This research attempts to fill this knowledge gap by analysing the factors that influence the acceptability of POS systems among SMEs in South Africa.

1.4. Research question

The primary research question is: What are the factors that influence SME owner-managers to adopt POS systems?

1.5. Research objectives

The objective of this study is to explore the factors that motivate or inhibit SMEs in South Africa to adopt POS technology. To effectively address the research question, this study's overall objectives are as follows:

i. To determine the inhibiting and motivating technological factors that may influence SME adoption of POS systems.
ii. To determine the inhibiting and motivating organisational factors that influence SMEs to adopt POS systems.
iii. To determine the inhibiting and motivating environmental factors that influence SMEs to adopt POS systems.

1.6. Rationale of the study

Through the widespread usage of payment systems, SMEs may participate in the digital economy and gain simpler access to financial services (Rasheed & Siddiqui, 2009). Through the adoption of POS systems, SMEs may often improve customer experience, data collection, and financial performance. In South Africa, however, the penetration of POS systems among SMEs remains modest, and the elements that impact this are little known.

This study aims to add to the existing body of knowledge on the variables influencing the level POS system adoption by gaining a deeper understanding of the technological, organisational, and environmental factors that influence the adoption of POS systems by SMEs in South Africa. Therefore, the researcher thinks that the obtained data will be valuable to fintech companies who supply

POS systems in their attempts to increase the likelihood that SMEs would adopt and use such systems.

1.7. Delimitations of the study

The purpose of this study was to gain insight into South African merchants' perspectives of the factors influencing SMEs' adoption of POS systems. To ensure relevance and applicability in the South African context, the study specifically targeted SMEs in the Gauteng province. With Gauteng accounting for 46% of all recognised South African SMEs, this delimitation allowed for a focused investigation of a significant portion of the SME community. By narrowing the scope to Gauteng, the study aimed to highlight the particular dynamics and difficulties confronting SMEs in this economically crucial region, providing focussed and contextualised findings.

However, it is critical to note that the Gauteng province delimitation imposes limits. The findings may not be completely applicable to SMEs outside of the province or to countries with differing economic and social conditions. Nonetheless, by focusing on South African merchants in the Gauteng province, this study aimed to provide substantial insights into POS system adoption in the local SME sector.

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1.8. Assumptions

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This study used assumptions to handle information disclosure and confidentiality challenges, particularly with relation to SMEs asked for participation. It recognised that SMEs may be cautious to divulge sensitive information for privacy and competitive concerns. To address these issues, the study regarded

anonymity as a critical approach for increasing participation and protecting participant data. By ensuring anonymity, the aim was to foster confidence, stimulate openness, and alleviate concerns, ultimately achieving a balance between data gathering and participant privacy. Anonymity was critical for sustaining research ethics, respecting participant rights, and ensuring the integrity and trustworthiness of the study's findings.

1.9. The study postulated that the confidentiality constraints that SMEs experience could limit their desire to provide certain information. As a result, maintaining anonymity was critical in order to preserve data, establish confidence, and achieve the research goals. Partcipant privacy rights were prioritised in order to foster honest involvement and improve the research's quality and credibility. Anonymity played a significant role in promoting open and frank responses, thereby improving the study's findings and recommendations by securing participant data, adhering to ethical norms, and emphasising research integrity. Overall, the study recognised the difficulties of information disclosure and confidentiality and used anonymity as a safeguard to encourage participant engagement and respect research standards.Chapter outline

The chapters for this study are as follows:

Chapter One: Introduction

The first chapter detailed this study's background, problem statement, and particular research aims and objectives. The rationale, limits, and assumptions of this study were also explained.

Chapter Two: Literature review and theoretical framework

The second chapter reviews the relevant literature for this study. The literature review provides an overview of the POS system and the factors that influence POS system adoption.

Chapter Three: Research paradigm and approach

The third chapter provides a summary of the research methodologies utilised to address the research questions and fulfil this study's objectives.

Chapter Four: Presentation of findings

The fourth chapter presents the findings from semi-structured interviews.

Chapter Five: Discussion of the findings

The findings are discussed and aligned with the literature gathered in Chapter Two. The chapter analyses this study's findings concerning the propositions it intended to examine.

Chapter Six: Conclusion and recommendations

Chapter six concludes this study and presents the recommendations according to the findings.

1.10. Chapter summary

This section provides a summary of the research. In this chapter, the context and purpose of the research are outlined. The research topic and aim are stated and led by the study of relevant literature. In this chapter, the study's justification and limitations are described. The following chapter discusses the literature pertinent to this study's topic.

CHAPTER 2. LITERATURE REVIEW AND THEORETICAL FRAMEWORK

2.1 Introduction

This chapter examines the literature pertinent to this study. The assessment offers a summary of the POS system and the elements that impact its adoption. This chapter also outlines how other studies have used technology user adoption model structures to investigate variables that impact the adoption of POS systems. This chapter examines the evolution of POS systems, the theoretical basis and research model, and the analytical framework for this study.

2.2 Overview SMEs

Businesses with one or more owners, including cooperatives and NGOs, are considered SMEs under South Africa's National Small Commercial Amendment Act (26 of 2003). This definition covers all organisational levels, from parent to subsidiary. To meet the criteria of the Act, SMEs might be classified qualitatively or quantitatively. See Table 1 below for a logical breakdown of small and medium enterprises in the South African setting.

Category	Annual Turnover	Number of Employees
Micro enterprises	Between R500k and R2,5 million per annum	1 to 10 employees
Small enterprises	Between R2,5 million and R10 million per annum	11 to 50 employees
Medium enterprises	Between R10 million and R20 million per annum	51 to 250 employees

Table 1: SME categories in South Africa (BASA, 2018)

This study will focus on the SME portion of those listed above. Cuhna et al. (2020) refer to these SMEs as "the missing middle," suggesting that they have the potential to become active participants in the digital economy but are being disregarded by the financial services sector.

2.3 Issues and challenges of SMEs in SA

SMEs in developing countries confront a variety of challenges, including limited access to capital and credit, inadequate infrastructure and service offering, and a lack of managerial skill (Fleur et al., 2018). According to a DTI (2008) survey, this is rather typical in the South African SME setting as it found that SMEs in South Africa have a high probability of early failure. Most SMEs fail because their founders try to operate with insufficient funding and profits.

According to McKinsey's (2020) research SMEs in South Africa struggle to obtain the finance they require for expansion because they lack access to the financial tools that could help them and frequently struggle to meet the standard risk criteria, such as verification of tax status and financial statements. In addition, according to studies cited by Pidugu (2015), small firms are more inclined to adopt payments fintech when they trust the regulatory framework. However, Ayandibu & Houghton (2017) argue that the stringent regulatory environment, lack of government backing, and unfavourable economic conditions make it difficult for South African SMEs to acquire access to the complete range of financial services.

Financial management is crucial to the success of any small business. According to Ayandibu et al. (2019), many South African small business owners lack the knowledge to manage their finances effectively. Since they lack the requisite capital, most SME owners believe they are unable to adopt fintech solutions to improve their financial management. Kalan (2016) mentions that several South African SMEs are hesitant to implement fintech for fear of losing client trust and paying additional costs. Leboea (2017) points out that South African SMEs need help gaining access to appropriate technology and obtaining expertise on relevant and available techniques. According to this study, budgetary constraints, and a lack of know-how in implementing technology are inhibiting South African SMEs from being innovative with their digital offerings. When it comes to access to, and adoption of technology, Nkosana and Skinner (2016) contend that SMEs

in rural South Africa are the most negatively impacted by a lack of supporting infrastructure, such as fixed telephone lines for broadband internet access.

According to the literature, despite efforts by most African governments to transition to paperless economies, African businesses rely heavily on cash (Chishti & Barberis, 2016; Adeoti, 2013). Despite the ease of accepting credit cards online, many businesses prefer to be paid in cash because of the inherent risk of dealing with an inconsistent digital connection (Najib & Fahma, 2020). Furthermore, due to the high transaction costs, SMEs are encouraged to employ cash transactions, making adopting, and using electronic payment systems a voluntary activity (Rahman, 2022). SMEs in South Africa prefer cash for its convenience and security. There are fewer effective payment collection methods accessible to SMEs in rural and underdeveloped areas of the economy, where they often have low monthly turnover and even lower earnings (PASA, 2021).

2.4 Evolution of POS

James Ritty built a prototype cash register in 1879 to prevent employees from manipulating the company's receipts. The device quickly evolved into a financial transaction tool that issued permits and generated sales reports (Akerejola et al., 2019; Abiola, 2022). In the 1970s and 1980s, technological advancements like bar codes, the integration of traditional cash registers with computers, and the advent of graphical user interfaces (GUIs) helped propel POS technology into the mainstream. Cloud computing enabled the establishment of POS systems for web-based software applications in the 2000s (Tikapichart, 2018). Tablets and smartphones are among the hardware alternatives for the cloud-enabled POS system that allow retailers to deploy mobile payment systems (MPS) without needing to be fixed, on-site POS systems (Prihatiningtias & Wardhani, 2021).

The AFI report (2018) notes that fintechs such as Alipay and WeChat Pay, which have digitised traditional payment systems in China, are case studies of how SMEs can become financially integrated through the provision of payment systems. According to the Genesis Analysis report, fintech has provided SMEs in

South Africa with greater access to payment systems, the largest segment with 68 active fintechs.

POS systems allow businesses to accept card payments, generate sales reports, enable loyalty programmes, and improve efficiency (Prihatiningtias & Wardhani, 2021b). A card reader that can sync with an iOS or Android device is required to achieve this objective. In addition, a business can use a POS as a business intelligence portal as it allows a business to gain access to real-time sales data and analytics (SME South Africa, 2021).

Despite POS systems being recognised and used globally to transact and have been proven to improve the efficiency of SME operations, SMEs' lack of adoption of POS systems is primarily driven by the lack of awareness of the use and benefits of POS (Olasojumi et al., 2018). The SME segment is unfamiliar with the POS system, resulting in most retailers using traditional transactional methods such as cash (Tikapichart, 2018). South Africa is regarded as a global leader in the POS market (PASA, 2020). However, the use of MPS is not popular among most small merchants in the country as they lack both an understanding of the benefits of adopting financial technology solutions and the proper infrastructure to facilitate their successful adoption (Pidugu, 2015; Nkosana & Skinner, 2016; Slazus & Bick, 2022).

Given the increasing innovation in payments, POS is defined in this study as a device that enables card-payment transactions on and off the merchant's business premises.

2.4.1 *POS adoption benefits for SMEs*

In today's highly competitive, globalised, and technologically advanced business world, companies need to adapt quickly. To remain competitive, businesses must stay abreast of technological advancements, devise new business models, and ward off threats from the competition (Wu et al., 2015; Najib & Fahma, 2020b).

The gateway to financial inclusion for SMEs is the use of payment platforms or services, as this leads to SMEs creating a digital profile for financial services, which enables further access to other financial services products such as loans and insurance (Rasheed et al., 2019; Lee & Shin, 2018). The simplicity of the technology may encourage its adoption (Omotayo, 2015). POS technology allows SMEs to perform transactions quickly and easily without affecting their operations. (Lestariningati, 2018). Quick POS transactions motivate more speedy service delivery. This method eliminates the need for businesses to manage large amounts of cash while saving time and money (Adeoti, 2013).

POS adoption enables expanded business opportunities as it contributes to convenience, allowing SMEs to grow their bottom line. In addition, SMEs that adopt POS systems have the advantage of attracting a more significant customer segment due to the enhanced user experience (UX), as advanced technology usage enables SMEs to provide a user-friendly and client-centric service transaction (Rasheed et al., 2019). The perceived improved UX, the ability to provide efficient service, and the convenience afforded to consumers motivate the adoption of POS, as merchants view this as having a competitive advantage (Showati, 2019).

Merchant POS systems benefit SMEs by improving their access to financial services and operational effectiveness. SMEs that adopt POS systems can attract technologically savvy consumers and have a lower propensity to perform cash-based transactions (Rasheed et al., 2019). Engaging customers using POS systems results in improved financial management, higher productivity, and a greater reach of services for SMEs.

The perceived ease of use (PEOU) captures users' expectations about how little time and effort will be required to use a system (Davis, 1989). From a POS perspective, this may refer to the merchant’s sentiment on the speed with which they can execute a client's transaction and the merchant's ability to navigate the system. The simplicity of the technology may encourage its adoption (Omotayo, 2015). POS technology allows SMEs to perform transactions quickly and easily

without affecting their operations. (Lestariningati, 2018). Quick POS transactions motivate more speedy service delivery. This method eliminates the need for businesses to manage large amounts of cash while saving time and money (Adeoti, 2013).

Establishing a distinct and appealing customer value proposition (CVP) has become more crucial than before, given the intense competition that SMEs confront in today's globalised marketplaces. SMEs' perceived price, relative advantage, and perceived benefits positively influence the adoption of MPS (Skafi et al., 2020; Kwabena et al., 2021). To drive widescale adoption, Tikapichart (2018) posits that for SMEs to see the value of POS technology, POS systems should be designed to fit the purpose of the SME business model. The adoption rate of technology is shown to be highly influenced by several factors, including the perceived value or competitive advantage of the technology, as well as the affordability of the technology (Nyawo, 2017).

2.5 Theoretical background and research model

Dillon and Morris (2001) describe technology adoption as the manner in which users accept and adapt to new technologies to fulfil their own needs. Researchers have hypothesised a link between the components of technology adoption models such as the Technology Acceptance Model (TAM), the United Theory of Acceptance and Use of Technology (UTAUT), and its extension UTAUT2, and consumer behaviour toward POS systems.

Fred Davis proposed the TAM model in 1989, and it postulates that a system's adoption may be understood in terms of the user's motivation, which in turn is affected by the system's features and capabilities. Additionally, the model supposes that PEOU, perceived utility, and the user's attitude toward utilising the system may all account for the phenomenon of user motivation. The TAM has provided a valuable perspective to researchers studying digital adoption (Hanafizadeh, Keating & Khedmatgozar, 2014). However, the TAM has been criticised for its inherent assumption that once customers intend to adopt, they

are free to do so without restraint. Hanafizadeh et al. (2014) argue that, in practice, constraints limit users' freedom to act as they see fit.

In response to criticism that previous theories of technology acceptance were fragmented, Venkatesh et al. (2003) developed the UTAUT. The UTAUT characterises technology purpose and usage behaviour based on four components: performance expectancy, effort expectancy, social influence, and facilitative variables. Contrary to the UTAUT claim, Venkatesh et al. (2003) found that favourable conditions cannot mitigate the influence of external influences.

Employing technology acceptance models, researchers have investigated consumer behaviour regarding POS systems to identify which factors impact their adoption. Rarely does literature examine the company owner's perspective. The emphasis on the individual user, according to Bryan and Zuva (2021), causes TAM and UTAUT research to overlook the organisational adoption of technology. According to Wong et al. (2020) ,organisational and environmental factors that may influence technology adoption are not considered.

The technology, organisation, and environment (TOE) paradigm was established by Tornatzky and Fleischer (1990) to explain why and how firms embrace and use new technologies. The TOE framework argues that the technical, organisational, and environmental contexts of an organisation influence technology adoption choices and explores how context influences the adoption and implementation of technological advances. The TOE, according to Bryan and Zuva (2021), reveals how an organisation impacts the acceptance and deployment of new technology. In addition, according to Baker (2011), the TOE permits successful research on organisational technology adoption (Figure 2).

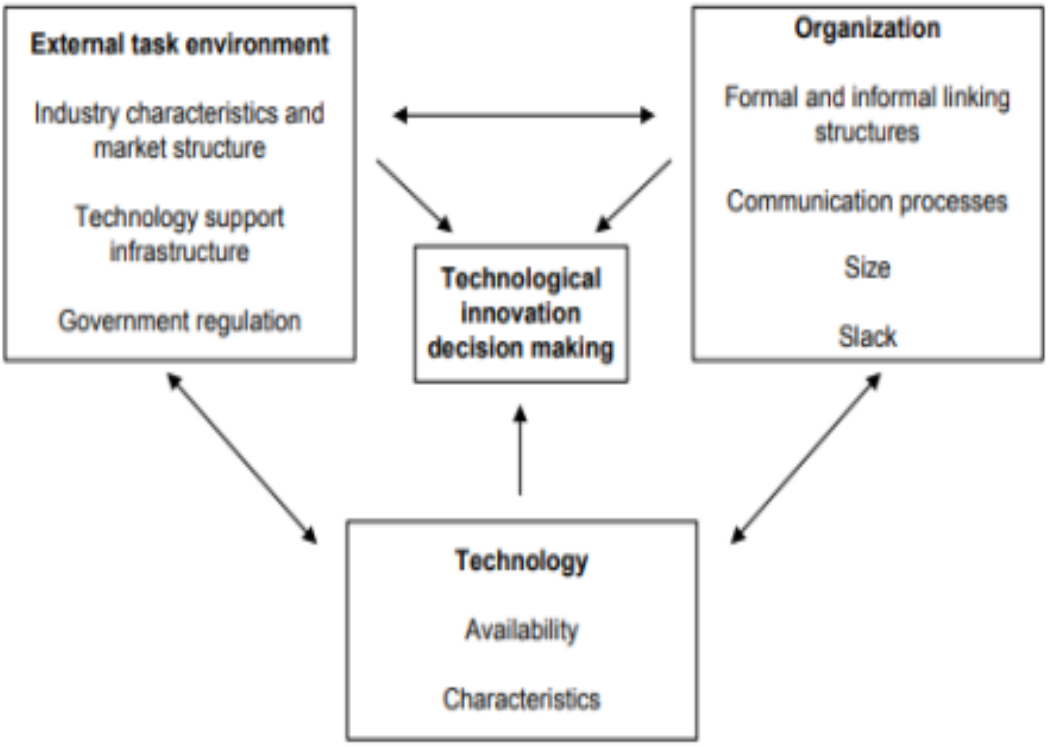


Figure 2: TOE Framework (Tornatzky & Fleischer, 1990)

The TOE framework is theoretically and practically sound and has been used in several scenarios (Baker, 2011; Abed, 2020). Seethamraju and Tod (2018) credit this to the framework's versatility, which permits the incorporation of technical and social aspects. Arnold et al. (2018) endorse this viewpoint and hypothesise that the framework allows for the incorporation of constructs from other theories of technological adoption, including TAM and Diffusion Innovation Theory (DOI).

Therefore, the TOE framework was judged the most suitable for examining the variables that impact merchant adoption in this study. The objective of this research is to give fresh insight on the variables that impact the adoption of POS by SMEs by examining the technical, organisational, and environmental settings of SMEs.

2.6 POS Adoption Analytical Framework

Considering the literature review and the TOE framework, a conceptual model for POS adoption was constructed. The TOE framework was used to examine the factors influencing POS system adoption by South African SMEs.. Figure 3 depicts the three facets of the conceptual model constructed, detailing the technological, organisational, and environmental factors that influence the adoption of POS by SMEs.

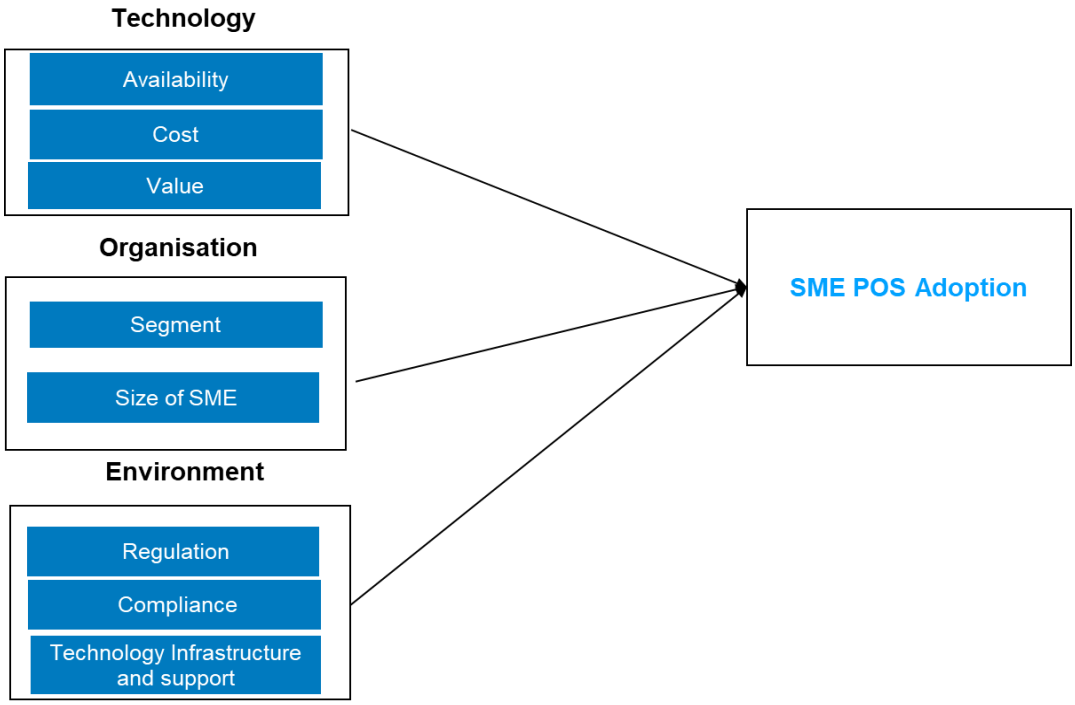


Figure 3: POS Adoption Analytical Framework

2.6.1 *Technological factors*

i. Availability

Within the context of TOE, technical development provides an organisation with an overview of the technologies at its disposal (Bryan & Zuva, 2021). The technical context includes the technologies already employed by the business and those not yet employed but commercially accessible (Baker, 2011). The

technological foundation of a business is based not only on well-established practices but also on up-and-coming technology that is readily available to businesses. In addition, businesses can discover potential new technology to include in their expansion plans if they evaluate unused resources (Kwabena et al., 2021).

ii. Cost

The perceived high costs of technology and the lack of finance to appropriate the technology are contributory factors to SMEs' reluctance to adopt ICTs (Chimucheka, 2013). The price of the technology is often cited as a barrier to entry for SMEs. Unless there is a proportionate advantage, SMEs are hesitant to invest in digital equipment for payments (Seethamraju & Diantha, 2018). The perceived cost of implementing POS systems, such as the upfront costs associated with acquiring new hardware and software, merchant service fees, and equipment leasing prices, is ascribed to the low adoption of POS systems by SMEs (Tikapichart, 2018; Nyawo, 2018). Due to the dynamic nature of the ICT ecosystem, the need for end users to continually re-learn, re-adapt and re-update their technologies is a significant impediment to mainstream adoption (Paramita, 2019). Entrepreneurs are also aware that modern ICTs are prone to obsolescence and costly upgrades (Nkosana & Skinner, 2016).

iii. Value

To encourage a business to invest in technological innovation, the value offer must stand out from the competitors (Ondrus & Lyytinen, 2011). The perceived value proposition describes how the deployment of the new technology or innovation will increase the current product's financial and operational performance while simultaneously fixing a pressing issue confronting the organisation (Au & Kauffman, 2008). Value proposition at the point of sale refers to the product's distinct selling point in terms of the service and perceived value it will bring to merchants. If there were a clear financial incentive for merchants to adopt a new technology, they would be more inclined to do so (Nyawo, 2017).

2.6.2 *The Organisational factors*

i. Size and industry segment

The organisational context investigates how the features of the organisation, such as its scope, size, and internal structures, impact how technology is adopted inside the organisation (El-Haddadeh, 2020; Gentile-Lüdecke et al., 2020). The type and quality of resources used by the organisation, the complexity of the existing management structures, the size of the organisation, and the number of idle resources available to the organisation can be used to characterise the organisational context (Kwabena et al., 2021). An industry segment is a subset of the business sector consisting of companies with common characteristics. Technology adoption by SMEs is influenced by the nature of the sector in which they operate (Brown & Jayakody, 2008). There is an inextricable link between technology's market niche and its value to a business. The market the company serves validates the usefulness and novelty of a technology (Mallat & Tuunainen, 2008). Regarding accepting payments, POS systems are optimised for several industries.

2.6.3 *Environmental factors*

Tornatzky et al. (1990) identify the scale of the industry, the regulatory climate, and the nature of the competition as three environmental determinants. Government assistance and supplier availability are other essential aspects to consider when analysing SMEs' clients' environmental context (Kwabena et al., 2021). When there is both the necessary infrastructure and a permissive regulatory framework for the adoption of new technologies, businesses are effectively pushed to use ICT.

i. Regulation and compliance

In an accommodating regulatory environment, SMEs are more likely to use ICTs. The regulatory environment and the complexity of using traditional banks and

government institutions may hinder adoption. As a result, governments have a vital role to play in adoption (Najib & Fahma, 2020). While POS systems help SMEs with financial management and tax compliance, the adoption of digital technology is impeded by a lack of trust in the regulatory environment and SMEs' reservations about government and banking bureaucracy.

Due to restrictions such as regulatory requirements, licensing requirements, and related costs such as income tax and value-added tax, SMEs may be unwilling to use ICTs (Seethamraju & Diatha, 2010). In addition, SMEs may need help to fulfil the stringent standards of regulatory authorities such as the Payment Card Industry Security Standards Council (PCI SSC), which defines recommendations for the usage of payment technology in South Africa (Nyawo, 2013).

Compliance with labour regulations, taxation, municipal regulation, and a lack of government backing all contribute to low levels of legally registered SMEs, which may be ascribed to the slow adoption of POS systems (Nieuwenhuizen, 2019). Furthermore, because most businesses can only conduct cash transactions, SMEs need an enabling regulatory environment to be more responsive about implementing digital payment systems due to the tax implications (Seethamraju & Diantha, 2018).

ii. Infrastructure and support

The availability of internet infrastructure that enables high-speed transactions significantly affects the adoption of POS systems (Paramita, 2019). Poor infrastructure, network downtime, and power outages in developing countries is the biggest obstacle to effective POS use (Adeoti, 2013; Skafi et al., 2020a). Infrastructure, applications, operations, policies, information security, power distribution systems, processes and personnel, connection and interfaces, and all required hardware are required for a POS system to operate at peak efficiency (Akerejola et al., 2019).

Supporting infrastructure availability has a significant effect on the pace of POS adoption. The most major hurdle to efficient POS utilisation is the frequent

incidence of network failure, power outages, and the unavailability of the POS at some or all merchant locations (Adeoti, 2013). Inadequate physical and digital infrastructure, limited access to digital technologies, and the unreliability of digital technologies further impede their wider adoption (Adeoti, 2013; Seethamraju & Diantha, 2018).

Although South Africa has the highest fintech penetration on the African continent (Santosdiaz, 2021), Akin-Adetoro and Kabanda (2021) argue that SMEs in South Africa lack adequate support to access appropriate technology for their operations. Nkosana and Skinner (2016) posit that purchasing and developing fundamental infrastructure, rather than introducing ICTs, must be the primary priority to enable South African SMEs.

2.7 Propositions

Proposition 1: Motivating and inhibiting factors stemming from a SME's technological, context ultimately influence the decision to adopt a POS system.

Proposition 2: Motivating and inhibiting factors stemming from a SME's organisational context ultimately influence the decision to adopt a POS system.

Proposition 3: Motivating and inhibiting factors stemming from a SME's environmental context ultimately influence the decision to adopt a POS system.

2.8 Chapter summary

POS systems aid in the expansion of digital economy SMEs. According to research, merchants' preference for cash, the perceived high cost of POS systems, a lack of knowledge, inadequate digital literacy, security and trust concerns, and harsh restrictions all impede POS adoption.

The technological, organisational, and environmental context of SMEs has a significant impact on technology adoption. The TOE framework is expanded in

this merchant-focused study. A critical evaluation of the literature encouraged greater research.

This study looks at the technological, organisational, and environmental context through the eyes of merchants to identify POS system adoption motivators and inhibitors in South African SMEs. The following chapter moves into the research methods and design of this study.

CHAPTER 3. RESEARCH METHODOLOGY

3.1 Introduction

This chapter provides an overview of the research procedures used to answer the research questions and achieve the objectives formulated for this study. Chapter three is important because it describes this study's research design and methodology, determining how likely it is to succeed. This chapter discusses the research design, research philosophy, research strategies, population, and selection of the sample. The gathering and analysis of data are also presented. Prior to performing this study, approval was requested from both the participant and the institution to ensure that all ethical considerations were adhered to. The reliability and validity, as well as the limitations of this study, are also discussed in this chapter.

3.1 Research approach

Corbin and Strauss (2008) define qualitative research as the process of collecting and analysing data from study participants using open-ended and adaptive research procedures. Denzin and Lincoln (2000) assert that qualitative research requires an interpretive and realist approach. In this context, the researcher examines things in their natural habitat and attempts to understand or interpret phenomena based on the meanings that individuals attribute to them. According to Creswell and Creswell (2017), qualitative research allows the researcher to collect data in a real-world setting where participants are directly confronted with the problem.

The rationale for using a qualitative approach to answer the research question is that interviewing the participants leads to a better understanding of the elements that influence the adoption or non-adoption of POS systems by SMEs. In addition, it is believed that using a qualitative technique provides extraordinary data richness and insight into the phenomena being studied (Hancock, 2002).

Qualitative research is also appropriate for this study as it allows for a deeper understanding of participants' behaviours, experiences, and perspectives; it also allows for the research to be seen through the eyes of the participants and contributes to empirical knowledge (Corbin & Strauss, 2008).

Furthermore, researchers have already statistically studied SMEs' desire to adopt POS systems and their intention to implement them. However, fewer qualitative studies understand the motivating and inhibiting elements influencing SMEs' decision to adopt POS systems.

3.2 Research design

. Interpretivism has aided academics in their quest to better understand the world around them by giving a framework for interpreting different levels of comprehension (Nguyen & Tran, 2015). The interpretivist approach enables the researcher to comprehend the phenomenon through the eyes of the participants (Merriam, 2000). Consistent with Merriam's (2002) view, Yanow & Schwartz-Shea (2011) posit that interpretivist researchers gain insight into the world by listening to and taking into account the experiences and viewpoints of their study participants. . Nguyen and Tran (2015) assert that an interpretative paradigm researcher will use those experiences to develop and interpret his understanding based on the evidence acquired while seeking to find solutions to research questions. Therefore, the interpretivist method was deemed ideal for this research because it helped to better understand the factors that influence the adoption of POS from the SMEs' perspective. In-depth interviews were conducted for the researcher to better understand the participants' perspectives on the characteristics of the TOE. This technique providednew perspectives on technology adoption that can be integrated into existing technology acceptance frameworks..

3.3 Data collection methods

The most common method to collect qualitative data for a study is through conducting interviews. Through interviews, the researcher and participant may have an in-depth conversation on the examined topic. The purpose of the interview is to extract the respondent's thoughts, feelings, and perspectives about the variables that impact the adoption of POS systems (Bodart & Evrard, 2011). Thus, interviews allow the researcher to dig further into the "what," "who," and "why" (King & Horrocks, 2010).

Interviews are used for the following advantages that it offered:

- Permits the researcher to explain questions when the participant does not fully comprehend the question (Bernard, 2013; Bowie, 2016);
- Enables the probing of sufficient information where the participant is not addressing the research questions thoroughly (Hennink, 2010); and
- To obtain in-depth data (Yin, 2012).

However, even though the use of an interview had many advantages, the researcher found the use of an interview time-consuming, and many times had to reschedule interviews due to unforeseen circumstances of the sample.

A structured interview guide (see Annexure B) is employed because the questions are prepared expressly for this study's research objectives. The structured interview also focuses on enhancing reliability (Hersen, 2016) in that using a structured interview removes the possibility of receiving various responses to the research questions. Kamberelis and Dimitriadis (2013) and Queirós, Faria and Almeida (2017) believe that semi-structured interviews allow the introduction of new constructs that have not been previously explored in the literature. Structured interview questions are tailored to this study's predetermined research objectives and give participants freedom of conversation. Therefore, semi-structured interviews were used in this study. The questions are asked according to the sequence of the interview schedule.

3.4 Population and sample

3.4.1 *Population*

Given that approximately 2,36 million SMEs operate in South Africa (McKinsey, 2020; SEDA, 2020), including all of them in the study's population is both unrealistic and impractical. However, Gauteng is recognised as the key hub for SMEs, as indicated by the Finmark Trust report (2020), and 46% of SMEs operate effectively inside the province. Furthermore, the researcher resides in the Gauteng area. Hence it was convenient to use the Gauteng area as the population for this study. A total of 20 interviews were conducted for this study.

3.4.2 *Sampling and sampling method*

This study deployed the purposeful sampling technique. Purposive sampling was used to identify a sample of participants relevant to this study question (Etikan et al., 2016). This involved South African SMEs in the Gauteng area. This study excludes SMEs that operate in the informal sector. Snowball sampling is also used to select the sample as the researcher needs a readily available database of SMEs in the Gauteng area who are using the POS system. This meant that each sample identified referred the researcher to another sample with the same characterises (Leedy & Ormrod, 2010).

Experts in qualitative research contend that there is no simple answer to the question "how many?" and that the sample size depends on several philosophical, methodological, and practical considerations (Baker & Edwards, 2012). Sandelowski (1995:183) suggests that qualitative sample sizes should be large enough to permit the development of a "new and richly textured knowledge" of the phenomenon under investigation but small enough to permit "depth, case-oriented analysis" of qualitative data. Morse (2000) argues that fewer participants are required when more usable data are acquired from each participant. Guest et al. (2006) concluded that 12 interviews should suffice to reach data saturation in homogeneous research employing purposeful sampling (as was the case of

this study). To ensure data saturation, a sample of 20 is selected. Burnett (2009) suggests that a researcher can begin with a sample of at least 12-15 and then plan to add more to ensure data saturation.

3.5 Research instruments

An interview is selected as the instrument to collect data (see Appendix B). Questions in the interview schedule are aligned with the TOE framework that is used for this study. The interview guide is divided into three sections that address organisational, technological, and environmental factors that influence SMEs' decision to adopt POS systems:

i) Organisational factors
ii) Technological factors
iii) Environmental factors

3.6 Procedure for data collection

Emails to participate in this study were sent to SME incubators that the researcher was aware of. Social media platforms were also used to request participation by SMEs who had business in the Gauteng area. The snowball sampling also helped in that SME owners who were currently using the POS system referred other SMEs who used the POS system. Contact was made to referred SMEs who willingly gave their consent to participate. This process took place until a sample of 18 was reached. Face-to-face interviews took place in a convenient venue and time for the participant. All Covid-19 protocols were adhered to protect the researcher and the participants.

All participants were interviewed only after a consent form (Appendix A) was signed, permitting them to be interviewed. Participants had to also give their permission for the interview to be recorded, and they were assured that the recordings would not be made public but used for the sole purpose of data analysis. All recordings were password protected. Participants were requested to

answer each question to the best of their ability to allow the researcher to gain a better understanding of the factors that influence the adoption of POS systems, hence assisting in the development of recommendations for this study. The interview began with a context-setting statement that informed the participant about the purpose of the research and the intention to use the findings. Additionally, based on their responses, respondents were asked additional probing questions.

3.7 Data analysis strategies and interpretation

The collected data were analysed using Atlas.ti (qualitative data analysis package) to determine themes and sub-themes. Thematic analysis was deployed, making it possible to identify, analyse and report patterns and themes in the data (Braun & Clarke, 2006). The interview recordings were transcribed into written form to allow a thematic analysis of the acquired data. Along with the transcription, an initial list of concepts, thoughts, and themes were created to serve as the basis for creating an initial list of codes from the data.

The codes were developed using the TOE framework, the conceptual framework and any new factors that emerged during the research. The themes were then evaluated to determine which ones remained relevant, should be integrated, and should be split into different themes or sub-themes.

Once the themes were mapped, they were defined by determining the actual essence of the theme. These themes and a deep understanding of them were then incorporated into this study data analysis to analyse the factors that influence SME owner adoption of the POS system.

3.8 Limitations of the study

Due to time constraints in completing this study, it was impossible and impractical to include all SMEs in this study. In addition, the researcher had no readily

available database to select participants. Moreover, the sample size chosen will not be sufficient to reflect the totality of the sectors' biases toward POS adoption.

3.9 Quality Assurance

3.9.1 *Transferability*

The extent to which the results of a qualitative research study apply to various situations and sample sizes is referred to as transferability (Macnee & McCabe, 2008). Transferability is defined by two criteria: an accurate description of the setting and a purposeful selection of research participants (Anney, 2014). This study focuses on SME businesses and uses a purposive sampling technique to identify SMEs that fall into the above categories. The transferability of this study was average as the scenario is not limited to South Africa but can also apply to SMEs and fintech in underdeveloped countries.

3.9.2 *Credibility*

Credibility is a measure of the trustworthiness of research findings (Leedy & Ormrod, 2010). Credibility assesses whether research findings accurately reflect participants' original data and whether their perspectives were interpreted correctly (Lincoln & Guba, 1985). Peer debriefing can be used to determine credibility. The researcher uses this method to solicit comments and support from other researchers or scholars to improve the quality of their research findings (Anney, 2014). Given that a research committee and an appointed academic research supervisor reviewed this study, it should be able to maintain its credibility if these parties use the right leverage.

3.9.3 *Dependability*

Consistency of observations over time defines dependability. Dependability requires that this study's findings, interpretations, and recommendations be supported by the data collected from study participants (Tappen, 2010).

Therefore, reliability is ensured by an accessible audit trail, stepwise replication, and a code-recode technique (Anney, 2014). The stepwise replication and code-recode approach are not used in this study; however, all interview transcripts are retained. Consequently, the transcripts of the participants' actual responses confirm the trustworthiness of this study.

3.9.4 *Confirmability*

Confirmability refers to the reliability of this study's findings or the degree to which others may independently confirm or accept the findings (Leedy & Ormrod, 2010). For this study, the interview questions were derived from the literature reviewed to determine whether the results correspond with other findings.

3.10 Ethical considerations

This study met all ethical research requirements of Wits University. All participants were adequately informed of the purpose and nature of this study so that they understood the nature of their consent. To protect the confidentiality of participants, interviews were only conducted with their consent, and the same applied to the data obtained. Participants were informed that they could withdraw from this study at any time they felt the need. The study participants, respondents, researchers, and the university were protected. Before proceeding with this study, approval was obtained from the Wits University ethics committee, and all findings will be published following all applicable ethical regulations.

3.11 Chapter summary

This chapter explained the research methodology that was adopted to achieve the objectives of this study. The qualitative approach was taken as the researcher wanted to understand the sample’s responses and probe for answers where necessary. The population, sampling strategy, and data collection method and procedure were explained in this chapter. The research instrument, limitations,

and ethical considerations were also presented. The collected data is thematically analysed and presented in the next chapter.

CHAPTER 4. PRESENTATION OF THE FINDINGS

4.1 Introduction

The purpose of this study was to explore the factors that influence SMEs' decisions to implement POS systems in South Africa. The research examined these elements from the point of view of merchants to better understand the driving and restraining forces that may originate in the technological, organisational, and environmental setting of SMEs. The research employed the TOE framework to determine whether SMEs' technological, organisational, and environmental settings influence adoption.

The findings from the semi-structured interviews with SME owners and managers are presented in this chapter. The findings are presented in an order that follows the proposition made in Chapter 2. This study proposed that the decision to adopt a POS system is influenced by:

I. Motivating and inhibiting factors stemming from a SME's technological, context in which a SME operates.

II. Motivating and inhibiting factors stemming from a SME's organisational context in which a SME operates.

III. Motivating and inhibiting factors stemming from a SME's environmental context in which a SME operates.

.

To ensure a logical and coherent presentation of the results, this chapter provides an overview of the SMEs that participated in this study, a view of the POS landscape, then moves to findings based on the primary themes. A presentation of the findings provides insights into what the motivating factors are from the technological, organisational, and environmental perspectives and then moves to the inhibiting factors, respectively.

4.2 Sample classification

Twenty in-person interviews were conducted at various SME businesses. The type of industrial sector in which the SMEs operated, the number of outlets they had, the number of people they employed, and their annual contributed to the outcomes of the study. SMEs that operate primarily or exclusively in the marketplace, such as entertainment services, as well as SMEs that operate from a fixed location and the marketplace, such as clothing resellers who also offer custom clothing designs and personal shopping, were presented.The demographics of the SMEs were further broken down to have a better understanding of their breadth. Four food and beverage specialists, two entertainment specialists, two retail specialists, four personal service specialists, two tourism specialists, two beauty and health specialists, and four hospitality specialists were interviewed.

Using the South Africa SME gazette referenced in Chapter 1's SME overview as a guideline, 16 of the 20 respondents interviewed were categorised as small enterprises and 4 as medium firms based on their yearly sales and employee count.

The participants were asked whether they use a POS system in their day-to-day activities. The data analysis revealed that fifteen (15) of the SMEs interviewed employed a POS device in their daily operations. Three (3) of those interviewed no longer used their POS device, and two (2) did not have a POS device. To determine industry-specific adoption rates, participants were asked how long their business had been in operation and how long they had employed a POS system. Fifteen of the SMEs were considered early adopters as they acquired a POS system upon operating, two SMEs were considered late adopters because they did not have a POS system, however, were contemplating doing so. The data revealed that most enterprises adopt POS systems in the second year of being in operation. The research also found that 65% of the SMEs interviewed acquired their POS system from a fintech business, while 25% purchased it

through a bank, providing insight into the situation from both traditional banks and fintech companies' perspectives.

4.3 Factors influencing the adoption of POS systems

The deductive approach used in developing themes for this research paper was critical in establishing a sound basis for the study. The researcher was able to build on existing constructs and theories within the TOE framework by using a deductive research approach. Commencing with known theories and notions, this approach entailed developing logical deductions and conclusions based on them. Several variables influenced the decision to conduct deductive research. Firstly, the TOE framework already provides a comprehensive and well-established theoretical foundation for understanding technology adoption by SMEs. By adhering to this framework, this guaranteed that the study was founded on well-known ideas and concepts, improving its legitimacy and usefulness. Secondly, a deductive technique is especially appropriate when the goal of the research is to test or validate existing theories. The aim of the study in this case was to investigate the applicability of TOE framework in the context of POS adoption by SMEs. The constructs within the framework were methodically evaluated and their relevance and significance assessed and in describing the phenomenon under research.

Based on the elements in the TOE framework, specific themes were developed, allowing for a focused and targeted examination. This method also made it easier to create predetermined codes and propositions, which aided in the data collection and processing.

4.3.1 *The findings that follow depict the motivating factors as per the constructs of the TOE framework (technology,*

organisational and environmental factors). Motivating and inhibiting Technological factors

4.3.1.1. Technology availability

The technological foundation of a business is based not only on well-established practices but also on up-and-coming technology that is readily available to businesses. Therefore, to ascertain what influences the SMEs to adopt POS technology, they were asked what informed their selection of a POS system for their business. Some specific responses were as follows:

> *P7: "When I registered my business, my bank recommended a POS device to enable easier transacting."*
>
> *P1: "We were approached by POS system providers, and it was then that we decided to adopt the system for our business."*
>
> *P17: "We conducted a lot of research on payment methods for our business, we decided on POS due to its widespread availability and ease of use."*

The findings indicate the existence of a competitive POS system market accessible to SMEs. However, the results also show that most POS system suppliers (fintech and banks alike) communicate with their target markets via direct marketing, whereas just a minority of SMEs perform their own research into the POS system market.

Furthermore, when asked what informed their decision not to adopt a POS for their business, the merchants advised that the South African financial service providers offer a variety of digital payment options, including direct electronic fund transfers (EFTs) and Geo Payments, which allow customers to send and receive money in real-time by using geo-location; this is when the sender and the receiver are close to each other, and these alternatives enable rapid release and access to merchants' cash. The specific responses were:

P10: "I am comfortable with receiving EFT payments. Most people I deal with in the streets pay via EFT."

P18:" As a personal shopper my clients prefer sending money directly to my bank account."

P7:" I did not necessarily see the use of a POS system as there are other forms of payments such as EFT and Geo Payments that I use for my business."

4.3.1.2. Technology value

This study proposed that the technology value proposition influences the adoption of POS systems. The value propositions given by POS may vary, with perceived value varying between merchants. This is evident in the responses when the merchants were asked how they believed a POS complements their business. Five major factors were identified as undervalued factors: convenience, safety, business growth, professionalism, and financial management. The findings are presented below.

i. Convenience

Participants who have implemented a POS system for their business cite the resultant convenience as a significant motivating factor. Most respondents noted that their overall retail experience had improved because of the convenience and swiftness of using a POS terminal. Participants reported that the use of a POS system allowed them to process transactions more quickly, which improved the overall customer experience during times of high foot traffic. The specific responses were:

P1: "It provides convenience for our business model. My customers can pay directly, eliminating payment delays on the monthly school fees."

P3: "When we do not have a card payment point, customers usually abandon their purchases and go elsewhere. Once people know there is a convenient way to pay, they are usually driven to make a purchase at that point in time."

P8: "As we are in our growth phase, we realised our customers prefer card payments as this offers convenience."

Respondents agreed that a POS device's reduced payment processing time was a significant advantage over alternative payment options. In addition, the participants acknowledged a clear association between the adoption of POS systems and the aforementioned criteria of convenience, security, business growth, professionalism, and financial management.

ii. Safety

The findings indicate that the POS is beneficial to businesses since it allows merchants to serve their customers better and take card payments instead of cash. Most respondents also noted that reducing the inherent risks of cash transactions was a major driver in their decision to adopt POS technology. The specific responses were:

P5: "Our customer base views cash as inconvenient. People avoid carrying cash for various reasons. The tap-to-pay functionality assists in transacting, and from a business perspective, carrying cash is risky."

P10: "It is safe, and it is better than having cash. Using a machine is safer than anything."

P17: "There is a safety element, people do not carry hard cash as they prefer card systems."

iii. Business growth

In relation to how the POS complemented their business, the merchants were further asked if the use of a POS system assisted them in attracting and retaining customers. Several SMEs have observed that implementing a POS system has resulted in an increase in the number of new consumers who have become aware of their services, as well as an increase in the number of customers who continue to use their services. The specific responses were:

> *P14: "The POS has helped me attract new customers and be able to conduct transactions with customers from other countries who are visiting South Africa. I can transact with clients who use American Express (Amex) and cross-currency."*
>
> *P16: "Certainly, because, from a word-of-mouth perspective, it has probably helped me with referrals as people share that there is no need to worry about me as a supplier when I deliver your order because I'll bring a POS machine. I think that helps a great deal."*
>
> *P13: "I have been able to secure immediate sales in places like the market where customers would be browsing but not have planned to purchase an item. When they see that I have a POS machine, I find they are keen to transact."*
>
> *P18: "I found that if you do not have the machine, you stand to lose sales as customers prefer card payments."*
>
> *P3: "When you do not have a POS machine, customers usually abandon their purchase and go elsewhere. Once people know that there is a convenient way to pay, they are driven to purchase at that point in time."*

iv. Financial management tool

As discussed in Chapter 2, financial management is associated with most SME failures. According to the findings, several participants believed that a POS

system enhanced their financial management by making it easier to keep accurate records and have a better grasp of their company's revenue and expenses. In addition to assisting with planning and spending tracking, the POS system reduced the owners' propensity to use business funds for personal purposes.

Below are the specific responses:

> *P1: "The POS system helps me with financial management. When I have cash in hand, I tend to use the money for my personal expenses, which impacts my business finances."*
>
> *P8: "The POS system helps me not to keep cash on the premises or in person because I will use it and not be able to account for business income. It works as a financial and business management tool."*
>
> *P18: The POS has made it easier for me to learn new ways to manage my business finances."*

v. Professionalism

Another unanticipated novel factor that participants introduced was professionalism. According to the merchants, a POS system helps their firm succeed since it projects an image of professionalism to customers. Customers are attracted to and retained through what they believe to be an air of professionalism. The specific responses were:

> *P12: "The POS has helped my customers as they view my establishment as a professional business."*
>
> *P13: "The POS exudes professionalism. The perception that customers have of my business is a professional one, which has contributed to my ability to attract and retain them."*

4.3.1.3. Technology cost

This study proposed that cost is an influencing factor in the adoption of POS systems by SMEs. To ascertain how cost played a factor in the SMEs' decision on adoption, the merchants were asked what the costs were of having a POS system solution in their business and whether the associated costs negatively or positively impacted their operational costs. On cost, the specific responses were as follows:

> *P3: "We paid R2000 once-off fee to acquire the device and a set percentage per transaction."*
>
> *P5: "We have spent between R700 and R1200 for each mobile device. We do not pay per transaction."*
>
> *P6: "I have an on-prem and eight mobile devices. R10 000 for on-prem and R700 for each mobile device.*

Merchants who keep a close eye on their bottom line have suggested that the per-transaction cost of the POS system is a source of dissatisfaction because it has a negative effect on their profits. However, the findings also suggest that some business owners saw the expenses as unavoidable because the benefits to their business outweighed the costs. The specific responses were:

> *P8: "Most small businesses are focused on survival; the extra costs can be challenging for them. Some merchants want to keep their money as is and do not want to incur extra costs."*
>
> *P17: "A POS would have a negative impact on my operational costs. It is an additional cost I do not need in my business."*
>
> *P13: "The POS has negatively impacted our operational costs significantly as we pay a set percentage per transaction."*

P18: "It negatively impacted my operational costs as it became costly to use it over time. The charges per transaction were too high for my business.

P14: "I can speak for start-ups in that they do not have the money to afford a POS, so the last thing they want is to absorb more costs in their operations."

vi. Preference for cash

Leading on from the cost factor, the researcher found it necessary to ask the merchants if other contributory factors influence the decision of other merchants to adopt POS systems. According to the findings, cash transactions are still widely used in the SME value chain. Some respondents mentioned the requirement for constant access to liquid funds to meet the expenses inherent in running a business and interacting with other entities within their ecosystems or business value chains. Some users complained about the lengthy lag time between when a transaction is finalised and when the money is transferred into their bank accounts. An economy dependent on cash is constantly brought up because most businesses still prefer to conduct business in physical cash. The specific responses were:

P13: "The ecosystem is cash-dependent; that is, cash is king in this environment, and entrepreneurs and customers alike prefer using cash. Waiting for the clearing of funds is challenging for small businesses."

P1: "Some merchants do not like the charges associated with the system. There is also a preference to hard cash as it provides convenience to attend to the running costs of the business."

P14: "Cash is king in this environment. It takes days for the cash to clear and be released by Yoco. This delay impacts your cash flow and sometimes you need the cash to tend to other business needs."

4.3.2 *Motivating and Inhibiting Organisational factors*

4.3.2.1. Industry Segment

This section examined the impact of organisational factors on POS implementation. It was essential to understand whether the industry in which the SMEs operated influenced the adoption of POS systems for their businesses. The findings indicate that the type of industry a business operates in influences the merchants' decisions. Businesses in a particular field, with a particular clientele, were found to profit from POS technology. Merchants that have adopted a POS system advised that given the type of clientele that frequents their establishments, the use of a POS system is almost non-negotiable. The specific responses were:

> *P6: "Based on our business model, our clientele prefers using card payments."*
>
> *P16: "I operate in a medium to high SME, so those clients want the service and convenience of using card terminals."*
>
> *P7: "The tourism industry brings us people from all over the world, therefore, we had no choice but to adopt the system."*

4.3.2.2. Size

Having provided the demographics of their business, it became evident from the data that the adoption of POS systems was related to the growth of the company as assessed by the size of the SME. According to the interviewed business owners, the need for a POS system increased in proportion to the company's growth. However, the SMEs opined on other merchants, suggesting that the size and volume of business did not justify the deployment of POS systems. Comments captured within the discussion in relation to the size of the SME were:

P5: "We have a large client base. Therefore, we decided to implement multiple POS systems to ensure that we can cater to our clients."

P7: "As the business grew, we understood the importance of having a POS system. However, a lot of merchants cannot justify the use of a POS simply because their businesses are too small."

P9: "There is not much business to justify acquiring a POS system."

4.3.3 *Motivating and Inhibiting Environmental factors.*

4.3.3.1. Regulation and compliance

From a regulatory perspective, the merchants were asked whether they were aware and informed of regulatory requirements that may have influenced their decision to adopt a POS system. Some participants suggested that there is a perceived link between POS systems and SARS requirements as a barrier to adoption. The findings suggest that 4 of this study's participants adopting a POS system improved their regulatory compliance. The specific responses were:

P10: "The POS system keeps a record of everything; it also calculates my tax from the amount the client paid for when I submit my returns."

P12: "I can now also use it for tax compliance with SARS as it helps me with bookkeeping."

P16: "We are a tax-registered business and with the implementation of the system we have been able to file our returns on time."

P13: "The invoicing system helps with tax requirements. However, the business does not have to be VAT registered to acquire a Yoco POS.

However, the remainder of the participants opined on other merchants, citing that they do not use POS systems to avoid declaring their income to SARS. The specific responses were:

P5: “People fear the charges and having to pay tax…cash remains king.”

P10: “Some people do not want to comply with SARS because it means they must account for their income.”

P19: “Most businesses are informal and prefer not to pay fees or tax from their income.”

4.3.3.2. Infrastructure support

When asked if they are facing any technical difficulties preventing them from using the POS systems effectively, the merchants indicated that the POS providers offer the required technical support when required. When asked if any environmental barriers prevent businesses from adopting POS systems, participants stated that frequent power outages are the biggest problem, as they cause technical issues with bandwidth and the lack of network required to complete a transaction on a POS machine. The specific responses were:

P12: “I have experienced no technical difficulties. Power outages may have an impact on the transacting ability of the device.”

P14: “I have not had any technical difficulties. Good battery life: however, power issues impact the availability of services.”

P15: “Power outages may impact services if the device is not charged; however, amidst those power interruptions, one can transact depending on the location and availability of the network.”

4.4 Chapter summary

The findings provided light on the factors influencing South African SMEs' adoption of POS systems. The results suggest that adopting POS systems improved the participants' businesses and that the TOE framework's constructs encompass motivating and inhibiting aspects. According to most of this study's population, the technology's availability and its value proposition were the

fundamental technological contexts of the business that motivated the adoption of the technology.

Analysis of the findings suggests that the simplicity of employing a POS system assisted merchants in generating new sales and repeat business. This is supported by the fact that most merchants prefer card payments over cash. Other perceived value aspects offered by the merchants who participated in this study included financial management, professionalism, and a reduction in abandoned purchases. The findings also suggest that the integrated accounting system made it easier for merchants to understand their business and comply with applicable requirements. In addition, some participants indicated that the POS system made their business seem more professional and that customers felt more comfortable doing business with them because they could produce proof of the transaction.

The cost of technology had a negative effect on most merchants' operational expenses. According to some merchants, the expense of installing a POS system is not justified by the amount of consumer traffic. In addition, since most SMEs in the merchants' ecosystem rely on cash for day-to-day operations, some participants ranked the desire for cash for merchants in their ecosystem as a significant barrier to widespread adoption.

Another impediment is the wide variety of payment methods available in South Africa, as most participants think that if they are given options, they will have lower operational expenses. Due to the variety of payment options, a fixed-cost system facilitates more convenient business transactions for retailers. Participants who have abandoned the POS system cite the availability and simplicity of alternative payment methods, not the expense, as the reason for their decision.

Merchants who elect not to declare their profits to SARS would rather refrain from using the system. The findings indicate that small businesses frequently avoid paying taxes. SARS's reputation for levying hefty taxes on enterprises was also noted as a hindrance to adoption. On the other hand, SMEs that have employed

the POS system appreciate its financial management and bookkeeping features that enable compliance.

Even though SMEs have expressed satisfaction with POS vendor support, South Africa's power crisis makes it more challenging for SMEs to adopt and universally use POS systems. Frequent power outages cause network disruptions and system inefficiencies, making it difficult for merchants to provide the convenience of a POS system to their consumers consistently. The next chapter discusses the findings as reported in Chapter 4.

CHAPTER 5. DISCUSSION OF THE FINDINGS

5.1 Introduction

This chapter builds upon the analysis of the findings offered in chapter 4. The findings of each study objective are discussed in the context of the TOE framework's underlying constructs and the literature review's observations. The findings of this study are presented together with the researcher's interpretation of those findings.

5.2 Motivating and Inhibiting Technological factors

5.2.1 *Technology availability*

It is essential to highlight that the technical background includes not just the company's existing technology but also those that are commercially available but are currently out of use. According to Bryan and Zuva (2021), a company will explore the technical possibilities available to it. This study found that there is awareness of the available technology, with most participants learning about its availability, benefits, and operability through direct marketing from POS system vendors, which led to their adoption of the system. Direct marketing and merchants' own research on POS systems provided merchants with appropriate knowledge to make an educated adoption decision.

Merchants who had not yet implemented a POS system cited the availability of alternative digital payment methods as the rationale for not doing so. In addition, the perceived high costs, coupled with the perceived negative impact on operating costs, were found to be a deterrent to adoption.

The findings further suggest that multi-channel payment approaches used by some merchants negatively influence SMEs' adoption of POS systems. This finding is reinforced by claims made in research by Kwabena et al. (2021), who

claim that a company's technological foundation contains established practises and readily available developing technology.

The proposition of this research on the availability of technology enables us to conclude that ease of access is a motivating factor in POS system adoption. However, the existence of alternative payment platforms may deter SMEs from the widespread adoption of POS systems.

5.2.2 *: Technology value*

The perceived value proposition differentiates and motivates organisations to invest in cutting-edge technology (Ondrus & Lyytinen, 2011). The perceived added value assesses the degree to which a technical innovation may improve the profitability and efficiency of an existing product while also addressing an urgent business need (Au & Kauffman, 2008). According to the findings, SMEs gained more value after acquiring and installing a POS system. A POS system's value proposition is the mix of expected service quality and product perceived value.

The value propositions provided by POS may vary significantly, with participants' perceptions of value differing widely. This study identified convenience, ease of transactions, business growth, and the employment of the POS as a financial management tool as the POS's value proposition by this study. For most participants, the ease of completing a transaction was more significant and valued.

Payment delays prevent firms from stockpiling supplies, purchasing items, and paying third-party providers (Skafi et al., 2020). According to Kwabena et al. (2021), who concur with this opinion, owing to the severe competition in today's marketplaces, the customer experience is more important than ever for SMEs. Price, relative advantage, and perceived benefits all have a positive impact on SMEs' adoption of payment systems. According to Tikapichart (2018), in order for POS technology to be widely embraced and for SMEs to profit from it, POS systems must be tailored to SME business models. The findings suggest that the

increasing prevalence of POS systems and their ease of use have encouraged their adoption.

As discussed in Chapter 2, most SMEs fail due to inadequate financial management. Some participants reported that implementing a POS system has helped them better manage business finances by easing bookkeeping and improving their understanding of revenue and expenses. The POS system also helped them understand their operating costs and prevented them from wasting money on business or personal expenses. This viewpoint is supported by the research of Nyawo (2017), who contends that businesses will embrace new technologies if they perceive doing so will improve their bottom line.

According to the results of this research, implementing and utilising a POS system has assisted SME owners and managers in improving their business acumen and the fundamental business foundations for running a successful organisation, such as sales tracking, revenue versus profit comprehension, and capital management. Furthermore, according to the participants, this has facilitated their access to previously unavailable banking services. This supports the argument made by (Rasheed et al., 2019; Lee & Shin, 2018) that utilising a payment platform or service is the first step toward financial inclusion for SMEs, as it enables these businesses to create a digital profile for financial services and gain access to several types of financial products..

The findings revealed that the SMEs' perceived value improved when they acquired and implemented a POS system. Based on this premise, this study concludes that the value of the technology is what drives SMEs to use POS systems.

5.2.3 *Technology cost*

According to Chimucheka (2013), perceived high technology costs and a lack of capital to implement technology are factors contributing to SMEs' reluctance to use ICTs. This study's results indicate that that the pricing structure offered by banks and fintech is the most crucial element for merchants, with costs found to

negatively impact SMEs' operational costs negatively, thus impacting widespread adoption. Seethamraju and Diantha (2018) contend with this finding that the cost of technology is a barrier to entry for SMEs and that unless there is a commensurate advantage, SMEs are hesitant to invest in digital payment technology.

According to research cited by Tikapichart (2018) and Nyawo (2018), SMEs do not use POS systems because they perceive them to be too costly. New hardware and software licencing fees, merchant service fees, and equipment leasing charges all fall under this category. This study's results contradict this contention, since 80% within the SMEs surveyed stated that they are prepared to spend R500 to cover the one-time cost of the system as well as the 2% transaction charge. SMEs were prepared to pay for a POS system because they believed the advantages would outweigh the initial outlay. The POS providers have set competitive pricing for the device, an idea reinforced by research by Olasojumi et al. (2018), who states that POS vendors may address the cost factor while minimising implementation costs.

Omotayo (2015), argued that all business organisations engage in transactions that involve payment in cash. This finding is in line with the notion put forth by analysis of this study's findings that merchants in the SMEs' ecosystems still prefer cash. This study concludes that the perceived high cost of implementing a POS system and its preference for cash is an inhibitor to its widespread adoption.

5.3 Motivating and Inhibiting Organisational factors

5.3.1 *Size*

El-Haddadeh (2020) and Gentile-Lüdecke et al. (2020), the organisational environment, including its size and scope, impacts the adoption decision within an organisation. SME owners tend to be resourceful people who, by necessity, are personally invested in the success of their company and its continued relevance to its target market. Therefore, it appears from the data that the

adoption of POS systems was related to the growth of the company as assessed by the size of the SME. This contradicts the results of Omotayo (2015), who found that neither the age nor the size of the firm had any effect on whether or not they used a POS system. Consequently, this study contended that there is a correlation between the size of the SME and the adoption and use of POS systems.

5.3.2 *Industry segment*

There is an inextricable link between the market niche served by technology and the value it offers the business (Mallat & Tuunainen, 2018) and the availability of POS systems from dominant fintech companies in the POS system market such as Yoco and iKhokha, which cater to SME business models, and are optimised for several industries, supports this notion.

Brown and Jayakody (2008) argued that the type of industry in which SMEs operate influences their adoption of technology. The findings of this study agree with this notion as they suggest that the adoption of POS systems was driven by the type of customers they serve and the industry in which they operate. It must be pointed out, however, that the competitive landscape of the industry in which the SMEs operate suggests that even though some SMEs have embraced POS, their competitors trade primarily in cash, which is regarded to have had no significant impact on their business.

It is from this premise that this study concludes that the industry within which the SME operates does influence adoption and is also driven by the SMEs' customer preference and value proposition.

5.4 Motivating and Inhibiting Environmental factors

5.4.1 *Regulation and compliance*

Despite the advantages of POS for SMEs in terms of financial management and tax compliance, Najib and Fahma (2020) argue that a lack of trust in the regulatory environment and SMEs' aversion to government and banking bureaucracy are barriers to electronic commerce adoption. The findings revealed that South African SMEs preferred not to adopt payment technology to avoid paying taxes, thus supporting this notion and that made by Nieuwenhuizen (2019) that compliance with labour legislation and taxation contributes to the low levels of legally registered SMEs' uptake of POS systems. It is from this premise that this study concludes that regulatory compliance is, therefore, an inhibiting factor for the widespread use of POS systems by SMEs in South Africa.

5.4.2 *Infrastructure*

The accessibility of network facilities for the Internet that facilitates high-speed transactions impacts the adoption of POS systems (Paramita, 2019). This study found that POS suppliers provide excellent technical support. In addition, the reliability of customer service responses from most suppliers has reduced the abandonment of POS systems and the return to cash transactions.

This study's findings indicate that the convenience afforded SMEs by POS systems has driven their adoption. For most participants, the convenience of closing a sale is more important and is appreciated. However, payment delays upset the value chain, thus proving sustainability a challenge for most SMEs. Adeoti (2013) contends with this notion, asserting that network failure, frequent power outages, and combined the widespread absence of POS systems provide the greatest challenge to the efficient use of POS. Skafi et al. (2020a) further contend with this notion as found in research conducted, which asserts that underdeveloped nations are often faced with challenges of inadequate

infrastructure, network failures, and power outages, which pose the most significant barrier to efficient POS adoption.

The findings from this study are consistent with those of Skafi et al (2020a) in that while the infrastructure supporting POS technology is available in the areas where participants operate (South and North of the Gauteng province), there is no technical infrastructure that provides the high-speed transactional capability required to process transactions or use a POS. In addition, the South African power crisis remains a challenge to the POS system's operation. Consistent power outages influence network accessibility because they affect cell phone coverage and network towers, which in turn affect bandwidth.

Business applications, solutions, procedures, information security, power distribution sources, and staff, as well as connection and interfaces, are all required for a POS system to perform well (Akerejola et al., 2019). Conclusions drawn from this study's analysis indicate that the lack of trust in the government's ability to provide stable power infrastructure to enable the efficient use of POS systems has eroded the SMEs' intention to adopt them. In addition, the accessibility of necessary infrastructure is a major element in determining the rate of POS adoption (Akerejola et al., 2019). Therefore, this study proposed that infrastructure availability and support may motivate or inhibit the adoption of POS systems and concluded that the absence of infrastructure availability and the ability to operate at full capacity is an inhibiting factor for the adoption of POS systems.

5.5 Chapter summary

This study argued that components originating in the technological, organisational, and environmental context in which the SME operates influence a SME's incentive for and reluctance to using a POS system. The TOE framework was utilised in this study to determine if the framework's given constructs served as drivers or inhibitors of POS system adoption in the SME environment.

The proliferation of fintech businesses like Yoco, iKhokha, and Vodapay has increased access to POS systems, which has increased SMEs' familiarity with and use of such systems. This research revealed that the perceived value of the POS system is a motivating factor, with its benefits related to the SME's success and overall value. The POS is convenient, easy to use, helps businesses grow, and can be used as a tool to manage money. All these things support the idea that the value of technology is a motivating factor that affects adoption. The literature reviewed contended that cost is a deterrent to adoption, supported by the findings, as merchants have acknowledged that the costs negatively impacted their operational costs. As a result, the cost was determined to be an inhibiting factor for adoption in this context.

According to the literature, there is an inextricable link between the scale of technology, its market niche, and the value it provides to a business. The findings suggest that the SME environment is such that adoption is driven by customer preference and the growth in the size of the SME. However, the perceived relative advantage gained by merchants who have adopted a POS system does not influence competitor adoption.

The South African payments environment is hampered by the lack of confidence in the regulatory environment and the perception of a high-income tax that labours against SMEs. Most SMEs have a low revenue base, discouraging merchants from using POS systems to avoid income tax.

South Africa's infrastructure availability has permitted rapid growth in digital solutions. The availability of internet connectivity, hardware, and software to conduct efficient transactions through a POS system has enabled the rising implementation of mobile payment solutions within the SME sector. However, the outcomes of this study are consistent with the existing literature in that, just like in other developing countries, South Africa's power supply problems discourage SMEs from using POS systems. This is because SMEs want to avoid the risk of not being able to offer customers constant convenience without an always-on payment system and having to do business in cash when the system

is not working. In the next chapter, the conclusions and suggestions of this study are presented.

CHAPTER 6. CONCLUSIONS & RECOMMENDATIONS

6.1 Introduction

This study's findings were discussed in with reference to the literature discussed in Chapter 2, asserting that this study's proposition and objective established in Chapter 2 were plausible. The sixth chapter begins with a brief overview of this study problem and summarises the key findings. This section also includes recommendations for advancement to POS system suppliers and government agencies responsible for promoting the development of SMEs in South Africa. Suggestions for further research are offered in the concluding section.

6.2 Conclusion

Payment system success strongly relies on merchant involvement, which provides customers with a valued service and contributes a portion of their revenues to the system's infrastructure (Dahlberg et al., 2015). Even though the fintech payments ecosystem is rapidly expanding and the POS industry is expected to increase exponentially in this decade, SMEs' adoption of POS systems remains modest. Previous research on POS solutions evaluated acquisition from the end user's (the customer's) perspective, neglecting the merchants' perspective (Dahlberg et al., 2015; Nyawo, 2015)

Using the TOE paradigm, this study aimed to explore whether the technological, organisational, and contextual factors of SMEs in Gauteng, South Africa, influenced their inclination to utilise POS systems. This study explored seven factors that affect the uptake of POS systems within the framework offered. These parameters were chosen based on theoretical considerations gathered from a review of foundational POS literature. An interpretivist approach was employed in this study to explore the research topic from the participants' viewpoints (Merriam, 2002). Because of the interpretivist nature of the study approach, semi-

structured interviews with SMEs provide insight on the factors that drive POS acquisition from their perspective.

Twenty (20) in-depth interviews with SMEs from several economic sectors in Gauteng were conducted. The researcher sought to determine what factors influence SMEs' choice to deploy POS solutions, therefore they conducted interviews and asked pointed questions. This research's findings accomplished this by comparing them to the TOE framework's basic and secondary concepts. According to the results of this qualitative study, when it comes to the deployment of POS solutions by SMEs, there are both motivating and inhibiting factors at work.

6.2.1 *Key findings on technology factors*

According to the results obtained, SMEs adopted POS systems owing to the availability of these systems. The bank-supplied POS systems are now having to compete with the availability of fintech POS vendors such as Yoco, iKhokha, and Vodapay, which provide merchants with a variety of systems to choose from to suit their business needs. In addition, the South African payments landscape has advanced to the point where alternative platforms like direct electronic fund transfers (EFTs) and Geo Payments, which use geolocation to transfer money in real time when the sender and receiver are in close proximity, can be used by merchants.

These options enable retailers to receive and access their funds promptly. As a result, POS systems may appear less common than they are. Despite this, this study found that 95% of merchants who participated in this study advocated for the usage of POS systems, notably for reasons related to customer service, revenue growth, and online security, as other payment methods are prone to fraudulent transactions.

The cost structure South African fintech POS system providers supplied was seen favourably by merchants, as shown by the research. Similarly, Tikapichart (2018) found that the increasing use of POS systems by Thai SMEs positively

contributed to lower appropriation costs. This study proposes that the cost of technology can either be a motivating or an inhibiting factor for adoption. This study finds that the low cost of acquiring POS systems is a motivating factor; the widespread adoption by South African SMEs is hampered by the systems running costs of the system and the preference for cash by other merchants in the SMEs ecosystem.

6.2.2 *Key findings on organisational factors*

This research shows that a SME's choice to implement a POS system depends by both business size and business sector. The research established that the SMEs' growth over time had significant weight in SMEs' decision-making process regarding whether to adapt. The absence of a POS system disadvantaged merchants, and the majority of those interviewed feared the risk of having sales abandoned. The findings reveal that a merchant's decision of whether or not to deploy a POS system is motivated primarily by the requirements of the business at various stages of its development.

6.2.3 *Key findings on environmental factors*

Lack of government confidence and the belief that SARS levies excessive income taxes on SMEs were identified to be the main barriers to broad adoption. To assist SMEs in transitioning from non-compliance, the government should collaborate with SME incubators to provide fiscal management and taxation training.

The availability of supporting infrastructure was a crucial factor in POS uptake. Network failure, frequent power outages, and the unavailability of POS at all merchant locations are the most major obstacles to the successful deployment of POS systems by SMEs in South Africa. Therefore, POS system suppliers should offer battery backup solutions to guarantee uninterrupted service and maximum merchant convenience.

6.3 Recommendations

6.3.1 *Implications for practice*

These findings contribute to the literature and knowledge base of POS system providers in the fintech industry, as well as to the development of improved strategies for accelerating adoption. In addition, service providers and governments should address the factors that encourage, motivate, and inhibit SMEs from adopting new technologies.

6.3.1.1. Targeted marketing strategies

Despite South Africa's relatively high POS penetration in comparison to other African countries, SMEs are slow to appreciate the benefits of transitioning to digital payment systems. Baker (2011) proposes exploring technologies that currently exist but aren't being used by the organisation to assist merchants recognise how technology may help them evolve and adapt. Furthermore, given that some businesses are owned by older people but managed by younger people, service providers must ensure that their marketing materials emphasise the value proposition and are appropriate for all generations to break through the technical ignorance of the older generation, who do not believe in virtual money and prefer hard cash.

It can be argued that existing approaches do not provide enough real experience for merchants who are not digitally savvy to understand the system's complete capabilities fully. Instead, vendors should use direct, on-the-ground marketing approaches, such as seminars for SMEs. The system is walked through, and the value proposition is communicated so those with limited digital literacy can make informed decisions. The Department of Small Business Development (DSBD) may also be involved in the planning and execution of such seminars.

6.3.1.2. SME value-chain appreciation

According to this study's findings, cash remains an integral part of merchants' business ecosystems; consequently, eliminating cash transactions is not a realistic option. As a result, this study suggests that POS system suppliers obtain a better grasp of the SMEs' value chain or ecosystem to strengthen their ability to promote the widespread adoption required for a simpler B2B transactional basis. This suggestion is based on the notion that these providers' ability to encourage the widespread adoption necessary for a B2B transactional basis requires to be improved. This can be accomplished by studying the SME value chain from end to end and determining which of the chain's merchants prefer to accept cash over other payment methods. As a result, POS suppliers will be able to demonstrate the B2B value proposition provided by POS systems, encouraging more extensive use of the technology.

6.3.1.3. Government support

Ayandebu et al. (2019) postulate that there are obstacles to the sustained profitability of small businesses. According to the study's authors, the largest obstacle for new business owners is a lack of knowledge and skills, and they urge that the government consider offering training and assistance to entrepreneurs. These assertions are reinforced by this study's results, which reveal that poor financial management is the leading cause of failure among SMEs. Consequently, it is proposed that government agencies tasked with the development of SMEs, such as the DSBD, provide financial support to fintech POS vendors who have developed and championed strategies that help SMEs better manage business finances by simplifying bookkeeping and enhancing SMEs' understanding of revenue and expenses.

According to the findings of this study, merchants' failure to fully utilise POS systems is limited by their lack of knowledge of the regulatory landscape. Acknowledging the critical role that SMEs play in the economy, this finding concurs with Seethamraju and Diantha (2018) that effective approaches must be

implemented to assist SMEs in dealing with regulatory and compliance challenges. Nyawo (2017) provides evidence in favour of this notion by arguing that business owners will adopt new technologies if they can see a financial benefit.

This study's findings, which concur with those of Akerejola et al. (2019), imply that the South African government should prioritise infrastructure availability to promote the broad adoption of POS systems by SMEs. A POS system's infrastructure, programmes, power, network, and peripherals must all be in place for it to function properly. Since power outages have made it impossible for many businesses to process card payments, many have adopted cash-only policies. For a business to function normally, it is essential for it to have constant and uninterrupted access to both electricity and the internet.

According to Ayandibu et al. (2019), there are obstacles to the long-term profitability of small businesses. The researchers identify a lack of knowledge and skills as the foremost barrier to entry for new business owners, and they encourage the government to consider equipping entrepreneurs with the necessary resources to succeed.

6.4 Suggestions for further research

As more digital payment methods become available to consumers and businesses, using POS terminals as the primary payment method may become obsolete. As a result, it would be prudent to investigate how other payment methods affect the use of POS terminals. Governments should make concerted efforts to promote POS adoption. To encourage widespread uptake, policymakers should investigate how best to foster inclusive regulatory environments for SMEs.

Assertions in the literature that SMEs have limited options for collecting payments, particularly in rural and underdeveloped sectors of the economy, call for further research on the technology’s acceptance in these sectors of the

economy and should be carried out to provide merchants with simpler and more convenient transaction methods. Lastly, as indicated in the limitations, this study was limited in that it only considered merchants in Gauteng; this suggests that similar research might be expanded to other parts of South Africa to obtain a more representative sample. The county-wide nature of the sample group also allows for a heightened emphasis on the enterprises that have adopted POS systems.

6.5 Chapter Summary

This research contributes to the literature on POS systems by revealing the factors that have been shown to have an influence on POS system adoption. This research used the TOE framework to address a gap in the knowledge POS system adoption by South African SMEs.

Prior research has focused mostly on the acceptance of the technology among end-users (consumers). Consequently, this study provided an opportunity to assess adoption from the merchant's viewpoint and identify why South African adoption rates were not growing as rapidly as anticipated, especially in the SME sector.

Adoption criteria were primarily identified by reviewing existing academic literature. It was suggested that a model be created that would take into consideration the several factors of adoption revealed in the research. Using qualitative approaches, the researcher was able to determine if the cited factors acted as deterrents or facilitators of POS system adoption.

The use of qualitative approaches revealed that the variables most influential in driving adoption were technology (availability and value proposition) and organisational factors (size and industry sector). This study discovered certain key aspects that had not previously been discussed, such as the importance of professionalism and safety in creating value.

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APPENDIX A: Interview Guide (Research Instrument)

Preliminaries:

A participant information sheet was emailed and explained to the interviewee before the interview.
A copy will be available already signed or signed with the Participant Information sheet submitted.
Ethical clearance certificates from the university were handed in before the interview.
Verbal consent was obtained before the start of the interview.

Introductions:

My name is Sibongile Martino. I am a Master of Management Student at the Wits Business School. I am conducting interviews as part of my research project, and I would like to ask you some questions related to the factors that influence the adoption of merchant point sales systems in South Africa. First, as an introduction, statistics suggest an upward trend in the anticipated take-up of businesses of payment systems; however, the same statistics also suggest that most SMEs prefer to perform cash transactions.

Most researchers have concentrated on the consumer perspective; therefore, the aim of this research is to understand the factors that affect the adoption of point-of-sales systems from a merchant perspective. The following questions I'm going to ask are about your company's demographics and understanding of how you conduct business and transact. This will then help us understand the factors that have impacted your decision on either adopting a point-of-sale system or not.

1. Demographic: Organisational Factors

Q1. Can you briefly explain the main business your company does?

Q2. What is the current number of employees?

Q3. What is the annual turnover of your business?

Q4. In which industry segment would you say your business operates?

Q5. Would you consider your business formal or informal?

Q6. Does your business offer delivery services?

2. Technological Factors

Q7. Do you have a merchant payment point? If yes, how long have you had a merchant payment point? If not, are you considering getting one?

Q8. What informed your selection of a POS system for your business?

Q9. What informed your decision not to adopt a POS for your business?

Q10. When considering the way your business operates, in what way do you believe a POS complements your business?

Q11. When considering the way your business operates, how often do you face issues due to the lack of a POS system?

Q12. In your opinion, does/will using a POS system assist you in attracting and retaining customers to your business, and why is that so?

Q14. What are the costs of having a POS system solution in your business?

Q15. Would you say having a POS system has negatively or positively impacted your operational costs?

Q16. How much do you think a POS system costs or should cost?

Q17. What benefits have you experienced in using a POS system for your business?

Q18. What are the challenges experienced in using a POS system for your business?

3. Environmental Factors

Q19. Can you describe the technical difficulties you think you have/might face with the POS system?

Q19. Are any technical barriers preventing you from acquiring a POS system?

Q20. Are you aware and informed of regulatory requirements that may influence you to adopt a POS system?

Q21. Are you aware of any of your competitors adopting POS systems and their impact on your business?

Q22. Are there any environmental barriers preventing your business from adopting POS systems?

Q23. In summary. Can you mention factors that negatively Influence the adoption of POS systems by SMEs in South Africa?

APPENDIX B- Participant Consent Form

Date:

Delivery Method: Electronic

Attention: Sibongile Martino

CC: Euphemia Godspower-Akpomiemie

SUBJECT: CONSENT FOR PARTICIPATION IN INTERVIEW RESEARCH

I volunteer to participate in a research project conducted by Sibongile Martino a Master of Management student at the University of the Witwatersrand's Wits Business School. I understand that the project is designed to gather information about the factors that influence the adoption of fintech by SMEs, specifically merchant Point of Sale (POS) systems in South Africa.

I hereby acknowledge that I'm aware that I will be one of the participants being interviewed for this research project and therefore shall participate based on the following considerations:

1. My participation in this project is voluntary. I understand that I will not be paid for my participation. I may withdraw and discontinue participation at any time without prejudice.

2. I understand that some interviewees may find the discussion interesting and thought-provoking. However, if I feel uncomfortable in any way during the interview session, I have the right to decline to answer any questions or to end the interview.

3. I am aware that my participation involves being interviewed by Sibongile Martino. The interview may last approximately 30 minutes. Notes will be taken during the interview, which may include audio or visual recordings of the interview and the subsequent dialogue.

4. I understand that the student will not identify me by name in any reports using information obtained from this interview and that my confidentiality as a participant in this research will remain confidential and secured.

5. I hereby acknowledge that I have read and understood the explanation provided to me, and I voluntarily consent to participate in this research project.

6. My rights remain reserved and shall be provided with a copy of this consent form upon co-signatories.

_____

Participant Signature

_____

Date

0002053T@students.wits.ac.za

Research Supervisor:

Euphemia Godspower-Akpomiemie

+27 11 717 4852 Euphemia.Godspower-Akpomiemie@wits.ac.za

APPENDIX C- Ethics approval notification

Graduate School of Business Administration
University of the Witwatersrand, Johannesburg

Wits Business School

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

Ethics Clearance Certificate

Ethics protocol number: WBS/DB0002053T/561
This certificate is only valid with a legitimate ethics protocol number and signed by the Researcher (below).

Project title	The adoption of fintech by small and medium enterprises in South Africa
Investigator / Researcher	Mrs Sibongile Martino
Nature of Project	MM (Digital Business)
Decision of the Committee	Approved, provided stakeholders and participants are guaranteed confidentialty.
Issue Date of Certificate	2022-07-05
Expiry date	Date of submission of the project / research report
Chairperson	Prof Anthony Stacey ☎ +27 11 717 3587 +27 82 880 4531 anthony.stacey@wits.ac.za

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Declaration by Researcher

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

I fully understand the conditions under which I am authorized to carry out the abovementioned research and I 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

06/07/2022
Date: