

**DETERMINANTS OF MOBILE PAYMENT PLATFORMS ADOPTION
AMONG MICRO-RETAILERS IN GIKOMBA MARKET, NAIROBI
COUNTY: MODERATING EFFECT OF CUSTOMER ATTITUDE,
HANDSETS, AND DEMOGRAPHICS**

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ADMISSION NO 137172

**A Dissertation Submitted to Strathmore University Business School in Partial
Fulfillment for the Degree of Master of Science in Development Finance of**

Strathmore University

MAY, 2025

DECLARATION

I hereby declare that neither this university nor any other university has previously accepted my work as a submission for a degree. To the best of my knowledge and belief, the project does not contain any previously published or written works by other authors, with the exception of the thesis itself, where appropriate citations are made.

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ABSTRACT

The adoption of mobile payment platforms in the retail sector in Kenya is increasingly gaining popularity amidst the ever-growing informal business industry in the country. Mobile money technology has the potential to increase profitability and growth of micro-retailers as it reduces complexities faced in the manual system. However, there is limited information on the awareness, prevalence and perceived convenience or solutions of this system among micro-retailers. This study sought to investigate determinants of mobile payment platforms adoption among micro-retailers in Gikomba market, Nairobi County, with the moderating effect of customer attitude, handsets, and demographics. Specific objectives included: to determine the extent of knowledge of mobile money platforms in the micro-retailers market in Gikomba Market, Nairobi County; identify the limiting factors to the adoption of mobile money platforms among micro retailers, and to investigate potential solutions to address any limitations of adoption of mobile money platforms among micro-retailers in Gikomba Market, Nairobi County. The study employed positivism philosophy and descriptive research design where the study area was Gikomba Market in Kamukunji subcounty, Nairobi County. The study population included 2,700 micro-retailers in Gikomba Market where simple random sampling technique was employed to select a sample size of 348 micro-retailers for the research using Yamane formula. The study utilized primary data collected using a structured questionnaire consisting both open and closed-ended questions. Analysis for quantitative data was done descriptively and inferentially using SPSS while qualitative data was analyzed using thematic content analysis techniques. The findings indicate that ease of use has a positive impact on adoption since user-friendly platforms simplify transactions. High transaction costs are deterrent, especially for micro-retailers with small profit margins, whereas strong security measures boost trust and confidence in the platforms. Moderating factors, such as customer attitudes, demographic characteristics, and availability of advanced handsets significantly, shape the adoption patterns. The study recommends simplified platform interfaces, lower transaction charges, improved security, and tackling demographic barriers through focused outreach and education. These strategies can help in increasing general adoption of mobile payment platforms, hence improving financial inclusion and economic efficiency in the micro-retail market sector.

Key words: Mobile Money, Micro-Retailers, Technologies, Profitability, Micro-Enterprise

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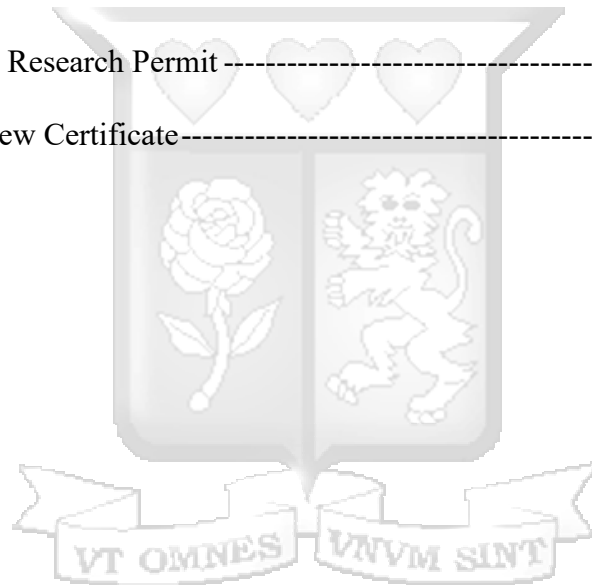
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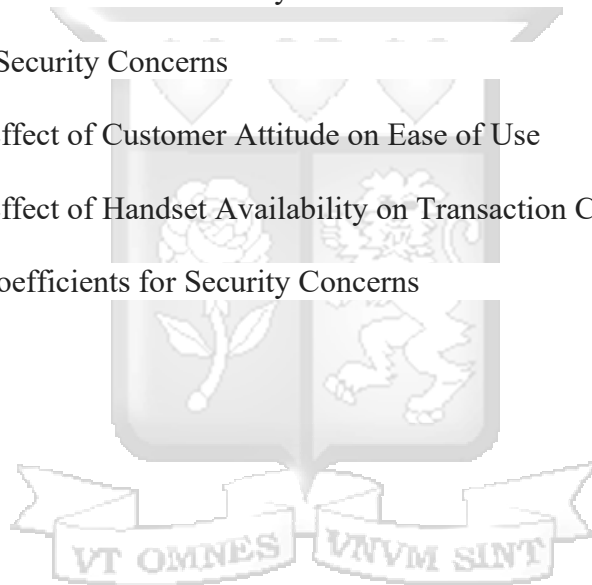
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ABBREVIATIONS AND ACRONYMS

APP	Application
CBD	Central Business District
FMCG	Fast Moving Consumer Goods
GDP	Gross Domestic Product
ICT	Information Communication Technology
IMOT	Integrative Model of Organizational Trust
KIPPRA	Public Policy Research and Analysis
P2P	Person to Person
SME	Small and Medium Enterprises
SMS	Short Message Service
SPSS	Statistical Package for Social Sciences
TAM	Technology Acceptance Model
TRA	Theory of Reasoned Action



DEFINITION OF TERMS

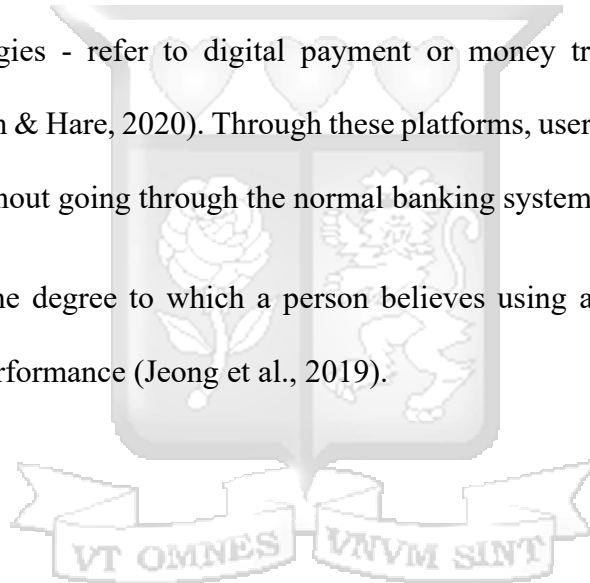
Adoption of mobile money technologies - refers to embracing electronic money transfer systems, such as Mpesa, Airtel money, etc. for what is seen as easier business transaction purposes (Johnen, Parlasca & Mußhoff, 2023).

Micro-enterprise - A business venture with less than 10 employees and generates less than KES 1 million in annual revenues (Riro, 2022)

Micro-retailer - A micro-enterprise within retail (Österberg et al., 2015).

Mobile money technologies - refer to digital payment or money transfer platforms used in cellphone devices (Parekh & Hare, 2020). Through these platforms, users are able to receive, send, and withdraw money without going through the normal banking system.

Perceived usefulness - the degree to which a person believes using a particular system would enhance his or her job performance (Jeong et al., 2019).



DEDICATION

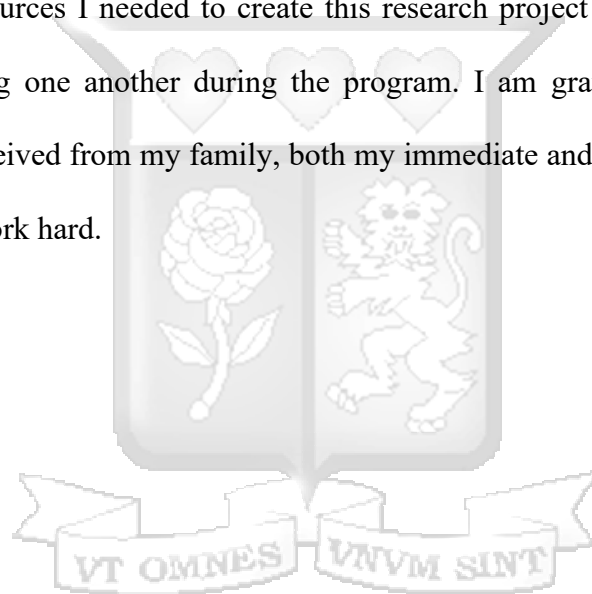
This project is dedicated to my late father Dr. Stephen Njoroge Gachie, my mother Dr. Wachuka Njoroge, my sister Melissa, and my brother Alvin, who are my source of support and inspiration to always work hard and grow.



ACKNOWLEDGEMENTS

I give thanks to the All-Powerful God for giving me the courage and many blessings that allowed me to finish my Master of Science in Development Finance degree. I would like to thank my supervisor, Dr. David Mathuva, for his expert assistance and direction during the drafting of this research. I would want to express my gratitude for his time-saving generosity in discussing any topic pertaining to the project's pursuit.

I am appreciative of the Strathmore University library personnel for their assistance in getting me the information and resources I needed to create this research project report. Thank you to my coworkers for supporting one another during the program. I am grateful for the support and understanding I have received from my family, both my immediate and extended ones, who have always inspired me to work hard.



CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Mobile money technology is increasingly being viewed as the ideal system for business transactions, not only in Kenya, but across the world (Shao et al, 2019). To the supporters of the mobile money systems, mobile money payment platforms come with various advantages, including security, affordability, ease of accessibility and use, convenience, and availability. There is also the question of financial inclusivity, quick and easy transactions among others. Despite these several notable advantages of mobile payment platforms in business transactions, there are still challenges limiting adoption of this system, especially among micro-retailers in local markets (Cao, 2021). According to Tengeh and Gahapa (2020)., some of the limitations associated with mobile money use in small businesses include vulnerability to hacking and fraud, high changes of identity theft, overdependence on technology where some of the users may not always have updated knowledge about the financial services in online financial systems. There is also the potential danger of exposure to loss of money, such as when some customers reverse money to their Mpesa accounts after they have paid for goods or services to the sellers or fenders.

A micro-retailer is a micro-enterprise within retail (Österberg et al., 2015). At a global level, a 2016 World Bank study revealed that small retailers, including micro, small and medium retailers, transacted a total of USD 19 trillion in cash and cheques, and USD 15 trillion in electronic payments (World Bank, 2016). A micro-enterprise is defined as a business venture with less than 10 employees and generates less than KES 1 million in annual revenues (Riro, 2022). Mobile money services are a cashless instrument which allows users to transfer money using short

message service (SMS) (Dalton et al., 2018). The term "mobile payment" describes the use of a mobile application to streamline online purchases by providing customers with an easy way to make payments for goods and services (Petrova & Mehra, 2010).

1.1.1 Adoption and Trends of Mobile Payment Platforms Across the World

Over the last 20 years, there has been a growing movement worldwide to encourage the unbanked people to use mobile payments (Pelletier, Khavul & Estrin, 2020). Through the development of a new financial and technological environment, mobile payments not only support financial inclusion but also play a key role in the transition to a cashless society. Financial institutions, merchants, agents, mobile phone users, and mobile phone providers are all part of the ecosystem. Users and merchants do not need to have bank accounts to interact with these ecosystem partners (Rahman & Islam, 2021). There is growing evidence that adoption of mobile money can significantly positively influence productivity and poverty reduction among small and medium scale traders by providing alternatives to traditional banking services (Tengeh & Gahapa, 2020). However, a study by Pelletier, Khavul and Estrin (2020) indicated that there is still a dearth of knowledge regarding how increased adoption of mobile money technology can be maintained.

The need for more efficient financial transactions, rising smartphone usage, and technological improvements have all contributed to the tremendous growth in the use of mobile payment platforms worldwide in recent years. According to the Global Findex Database (World Bank, 2022), approximately 76% of adults worldwide made or received a digital payment in 2021, up from 67% in 2017. In Spain, in a study on the determinants of intention to use peer-to-peer mobile payment among medium scale traders, Liébana-Cabanillas, Molinillo, and Japutra (2021) noted that adoption of this technology was significantly influenced by subjective norms of the users,

usefulness of the technology, and personal innovativeness. However, the socio-economic dynamics of Spain may differ from the situation in Kenya. Hence, this calls for the current study to highlight factors that influence adoption of mobile payment in micro-retailers in the K Gikomba market in Nairobi County.

In China, Cao (2021) noted that during the Covid-19 pandemic period, many people were forced to embrace cashless financial transaction models, thus increasing the use of mobile money technology as a quick and safe alternative. The study further revealed that mobile payment adoption in China was significantly influenced by business factors, and technological competencies of SMEs operators in the country. In another study by Liu, Pan, and Yin (2020) on the factors influencing usage of mobile payment by households in emerging markets in China, the findings noted that mobile payment positively influenced consumption among urban households during the Covid-19 period. This was contrary to the rural households which were least affected by adoption of mobile payment in terms of consumption.

According to GSMA (2022), there are more than 548 million registered mobile money accounts in Sub-Saharan Africa, representing a 17% annual growth rate. These accounts continue to dominate the financial services market in this region. In Zambia, Hassan (2023) did a study on the relationship between mobile money payment adoption and performance of informal business and noted that adoption of mobile money significantly improved performance of informal business in the southern country. The study further indicated that embracing mobile money payment was preferred due to the low transaction costs and improvement in liquidity related to the use of this payment model. The research recommended improved digital technologies for ultimate improved informal business performance. The case of Zambia regarding adoption of mobile payment

platforms is just a demonstration of the dynamics in this field cutting across many countries in the African region, including Kenya.

In Kenya, statistics indicate that more than 68% of adults in the country actively use mobile money platforms including M-Pesa, Airtel Money, and T-Kash, making the country a global leader in this area (Communications Authority of Kenya, 2023). Kenya is known to have a very vibrant mobile money payment system Mpesa, thus famed as among the few African countries that have made important steps towards development of real-time payment networks (Ayiesa, 2018). For instance, PesaLink which was first initiated in 2017 has been successfully used in payment and direct debits by many Kenyan consumers and business people to instantly and easily undertake interbank money transfers. The PesaLink mobile payment application is compatible with multiple foreign currencies, including euros, sterling pounds, and US dollars, thus greatly revolutionizing the financial market across the globe. Apart from Mpesa which is the most commonly used mobile money payment platform in Kenya, other methods include Airtel money, paypal, pesapal, and skrill among others. Available statistics by Safaricom show that currently Mpesa has over 30 million subscribers in Kenya and more than 21 million of them across other African countries, such as Tanzania, the Democratic Republic of Congo, Mozambique, Lesotho, Ghana and Egypt which currently also enjoy Mpesa services (Safaricom, 2023). Despite the vibrant nature of the mobile money sector in Kenya, its adoption in retail businesses has not been very encouraging partly due to cost of transactions and safety issues (Ayiesa, 2018).

1.1.2 Retail Trade and Its Impact on Kenya's Economy

Retail trade is an important aspect of the economy in Kenya, with statistics indicating that the informal sector in general accounts for more than two-thirds of the national GDP (KIPPRA, 2023).

In the first quarter of 2023, wholesale and retail trade is said to have expanded by about 4.9 percent, thus significantly contributing to the country's GDP. The increasing trend in growth of the retail sector in Kenya has not however reflected corresponding adoption of the mobile payment technologies as the world is fast embracing cashless financial transactions across different business sectors.

According to a 2019 study in Kenya for example, 90% of micro-retailers use traditional cash management methods where most of the transactions are cash-based. The situation therefore left most micro retailers vulnerable to cash thefts, cash misuse, poor cash management, and lack of proper accounting. This came against the backdrop of the fact that 75% of goods sold are from wholesalers far from the micro-retailers, which forced the businesses to close temporarily during the day to get products, often leading to loss of sales, time, and high transportation costs (Technoserve, 2019). Kenya is home to Africa's second most developed retail sector. According to the Kenya National Bureau of Statistics (KNBS, 2023), wholesale and retail trade was reported to have contributed to the country's Gross Domestic Product (GDP) close to 307 million Kenya shillings by March 2023, up from about 262 million shillings by December 2022. Statistics further show that until today, the informal sectors in Kenya contributed about 32.6% (\$127 billion) to the GDP, having employed roughly 16 million people in 2022 alone. According to the Kenya Institute for Public Policy Research and Analysis (KIPPRA), the informal sector in Kenya employs almost 83% of the country's workforce, thus making it the backbone or main driver of Kenya's economy (KIPPRA, 2023). Between 70% and 75% of Kenya's retail sector is driven by micro-retailers, with 95% of retail shoppers visiting kiosks or small retail shops frequently, and visiting supermarkets only once a month (Nielsen, 2015; Technoserve, 2019).

In Kenya the most commonly utilized form of electronic payment is mobile money (Pamuk et al., 2018). Mpesa, the first mobile money instrument, was created by Kenya's Safaricom in 2007 to improve P2P (person to person) money transactions (Dalton et al., 2018). Lipa Na Mpesa, which is divided into Buy Goods and Services and PayBill, was subsequently introduced by Safaricom in June 2013 with the intention of increasing Mpesa's use in retail transactions. In the 15 years that Mpesa has been operational, it has attracted more than 470,000 businesses and over 600,000 Mpesa agents (Lopokoiyit, Gathinji & Vijay, 2022). Following in the footsteps of Safaricom, Airtel and Telkom Kenya are the latest telecommunications companies that have since released Airtel Money and T-Kash respectively while Safaricom has consistently endeavored to improve Mpesa by introducing new services such as Pochi la Biashara. In a general sense, retailers provide an important link between manufacturers and customers as they provide the sales to the final consumer in the distribution chain.

1.1.3 Gikomba Market and Factors Affecting Adoption of Mobile Payment Platforms

Gikomba is located in Pumwani ward of Kamukunji subcounty, and is the largest open market in Nairobi County (Kitonyi, 2023). As the capital city of Kenya and the largest regional trading hub for East African region, Nairobi County emerges as an ideal area of research focus regarding adoption of mobile payment platforms by micro-retailers (Lwesya, 2022). Statistics from the county government shows that there are over 2,700 traders in the market involved in different kinds of micro-retail businesses. These include but not limited to second hand clothes dealers, fruit, grocery, cereals, textile, and food vendors (Kamau, 2018). Usually, Gikomba market is flocked by very many people from different parts of the country, with so many attracted to the open marketplace due to the well-known used clothing, or mitumba as it is commonly called.

Among the busiest marketplaces in Nairobi is the Gikomba market, with thousands of customers witnessed here every day coming to purchase different types of commodities.

In markets like Gikomba, one of the biggest open-air marketplaces in East Africa, micro-retailers, who make up the majority of the informal sector, have increasingly embraced mobile payment services in order to enable quick, safe, and cashless transactions (Ongoro & Muiya, 2023). At the micro-retailer level, there are still notable differences in acceptance levels despite the country's growing mobile money usage, indicating that some characteristics either help or impede adoption (Wanga, 2021). Comprehending these elements is essential for augmenting financial inclusion and enabling small enterprises in extremely dynamic settings such as Gikomba Market.

Like in many other markets in a busy cosmopolitan area, the majority of micro-retailers in the Gikomba market are increasingly adopting cashless platforms, away from cash-based transactions (Shao et al, 2019). However, a study by Okenyuri (2014) noted that some of the challenges affecting full adoption of the Mpesa platform by micro-retail businesses include high transaction costs, ease and convenience of use of the system, accessibility, and safety and security among others. Despite these challenges, little is known about how much they influence retail enterprises' adoption of mobile payments. Therefore, the goal of this study is to examine the factors impacting the adoption of mobile payment systems in Gikomba Market in order to generalize the findings to other similar situations.

1.1.4 Conceptual Review of Key Variables

Three main independent variables, which include ease of use, transaction costs, and security concerns, are thought to have an impact on the adoption of mobile payment platforms in the current study. Customer attitude, handset ownership/quality, and demographic traits moderate this

association. Ease of use is a key factor in the adoption of technology, according to Technology Acceptance Model (TAM) Davis's (1989). Mobile payment systems must be easy to use and user-friendly in order to attract micro-retailers, many of whom might not be very tech-savvy. Studies show that the use of mobile payments is strongly influenced by perceived affordability (Lai & Liew, 2021; Wang, 2022). High deposit, transfer, or withdrawal costs may deter regular use, particularly for small-scale vendors in informal markets.

Regarding security concerns, Behera, Bala and Rana (2023) established that perceived risks, including fears of fraud, hacking, and loss of funds, tend to inhibit mobile payment adoption. Trust in the platform's security systems is therefore critical for user acceptance. Furthermore, moderating variables, such as customer attitude, handset access/quality, and demographics (e.g., age, education, and gender), are introduced based on existing literature that emphasizes individual and contextual factors affecting technology adoption (Mensah & Mwakapesa, 2024). This implies that customer attitude moderates the willingness to adopt even when perceived ease of use, costs, and security levels vary. Additionally, handsets can either facilitate or hinder the use of sophisticated mobile payment apps; lower-end devices might not support them. Technological acceptance patterns are also influenced by demographic factors like age, education level, and past experience with digital tools.

The research on mobile payment acceptance models provides significant support for the choice of security concerns, transaction costs, and convenience of use as independent variables. Studies like Venkatesh et al. (2003), Zhou (2011), and Davis (1989) consistently show that these criteria are important predictors of technology adoption. Furthermore, local studies conducted in Africa, such as Wanga (2021) and Ongoro and Muiya (2023), have emphasized the significance of price,

convenience of transaction, and security perceptions in influencing the use of mobile money platforms. Therefore, the selection of these factors is not arbitrary; rather, it is based on theoretical frameworks and empirical data that are pertinent to the usage of mobile technology in emerging and informal economies. The introduction of moderators further enriches the study by accounting for potential variability in adoption patterns, making the research model robust and contextually appropriate for micro-retailers operating in Gikomba Market.

1.2 Statement of the Problem

Mobile payment platform adoption among micro-retailers in Kenya is fast gaining momentum in many different areas, including Gikomba market, Nairobi County (Kariuki, 2021). Yet, there are still substantial challenges affecting effective small and medium-sized businesses' acceptance of the mobile money payment methodology entrepreneurs due to varied factors. A study by Ayiesa (2018) noted that despite existing of many different mobile payment platforms in the Kenyan market currently, adoption of each one of them comes with unique challenges. Besides Airtel Money by Airtel and T-Kash by Telkom, Safaricom's Mpesa products of Buy Goods & Services, PayBill, Pochi la Biashara, and Send Money cannot be said to be easily managed by all subscribers of Safaricom (Ayiesa, 2018). Each of these services comes with different uses in the market; with different levels of adoption as far as business transactions are concerned.

Dlamini (2020) conducted a study on the factors influencing rural families' adoption of mobile money in South Africa revealed that knowledge and perception of the platform, as well as trust of the system significantly influenced the level of adoption. However, there is a contextual gap between the study by Dlamini (2020) and the current research given that the former focused on a rural population which might not have same level of knowledge on innovation as the current study

population in an urban setting. Furthermore, the dynamics involved in the South African vs. Kenyan markets necessitates the current research to bridge any existing knowledge gap. Despite revelation of challenges of mobile payment adoption such as cost of transactions (transfer & withdrawal charges), accessibility, ease of application, security (e.g. reversal & identity theft), there are also increased driving factors for adoption of the technological modalities, such as convenience and safekeeping of the business money (Ayiesha, 2018). Notably, the study by Ayiesha (2018) involved students of higher learning institutions, with the revelations that they found it hard to transact large amounts of money using mobile money platforms thereby opting for cash or bank transactions.

Despite constant innovations of new products in the mobile money market, such as has been witnessed in Mpesa services, this has not completely made it easier for the users to operate seamlessly. Not many small retailers readily embrace Buy Goods and Services, PayBill and Pochi la Biashara products by Safaricom Mpesa among micro-retailers in Kenya (Ayiesha, 2018). Yet, there is little information regarding why retailers may prefer one service as opposed to the other during the uptake. Therefore, this study investigates the variables influencing micro-retailers in Nairobi County's Gikomba Market's adoption of mobile payment platforms.

1.3 Research Objectives

1.3.1 General Objective

The general objective was to investigate determinants of mobile payment platforms adoption among micro-retailers in Gikomba market, Nairobi County, with the moderating effect of customer attitude, handsets, and demographics.

1.3.2 Specific Objectives

The specific objectives of this study were:

- i. To determine the effect of ease of use on adoption of mobile payment platforms among micro-retailers in Gikomba Market, Nairobi County.
- ii. To identify the influence of transaction costs on adoption of mobile payment platforms among micro-retailers in Gikomba Market, Nairobi County.
- iii. To examine the effect of security concerns on adoption of mobile payment platforms among micro-retailers in Gikomba Market, Nairobi County.
- iv. To determine the moderating effect of customer attitude, handsets, and demographics in the adoption of mobile payment platforms among micro-retailers in Gikomba Market, Nairobi County.

1.4 Research Questions

This study sought to address the following research questions:

- i. What is the effect of ease of use on adoption of mobile payment platforms among micro-retailers in Gikomba Market, Nairobi County?
- ii. What is the influence of transaction costs on adoption of mobile payment platforms among micro-retailers in Gikomba Market, Nairobi County?
- iii. What is the effect of security concerns on adoption of mobile payment platforms among micro-retailers in Gikomba Market, Nairobi County?
- iv. What is the moderating effect of customer attitude, handsets, and demographics in the adoption of mobile payment platforms among micro-retailers in Gikomba Market, Nairobi County?

1.5 Scope of the Study

The study's focus was on the variables influencing the uptake of mobile payments platforms in micro-retailers in Gikomba Market, Nairobi County. The scope was therefore limited geographically to the open market in Nairobi County, with the anticipation of generalization of the findings to other similar populations outside the study site. Gikomba market was ideal for this study given its dynamic nature of business surrounding micro-retailers in this market where traders and customers are attracted from different socioeconomic settings. This gave the researcher an opportunity to hear comparative experiences of the traders based on their socio-economic backgrounds. In terms of the study variables, the study was specifically restricted to 4 independent variables, including the mobile payment platforms' user-friendliness, transaction cost, security concerns, and users' attitude to adoption of mobile payment platforms among micro-retailers in Gikomba market in Nairobi County. This gave the research a manageable scope that was more tenable within its general objective.

The focus of mobile payment platforms included Mpesa, Airtel Money, and T-Kash offered by Safaricom, Airtel, and Telkom Kenya, respectively. This was because these are the most commonly available mobile payment platforms, despite variations in terms of level of use among the subscribers. The study involved micro-retailers in Gikomba Market, including, hawkers, food vendors, kiosk and small shop owners who form the majority in different sub sectors of the informal economy. The study was carried out for 1 year (Sept 2023 to Sept 2024), with fieldwork taking one month (July 2024) to complete.

1.6 Significance of the Study

The study may be beneficial to mobile money technology providers as it provides them with a practical understanding of the current market prevalence and perception of their products. The research may also give providers of mobile payment platforms visibility on the services the current micro-retailer would find helpful and which would drive them to adopt the technology. The results about the variables influencing the uptake of mobile money technology may provide system developers insights into the aspects that make micro-retailers either adopt the products, or shy away from the products. The study therefore provided suggestions on aspects to be improved by mobile money technology developers in order for them to enhance their popularity in the market.

This study is also expected to be of great value to micro-retailers in Kenya, by highlighting the possible benefits of mobile money technology as well as raise awareness of the technologies among the micro-retailers. The study is envisioned to provide potential solutions to micro-retailers and encourage adoption of mobile money technologies as preferred mode of payment in business transactions among multiple micro-retailers across Gikomba Market. The findings of this research may also be useful in highlighting possible challenges of mobile payment platforms to micro-retailers and developing or suggesting potential solutions to the challenges faced.

Researchers and academicians would also benefit from the study since it will contribute to the body of knowledge regarding financial management and the adoption of micro-retailers of relevant mobile technology for more effective and sustainable running of the business in Kenya and across the world. Recommendations of this research may also trigger further studies as the findings serve as a source of reference to researchers pursuing future studies in related topics.

1.7 Chapter Summary

The chapter focused on the background of the study, outlining the background of the study, statement of the problem, research objectives, research questions, scope, and significance of the study. In the background, which provided the study's foundation, there was also a discussion on key variables of the research, highlighting different aspects from global, regional, national, Kenyan, and local perspectives.



CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter offers a thorough analysis of empirical research pertaining to the variables influencing the uptake of mobile money payment systems among micro-retailers in Kenya and elsewhere across the world. In light of the research questions that were emphasized in the first chapter, this chapter examined the literature. The conceptual framework of the study and the theoretical review were also covered in this chapter.

2.2 Theoretical Review

The spread of innovations theory and the theory of reasoned action will be used in the study to address its research questions. The two theories will allow the researcher to analyze the phenomenon under study from various perspectives and frameworks for more comprehensive understanding of the same. In this sense, each theory is expected to offer unique insights and shed light on different aspects of the variables that a singular theoretical approach is likely to ignore. Adoption of the two theories will also improve the study's validity and reliability since it enables the researcher to synthesize ideas and concepts from varied disciplines for comprehensive analysis and holistic understanding of the subject being investigated (Collins & Stockton, 2018).

2.2.1 Theory of Reasoned Action

Ajzen and Fishbein attempted to gauge the gap that existed between attitude and conduct before developing the Theory of Reasoned Action (TRA) (Albarracin & Johnson, 2001; Otieno & Liyala1, 2016). The hypothesis originates from social psychology, where researchers have tried to explain how and why people's beliefs alter their conduct and how and why attitude influences

behavior (Albarracin & Johnson, 2001; Otieno & Liyala1, 2016; Waititu, Yousafzai & Foxal, 2010). The theory of reasoned action can explain the pattern of behavior while choosing to use a new invention or piece of technology.

Otieno (2016) further argues that the reasoned action theory can clarify whether behavioral intentions, subjective norms surrounding behavior performance, and the individual's assessment of the behavior's ease of execution are what drive behavior, such as the use of new innovations in the workplace. This theory postulates that our subjective norms and attitudes are the primary causes of behavioral intent. According to Ajzen and Fishbein, attitudes are made up of two parts: appraisal and belief strength. Thus, this idea connects people's attitudes, beliefs, norms, and behaviors with regard to uptake of new technology. The theory further suggests that all other factors, such as characteristics of tasks, organizational structure, and political factors only have an indirect impact on behavior through affecting attitudes or arbitrary standards held by the individual.

Adoption of new technology by micro-retailers would naturally lead to weighing the benefits against the likely disadvantages of the technology based on rational decisions. Based on the principles of the reasoned action theory, this means that individuals will change their attitudes and beliefs about certain things after they have carefully assessed their new perspectives vis-à-vis the old situations. Based on past literature, adoption of mobile money applications among micro-retailers continues to face setbacks, and all these are informed by what people consider to be working better for them. For instance, according to Ayiesa (2018), despite the numerous benefits of mobile payment systems across different business sectors, many customers in the micro-retail sector have not fully embraced the technology due to different personal reasons.

By connecting attitudes and subjective norms to actual action, the Theory of Reasoned Action (TRA) offers a useful framework for comprehending behavioural intents; yet, its use in this study has limitations. TRA makes the assumption that people behave rationally and that their choices to use mobile payment platforms are only motivated by conscious intents influenced by attitudes and perceived peer pressure. Decisions made by micro-retailers in Gikomba Market, however, might not always be well-considered or logical. Various factors, including a lack of digital literacy, impulsive decision-making, socioeconomic limitations, and environmental issues like network dependability, can significantly impact adoption beyond individual intent (Hussain, Gupta & Bhardwaj, 2024). Furthermore, TRA does not specifically take into consideration infrastructure or technology restrictions (such as handset limitations), which are critical to the implementation of mobile payments. Therefore, in order to fully capture the complexities influencing mobile payment adoption in such a dynamic informal market context, TRA must be supplemented with more technology-specific models like, diffusion of innovation theory, the Technology Acceptance Model (TAM) or Unified Theory of Acceptance and Use of Technology (UTAUT).

2.2.2 Diffusion of Innovations Theory

Everett Rogers developed the theory of diffusion of innovations in 1962 to describe how a concept or product can gain traction over time and diffuse or spread through social systems to benefit a specific population (2003). According to Dearing and Cox (2018), diffusion is a social process through which people respond to learning about an innovation. Related to the current research where the focus is on innovations and their application in mobile payment platforms, the theory is relevant in explaining how individuals can be influenced to adopt such platforms due to their perceived advantages or conveniences. According to Rogers (2003), innovation is any concept, procedure, or undertaking that a person views as novel or section of a community. Adoption is

then viewed as making full decisions to use the invention, with diffusion allowing progressive communication of the innovation through time and space. Therefore, the four essential components of an innovation's spread are innovation, communication channels, time, and social systems (Hoerup, 2001). These principles can be seen in the adoption of mobile payment platforms depending on how beneficial they are to the individuals adopting them.

The adoption of new technologies, including mobile payment systems among micro-retailers in Nairobi County's Gikomba Market, is best studied using the diffusion of innovation theory. Medlin (2001) maintained that theory has widely been used in research involving technological revolutions where the concepts of technology and innovation are often used interchangeably. Through diffusion of innovation theory, it is possible for a researcher to look at the rate, how, and why the new technology is spreading. These will explain the level of adoption of the new innovation at individual and community levels (Ndungu, 2020). An innovation's adoption behavior can be significantly influenced by a number of characteristics, including relative advantage, complexity, and compatibility, usability, as well as applicability (Rogers (2003). These factors may explain why adoption of mobile payment platforms among micro-retailers has not been a guarantee despite notable advantages. This means that individuals are motivated to adopt cashless business transactions based on what they consider most useful and convenient to them.

Al-Jabri (2012) further argued that relative advantage of using a new technology is often the guiding principle for people to decide whether or not to embrace the technology. A new technology's relative advantages can be viewed in terms of its alleged benefits, as well as complexity, compatibility, and visibility compared to preceding innovations. In relation to the embracing of new mobile money inventions among micro-retailers in Gikomba Market, this

implies that the service must be perceived as being in harmony or consistent with the users' habits where they have the capacity to use the said innovation.

The Diffusion of Innovations Theory (DOI), which emphasizes elements including relative advantage, compatibility, complexity, trialability, and observability, provides helpful insights into how new technologies, such as mobile payment platforms, spread among consumers (Arli & Bakpayev, 2023). However, there are significant limits to its use in this study. DOI frequently ignores the intricate socioeconomic realities that micro-retailers in unofficial marketplaces like Gikomba face by generalizing adoption as a linear trend (Koloseni & Mandari, 2024). For example, although the theory presupposes that people independently decide which innovations to adopt, in reality, external variables like a lack of technology infrastructure, the cost of mobile phones, and fluctuating consumer demand have a significant impact on adoption patterns. Furthermore, the moderating impacts of demographics, handset accessibility, and individual attitudes, all of which are crucial in influencing the uptake of mobile payments in low-income environments, are not well covered by DOI (Arli & Bakpayev, 2023). Consequently, although DOI offers a valuable perspective for comprehending broad adoption patterns, it has to be modified or enhanced by models that more accurately represent the specific obstacles and facilitators encountered by micro-retailers in developing nations (Koloseni & Mandari, 2024).

2.2.3 Technology Acceptance Model

Davis developed the Technology Acceptance Model (TAM) in 1989 and listed the advantages of technology in performing important functions. The theory further postulates that whenever individuals or organizations are introduced to technology, their choice of whether to use the technology or not is influenced by the effectiveness of the technology with regard to performance

of the tasks it was intended for. For Davis (1989), perceived utility of a given technology and the ease with which it is applied makes a significant impact in influencing the decisions and behaviours of those who wish to adopt the technology in question. This view can relate very well with the situation where micro-retailers want to make a decision whether to use a given invention.

With respect to this research, it is generally believed that adoption of technology in payments in market will make things easier for the traders in general. Technology acceptance model will be significant for this study in the sense that the theory will provide a foundation upon which to view technology as an enabler when it comes to transacting businesses among small and medium retailers in a vibrant market.

The Technology Acceptance Model (TAM), which highlights how perceived usefulness and simplicity of use influence users' acceptance of new technologies, is extremely pertinent to comprehending the adoption of mobile payment platforms (Hossain, Hussain & Akther, 2023). Nevertheless, the theory has certain drawbacks when considering the micro-retailers in Gikomba Market. TAM does not fully account for broader contextual elements including economic challenges, trust issues, handset restrictions, or different customer behaviours that also have a significant impact on adoption (Jawad, Parvin & Hosain, 2022). TAM presupposes that adoption decisions are primarily logical and driven by technology. Additionally, TAM ignores the impact of infrastructure, social, and cultural barriers, all of which are especially noticeable in informal markets (Hossain et al, 2023). Additionally, it downplays the importance of emotional and behavioural factors, which might be important in situations where digital literacy is poor and peer pressure may impact the adoption of mobile payment methods more than logical analysis. Therefore, in order to fully explain mobile payment uptake in such informal, resource-constrained

situations, TAM has to be supplemented with other factors or integrated with socio-contextual theories, even though it provides a solid foundation.

2.3 Empirical Review

Literature review was carried out on sub-themes created along the 3 specific objectives of the study. These included ease of use and adoption of mobile payment platforms, cost of transaction and adoption of mobile payment platform, security concerns and adoption of mobile payment platform.

2.3.1 Ease of Use and Adoption of Mobile Payment Platform

There is no doubt that many organizations and businesses are increasingly adopting mobile money technology and platforms in conducting their businesses. One of the critical considerations in the adoption of this mode of transacting business revolves around the complexities of choice. According to Chen and Aklikokou (2020), perception of how easily an invention can be applied significantly influences the users' attitudes in its application in Sudan. However, this research was done in Sudan, thus presenting a contextual gap. In Ghana, Kelly and Palaniappan (2023) conducted research on the variables impacting the ongoing use of mobile money service transactions. Using technology acceptance model to guide the study where 406 mobile money users from the Savannah and Bono areas of Ghana participated in the study, the authors found that the technology's perceived danger, cost, utility, and simplicity of use greatly influenced the users' attitudes and final decision in adoption and/or continued use of the technology. These views were however related to the general mobile money users in Ghana, as opposed to the current study's more specific target population which is restricted to micro-retailers in Gikomba market, Nairobi

County in Kenya. This contextual and methodological gap will be addressed by the current research.

The dissemination of information on how mobile payment technology operates, with the goal of making the product's advantages apparent to the user, is crucial to its uptake. Therefore, mobile firms would do well to inform consumers about the potential that comes with adopting mobile money as well as the existence of a varied offer of services, as inadequate communication can prevent users from using the service (Mansour, 2021). Aside from the perception of technology's ease of use for transacting payments, there may be the question of actual knowledge of applicability of the model, otherwise known as technology awareness. An individual's awareness of the existence and advantages of technology is referred to as their level of technology awareness, which is usually a precondition for adoption of technologies (Al-Okaily et al., 2022; Kazembe, 2021). Despite these insightful revelations by these previous studies, the current study will act as an update in a different research setting.

Numerous research on the factors influencing technology adoption have demonstrated that a large percentage of the population's lack of awareness of these technologies is a major contributing factor to low technology adoption (Acheampong et al., 2018; Kazembe, 2021; Simtowe et al., 2010). This included lack of knowledge on how to handle electronic payment systems, hence discouraging some people from even trying to adopt the technology for fear of incurring unwarranted losses as a result of transactions going wrong. Hence, Abubakar (2013) concluded that the higher the knowledge among a given population, the likelihood that mobile money technology can be adopted. The reverse is also true. Furthermore, a number of potential users of the technology may lack knowledge on the different features that the different mobile payment

technologies have, this limiting their chances of adopting the technology According to Otieno et al (2016), many people are only aware of one aspect of using mobile phones to send and receive money; they are unaware of the other aspects, such as Buy Goods, Lipa na Mpesa, and Pochi la Biashara. This makes it abundantly evident that a lack of knowledge made it difficult for customers to take use of the many services that their mobile money technology might provide, thus indicating the need to drive product usage (Lemma, 2018).

In South Korea, Kim and Kim (2022) conducted research on consumers' intentions to pay for services in various places using mobile money where the citizens needed to access essential services. The research involved general regular users of the technology, with a sample size of 300 individuals but where 227 of them successfully finished and submitted the online survey that was used to gather data. The study's conclusions demonstrated that users' intentions to use the mobile money platform were highly influenced by their perceptions of the service's usability, subjective norms, and convenience of use. These views resonated with those by Kelly and Palaniappan (2023) in different research in Ghana which noted that social influence positively impacted the attitudes of users when it comes to adoption of new technology in the mobile money service industry. These included the level of trust of the mobile money transaction technology, especially with perceived risks. For the case of Kim and Kim (2022), the level of adoption of the technology was significantly moderated by the covid-19 outbreak, where some people were compelled to use mobile money services because of concern for the virus's propagation. Both studies however recommended rigorous marketing and awareness creation strategies by the providers of the mobile money technologies so as to improve their usefulness among the users. Given that these previous researches were undertaken outside Kenya, the current study will be critical in bridging this knowledge gap.

In China, a study on the impact of trust levels on the uptake of mobile money services among various users was conducted by Sleiman et al. (2021). A technological acceptance model served as the study's guide to help identify the variables affecting mobile money service uptake by different users in different situations in their daily lives. Using a sample of 373 users of popular Alipay and WeChat mobile payment platforms in China where a questionnaire was applied for data collection, the findings indicated that customer trust, and reputation and reputation of the technology in question are very important elements influencing individuals' decisions to adopt mobile money platforms. Perceived risks associated with mobile money applications also affected the customers' intention to adopt a given technology. Other related factors which impacted customer behavioral intention was also influenced by mobility, subjective norms, usefulness, simplicity of use, and perceived enjoyment of the product and using a particular mobile money technology. Despite these insightful results, Sleiman et al.'s study in 2021 was centered on general users of the mobile money platforms whose decisions may not be driven by business motives. However, the current research intends to specifically involve micro-retailers and what influences them to adopt the technology.

Another study by Zhang (2019) on technology and continued use of cashless payment platforms showed that confidence in independent mobile payment platforms was a factor that impacted the adoption. The research used a sample size of 740 respondents and incorporated gender aspect in determining if there was a difference in trust-building and adoption of the technology between male and female consumers. The findings showed that security and trust as well as customization of the platform played an important role when it comes to the platforms' adoption. Absence of confidence in the new invention for example increased perceived levels of risk of a given mobile money technology. Regarding gender differentials when it comes to factors influencing people

wanting to use mobile money in paying for services, the study's findings demonstrated that while security and personalization have a more noticeable impact on female mobile payment users' trust, mobility and reputation have a greater influence on male users' ability to develop trust.. The study by Zhang (2019) involved general users of the mobile money technology that were not necessarily driven by any business motives like micro-traders would.

2.3.2 Cost of Transaction and Adoption of Mobile Payment Platform

Adoption of mobile technology by different consumers is dictated by various factors, including the cost of transaction when it comes to making payments for the intended services (Zhang, 2019; Mbogo, 2010). Such factors may explain why in Kenya for instance, out of the more than 95% of the adult population registered Mpesa users, slightly more than 60% of these actively use the service. Statistics further shows that despite the increasing number of people using mobile money transfers where Safaricom's Mpesa stands at about 96.5%, Airtel Money at 3.4%, and Telkom Kenya's T-Kash at 0.1% (Communications Authority of Kenya, 2020), in Kenya and elsewhere in the world where mobile money technology is progressively gaining numbers, not all the people who get registered for the service regularly use it (Becatien et al, 2022; Konte & Tetteh, 2023; Mbogo, 2010). This may also be the case in Kenya, thus requiring empirical research to clearly link the numbers registered for mobile payment platform and those currently using it.

A study by Konte and Tetteh (2023) on transaction costs and adoption of the platform among different sectors of the small business economy revealed that a number of customers used what they considered a lot of money in transacting different purchases of services as opposed to using cash. Utilizing information from the World Bank's enterprise survey covering 14 sub-Saharan African nations, the study established that a number of small scale businesses were ready to

combine mobile money platforms and cash transactions, but the latter was taking more precedence due to perceived ease and straightforward handling. It further emerged that the uptake of mobile money among small and medium size businesses was relatively slow compared to the situation among big companies. Becatien et al (2022) noted that disparity in mobile money adoption among micro-retail businesses and big organizations can easily be explained by the small profit margins in smaller businesses where the mobile money transaction costs would appear to even worsen the situation. While the bigger companies may hardly feel the pressure of expanding on mobile money purchase and sale transactions, micro-retailers do not enjoy similar luxuries. Both studies by Konte and Tetteh (2023) and Becatien et al (2022) recommended the need for reduction in transaction costs in mobile money to encourage adoption of the same by small retail business entities.

Sleiman et al (2022) did a study continuation of mobile payments adoption in Sudan in the private business sector and noted that a number of businesses were keen in using mobile payments as their preferred mode of business transactions. Through the use of a structured questionnaire to collect data from a sample size of 453 respondents, it was further established that technological improvements in the telecommunications business made it easier for many people to own smartphones which simplified and increased options of purchasing and selling goods and services by use of mobile devices. This mode of business transactions further enhanced people's flexibility and convenience as they were able to order and pay for goods and services even business locations or workplaces as they went about other daily activities. The study also noted that satisfaction was the overriding factor in motivating people in adopting innovative payments platforms. Yet, the study by Sleiman et al (2022) did not specifically focus on small scale traders that may not be particularly motivated by comfort, but by much they are able to make or save by using mobile payment platforms.

In addition to the direct cost of transaction in terms of the money deducted by the providers in every transaction the user makes, research has also pointed to the indirect cost incurred in terms of time used to make the transaction and associated risks of losing money, especially to individuals who lack sufficient knowledge on how to maneuver through the technology which may force them to seek help from those who could easily con them (Mbogo, 2010; Zhang, 2019; Becatien et al, 2022). Other indirect costs of transactions may include some users of mobile money services are forced to go to regions where networks are operating normally in order to complete transactions due to factors including unreliable networks and interrupted transmissions, which results in extra expenses and significant inconveniences (Talon & Tengeh, 2019). Another challenge was that many cash transactions are preferred by traders over cashless transactions. The main cause of this was people's mistrust in mobile phone payment systems because they were afraid that others would exploit their old SMS credentials to trick them into paying more than they intended and end up defrauding the unsuspecting victims (Otieno et al., 2016).

Franque, Oliveira, and Tam's (2021) study on the variables influencing African consumers' intentions to continue using mobile payments established that there are different barriers to easy adoption of mobile money application in the micro-retail sector. The 338 participants in the study were interviewed using an online questionnaire and revealed that a number of users were influenced by individual perception, preferences, and level of satisfaction with the technology. Additionally, it emerged that language barrier was a real challenge among a number of users of mobile money technology. Related to the micro-retail business sector where there are a number of traders with low levels of formal education, things such as reversing money to their mobile phones in the event that they sent it to wrong numbers proved too costly to bear. These views were a reflection of an earlier research of Otieno et al (2016) which established that besides fear of

reducing potential profits through high transaction costs of mobile money platforms, many users often developed the fear of losing money through complicated or complex system applications.

According to Hamdan and Menkhoff (2021), perceived high transaction costs related to mobile money technology adoption impede smallholders from full adoption and regular use of mobile money platforms. While many business operators in big business industries consider mobile money platforms as more convenient compared to cash transactions in terms of reduced risks, increased safety, and ease of transactions among business parties separated by long distance and space, in the micro-retail sector the cashless mode of doing business is ironically often considered riskier than where cash is directly involved in sealing business deals. The findings further indicated that in Tanzania and Ivory Coast where data was obtained, mobile money users profited more from this platform. The results emphasize the necessity of carefully weighing the possible benefits of policies that facilitate the use of mobile money with those that aim to increase market participation, as well as the possible drawbacks of taxation policies that target digital markets in developing nations.

2.3.3 Security Concerns and Adoption of Mobile Payment Platform

Security and safety of mobile payment technology is of paramount importance when it comes to its adoption for use (Alamgir, 2019; Ramtiyal, Verma & Rathore, 2022). A study by Alamgir (2019) on the influence of security perception on adoption of mobile payment in Bangladesh noted that many people appreciated the role of mobile money technology in improving individuals' quality of life and enhancing business. The study further focused on risk and trust issues of the mobile money technology and how these can influence the level of adoption by users. The findings revealed that customer satisfaction and loyalty significantly influenced how much willing and

ready the customers were when it came to adoption of mobile money platforms. On the other hand, perceived risk tended to erode customer confidence and trust in the mobile money platform, thus reducing customer satisfaction. Furthermore, the study noted that there was a direct relationship between customer satisfaction and customer loyalty, where both of these factors influenced adoption of the mobile money platform. At the same time, gender differentials moderated the adoption, with more women than men fearing to try new application options they were not sure about. Despite the revelations by Alamgir (2019), the study did not specify the study population in Bangladesh, hence the need for the current study focusing on micro-retailers.

In the research by Ramtiyal, Verma and Rathore (2022) study on how situational variables and risk perception affect small merchants' adoption of mobile payments in unorganized retail sector in India, it emerged that younger retail business people were more likely to face risks posed by the mobile payment platforms as opposed to older vendors. The cross-sectional survey involved 349 small scale vendors, with consideration of moderating or contextual variables as age, gender, user/customer attributes, and facilitating conditions. The research established that regardless of gender of the user, age was a common influencing factor where older individuals were not as willing to take risks as the relatively younger ones. Despite these findings within the Indian context, the current research would be imperative to bring into perspective the Kenyan situation.

Another study carried out by Agárdi and Alt (2022) on innovative money platforms found out that more consumers were increasingly using mobile payment in their different daily transactions. However, the adoption of this mode of payment significantly depended on individual attributes of the user. To gather data from 530 respondents comprising older and younger consumers of the mobile payment platforms, an online survey form was employed for comparative analysis

purposes. The findings revealed that perceived ease of use and financial risk of the mobile payment platform had a greater impact on older users and subjective norms. On the other hand, the younger users were influenced more by compatibility of the mobile payment platform with their individual lifestyle. Therefore, the study recommended the need for more emphasis on generational patterns as a guide for clearer understanding of mobile payment acceptance. Undertaking the current study within a Kenyan context will help to shed more light on the factors influencing adoption of the mobile payment platform, especially among micro-retailers who comprise people from diverse social backgrounds.

Franque et al (2021) argue that in Africa, after the launch of mobile money payment where Mpesa was first launched in Kenya in 2007, this technology has largely been seen as a very important platform for transforming people's lives across the region and the world. In Mozambique for example, Batista and Vicente (2020) established that mobile money has greatly transformed lives of smallholder farmers in villages through access to savings and facilitation of ease of doing business transactions. Yet, fear of the risk of use of the technology continues to suppress widespread adoption of the mobile money platform, especially among village people due to inadequate updated evidence regarding how the technology keeps on improving, hence presenting considerable complexities to the new users. In developing countries such as Kenya, studies have demonstrated the nature of the immense contribution mobile payment platforms have brought to the people's quality of life by availing financial services to them (Asamoah, Takieddine, & Amedofu, 2020; Batista & Vicente, 2020).

Some of the critical financial services presented by mobile money platforms include money transfer, money withdrawal, and payment of goods and services which have improved people's

lives in a major way (Rahman, Didarul, & Taghizadeh, 2020). Despite the incredible impression of the technology people’s lives across social settings, these changes may not be easily happening among micro-entrepreneurs in less developed neighborhoods, including Kenya, Bangladesh, and other similar regions. Rahman et al (2020) revealed that in Bangladesh, price value strongly influenced behavioral intention for acceptance to use mobile money payment among small scale traders. Such a scenario generally presents certain biases in which the mobile money platforms are improving the wellbeing of different social groups in different countries. Generally, available services and customer knowledge of the services offered; ease and convenience of use of the technology; and transaction costs are some of issues which may enable or hinder the money payment platforms’ adoption by any emerging country, such as Kenya (Mansour, 2021; Lemma, 2018; Njuguna, 2018; Mkende & Mashenene, 2019). However, all these factors may not apply the same way across different socio-economic environments, hence the need for the current research.

2.4 Summary of the Literature and Research Gaps

Based on the reviewed literature, the following gaps are inherent.

Table 2.1 Literature Gaps

Author	Study	Findings	Gaps	How the study fills the gaps
Kelly & Palaniappan (2023)	Identifying the variables impacting Ghana's continuing use of mobile money service transactions using a technology acceptance	Perceived risk, cost of technology greatly influenced the users’ attitudes and final decision in adoption and/or continued use of the technology	Focused in Ghana’s general users of the mobile money platforms	Current study will highlight Kenyan case, with specific focus on Gikomba market with a dynamic target population

Author	Study	Findings	Gaps	How the study fills the gaps
	model			
Kim & Kim (2022)	Intention to Use Mobile Simple Payment Services: Emphasizing the COVID-19 Risk Perception.	Subjective standards, perceived utility, and perceived ease of use of the mobile money service significantly influenced the users' intention to adopt the mobile money platform	Research applied more to south Korea where it was situated, as opposed to Kenya, was restricted to covid-19 social dynamics	Current research will focus on Kenyan environment, without restriction of focus in terms of seasons (environmental episodes)
Konte and Tetteh (2023)	Mobile money, conventional financial services, and business productivity in Africa	Number of customers using what they considered a lot of money in transacting different purchases of services as opposed to using cash.	Used secondary data from World Bank for 14 African countries, making the findings broad-based	Will use primary data which is more up to date, and more focused on specific local markets.
Otieno et al., (2016)	Difficulties in Using and Adopting Mobile Money Services	<ul style="list-style-type: none"> - Language barrier is a limiting Mobile payment technology - Some participants prefer cash transactions to mobile transactions due to fear of being defrauded 	<ul style="list-style-type: none"> - The study is focused on Nairobi in general and thus does not capture the unique nature of Gikomba market trading environment. - The study considers Mobile payment solutions as a singular service and does not break it down to the offerings by all the service providers 	<p>This study will be based in Gikomba and thus cover the unique perspective of traders and customers.</p> <p>- This study will look at the individual offerings in the Mobile payment landscape and give limitations and solutions for each</p>
Lemma, (2018)	Adoption of Mobile Money service in Addis Ababa, Ethiopia	Services available, Knowledge, cost and convenience are high determinants for the adoption of Mobile	- The study was focused in Ethiopia not Kenya	-This current study focuses on Kenya, and specifically on ease of use,

Author	Study	Findings	Gaps	How the study fills the gaps
		Payment Technology	-The study does not specify factors influence adoption of mobile money platforms	transaction costs, and security concerns
Njuguna, (2018)	Kenya's Nairobi County as an Example of Household Choice in Mobile Money Transfer Service Providers	<ul style="list-style-type: none"> - The accessibility, transactional cost, and convenience of the mobile payment service providers were the determining considerations in Nairobi County. - The most widely used mobile payment service is M-Pesa, which is followed by Airtel Money, Equitel Money 	<ul style="list-style-type: none"> - The study is focused in Nairobi County in general they recommended a study be done in other settings so as to give other perspectives. - The study discusses the mobile payment service providers but now the specific offerings such as PayBill and Buy Goods 	<ul style="list-style-type: none"> - This study will be based in Gikomba and thus cover the low socioeconomic perspective. - This study will focus on specific offerings by the mobile payment service providers
(Mkende & Mashenene, 2019)	Advantages and Difficulties of Mobile Banking at Tanzania's National Microfinance Bank in Dodoma	In Tanzania, People preferred Mobile Phone Banking (MPB) to National Finance Bank (NFB) because MPB is more convenient and cheaper than NFB	<ul style="list-style-type: none"> - The study is based on the Tanzanian Market not Kenyan - The study focuses on the factors that get people to adopt Mobile phone banking over a bank and not on the different Mobile payment technology offerings. 	- This study is based in Gikomba Market in Kenya and will give the knowledge, limitations, and recommendations based on the specific objectives of the study
(Mansour, 2021)	Evidence of Product-Specific Determinants of	-Egyptian Government has a National Payment	- The study is based in Egypt and not Kenya	- This study will focus on the Gikomba Market

Author	Study	Findings	Gaps	How the study fills the gaps
	Mobile Money Adoption During the COVID-19 Pandemic from Egypt	council to promote mobile money adoption -Lack of information on the varied offers and benefits inhibits mobile money adoption	and thus the findings may not be generalizable to Kenyan environment	in Kenya which will not only give a Kenyan perspective but a low socioeconomic Kenyan perspective
(Hamdan & Menkhoff, 2021)	Unrealized potential, inclusivity, and mobile money Proof from the African nation	-High fees are a limiting factor to adoption of Mobile Payment Technology	- This study is focused on Uganda and thus the limiting factors may possibly be different from those in urban Kenya	- This study will focus on the Gikomba Market and thus give a unique socioeconomic Kenyan perspective.
(Talon & Tengeh, 2019)	The Effect of Mobile Money on Douala, Cameroon's SMEs' Financial Performance	Unstable mobile networks inhibit the adoption of Mobile payment technology	- The limiting factors pointed out in this study may not be the same as in the Kenyan Market as they are based on the Cameroonian Market.	- current study will have a Kenyan perspective as it is based on Gikomba Market in Nairobi County
(Al-Okaily et al., 2022)	Does the acceptance rate of financial inclusion rise with financial awareness? A factual analysis in the age of digital revolution	The study discovered that the four UTAUT model constructs of enabling conditions, effort expectancy, performance expectancy, and social influence were all positively impacted by knowledge of mobile financial technology.	- It focused on the effect of awareness among individuals, not businesses	- This study will specifically focus on micro-retailers whose dynamics may be different from any other social groups
(Kazembe, 2021)	The Disparity in Sub-Saharan Africa's Technology	The study showed that information availability, farmers' financial and human	- The adoption of agricultural technology, not mobile payment	- The use of mobile payment platforms by micro-retailers is

Author	Study	Findings	Gaps	How the study fills the gaps
	Awareness and Adoption	resources, external programs and incentives, and farmers' risk tolerance all influence adoption as a decision-making process.	technologies, was the study's main focus.	the main emphasis of this study.
(Acheampong et al., 2018)	Does agricultural technology adoption depend on awareness? Ghana's situation with improved sweet potato varieties	The results of the study showed that adoption of enhanced sweet potato cultivars was favorably and significantly influenced by awareness. Adoption is also facilitated by raising awareness of and educating people about the enhanced varieties.	- The target demographics for the study was farmers with a focus on agricultural technology, not Micro-retailers and Mobile Payment Technology	- This study focuses on the retail industry and the knowledge of Mobile Payment Technology For Micro-retailers

2.5 Conceptual Framework

The individual elements were examined from a broad viewpoint in order to present a thorough picture of the factors influencing the adoption of mobile money technology systems in Kenyan micro-retailers. These included ease of use of the platform, transaction costs, and security concerns. The study will consider all the 3 factors (independent variables) among micro-retailers in Gikomba Market, with their possible influence on adoption of mobile payment platforms as the dependent variable). Different indicators will be used to measure each of the studied variables, as illustrated in figure 2.1.

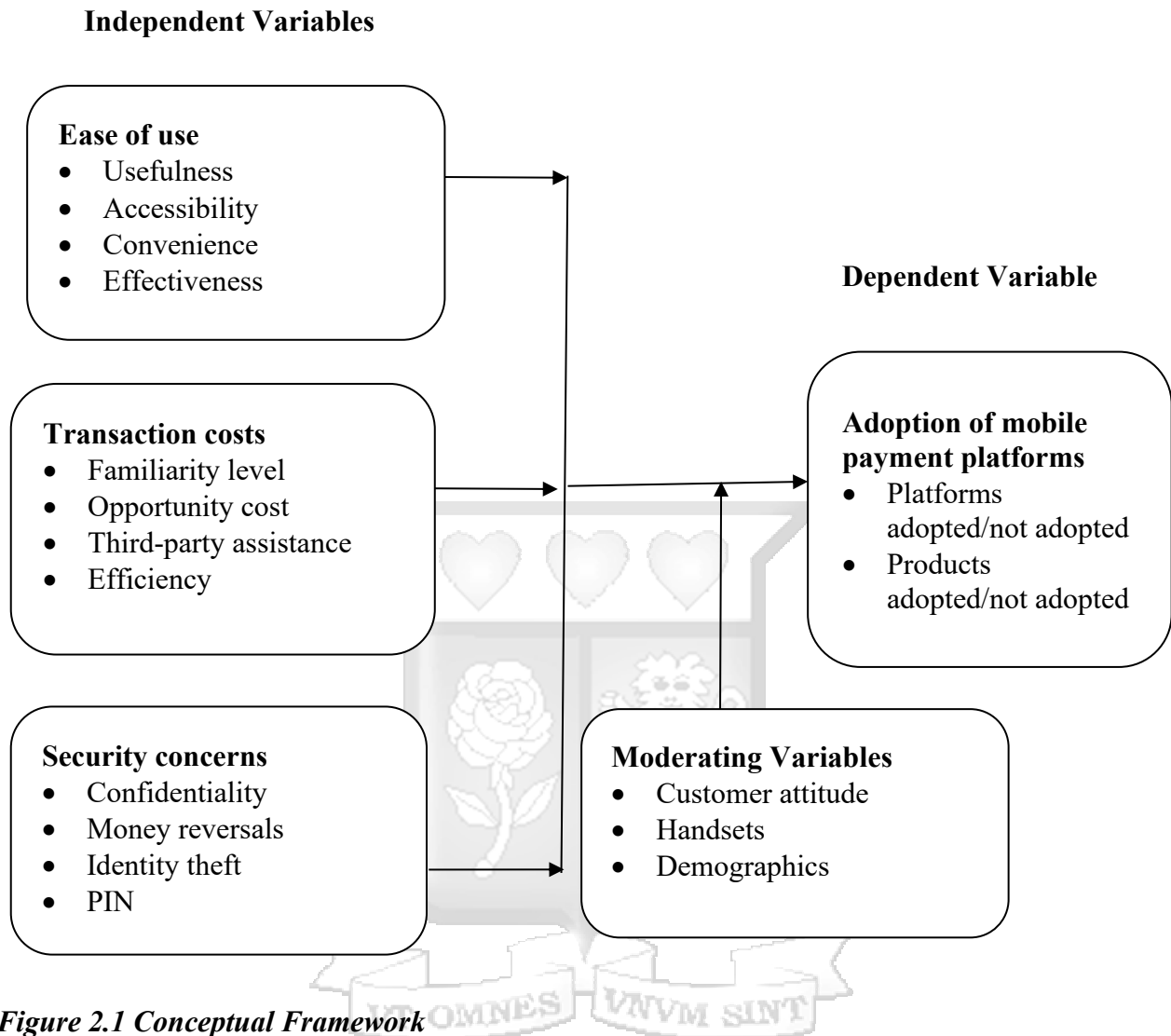


Figure 2.1 Conceptual Framework

This study used customer attitude, mobile phone handsets, and demographics of the respondents as moderating variables. Moderating is an element that modifies the relationship between independent and dependent variables and reveals the direction or strength of that relationship (King, 2013). In this case, ease of use, transaction costs, and security concerns as the independent variables (variables being studied/controlled) to measure adoption of mobile payment platforms (dependent variable) can further be influenced by customer attitude towards mobile payment

platforms, ownership of or access to mobile phone handsets, and demographics of the study population which in this case constitutes micro-retailers in Gikomba Market, Nairobi County.

2.6 Operationalization of Variables

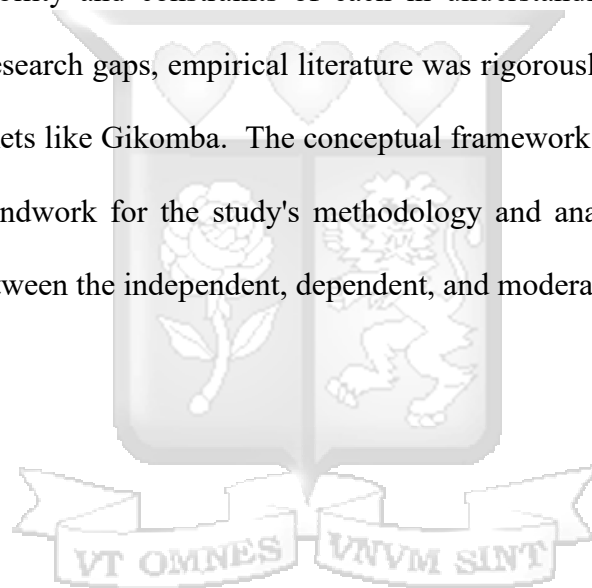
Three independent variables, including ease of use, transaction costs, and security concerns of mobile payment platforms was examined in this study as predictors of adoption of the adoption of the platforms. These were further measured as operationalized in table 2.2.

Table 2.2 Operational Definition of Variables

Variables			
Independent Variables	Indicators	Data analysis techniques	Tools of Analysis
Ease of use	<ul style="list-style-type: none"> ● Usefulness ● Accessibility ● Convenience ● Effectiveness 	<ul style="list-style-type: none"> ● Descriptive statistics ● Inferential statistics ● Content analysis 	<ul style="list-style-type: none"> ● SPSS & Excel
Transaction costs	<ul style="list-style-type: none"> ● Familiarity level ● Opportunity cost ● Third-party assistance ● Efficiency 	<ul style="list-style-type: none"> ● Descriptive statistics ● Inferential statistics ● Content analysis 	<ul style="list-style-type: none"> ● SPSS & Excel
Security concerns	<ul style="list-style-type: none"> ● Confidentiality ● Money reversals ● Identity theft ● PIN leakage/sharing 	<ul style="list-style-type: none"> ● Descriptive statistics ● Inferential statistics ● Content analysis 	<ul style="list-style-type: none"> ● SPSS & Excel
Dependent Variable			
Adoption of mobile payment platforms	<ul style="list-style-type: none"> ● Platforms adopted/not adopted ● Products adopted/not adopted 	<ul style="list-style-type: none"> ● Descriptive statistics ● Inferential statistics ● Content analysis 	<ul style="list-style-type: none"> ● SPSS & Excel

2.7 Chapter Summary

This chapter focused on review of relevant literature on the adoption of mobile payment platforms, focusing on the key variables of the study: ease of use, transaction costs, and security concerns. The chapter also critically examined the moderating variables, including customer attitude, handset availability, and demographics, and how they influenced adoption. The chapter also examined the theoretical frameworks that supported the research, such as the Diffusion of Innovations (DOI) Theory, the Theory of Reasoned Action (TRA), and the Technology Acceptance Model (TAM), emphasizing the applicability and constraints of each in understanding the uptake of mobile payments. To identify research gaps, empirical literature was rigorously examined, especially in relation to informal markets like Gikomba. The conceptual framework presented in the chapter's conclusion laid the groundwork for the study's methodology and analysis by illuminating the proposed connections between the independent, dependent, and moderating variables.



CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

The research methods that were employed in the study are introduced in this chapter. In addition, the target audience, sample size, sampling procedures, research design, and research philosophy are discussed. There are additional presentations of the research's ethical considerations, validity and reliability tools, data collection and analysis techniques, and data presentation.

3.2 Research Philosophy

A research philosophy constitutes an individual's beliefs regarding the best methods for collecting, evaluating, and applying data related to a phenomenon (Saunders et al., 2012). The research used positivism research philosophy. Aggarwal and Ranganathan (2019) define positivism as a concept that allows researchers to study the universe in an objective manner where a researcher disassociates her/himself from personal prejudices to independently focus on the research problem under scrutiny. The basic principle of positivism research philosophy is that all truthful knowledge is usually founded on the positive information obtained through observable experience. Therefore, this philosophy was applied to analyze received data from the respondents without subjective influence of the researcher. This implied that the findings on the factors affecting adoption of mobile payment platforms among micro-retailers in Gikomba market in Nairobi County was presented as the true views of the respondents.

3.3 Research Design

The overall strategy for addressing research issues is outlined in a research design. The research design used for the study was descriptive, which involves the use of existing information to correlate and analyze the prevalence or incidence of a situation. Its goal is to precisely and

methodically characterize a population, circumstance, or phenomena (Mugenda & Mugenda, 2003). The researcher can examine the link between factors, facilitated by the descriptive design without manipulating or controlling any of the variables (Aggarwal & Ranganathan, 2019). The design further allows use of structured questions to gather specific sets of information from the respondents (Ranganathan & Aggarwal, 2018).

3.4 Target Population

A population is a collection of people, things, or entities that a study intends to conduct research on and draw conclusions from (Flick, 2017). A target population must have common and distinct characteristics to allow its sample to be a true representation of the entire population. The target population for this study included micro-retailers (consisting of 1-9 employees) in Gikomba Market, Nairobi County. These consisted of small business entities such as kiosks and temporary small stores for various businesses, temporary business structures such as sheds, grocery shops, small-scale pop-up shops and boutiques, and small eateries among others (Roland et al, 2015). Available data from the county government of Nairobi estimates that there are about 2,700 micro-retailers in the Gikomba market, and this formed the sampling frame for the study (County Government of Nairobi, 2023). Table 3.1 illustrates the target population for the study.

Table 3.1 Target Population

Category	Target Population (N)	Percentage (%)
Clothing & Textiles	890	33
Footwear & Accessories	545	20
Household Goods	275	10
Food & Produce	445	16
Electronics & Phone Accessories	290	11
Cosmetics & Beauty/Personal Care products	160	6
Others	95	4
Total	2700	100

3.4.1 Inclusion Criteria

The study population included the micro-retail store owners in Gikomba Market, Nairobi County operating legal businesses in different economic sectors, including second hand clothes stores, general shops and other related business entities. These had a designated place of business for easier contacts and follow-ups on the relevant information for this study. The owners of the business were of legal age, of at least 18 years.

3.4.2 Exclusion Criteria

This study excluded micro-retail store owners in Gikomba Market, Nairobi County operating illegal businesses of any nature, as well as those that did not have designated places of their businesses, such as hawkers. This approach was informed by the fact that it would not be easy to follow-up on certain relevant information if need arose for the researcher to trace back the respondents for any clarifications, such as for the case of hawkers. Owners of the businesses who fell below the legal age of 18 years were also excluded from the study.

3.5 Sampling procedure and Sample Size

A representative subset of the population is called a sample, and it is used to gather data (Ranganathan & Aggarwal, 2018). This study used simple random sampling techniques where Yamane (1967) formula was used to determine the research's sample size. Simple random sampling is a probability sampling strategy that gives each sample item an equal chance of being chosen (Heyvaert, 2016). The Yamane formula operates as

$$n = \frac{N}{1 + N(e)^2}$$

, where N is the target population, e is the degree of precision at 0.05, and n is the sample size. Hence, based on the sampling frame of 2,700 micro-retailers in Gikomba market, n was $2,700/1+2,700(0.05)^2 = 348$, This was the number of micro-retailers or

the study's sample size involved in this research. The sample size was proportionately distributed as follows:

Table 3.2 Sample Size

Category	Target Population (N)	Sampe Size (n)
Clothing & Textiles	890	115
Footwear & Accessories	545	70
Household Goods	275	35
Food & Produce	445	57
Electronics & Phone Accessories	290	37
Cosmetics & Beauty/Personal Care products	160	21
Others	95	12
Total	2700	348

3.6 Data Collection Methods

Primary data gathered using a standardized questionnaire served as the foundation for this investigation. There were both open-ended and closed-ended questions on the surveys, enabling the gathering of both quantitative and qualitative data. Mugenda & Mugenda (2003) noted that questionnaires obtain rich information from the respondents as the instrument provides them with an opportunity to give properly understood responses to the questions, thus improving the quality of the information received. The questionnaires were administered to the micro-retailer owners through a drop-and-pick approach where blank questionnaires were given to them to fill before completed ones were picked by the researcher on an agreed later date. The research instruments were first tested in the field before being used in the actual data collection (Mugenda & Mugenda, 2003).

3.6.1 Validity of Instruments

According to Flick (2015), the study's validity is determined by the suitability of the measurements employed, the precision of the analysis, and the applicability of the findings. In general, a research

instrument's validity refers to how well it can provide reliable data which is generalizable from the samples to the entire study population. Both content and construct validity of the questionnaire were tested. This entailed checking consistency and accuracy of framing of the questions in order for the correct message to be communicated or passed across to the intended audience. Pretesting of the tool allowed any necessary modifications to ensure the instrument measured what was expected of it. Additionally, construct validity was upheld by limiting the questions to how variables are conceptualized and ensuring that the specific variable indicators belonged to the same construct. The thesis supervisor was closely consulted on how to improve the tool.

3.6.2 Reliability of Instruments

The degree to which a research instrument yields consistent results throughout the entire fieldwork exercise is what determines its reliability (Bryman, 2016). Reliability of the questionnaire was tested using Cronbach's alpha (α) coefficient. This strategy was applied to measure internal consistency of the questionnaire where a measure of 0.7 was used to determine high reliability of the tool. Higher scores indicated that the scale is more trustworthy, hence a value of 0.7-1.0 was considered indicative of exceptional dependability of the questionnaire.

3.7 Operationalization of Variables

In this study, variables influencing micro-retailers in Nairobi County's Gikomba Market's adoption of mobile payment platforms were examined. The research addressed three independent variables, including effect of ease of use, influence of transaction costs, and the effect of security concerns on adoption of mobile payment platforms among micro-retailers in Gikomba Market, Nairobi County. Table 3.3 presents operationalization of the study variables.

Table 3.3 Operationalization of Variables

Objective	Variable	Indicator(s)	Measurement of Scale	Data collection method
To determine the effect of ease of use on adoption of mobile payment platforms among micro-retailers in Gikomba Market, Nairobi County.	Ease of use	<ul style="list-style-type: none"> ● Usefulness ● Accessibility ● Convenience ● Effectiveness 	Nominal	Questionnaire
To identify the influence of transaction costs on adoption of mobile payment platforms among micro-retailers in Gikomba Market, Nairobi County.	Transaction costs	<ul style="list-style-type: none"> ● Familiarity level ● Opportunity cost ● Third-party assistance ● Efficiency 	Nominal	Questionnaire
To examine the effect of security concerns on adoption of mobile payment platforms among micro-retailers in Gikomba Market, Nairobi County.	Security concerns	<ul style="list-style-type: none"> ● Confidentiality ● Money reversals ● Identity theft ● PIN leakage/sharing 	Ordinal	Questionnaire

3.8 Data Analysis Methods and Presentation

Data analysis, according to Matula (2018), entails putting raw data into a logical format, organizing it systematically, dividing it into units that can be understood, synthesizing it, looking for patterns, and drawing conclusions. Prior to data entry, the collected data was reviewed to ensure it was complete. Descriptive, inferential, and thematic content analysis methods were used to analyze the data. SPSS version 25 computer software and excel workbooks were utilized for the analysis of numerical and inferential data whereas qualitative data was analyzed using thematic content analysis technique. Tables and figures were used to present quantitative data, while narratives were used to describe qualitative data.

3.8.1 Regression Model

To display the link between the independent factors and the dependent variable, the following logistic regression model was used.

$$Y_i = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon \dots \dots \dots \text{Equation}(3.2)$$

Where: Y_i = Adoption of mobile payment platforms

X_1 = Ease of use

X_2 = Transaction costs

X_3 = Security concerns

α = Constant

ε = representing the error term

β_1 , β_2 , & β_3 represent the regression coefficients for the variables X_1 , X_2 , & X_3 , respectively. Using F statistics at a 95% confidence level, analysis of variance was utilized to examine the model's overall significance. Furthermore, the coefficient of determination R^2 was used to ascertain how the independent variables contributed to the dependent variable or research outcome. As demonstrated by the regression model, a number of moderating factors were considered in examining variables that may impact the uptake of mobile payment systems. These included; demographic variables (age, gender, education, & income level of retailer), customer attitude, and handsets.

3.8.2 Diagnostic Tests

Regression models make some basic assumptions, and various diagnostic tests had to be conducted to ensure data compliance with model requirements. The diagnostic tests undertaken in the study were usually tests which determined if data was obtained from population with normal distribution or not. These included multicollinearity test, which tests the relationship between independent variables; linearity tests which are used to determine whether the variables can be represented in a linear format; and heteroscedasticity test undertaken to ensure that the variance of data points from

the regression line are equal or almost equal to zero (Ogolla, 2019). Breusch-Pagan test was used in order to test for Heteroscedasticity, the Shapiro-Wilk tests in order to test for Normality, and the Variance inflation factor to test for multicollinearity.

3.9 Ethical Considerations

Before beginning fieldwork, a research approval permit was requested from the National Commission of Science, Technology, and Innovation (NACOSTI). The principles of informed consent, confidentiality, and anonymity were strictly observed during data collection. This implied that informed consent was sought from the respondents, confidentiality of information assured, and anonymity of shared data guaranteed at every relevant stage of the research where the research was required to observe these principles. For instance, participants were made aware of their ability to opt out of the study at any time or to withhold their responses to any questions that made them uncomfortable.

Furthermore, the respondents were assured that the information obtained from them was only to be used for the study. The researcher explained clearly the purpose of the enquiry to the respondents prior to their voluntary participation. Further, the respondents were informed about any possible benefit of the study to them. A copy of the consent form drafted by the researcher is provided at the appendices section.

3.10 Chapter Summary

This chapter detailed the research methodology employed to examine the factors influencing the adoption of mobile payment platforms among micro-retailers in Gikomba Market, Nairobi County. It outlined the research design, target population, sampling procedures, data collection instruments, and methods of data analysis. A descriptive research design was adopted, and proportionate

stratified sampling was used to select respondents across different sectors. Primary data was collected using structured questionnaires, and both descriptive and inferential statistical techniques, including regression analysis, were used to test the relationships between ease of use, transaction costs, and security concerns with mobile payment adoption. The chapter also outlined the proposed multiple regression model and discussed the ethical considerations and reliability and validity tests applied to ensure the robustness of the findings.



CHAPTER FOUR

DATA ANALYSIS AND PRESENTATION OF RESEARCH FINDINGS

4.1 Introduction

This study sought to determine factors affecting the adoption of mobile payment platforms in micro-retailers in Gikomba Market, Nairobi County. The specific objectives included to determine the effect of ease of use, the influence of transaction costs, and the effect of security concerns on adoption of mobile payment platforms among micro-retailers in Gikomba Market, Nairobi County. Additionally, the study examined the moderating effect of customer attitude, handsets, and demographics in the adoption of mobile payment platforms among micro-retailers in Gikomba Market, Nairobi County. This chapter presented data analysis, and display of the research findings.

4.2 Response Rate

The sample size for the study was 348 respondents. However, out of this number, 249 of them managed to successfully participate in the study, translating into 72% response rate. The responses are summarized in table 4.1.

Table 4.1 Response Rate

Category	Sample Size	Response Rate	
		Frequency (n)	Percentage (%)
Clothing & Textiles	115	83	72
Footwear & Accessories	70	51	73
Household Goods	35	24	68
Food & Produce	57	41	71
Electronics & Phone Accessories	37	27	72
Cosmetics & Beauty/Personal Care products	21	13	63
Others (e.g. shoe shiners, etc.)	12	10	82
Total	348	249	72

As shown in table 4.1, the micro-retailers involved in the study were distributed across different types of businesses to allow different perspectives about the subject of research. Despite disparities in the number of responses across the different categories of the respondents, each of them had at least 63% response rate, all contributing to the overall response rate of 72% which was sufficient for the study to make reliable conclusions.

4.2.1 Pilot Test Results

Reliability refers to the degree to which a research instrument yields consistent results after repeated application (Kennedy, 2022). The reliability of the used constructs was tested using Cronbach's Alpha, and the results summarized in table 4.2.

Table 4.2 Reliability Tests of Variables

Variables	Cronbach Alpha
Ease of use	0.831
Transaction costs	0.842
Security concerns	0.799
Customer attitude, handsets, and demographics	0.801

The findings in table 4.2 show that ease of use had a coefficient of 0.831, transaction costs had a coefficient of 0.842, security concerns a coefficient of 0.799, while the coefficient for customer attitude, handsets, and demographics was 0.801. Based on these findings, it can be deduced that all the variables adequately measured adoption of mobile payment platforms among micro-retailers in Gikomba Market, Nairobi County. According to Izah, Sylva and Hait (2023), a Cronbach's alpha of at least 0.7 is generally considered to be in the acceptable or adequate range for internal consistency reliability.

4.3 Respondents' Background Information

The respondents' background information was captured in terms of types of businesses they involved in, number of years their businesses had existed, earning from their respective businesses per day, gender, age bracket, marital status, highest level of education, preferred methods of money transfer, and the reasons for their preferred modes of money transfers. Table 4.3 illustrates the respondents' background information.

Table 4.3 Respondents' Background Information

Type of business	Category	Frequency (n)	Percentage (%)
	Clothing & textiles	83	33
	Footwear & accessories	51	20
	Household goods	24	10
	Food & produce	41	16
	Electronics & phone accessories	27	11
	Cosmetics & beauty/personal care products	13	5
	Others	10	4
	Total	249	100
Period of business existence	Duration	Frequency (N)	Percentage (%)
	1-5years	131	53
	6-10years	79	32
	11-15years	13	5
	16+years	26	10
	Total	249	100
Earnings from business	Daily Earnings	Frequency (N)	Percentage (%)
	0-500	26	10
	501-1000	40	16
	1001-2500	13	5
	2501-5000	52	21
	5001-10000	13	5
	10001-15000	39	16
	Above 15000	66	27
	Total	249	100
Respondents' gender	Gender	Frequency (N)	Percentage (%)
	Male	157	63
	Female	92	37

	Total	249	100
Respondents' age	Age Category	Frequency (N)	Percentage (%)
	20 – 25 years	45	18
	26 – 30 years	32	13
	31 – 35 years	26	10
	36 – 40 years	41	16
	41 – 45 years	43	17
	46 – 50 years	39	16
	50+ years	23	9
	Total	249	100
Respondents' marital status	Marital Status	Frequency (N)	Percentage (%)
	Single	45	18
	Married	165	66
	Separated	26	10
	Divorced	13	5
	Total	249	100
Respondents' education level	Education Level	Frequency (N)	Percentage (%)
	KCPE	29	12
	KCSE	40	16
	Certificate	51	20
	Diploma	77	31
	Degree	52	21
	Total	249	100
Preferred money transfer method	Mode	Frequency (N)	Percentage (%)
	Cash	52	21
	Mobile Payment Technology	197	79
	Total	249	100

The findings in Table 4.3 show that 83 (33%) of the businesses belonged to the clothing and textile category, 51 (20%) footwear and accessories, 24 (10%) household goods, 41 (16%) food and produce, 27 (11%) electronics & phone accessories, 13 (5%) cosmetics & beauty/personal care products, while 10 (4%) of them belonged to the ‘others’ category, which included things like shoe shining, among other types of businesses not captured in the above categories. Diversification of business types allowed varied views regarding technology mobile platforms payment adoption

among the micro-retailers in Gikomba market of Nairobi County. These diverse views further enriched the data used in addressing the research problem.

Regarding the operational duration of the businesses, 131 (53%) of them had been in existence for 1-5 years, 79 (32%) 6-10 years, 13 (5%) 11-15 years, while 26 (10%) had been in existence for more than 16 years. Overall, all the business entities involved in the study had been operational for at least a year, thereby allowing them to have experienced different aspects of application of technology in business transactions. On the amount of earnings for the businesses per day, it was established that 26 (10%) of the businesses made utmost 500 Kenya shillings, 40 (16%) 501-1000 shillings, 13 (5%) 1001-2500 shillings, 52 (21%) 2501-5000 shillings, 13 (5%) 5001-10000 shillings, 39 (16%) 10001-15000 shillings, while 66 (27%) of the business earned over 15000 shillings in a day. From the distribution of the daily earnings for the businesses involved in the study, this informed the dynamics of the mode of payment transactions.

On the respondents' gender, male was 157 (63%) while their female counterparts were 92, accounting for 37% of the total. This trend indicated that the micro-retail industry in Gikomba market was dominated by men. In terms of age of the respondents, 45 (18%) of the respondents (business owners or employees) were aged 20-25 years, 32 (13%) 26-30 years, 26 (10%) 31-35 years, 41 (16%) 36-40 years, 43 (17%) 41-45 years, 39 (16%) 46-50 years, while 23 (9%) had over 50 years of age. Overall, 41% of the respondents fell within the age bracket of youths, aged not more than 35 years. On the respondents' marital status, 45 (18%) of them were single, 165 (66%) were married, 26 (10%) separated, while 13 (5%) were widowed. Generally, a greater majority of the respondents were married while very few of them (5%) were widowed.

Regarding their highest level of education, 29 (12%) of the respondents had obtained KCPE certificate, 40 (16%) KCSE, 51 (20%) college certificate, 77 (31%) had diploma, while 52 (21%) had obtained a degree. Overall, 72% of the respondents had at least a college certificate, implying that a greater majority of them were in a position to make well-informed decisions regarding adoption of mobile payment platforms in their business transactions. As further demonstrated in the findings, mobile payment technology was the preferred methods among the micro-retailers, accounting for 197 (79%) of the respondents, against 52 (21%) who preferred cash. This implied that mobile payment technology was the most popular among the traders. Furthermore, several justifications were provided for the preferred mode of money transfer method. These included easy accessibility, convenience, and availability. However, those who supported cash as their most preferred mode of transaction lamented about increased transaction costs for mobile payment platforms, and the fact that most customers were most comfortable using cash as opposed to mobile money platforms.

4.4 Ease of Use and Adoption of Mobile Payment Platforms

The first objective of the study was to determine the effect of ease of use on adoption of mobile payment platforms among micro-retailers in Gikomba Market, Nairobi County. The respondents were first asked about whether they use mobile money payment platforms in their businesses, with the findings provided in Figure 4.1.

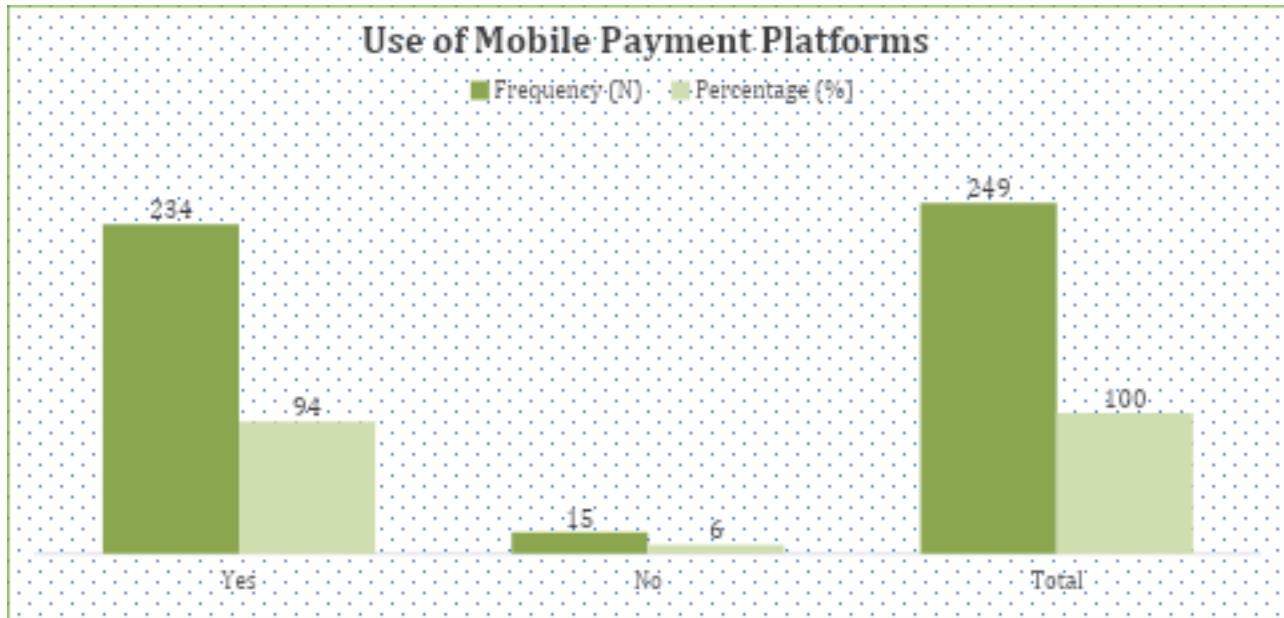


Figure 4.1 Use of Mobile Payment Platforms

From the findings, 234 (94%) of the respondents agreed that they use mobile money payment platforms in their businesses, while 15 (6%) indicated that they do not use this mode since they prefer cash. The subsequent question was how often they use the platforms, with the findings summarized in table 4.4.

Table 4.4 Frequency of Use of Mobile Payment Platforms

Frequency of use	Frequency (N)	Percentage (%)
1=very rarely	14	6
2=rarely	25	11
3=averagely	29	12
4=often	77	33
5=very often	89	38
Total	234	100

The findings in Table 4.4 shows that out of the 234 respondents that said they use mobile payment platform in their business transactions, 14 (6%) of them said they use them very rarely, 25 (11%) rarely, 29 (12%) averagely, 77 (33%) often, while 89 (38%) used the platform very often. Overall, the use of mobile payment platforms was popular among 71% of the respondents.

Furthermore, the study inquired about the specific or usual platforms used by the traders who confirmed their adoption of the technology in their business transactions. Table 4.5 provides a summary of these findings.

Table 4.5: Usual Mobile Payment Platforms Used

Usual mobile payment platform	Frequency (N)	Percentage (%)
Mpesa Send Money	16	7
Pochi La Biashara	35	15
Mpesa Buy Goods	60	26
Mpesa PayBill	40	17
Mpesa Send Money, Mpesa Buy Goods, Mpesa Paybill	14	6
Mpesa Send Money/Paybill	43	18
Mpesa Buy Goods/Paybill	26	11
Total	234	100

Based on the 234 respondents who reported to be using mobile payment platforms in their business transactions, 16 (7%) usually used Mpesa Send Money, 35 (15%) Pochi La Biashara, 60 (26%) Mpesa Buy Goods, 40 (17%) Mpesa PayBill, 14 (6%) Mpesa Send Money, Mpesa Buy Goods, & Mpesa PayBill, 43 (18%) Mpesa Send Money/PayBill, while 26 (11%) usually used Mpesa Buy Goods/Paybill. Using specific mobile payment platforms by different respondents was usually informed by different factors, including the fact that most people are using Mpesa, and that clients prefer Till number over Paybill. Other reasons entailed consistency in exchange of money, convenience, availability, and accessibility.

For further understanding of the motivation for adoption of particular mobile payment platform, a scale of 1-5 was used, where 1= no extent. 2 = less extent, 3 = moderate extent, 4 = great extent, and 5 = very great extent. As illustrated in table 4.6, different aspects of the platforms were measured using the scale, including usefulness, accessibility, convenience, and effectiveness.

Table 4.6 Motivation for Using Particular Payment Platforms Adopted

Statements	1= no extent	2 = less extent	3 = moderate extent	4 = great extent	5 = very great extent	Total
Usefulness	0	0	49	118	82	249
Accessibility	0	0	26	118	105	249
Convenience	21	49	17	91	71	249
Effectiveness	23	51	56	65	54	249

The findings show that, regarding usefulness of a mobile platform, 49 (20%) of the respondents were motivated to adopt a particular mobile payment platform to a moderate extent, 118 (47%) to a great extent, while 82 (33%) of them were driven by usefulness of a platform. On accessibility, 26 (10%) of the respondents were motivated to a moderate extent, 118 (47%) to a great extent, while 105 (42%) were inspired by accessibility to a very great extent. Furthermore, the micro-retail traders were encouraged to adopt certain mobile payment platforms due to their convenience, with 21 (8%) indicating that this happened to no extent, 49 (20%) to a less extent, 17 (7%) to a moderate extent, 91 (37%) to a great extent, and 71 (29%) to a very great extent. Finally, regarding effectiveness, 23 (9%) of the traders were driven to adopt particular mobile payment platform to no extent, 51 (20%) to a less extent, 56 (22%) to a moderate extent, 65 (26%) to a great extent, while 54 (22%) of them were encouraged by effectiveness of platform to a very great extent.

Overall, usefulness and convenience played a very central role in encouraging the micro-retailers to adopt mobile payment platforms of their choice.

Despite the widespread adoption of mobile payment platforms in the micro-retail businesses in Gikomba market, there were certain challenges encountered by some of the consumers of these platforms, as illustrated in figure 4.2.

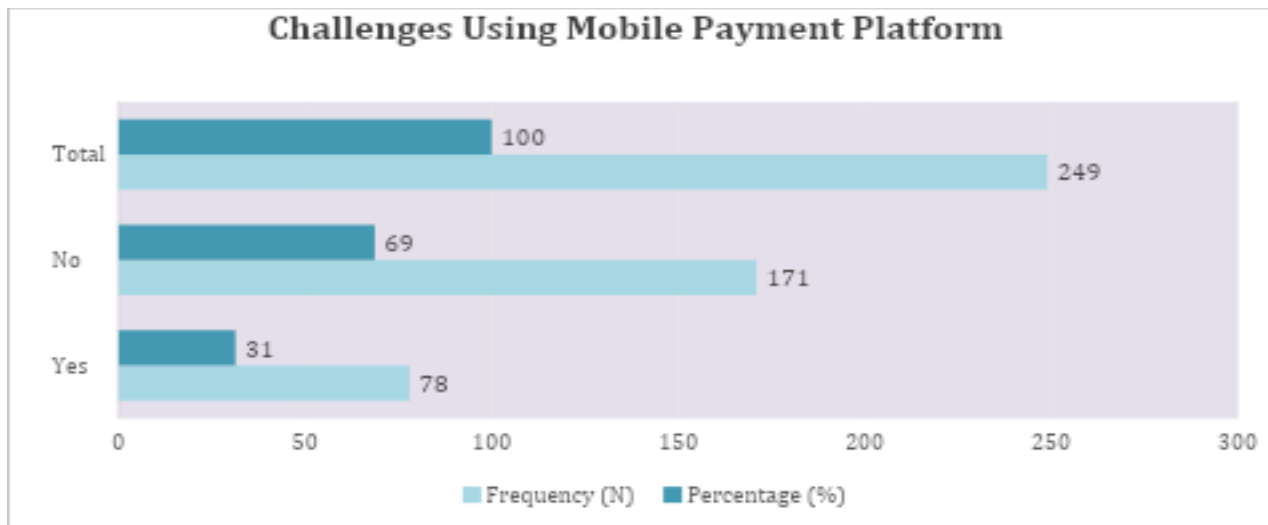


Figure 4.2 Are there Challenges of Mobile Payment Platforms?

The findings indicate that 78 (31%) of the respondents affirmed that there were challenges, whereas 171 (69%) of them denied that there were challenges. Overall, a greater majority of the respondents were comfortable adopting mobile payment platforms into their micro-retail businesses.

4.5 Transaction Costs and Adoption of Mobile Payment Platforms

The second objective of the study was to identify the influence of transaction costs on adoption of mobile payment platforms among micro-retailers in Gikomba Market, Nairobi County. Regarding

whether using of any mobile payment platform was because of its cheapness, the responses are captured in figure 4.3.

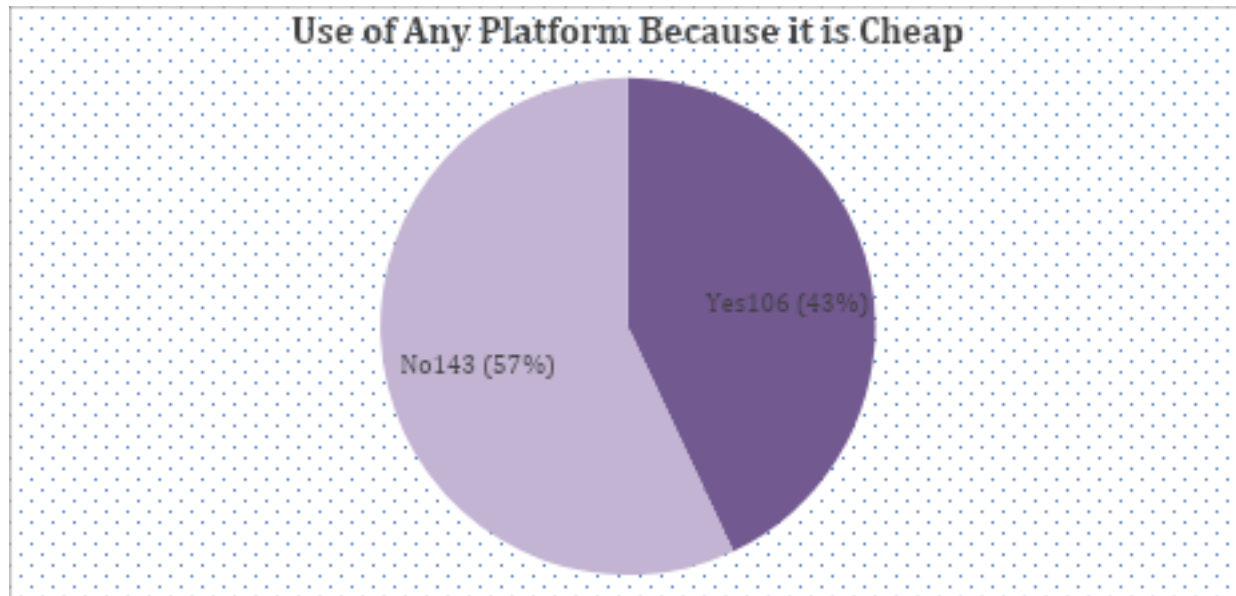


Figure 4.3 Use of Mobile Payment Platform Because it is Cheap

From the findings, 106 (43%) of the respondents used the mobile payment platforms because they were cheap. Conversely, 143 (57%) of them did not use the platforms because they were cheap. Notably, some of the traders confirmed to have embraced certain platforms for convenience, availability, and accessibility purposes, but not necessarily because they were cheap. Furthermore, specific mobile payment platforms adopted because they were cheap are provided in Table 4.7.

Table 4.7 Using Particular Payment Platforms Because they are Cheap

Mobile payment	Frequency (N)	Percentage (%)
Mpesa Send Money	39	37
Mpesa Buy Goods	54	51
Mpesa PayBill	13	12
Total	106	100

As illustrated above, out of the 106 respondents that confirmed to have adopted certain mobile payment platforms because they are cheap, 39 (37%) of them used Mpesa Send Money, 54 (51%) Mpesa Buy Goods, while 13 (12%) used Mpesa PayBill. It was also noted that the respondents had used the platforms of their choice for varied duration of time, and summarized in Table 4.8.

Table 4.8 Duration for Using Particular Payment Platforms Because they are Cheap

Duration	Frequency (N)	Percentage (%)
1-5years	76	72
6-10years	17	16
Over 10 years	13	12
Total	106	100

The findings indicate that out of the 106 respondents that had adopted certain specific mobile payment platforms because they are cheap, 76 (72%) had used them for 1-5 years, 17 (16%) for 5-19 years, while 13 (12%) for over 10 years. However, apart from the transaction costs, other motivating factors for using those specific platforms included convenience, availability, functionality, and accessibility. For example, the Mpesa services were commonly used because they are easily available and accessed by a greater majority of customers, especially in urban settings, such in Gikomba market. Furthermore, on a scale of 1-5 where 1= no extent, 2 = less extent, 3 = moderate extent, 4 = great extent, and 5 = very great extent, the respondents were asked about what informed their choice of a preferred mobile payment platform based on familiarity level, opportunity cost, third-party assistance, and efficiency. Table 4.9 presents these findings.

Table 4.9 Reasons for Using Preferred Mobile Payment Platforms

Statements	1= no extent	2 = less extent	3 = moderate extent	4 = great extent	5 = very great extent	Total
Familiarity level	0	0	52	104	93	249
Opportunity cost	0	0	0	99	150	249
Third-party assistance	92	157	0	0	0	249
Efficiency	39	40	71	66	33	249

Regarding familiarity level as a motivating factor for using of certain preferred mobile payment platforms, 52 (21%) of the respondents were motivated to a moderate extent, 104 (42%) to a great extent, and 93 (37%) to a very great extent. Furthermore, 99 (40%) and 150 (60%) were driven by the opportunity cost to a great extent and very great extent, respectively. Concerning third-party assistance, 92 (37%) were encouraged by no extent, while 157 (63%) to a less extent. Finally, 39 (16%) of the respondents were encouraged to use preferred mobile payment platforms by efficiency to no extent, 40 (16%) to a less extent, 71 (29%) to a moderate extent, 66 (27%) to a great extent, and 33 (13%) to a very great extent.

4.6 Security Concerns and Adoption of Mobile Payment Platforms

The study's third objective was to examine the effect of security concerns on adoption of mobile payment platforms among micro-retailers in Gikomba Market, Nairobi County. As to whether the respondents have ever been discouraged from using mobile money payment platforms in their business because of security concerns, the responses are reflected in Figure 4.4.

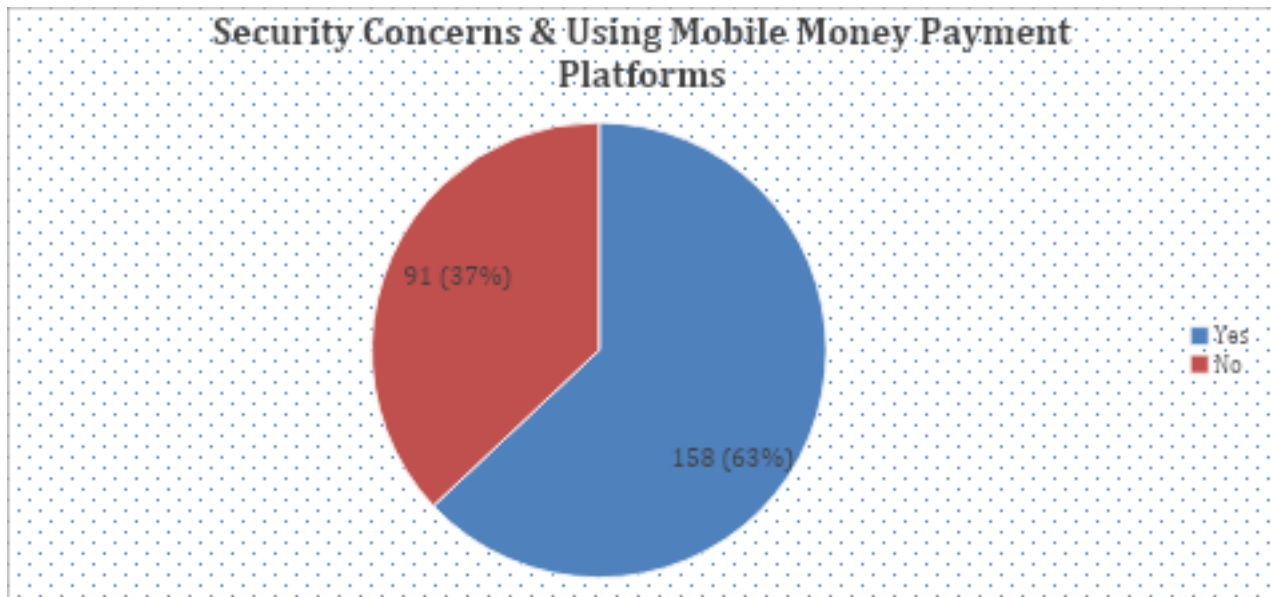


Figure 4.4 Discouraged from Using Mobile Payment Platforms Because of Security Concerns

The findings above show that 158 (63%) of the respondents had been discouraged from using mobile money platform because of security concerns, while 91 (37%) of them had not. For those who reported to have ever been discouraged to use the mobile payment platforms for security concerns, they were further asked how often this might have happened, with the results presented in Table 4.10.

Table 4.10 Frequency of Discouragement of Use of Mobile Payment Platform

Frequency of discouragement	Frequency (N)	Percentage (%)
1=very rarely	14	9
2=rarely	13	8
3=averagely	65	41
4=often	39	25
5=very often	27	17
Total	158	100

The findings show that out of the 158 respondents that reported to have been discouraged from using mobile payment platform due to security concerns, 14 (9%) of them were very rarely discouraged, 13 (8%) rarely, 65 (41%) averagely, 39 (25%) often, while 27 (17%) were discouraged very often. Overall, based on the distribution of the responses, security of the platforms was not a very serious concerns regarding their adoption among the micro-retail traders. It was further noted that the traders were discouraged from using certain specific mobile payment platforms, as summarized in Table 4.11.

Table 4.11 Discouraged Mobile Payment Platforms Due to Security Concerns

Platform discouraged from using	Frequency (N)	Percentage (%)
Mpesa Send Money	118	75
Mpesa Buy Goods	27	17
Mpesa PayBill/poshi la biashara	13	8
Total	158	100

From the findings, 118 (75%) of the respondents were discouraged from using Mpesa Send Money, 27 (17%) Mpesa Buy Goods, and 13 (8%) from using Mpesa PayBill/poshi la biashara. There were different security concern reasons given that informed the discouragement, including confidentiality, money reversals, identity theft, and PIN leakage/sharing. However, as indicated in Table 4.12, there were different rankings of the reasons provided for discouraging the micro-retailers from using some of the specific mobile payment platforms.

Table 4.12 Reasons for Discouragement of Use of Mobile Payment Platforms

Statements (reasons)	1= no extent	2 = less extent	3= moderate extent	4 = great extent	5 = very great extent	Total
Confidentiality	12	15	26	79	117	249
Money reversals	0	40	0	117	92	249
Identity theft	39	158	27	11	14	249
PIN leakage/sharing	34	53	65	66	31	249

Regarding confidentiality, 12 (5%) respondents were discouraged to no extent, 15 (6%) to a less extent, 26 (10%) moderate extent, 79 (32%) to a great extent, and 117 (47%) to a very great extent. There were equally varied responses regarding the extent to which the fear of money reversals discouraged micro-retailers from using certain mobile payment platforms, with 40 (16%) saying the influence was to a less extent, 117 (47%) to a great extent, and 92 (37%) to a very great extent. Furthermore, 39 (16%) of the respondents indicated that identity theft discouraged them to no extent, 158 (63%) to a less extent, 27 (11%) to a moderate extent, 11 (4%) to a great extent, and 14 (6%) to a very great extent. Concerning PIN leakage/sharing, 34 (14%) said this discouraged them to no extent, 53 (21%) to a less extent, 65 (26%) to a moderate extent, 66 (27%) to a great extent, and 31 (12%) to a very great extent. Overall, while confidentiality and money reversals seemed to seriously discourage the micro-retail traders from using certain mobile payment platforms, identity theft and PIN leakage/sharing did not appear to be a major factor causing the discouragement.

The study also sought to rank different factors that were likely to influence the adoption of a mobile payment technology offering, using a scale of 1-10, where rank 1 (R1) meant the lowest while R10 stood for the highest consideration.

Table 4.13 Ranking of Factors Influencing Adoption of Mobile Payment Platforms

Statements (reasons for choice)	Ranking (R1-R10)										Subtotal	Total	
	R1	R2	R3	R4	R5	Subtotal 1	R6	R7	R8	R9			R10
Information is easily available	0	11	26	15	41	93	39	40	23	28	26	156	249
The cost is affordable for me	0	27	13	52	79	171	65	0	11	2	0	78	249
The cost is affordable for the customer	0	12	78	66	52	208	27	14	0	0	0	41	249
It is easy to use for me	0	0	0	0	38	38	78	53	27	53	0	211	249
It is easy for the customer to use	24	37	41	79	40	221	15	13	0	0	0	28	249
It is easy to apply for	32	78	79	27	16	232	17	0	0	0	0	17	249
Time taken for a transaction to reflect	88	78	53	30	0	249	0	0	0	0	0	0	249

From the findings, ‘information is easily available’ as a factor influencing adoption of mobile payment platform was ranked (R) 1-5 by 93 (37%), and 6-10 by 156 (63%) respondents. Regarding ‘the cost is affordable for me’, 171 (69%) ranked it 1-5, against 78 (31%) who ranked it 6-10. On the ‘cost is affordable for the customer’, 208 (84%) of the respondents ranked it 1-5, whereas 41 (16%) ranked it 6-10. However, regarding ‘it is easy to use for me’, only 38 (15%) ranked this reason 1-5, while 211 (85%) of them as a greater majority ranked it 6-10. On whether the platform ‘is easy for the customer to use’, 221 (89%) ranked this 1-5, against 28 (11%) that ranked it 6-10. Almost a similar pattern of responses was noted regarding the opinion that any adopted platform was because ‘it is easy to apply for’, where 232 (93%) ranked it 1-5, against 17 (7%) ranking it 6-10. Finally, those who agreed that a given platform was adopted because of ‘time taken for a transaction to reflect’, all the 249 (100%) ranked it 1-5, implying that this was one of the popular

factors being considered. From the distribution of the responses, easy availability of information, and the ease of use were generally ranked highest. This meant that these were the most important factors most micro-retailers considered when trying to adopt a mobile payment platform.

The study further inquired why the respondents do not use specific mobile payment technology, as demonstrated in table 4.14.

Table 4.14 Reasons for Not Using Mobile Payment Platforms

Mobile Payment platform	Cost	Functionality	My Clients	Others	Total responses
			are not using it	are not using it	
Mpesa Send Money	33	46	56	63	198
Mpesa Buy Goods	0	12	78	52	142
Mpesa PayBill	59	32	79	121	291
Pochi La Biashara	78	92	66	23	259
Airtel send Money	0	0	169	121	290
Airtel Money PayBill	0	0	177	128	305
Airtel Money Till	0	0	162	141	303
Equitel Send Money	0	23	142	127	292
Equitel eazypay	0	0	136	131	267
T-kash Send Money	0	0	249	232	481

As illustrated in Table 4.14, cost, functionality, use by clients, and others are not using it, were the reasons generally provided regarding why the respondents were not using specific mobile payment platforms. Almost all these reasons applied to Mpesa Send Money, Mpesa Buy Goods, Mpesa PayBill, and Pochi La Biashara, despite the variations in terms of numbers. This further showed the popularity of the four platforms among the micro-retailers compared with the rest. On the other hand, some of the mobile payment platforms such as Airtel send Money, Airtel Money PayBill,

Airtel Money Till, Equitel Send Money, Equitel eazypay, and T-kash Send Money were not generally adopted because they are not commonly used by clients and the general public.

4.7 Moderating Effect of Customer Attitude, Handsets, and Demographics on Mobile Payment Platforms Adoption

Customer attitude, handsets, and demographics of the traders can significantly determine the strength and direction of the relationship between the primary factors (ease of use, transaction costs, and security concerns) and the adoption of mobile payment platforms. The study revealed that in moderating the customer's attitude, the impact of simplicity of use of a mobile payment platform may be reinforced by a favourable customer attitude toward technology. For instance, micro-retailers who have a positive attitude toward technology and believe that mobile payment platforms are easy to use are more inclined to embrace them. Regarding the moderating role of handsets, it was noted that the manner in which simplicity of use influences adoption may vary depending on the kind and features of the phones that micro-retailers employ. While retailers with basic phones may encounter challenges, those with smartphones that offer advanced functions are likely to find platforms easier to utilize.

Additionally, the relationship between ease of use and adoption of the platform was moderated by such factors as age, education, and digital literacy among the users. Mobile payment solutions, for example, might be simpler for younger, tech-savvy traders to utilize than for older, less educated retailers. Regarding transaction costs and adoption of mobile payment platforms, it was noted that while retailers who have a negative attitude toward mobile payment platforms might avoid adoption even in the case of low transaction costs, those who have a positive attitude might view transaction charges as a necessary expense and still use the platforms. The effectiveness of transactions and how retailers view prices can be impacted by the compatibility and functionality

of handsets. Adoption may be encouraged by retailers who use more sophisticated handsets since they perceive the advantages to outweigh the disadvantages. Higher-income or better-educated retailers might not be as sensitive to transaction costs, but lower-income or less educated retailers could likely consider the cost prohibitive, hence avoiding adoption of the platforms altogether.

Regarding security concerns and adoption of the mobile payment platforms, it emerged that positively inclined retailers may be less affected by security issues since they have greater faith in the mobile payment platforms' security capabilities. Negative people, on the other hand, can refrain from adopting because they are afraid of fraud or data breaches. By lowering security concerns, advanced security measures on handsets, such as biometric authentication, can increase usage. Conversely, basic handsets might make people more susceptible to fraud, which would discourage users from using them. Retailers that are older or less educated may be more concerned about security, while those with greater education or experience with digital platforms may be more confident in the safety of mobile payment programs, hence readily adopting them for their businesses.

Generally, customer attitude affects how mobile payment platforms are perceived and accepted across all aspects, including security concerns, transaction costs, and ease or convenience of use. Adoption chances are typically increased by a positive attitude. Micro-retailers' perceptions of security, price, and convenience of use are influenced by handheld devices, which can either facilitate or hinder adoption of technology. Additionally, the sensitivity of micro-retailers to each of the factors is influenced by demographics, such as age, income level, and education, which results in variations in adoption behaviour.

4.8 Diagnostic Tests

Before undertaking inferential statistical analysis, diagnostic tests were run, including normality, linearity, multicollinearity, and heteroscedasticity tests. This step ensured that the multiple regression analysis assumptions were met.

4.8.1 Normality Test

A normality test in inferential analysis determines whether a dataset has a normal distribution, which is required by many statistical tests such as regression analysis, ANOVA, and t-tests. When the premise of normality is breached, these tests may not give trustworthy results, and alternative procedures (such as non-parametric testing) may be more appropriate. It is assumed that the residual or error term must be normally distributed in order to execute a regression analysis correctly. To evaluate whether there was any deviation from the assumptions of the normal distribution of data, the Kolmogorov-Smirnov test was utilized.

Table 4.15 Kolmogorov-Smirnov Test

	Kolmogorov-Smirnova			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Unstandardized Residual	0.071	249	0.201	0.791	249	.48*
Standardized Residual	0.071	249	0.201	0.791	249	.48*

Kolmogorov-Smirnov and Shapiro-Wilk tests assume that if the p-value is less than 0.05, the data is not normally distributed. Table 4.15 indicates that the p-values for the unstandardized and standardized residuals for the Kolmogorov-Smirnov test ($p=0.201$) and Shapiro-Wilk test ($p=0.48$)

were greater than the significance level (α) of 0.05. As a result, it was determined that the data in the residuals followed a normal distribution and were thus eligible for inferential analysis.

4.8.2 Linearity Test

The linearity test was used to measure the degree or strength of the linear relationship between the variables based on the Normal P-P plot of the regression standardized residual. The results are summarized in Figure 4.5.

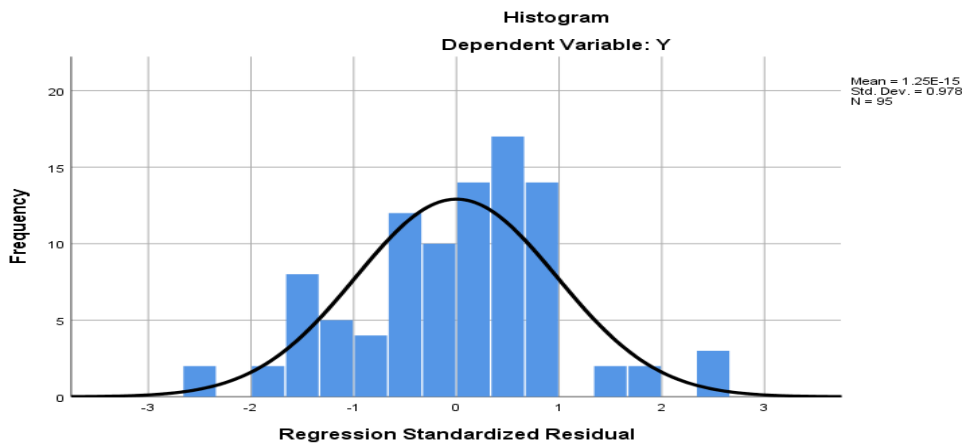


Figure 4.5 Histogram for Residuals

Figure 4.5 shows that the histogram's approximate center symmetry, which is mirrored by the left and right sides, corresponds to a normal distribution. Furthermore, the bell-shaped curve of the histogram indicates that the data has a normal distribution. The consistent tapering of the tails of the histogram further supports normalcy because it does not exhibit extreme values (outliers) that are likely to cause expanding of the tail externally.

4.8.3 Multicollinearity Test

Multicollinearity refers to the correlation between independent variables in a linear regression equation. Multicollinear variables may have a detrimental impact on model predictions in a given

collection of data (Kyriazos & Poga, 2023). Multicollinearity occurs when two or more predictor variables in a regression model exhibit a high degree of association. As a result, determining the separate influence of each predictor variable may become challenging, potentially skewing regression model results. The Variance Inflation Factor (VIF) was used to determine multicollinearity.

Table 4.16 Multicollinearity Test

Model	Collinearity Statistics	
	Tolerance	VIF
Ease of use	0.501	0.991
Transaction costs	0.612	0.987
Security concerns	0.632	1.012

According to Sulaiman et al (2021), high VIF (more than 5) or low tolerance (less than 0.1) suggest potential multicollinearity problems. However, as indicated in the summary above, all the independent variables had tolerance values of greater than 0.1 and VIF level of less than 5. These findings indicate that the dataset was devoid of multicollinearity, which means that there was no reciprocal influence between the independent variables.

4.8.4 Factor Analysis

A factor analysis was carried out to determine the fundamental elements influencing adoption of mobile payment platforms among micro-retailers in Gikomba Market. The analysis attempted to organize related variables into key components in order to simplify interpretation of the data. Based on eigenvalues greater than 1, five key variables that explained variance were identified using Principal Component Analysis (PCA) with Varimax Rotation. Below is the rotated component matrix:

Table 4.17 Rotated Component Matrix

Variable	Factor 1: Ease of Use	Factor 2: Transaction Costs	Factor 3: Security Concerns	Factor 4: Demographics & Technological Readiness	Factor 5: Customer Attitude & Social Influence
User interface simplicity	0.834	0.210	0.118	0.092	0.075
Speed of transactions	0.792	0.225	0.138	0.080	0.094
Technical support availability	0.728	0.194	0.202	0.118	0.102
Internet connectivity requirements	0.702	0.238	0.179	0.140	0.095
Transaction fees	0.215	0.871	0.135	0.078	0.102
Cost of mobile devices	0.202	0.832	0.122	0.092	0.089
Cost of mobile data for transactions	0.195	0.798	0.128	0.102	0.079
Fear of fraud and cybercrime	0.142	0.174	0.859	0.091	0.110
Perceived reliability of mobile payment platforms	0.156	0.181	0.830	0.118	0.125
Availability of fraud resolution mechanisms	0.172	0.156	0.774	0.132	0.102
Data privacy concerns	0.160	0.189	0.761	0.128	0.115
Level of education	0.112	0.100	0.098	0.856	0.152
Smartphone ownership	0.122	0.098	0.110	0.832	0.158
Digital literacy	0.138	0.112	0.125	0.801	0.144
Age and business experience	0.115	0.108	0.112	0.785	0.120

Variable	Factor 1: Ease of Use	Factor 2: Transaction Costs	Factor 3: Security Concerns	Factor 4: Demographics & Technological Readiness	Factor 5: Customer Attitude & Social Influence
Willingness to adopt digital payments	0.104	0.119	0.125	0.142	0.842
Influence of peers and customers	0.115	0.108	0.112	0.120	0.808
Perceived benefits of mobile payments	0.138	0.122	0.135	0.144	0.792

From the findings in Table 4.17, variables loading highly for factor 1 (ease of use and accessibility) included user interface simplicity, speed of transactions, technical support availability, and internet connectivity requirements. This meant that a platform's adoption rate increases with its easy usability. For factor 2 (transaction costs), highly loading variables included transaction fees, cost of mobile devices, and cost of mobile data. This implied that affordable platforms encourage usage, whereas adoption is negatively impacted by high costs of the platforms. Regarding factor 3 (security concerns), highly loading variables were platform reliability, data privacy, fraud concerns, and fraud resolution mechanisms. This could imply that secure platforms build and increase trust, while perceived security risks discourage adoption.

For factor 4 (demographics and technological readiness), highly loading variables included level of education, smartphone ownership, digital literacy, and age. This meant that higher adoption was correlated with higher education and digital literacy. Finally, key variables for factor 5 (customer attitude and social influence) entailed willingness to adopt digital payments, peer influence, and perceived benefits. This implied that adoption rates were increased by a positive attitude toward

mobile payment platforms. Overall, the factor analysis revealed that the three main factors impacting adoption of mobile payment systems among micro-retailers in Gikomba Market are ease of use, transaction costs, and security concerns. Adoption trends are also moderated by customer attitude and social influence, as well as demographics and technological readiness.

4.8.5 Pearson Correlation Analysis

A Pearson correlation matrix was used to assess the relationship between the study's independent and dependent variables. A complete negative association usually has a correlation coefficient of -1, a perfect positive relationship has a correlation value of +1, while zero shows no correlation at all. Table 4.18 contains the Pearson Correlation Analysis results.

Table 4.18 Pearson's Coefficients Correlation Analysis

		X1 ease of use	X2 transaction costs	X3 security concerns	Y adoption of mobile payment platforms
X1 ease of use	Pearson Correlation	1	.417**	.462**	.442**
	Sig. (2-tailed)		.000	.000	.000
	N	249	249	249	249
X2 transaction costs	Pearson Correlation	.417**	1	.588**	.606**
	Sig. (2-tailed)	.000		.000	.000
	N	249	249	249	249
X3 security concerns	Pearson Correlation	.462**	.588**	1	.783**
	Sig. (2-tailed)	.000	.000		.000
	N	249	249	249	249
Y adoption of mobile payment platforms	Pearson Correlation	.442**	.606**	.783**	1
	Sig. (2-tailed)	.000	.000	.000	
	N	249	249	249	249

** . Correlation is significant at the 0.01 level (2-tailed).

According to the Pearson's coefficients analysis above, the Pearson's correlation coefficient (r) is greater than negative 1 (-1) for all three independent variables. This meant that there was no

multicollinearity between the independent variables because their correlations were all above negative 1 (-1) but below positive 1 (+1). the results further showed that there was a positive and strong linear relationship between the independent variables (ease of use, transaction costs, and security concerns) and the dependent variable, which was adoption of mobile payment platforms. In general, when efforts in any of the three factors increased, so did the adoption of the platforms in a linear manner.

4.9 Inferential Analysis

Inferential statistics were used to show the relationship between the independent and dependent variables. This was in addition to descriptive statistics which were displayed using frequencies and percentages and assisted the researcher in organizing, measuring, condensing, and characterizing the fundamental aspects and patterns of the study's findings. Important conclusions based on extrapolations of the findings were also made possible by the inferential analysis.

The choice to employ simple rather than multiple regression analysis in this study was informed by the need to separate and investigate the distinct impact of each independent variable (ease of use, transaction costs, and security concerns) on the adoption of mobile payment platforms among micro-retailers in Gikomba Market. This approach allowed the study to provide a clear and focused knowledge of how each predictor independently influences adoption behaviour (Mizumoto, 2023). This approach is particularly helpful when conducting descriptive or exploratory research, or when validating the significance of specific variables prior to developing more complex models. Additionally, simple regression is better suited when the sample size or data structure does not satisfy the multiple regression assumptions or specifications, such as problems with homoscedasticity or multicollinearity (Reddy & Henze, 2023). As a result, simple regression

provides a practical and conceptually sound approach for establishing fundamental relationships in the early stages of model-building process.

4.9.1 Regression Analysis of Ease of Use

The first objectives of the study was to determine the effect of ease of use on adoption of mobile payment platforms among micro-retailers in Gikomba Market, Nairobi County. The coefficient correlation R and coefficient of determination (R^2) were calculated to establish the fit of the model in explaining the relationship between ease of use and adoption of the mobile payment platforms. Furthermore, linear regression was undertaken to establish the level of influence of ease of use on adoption of the payment platforms. Additionally, ANOVA was performed to test the overall significance of the regression model, and determine whether the regression equation explained a significant variance in the outcome of the study. These findings are illustrated in Tables 4.19-4.21.

Table 4.19 Coefficient of Correlation (R) and R^2 of Ease of Use

Model	R	R Square (R^2)	Adjusted R Square	Std. Error of the Estimate
1	0.325 ^a	0.225	0.214	2.231

a. Adoption of mobile payment platforms

b. Predictor: ease of use

Table 4.20 Regression Coefficients for Ease of Use

Predictor	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	β	Std. Error	Beta		
Constant	3.101	0.201		3.121	0.000
X ₁ Ease of Use	0.431	0.124	0.478	4.44	0.001

a. Adoption of mobile payment platforms

Table 4.21 ANOVA for Ease of Use

Source	Degree of Freedom	Sum of Square	Mean Square	F calculated	P-value
Model Regression	5	771.9	154.38	23.99	0.000 ^b
Residual Error	243	1563.5	6.43		
Corrected Total	248	2,335.40			

The results in Table 4.19 show a strong correlation between ease of use and adoption of mobile payment platforms, as evidenced by the coefficient of correlation R of 0.325. The coefficient of determination R square of the model is 0.225, indicating that 22.5% of the variance in mobile payment platform adoption (Y) was explained by ease of use of the platforms. Based on statistics in table 4.20, regression equation of the ease of use can be illustrated as $Y = 3.101 + 0.431X^1$. This analysis implied that when all other factors were presumed to be at zero, adoption of mobile payment platforms would be at a constant of 3.101. But a unit increase in ease of use, assuming all other factors to be at constant, would lead to 0.441 improvement in the adoption of mobile payment platforms. Furthermore, with a p-value of 0.001 which is below 0.05 ($p - 0.001 < 0.05$), it was concluded that ease of use significantly influenced adoption of the mobile payment platforms.

As illustrated in Table 4.21, the ANOVA shows the p-value as 0.000 and the F statistic (5, 243) at 95% level of confidence to be 6.43, which was less than F calculated (23.99). Since the p-value was less than 0.05 ($F = 23.99$ & $p - \text{value} < 0.05$), ease of use therefore had a significant influence on adoption of mobile payment platforms by micro-retailers in Gikomba Market, Nairobi County.

4.9.2 Regression Analysis of Transaction Costs

The second objective of the study was to identify the influence of transaction costs on adoption of mobile payment platforms among micro-retailers in Gikomba Market, Nairobi County. The

coefficient correlation R and coefficient of determination (R²) were calculated to establish the fit of the model in explaining the relationship between transaction costs and adoption of the mobile payment platforms. Furthermore, linear regression was done to establish the level of influence of transaction costs on adoption of the payment platforms. Besides, ANOVA was done to test the overall significance of the regression model, and determine whether the regression equation explained a significant variance in adoption of mobile payment platforms. The findings are outline in Tables 4.22-4.24.

Table 4.22 Coefficient of Correlation (R) and R² of Transaction Costs

Model	R	R Square (R ²)	Adjusted R Square	Std. Error of the Estimate
1	0..299 ^a	0.193	0.189	1.222

a. Adoption of mobile payment platforms

b. Predictor: transaction costs

Table 4.23 Regression Coefficients for Transaction Costs

Predictor	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	β	Std. Error	Beta		
Constant	3.101	0.201		3.121	0.000
X2 Transaction Costs	-0.398	0.113	0.349	3.65	0.002

a. Adoption of mobile payment platforms

Table 4.24 ANOVA for Transaction Costs

Source	Degree of Freedom	Sum of Square	Mean Square	F calculated	P-value
Model Regression	5	701.9	140.38	20.88	0.002 ^b
Residual Error	243	1633.5	6.72		
Corrected Total	248	2,335.40			

The findings in Table 4.22 indicate a strong correlation between transaction costs and adoption of mobile payment platforms, with a coefficient of correlation R of 0.299. The coefficient of determination R square of the model is 0.193, implying that 19.3% of the variance in mobile payment platform adoption (Y) was explained by transaction costs. Based on statistics in Table 4.23, regression equation of transaction costs can be written as $Y = 3.101 + -0.398X^2$. This means that performance of adoption of mobile payment platforms would be at a 3.101 constant when all other factors were presumed to be at zero. However, a unit increase in transaction costs, assuming all other factors to be at constant, would lead to a 0.389 negative performance in the adoption of mobile payment platforms. Furthermore, with a p-value of 0.002 which is below 0.05 ($p = 0.002 < 0.05$), it was concluded that transaction costs significantly influenced adoption of the mobile payment platforms.

As shown in Table 4.24, the ANOVA shows the p-value as 0.002 and the F statistic (5, 243) at 95% level of confidence to be 6.72, which was less than F calculated (20.88). Since the p-value was less than 0.05 ($F = 20.88$ & $p\text{-value} < 0.05$), transaction costs therefore had a significant influence on adoption of mobile payment platforms by micro-retailers in Gikomba Market, Nairobi County.

4.9.3 Regression Analysis of Security Concerns

The third objective of the study was to examine the effect of security concerns on adoption of mobile payment platforms among micro-retailers in Gikomba Market, Nairobi County. The coefficient correlation R and coefficient of determination (R^2) were calculated to establish the fit of the model in explaining the relationship between security concerns and adoption of the mobile payment platforms. Moreover, linear regression was performed to establish the level of influence

of security concerns on adoption of the mobile payment platforms. Additionally, the ANOVA was undertaken to test the overall significance of the regression model, and determine whether the regression equation explained a significant variance in adoption of mobile payment platforms. The findings are outline in Tables 4.25-4.27.

Table 4.25 Coefficient of Correlation (R) and R² of Security Concerns

Model	R	R Square (R ²)	Adjusted R Square	Std. Error of the Estimate
1	0.189 ^a	0.168	0.159	1.213

c. Adoption of mobile payment platforms

d. Predictor: security concerns

Table 4.26 Regression Coefficients for Security Concerns

Predictor	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	β	Std. Error	Beta		
Constant	3.101	0.201		3.121	0.000
X3 Security concerns	-0.357	0.132	0.443	3.35	0.000

b. Adoption of mobile payment platforms

Table 4.27 ANOVA for Security Concerns

Source	Degree of Freedom	Sum of Square	Mean Square	F calculated	P-value
Model Regression	5	651.9	130.38	18.82	0.001 ^b
Residual Error	243	1683.5	6.93		
Corrected Total	248	2,335.40			

The findings in Table 4.25 confirm a strong relationship between security concerns and adoption of mobile payment platforms, with a coefficient of correlation R of 0.189. The coefficient of determination R square of the model is 0.168, meaning that 16.8% of the variance in mobile payment platform adoption (Y) was attribute to security concerns. Based on statistics in table 4.26,

regression equation of security concerns was presented as $Y = 3.101 + -0.357X^3$. This implies that when all factors remained at zero, performance of adoption of mobile payment platforms stood at a 3.101 constant. However, a unit increase in security concerns, when all other factors were presumed to be at constant, led to 0.357 negative performance in the adoption of mobile payment platforms. Besides, with a p-value of 0.000 which is below 0.05 ($p < 0.000 < 0.05$), it was concluded that security concerns significantly influenced adoption of the mobile payment platforms.

The ANOVA results in Table 4.27 further show that the p-value was 0.001 and the F statistic (5, 243) at 95% level of confidence was 6.93, which was less than F calculated (18.82). Since the p-value was less than 0.05 ($F = 18.82$ & $p\text{-value} < 0.05$), security concerns therefore had a significant influence on adoption of mobile payment platforms by micro-retailers in Gikomba Market, Nairobi County. From the statistical trends for ease of use, transaction costs, and security concerns, especially as demonstrated in coefficient correlations R^2 (tables 4.20, 4.23, & 4.26), all these variables influenced the adoption of mobile payment platforms in micro-retailers in Gikomba Market, Nairobi County. From this analysis, the 3 factors cumulatively contributed influenced the adoption by 58.6% (ease of use - 22.5%, transaction costs - 19.3%, and security concerns - 16.8%). From this statistical pattern, it was therefore possible that other factors outside the scope of this study accounted for 41.4% variance in the dependent variable, where this may form the interest of other future studies by other researchers interested in this topic.

4.9.4 Moderation Analysis Using Regression

Model Structure

To test for moderation, the following regression models were estimated:

Model 1: $\text{Adoption} = \beta_0 + \beta_1X + \varepsilon$

Model 2: Adoption = $\beta_0 + \beta_1X + \beta_2\text{Moderator} + \varepsilon$

Model 3: Adoption = $\beta_0 + \beta_1X + \beta_2\text{Moderator} + \beta_3(X \times \text{Moderator}) + \varepsilon$

Where:

X = Independent variable (ease of use, transaction costs, or security concerns)

Moderator = Customer Attitude / Handsets / Demographics

(X × Moderator) = Interaction term

β_3 = Effect of the moderator on the relationship between X and Adoption

4.9.4.1 Moderating Effect of Customer Attitude on Ease of Use

The moderating effect of customer attitude on ease of use is illustrated in table 4.28.

Table 4.28 Moderating Effect of Customer Attitude on Ease of Use

Model	Predictor	Coefficient (β)	Std. Error	t-value	p-value
Model 1	Ease of Use	0.399	0.052	8.10	<0.001
Model 2	Ease of Use	0.297	0.055	7.09	<0.001
	Customer Attitude	0.251	0.048	4.38	0.000
Model 3	Ease of Use	0.277	0.060	4.67	0.000
	Customer Attitude	0.167	0.050	3.40	0.001
	Ease of Use × Attitude	0.131	0.045	2.89	0.003

From the findings in table 4.28, the interaction term (Ease of Use × Customer Attitude) is statistically significant ($\beta = 0.131, p=0.003 < 0.05$), implying that the relationship between ease of use and adoption of mobile payment platforms is positively moderated by customer attitude. In

other words, micro-retailers who have a favourable attitude about mobile payments are more likely to be influenced by ease of use when it comes to adoption.

4.9.4.2 Moderating Effect of Handset Availability on Transaction Costs

The moderating effect of handset availability on transaction costs is illustrated in table 4.29.

Table 4.29 Moderating Effect of Handset Availability on Transaction Costs

Model	Predictor	Coefficient (β)	Std. Error	t-value	p-value
Model 1	Transaction Costs	-0.351	0.060	-5.83	0.001
Model 2	Transaction Costs	-0.321	0.065	-4.77	<0.001
	Handset Availability	0.287	0.055	5.09	0.002
Model 3	Transaction Costs	-0.273	0.067	-3.88	<0.001
	Handset Availability	0.229	0.058	3.79	0.003
	Transaction Costs \times Handsets	0.142	0.050	2.80	0.005

As illustrated in table 4.29, the interaction term (Transaction Costs \times Handset Availability) is significant ($\beta = 0.142$, $p = 0.005 < 0.05$), meaning that handset availability moderates the negative effect of transaction costs on adoption. This would further imply that more availability of handsets reduces the negative influence of transaction costs. This may suggest that despite the higher costs, micro-retailers with easier access to handsets are more likely to adopt mobile payment platforms.

4.9.4.3 Moderating Effect of Demographics on Security Concerns

The moderating effect of demographics on security concerns is illustrated in table 4.30.

Table 4.30 Moderating Effect of Demographics on Security Concerns

Model	Predictor	Coefficient (β)	Std. Error	t- value	p- value
Model 1	Security Concerns	-0.292	0.058	-5.00	0.003
Model 2	Security Concerns	-0.243	0.061	-4.10	<0.001
	Demographics	0.191	0.054	3.33	0.001
Model 3	Security Concerns	-0.201	0.063	-3.17	0.002
	Demographics	0.145	0.056	2.68	0.004
	Security Concerns \times Demographics	0.122	0.048	2.50	0.006

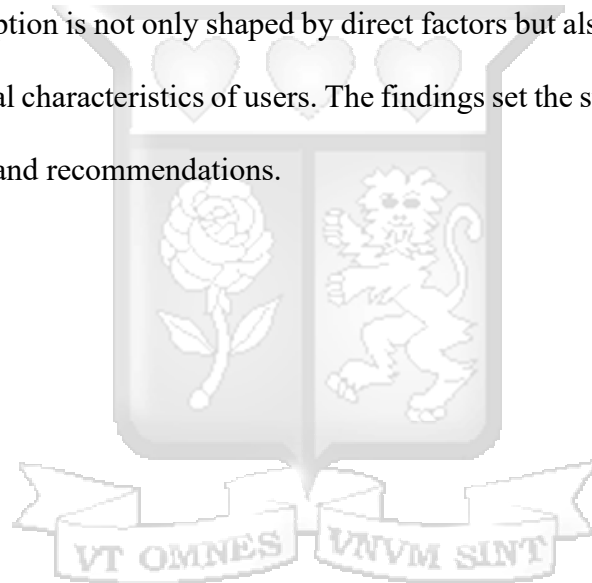
From the findings in table 4.30, the interaction term (Security Concerns \times Demographics) is statistically significant ($\beta = 0.122$, $p = 0.006 < 0.05$), indicating that demographics moderate the relationship between security concerns and adoption. This might further imply that some demographic groups may still use mobile payment platforms despite perceived security risks because specific demographic traits (such as age, education level, and tech savvy) might mitigate the negative effects of security concerns.

4.10 Chapter Summary

This chapter presented the findings of the data analysis carried out to look at the factors affecting the micro-retailers in Gikomba Market's use of mobile payment systems. The study investigated the relationship between three key independent variables: transaction costs, security concerns, and ease of use and the adoption of mobile payment platforms. According to the simple regression analysis, adoption was significantly influenced positively by ease of use, but negatively by

transaction costs and security concerns. These results emphasize the value of user-friendly interfaces and reasonably priced, secure technologies in promoting micro-retailers' adoption.

The chapter also assessed the moderating effects of customer attitude, handset availability, and demographics on the relationship between the independent variables and adoption. Moderated regression analysis showed that the relationship between ease of use and adoption was positively strengthened by customer attitude. On the other hand, the effect of transaction costs was moderated by handset availability, while demographics moderated the influence of security concerns. These findings suggest that adoption is not only shaped by direct factors but also significantly influenced by contextual and personal characteristics of users. The findings set the stage for the final chapter's discussion, conclusions, and recommendations.



CHAPTER FIVE

DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents a summary of the study's findings, conclusions, and recommendations. Furthermore, the chapter makes suggestions for future studies to fill gaps that may not be fully addressed by the current research.

5.2 Summary of Findings

The study focused on the ease of use, transaction costs, and security concerns, and how they influenced or affected adoption of mobile payment platforms among micro-retailers in Gikomba market, Nairobi County. Discussions are provided for each of these factors.

5.2.1 Ease of Use and Adoption of Mobile Payment Platforms

Ease of use of mobile payment platform was discovered in the study to be significantly influence the decisions by micro-retailers to use this mode of transaction in their businesses. From the findings, a greater majority of the micro-retailers confirmed to be using mobile payment platforms as opposed to relying on cash. Furthermore, many traders used the platforms regularly, indicating the popularity of this mode of payment transactions among the micro-retailers. About the specific platforms used by different traders, the use of Mpesa Send Money, Pochi La Biashara, Mpesa Buy Goods, and Mpesa PayBill featured more than the rest of the platforms, such as Airtel send money, Equitel send money, and Equitel eazypay, among others.

Like in the current research, the ease of use of technology has been established by previous studies as a serious influencing factor in the adoption. In a study in Sudan by Chen and Aklikokou (2020),

it was noted that the perception of how easily an invention can be applied significantly influences the users' attitudes in its application. Kelly and Palaniappan (2023) investigated the factors that influence the continued use of mobile money service transactions in Ghana. Using the technology acceptance model to guide the study, which included 406 mobile money users from Ghana's Savannah and Bono areas, the authors discovered that the technology's perceived danger, cost, utility, and ease of use all had a significant impact on the users' attitudes and final decision to adopt and/or continue using the technology. These perspectives, however, were based on general mobile money users in Ghana, as opposed to the current study's more focused target group, which is limited to micro-retailers in Gikomba market, Nairobi County, Kenya.

Other previous studies have also emphasized the role of ease of use of a technology in influencing its adoption. As noted by Kazembe (2021), dissemination of information about how mobile payment technology works, with the purpose of making the product's benefits clear to the user, is critical to its adoption. As a result, mobile companies would do well to tell consumers about the benefits of using mobile money as well as the availability of a diverse range of services, as poor communication can deter users from using the service. These views were reiterated by Mansour (2021), noting that aside from the perceived ease of use of technology for payment transactions, there may be a matter of actual knowledge of the model's applicability, often known as technology awareness. This study established that an individual's understanding of the existence and benefits of technology, such as Mpesa send money in this case, is usually a prerequisite for the adoption of the technology.

Different factors influenced the adoption of specific platforms, such as the fact that the majority of people use Mpesa and clients prefer Till numbers over Paybill. Other considerations included stability in currency exchange, ease, availability, and accessibility. Overall, utility and

convenience were very important in convincing micro-retailers to embrace their preferred mobile payment services. Despite the widespread adoption of mobile payment platforms in micro-retail firms, there were specific obstacles encountered by some of these consumers.

People's decision to use technology is also influenced by the essential services they can access through the service, and ease with which those services can be accessed. In their research on customers' intents to use mobile money to pay for services in various locations in South Korea, Kim and Kim (2022) noted that the users' intentions to utilize the mobile money platform were significantly influenced by their evaluations of the service's usability, subjective norms, and ease of use. These findings were consistent with those reported by Kelly and Palaniappan (2023) in a separate study in Ghana, which found that social influence had a beneficial impact on users' attitudes toward the adoption of new technologies in the mobile money services market.

The level of trust of the mobile money transaction technology, especially with perceived risks, informed users' decisions. Some people were compelled to use mobile money services because of concern for revealing their personal details due to unfamiliarity with how the technology worked. This study, and other previous ones, has recommended rigorous marketing and awareness creation strategies by the providers of the mobile money technologies so as to improve their usefulness among the users. Another study by Zhang (2019) on technology in South Korea and the continuous use of cashless payment platforms found that trust in independent mobile payment platforms was a factor influencing adoption. However, given that the previous researches were conducted outside the context of micro-retail sector in Kenya, the current study was critical in bridging this knowledge gap.

5.2.2 Transaction Costs and Adoption of Mobile Payment Platforms

When asked if they used a mobile payment platform because it was affordable, 43% said yes. Conversely, 57% did not use the platforms because they were cheap. Notably, some traders indicated that they used certain platforms for convenience, availability, and accessibility, rather than because they were cheap. Out of the 106 respondents who acknowledged that they had adopted various mobile payment services because they were cheap, 37% used Mpesa Send Money, 51% used Mpesa Buy Goods, and 12% used Mpesa PayBill. These views were generally a reflection of a number of previous findings. This study's findings echoed sentiments by several past studies. Research by Konte and Tetteh (2023) on transaction costs and platform adoption among different sectors of the small business economy in sub-Saharan Africa indicated that a number of clients used what they deemed not to cost a lot of money to transact when using various service transactions rather than using cash. Using data from the World Bank's enterprise survey of 14 sub-Saharan African countries, the study found that a number of small-scale businesses were ready to combine mobile money platforms and cash transactions, but the latter was taking precedence due to perceived lower extra cost and ease of use.

Further research by Becatien et al. (2022) revealed that the gap in mobile money adoption between micro-retail enterprises and large organizations can be easily explained by smaller businesses' low profit margins, with mobile money transaction costs appearing to exacerbate the situation. While larger organizations may not feel the urge to expand into mobile money purchase and sale operations, micro-retailers may not have the same benefits. These sentiments were generally reiterated in the current study, with several micro-retailers indicating that they considered mobile payment platforms to be costly due to service charges. The current study, and both studies by

Konte and Tetteh (2023) and Becatien et al (2022) highlighted the necessity for a reduction in transaction costs in mobile money to stimulate adoption by small retail businesses.

High transaction costs, such as charges for transferring money, receiving payments, or withdrawing funds, can discourage adoption by reducing profit margins for micro-retailers with small budgets. In contrast, decreased transaction costs make mobile payment networks more appealing because they allow retailers to keep more of their earnings. The study also noted that retailers are more inclined to use mobile payment platforms if they believe the benefits, such as convenience, quickness, and increased customer satisfaction, outweigh the transaction fees. If retailers perceive that the costs are disproportionate to the value given, they may avoid using these platforms or seek alternate ways. Similar views were expressed in a study by Sleiman et al (2022), noting that traders will always be encouraged by perceived costs of adoption of the platforms.

In the current research, the findings indicate that out of the 106 respondents that had adopted certain specific mobile payment platforms because they are cheap, 72% had used them for 1-5 years. However, apart from the transaction costs, other motivating factors for using those specific platforms included convenience, availability, functionality, and accessibility. Some of the retailers were driven by familiarity level to use certain preferred mobile payment platforms. Micro-retailers with large transaction volumes are more aware of cumulative costs. If fees are charged per transaction, the total cost can become prohibitively expensive, inhibiting adoption.

Platforms that offer flat prices or large transaction discounts are more likely to be used by frequent customers. Retailers may switch to or adopt alternative mobile payment solutions that offer reduced transaction costs, resulting in cost-effective market competition. Retailers also tend to weigh the cost-effectiveness of mobile payments against traditional methods, such as cash. Lower

transaction costs enable retailers to retain or lower pricing, increasing customer satisfaction and platform adoption. Retailers are more willing to use mobile payment solutions if transaction fees are transparent and predictable. Hidden costs or variable fees create distrust and discourage utilization of certain mobile payment platforms.

5.2.3 Security Concerns and Adoption of Mobile Payment Platforms

The study's third objective was to investigate the impact of security concerns on the adoption of mobile payment platforms among micro-retailers in Gikomba Market, Nairobi County. Regarding whether they had ever been discouraged from utilizing mobile money payment platforms in their business due to security concerns, 63% of retailers had, while 37% had not. Overall, platform security was not a major concern for micro-retail traders while adopting the platforms. Some of the platforms from which traders were discouraged due to security concerns were Mpesa Send Money, Mpesa Buy Goods, and poshi la biashara. There were different security reasons given that informed the discouragement, including confidentiality, money reversals, identity theft, and PIN leakage/sharing.

The findings of the current research echoed previous studies' revelations. For instance, in a study by Alamgir (2019) on the influence of security perception on adoption of mobile payment in Bangladesh established that mobile money technology was popularly embraced in improving individuals' quality of life and enhancing business. The findings further demonstrated that customer satisfaction and loyalty had a substantial impact on customers' willingness and readiness to adopt mobile money platforms. However, perceived risk tends to undermine customer confidence and trust in the mobile money platform, resulting in lower customer satisfaction.

Furthermore, the study found a direct relationship between customer satisfaction and customer loyalty, with both influencing mobile money platform adoption.

Retailers were concerned about the security of their personal and financial information on mobile payment platforms, as well as the possibility of fraud, such as unauthorized transactions, phishing, or fake payment confirmations. If these risks are perceived to be high, they become hesitant to use mobile payment platforms. A study conducted by Agárdi and Alt (2022) on innovative money platforms discovered that the adoption of this way of payment was highly influenced by the user's unique characteristics. The study found that perceived ease of use and financial risk of the mobile payment platform had a stronger impact on older users and subjective norms. On the other hand, younger consumers were more impacted by the mobile payment platform's suitability with their specific lifestyle. As a result, the study advocated emphasis on generational patterns as a roadmap for a better understanding of mobile payment adoption.

The possibility of financial loss due to system failure, multiple deductions, or delayed transactions has an influence on trust. If retailers believe their money is not secure, they are less likely to use the platform. These views were attributed to certain mobile payment platforms, which most traders lacked clear understanding about their operations and possible risks. Established businesses with a demonstrated track record of security inspire greater trust than newer or lesser-known platforms. For instance, Safaricom Mpesa products, such as Mpesa send money, buy good, or Paybill, enjoyed high level of trust among the traders because they were tested and proven compared to newer ones in the market, such as Equitel send money, among others. Retailers are influenced by the presence of strong security features including two-factor authentication, biometric verification, and encryption. Platforms that include these qualities are more likely to gain traction. In contrast, a lack of visible or dependable security safeguards discouraged use due to perceived threats.

Similarly, the reputation of the platform in handling and resolving security issues plays a crucial role.

The study further established that retailers who are unaware of security precautions or how to defend themselves when using mobile payment platforms are more vulnerable to security threats. This lack of awareness can result in reluctance to adopt. Training or awareness campaigns on safe usage techniques might help alleviate these concerns. Traders want systems that provide simple, accessible, and fast processes for resolving security-related issues, such as fraud or failed transactions. The absence of these processes might hinder adoption or result in high level of reluctance to adopt certain mobile payment platforms.

5.2.4 Moderating Effect of Customer Attitude, Handsets, and Demographics on Adoption

Customer attitudes, handsets, and traders' demographics can all have a substantial impact on the degree and direction of the relationship between the key factors (ease of use, transaction costs, and security concerns) and mobile payment platform adoption. The study discovered that, in moderating client attitudes, the benefit of a mobile payment platform's simplicity of use may be reinforced by a positive customer attitude toward technology. For example, micro-retailers who are optimistic about technology and believe that mobile payment platforms are simple to use are more likely to adopt them.

Regarding handsets' moderating impact, it was highlighted that the manner in which simplicity of use influences adoption varies depending on the type and features of the phones used by micro-retailers. While retailers with basic phones may face difficulties due to susceptibility to fraud, those with smartphones with advanced features are likely to find platforms easier to use. Furthermore, the association between platform ease of use and adoption was mediated by user age, education,

and digital literacy levels. Mobile payment solutions, for example, may be easier for younger, tech-savvy traders to use than for older, less educated ones.

In terms of security concerns and mobile payment platform adoption, positively minded retailers may be less affected by security issues since they place more trust in the security capabilities of mobile payment platforms. Negative people, on the other hand, may resist from adopting because they are concerned about fraud or data breaches. Advanced handset security features, such as biometric authentication, can boost usage by reducing security concerns. Overall, customer attitude influences how mobile payment platforms are regarded and adopted in all aspects, including security issues, transaction costs, and ease or convenience of use. An optimistic mindset usually increases the chances of adoption. Handsets have an impact on micro-retailers' views of security, pricing, and ease of use, which can either accelerate or inhibit technology adoption.

5.3 Conclusions

The first objective was to determine the effect of ease of use on adoption of mobile payment platforms among micro-retailers in Gikomba Market, Nairobi County. Based on the findings, the study concluded that ease of use of a given mobile payment platform significantly influenced the adoption. The ease of use of mobile payment platforms has a considerable impact on their uptake by micro-retailers in Gikomba Market. Retailers are more likely to use systems that are intuitive, easy to use, and need less technical knowledge, as these save time and effort in processing transactions. Adoption is discouraged by platforms that are thought to be difficult or need substantial training. Ensuring user-friendly interfaces and giving enough help for onboarding can significantly increase acceptance rates in this context.

Transaction costs are an important factor in the adoption of mobile payment platforms by micro-retailers in the Gikomba Market. High transaction charges limit the attractiveness of these platforms by reducing micro-retailers' already narrow profit margins, whereas lower and more transparent charges stimulate usage. Retailers are more inclined to use platforms that provide cost-effective solutions, competitive pricing, and predictable fee structures, so affordability is a primary priority for increasing adoption.

Security issues are critical in influencing the use of mobile payment platforms by micro-retailers in Gikomba Market. Many retailers are hesitant to use these platforms due to concerns about fraud, data breaches, and financial loss. To address these concerns and encourage adoption, it is critical to strengthen security measures, create trust in platform providers, and educate business owners on safe usage practices.

Customer attitudes, handsets, and demography all play an essential role in determining the adoption of mobile payment platforms among micro-retailers in the Gikomba Market. A good customer attitude boosts the influence of ease of use, transaction costs, and security concerns on adoption, while modern handsets and supportive demographic characteristics such as education and digital literacy make platform usage even easier. Targeted initiatives, such as enhancing handset access and encouraging favourable attitudes, can help optimize adoption rates among the micro-retailers.

The Technology Acceptance Model (TAM) is strongly supported by the study's findings, which also emphasizes the importance of customer attitude and ease of use in promoting adoption of mobile payment platforms. Although some aspects of the Diffusion of Innovations Theory and the Theory of Reasoned Action are fairly supported, particularly with regard to attitudes and

perceived barriers to adoption, TAM stands out as the most applicable framework for understanding mobile payment platforms by micro-retailers in Gikomba Market.

5.4 Recommendations

To increase the use of mobile payment platforms among micro-retailers in the Gikomba Market, developers and providers should prioritize user-friendly designs that require less training and technical knowledge. Platforms can be made more accessible by simplifying interfaces, providing clear instructions, and supporting several languages. Furthermore, providing regular training sessions or demos might assist traders gain confidence in using these technologies, hence increasing adoption rates.

Mobile payment platform providers should use pricing strategies that keep transaction costs cheap and transparent for micro-retailers in the Gikomba Market. Tiered pricing, volume-based discounts, or flat-rate transaction charges can alleviate the financial load on users with significant transaction volumes. Providers can also educate micro-retailers on the cost-benefit analysis of adopting mobile payments, highlighting how these platforms can improve efficiency and customer satisfaction.

To address security concerns, mobile payment providers should adopt strong security measures including two-factor authentication, biometric verification, and real-time fraud detection. Furthermore, transparent communication of these security measures to retailers can help foster trust and confidence in the platforms. Providers should provide fast and accessible mechanisms for resolving security issues, as well as training programs to educate retailers on safe usage practices and fraud prevention.

Interventions should aim to improve customer attitudes, increase handset accessibility, and address demographic barriers to adoption. Providers can launch awareness campaigns and efforts to highlight the benefits of mobile payments and clarify any myths or misconceptions. Subsidies or financing programs for micro-retailers to purchase handsets with enhanced features can increase adoption. Tailored support for distinct demographic groups, such as technology literacy training for older retailers or targeted marketing to less educated people, can help to close the adoption gap.

5.5 Limitations of the Study

Although this study offers insightful information about the factors affecting use of mobile payment platforms by micro-retailers in Gikomba Market, it has a number of limitations. Due to the study's geographic restriction to Nairobi County's Gikomba Market, the findings might not be as applicable to other informal markets or areas of Kenya with distinct socioeconomic and infrastructure contexts. Furthermore, the cross-sectional survey design limits the capacity to deduce causality; since the findings reveal associations at a specific point in time without showing how adoption behaviour may change over time. The respondents' self-reported information could be skewed by social desirability bias or not accurately recalled, especially with regard to their opinions or experiences with mobile payment platforms.

Furthermore, despite efforts to include a representative sample across several sectors of the micro-retail industry, because of the informal operations and dynamic nature of market activities in this sector, it is possible that some trader groups were either overrepresented or underrepresented. Lastly, although the study included moderating factors like demographics, customer attitude, and handset availability, it left out other possible moderators like peer influence or digital literacy, which could have limited the explanatory power or significance of the moderating model.

5.6 Suggestions for Further Studies

A comparative study could look into the differences in adoption patterns, barriers, and enabling factors between micro-retailers in urban marketplaces such as Gikomba and those in rural Kenya. Future research could explore how government regulations, taxation, and financial policies affect the uptake and use of mobile payment platforms, especially in informal markets like Gikomba. Research might look into how mobile payment platforms help micro-retailers achieve financial inclusion, with a focus on access to credit, savings, and other services. Research could look into how combining mobile payment platforms with inventory management systems, customer relationship management tools, or e-commerce platforms affects retailer performance.

5.7 Chapter Summary

This chapter outlined the summary, conclusions, and recommendations based on the findings of the study. The study sought to identify the factors influencing the adoption of mobile payment platforms by micro-retailers in Nairobi County's Gikomba Market, with particular attention to ease of use, transaction costs, and security concerns, as well as the moderating effects of demographics, customer attitude, and handset availability. According to the study, adoption was significantly impacted positively by ease of use, but negatively by transaction costs and security concerns. Customer attitude, handset availability, and demographics all had an impact on the direction and intensity of the relationships between the independent variables and adoption, according to moderating analysis.

The chapter also assessed the degree to which the study's conclusions supported or validated pertinent theoretical frameworks, with the Technology Acceptance Model (TAM) receiving the strongest validation. The cross-sectional methodology, self-reported data, and geographic scope

were acknowledged as the study's main limitations. Practical suggestions were made to improve the adoption of mobile payments based on these insights, especially through user education, reduced transaction costs, enhanced platform security, and easier access to reasonably priced mobile devices. The necessity of longitudinal and comparative studies as well as the inclusion of extra moderating variables like digital literacy were among the recommendations made for future research.



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Research and Applications*, 33, 100823.t



APPENDICES

Appendix I: Informed Consent

My name is Isaac Wangombe; I am a master student from Strathmore University. I am conducting a study on “Factors Affecting the Adoption of Mobile Payment Platforms in Micro-Retailers in Gikomba Market, Nairobi County, Kenya”. The study will be of importance in providing insight into the various factors that affect the adoption of mobile payment technology in micro-retailers in Gikomba Market.

Procedure to be followed

The study is being conducted at Gikomba Market and participation will require that I ask questions and record the information given by you in a questionnaire.

Participation in this study is voluntary therefore you have the right to refuse.

You have the right to end an interview at any moment and to decline to answer any questions.

Additionally, you are free to leave the study at any moment, with no negative effects on the services you currently receive from the study or from any other organization in the future.

Discomforts and risks

Some of the questions you will be asked may make you somehow uncomfortable. If this happens, you may refuse to answer these questions if you so desire. Additionally, you can end the interview at any moment. You may have to wait up to thirty minutes after the interview before receiving your regular services.

Benefits

By taking part in this research, you will assist us in understanding the different aspects that influence micro-retailers in Gikomba Market's use of mobile payment platforms.

Reward

If you agree to participate in this study, lunch will be provided and transport expenses will be reimbursed.

Confidentiality

The examinations and interviews will take place in a private setting inside the county.

The questionnaire will not contain your name. The surveys will be stored securely at Strathmore University in a secured cabinet. Everything will remain confidential.

Contact Information

If you have any questions you may contact:

Isaac Wangombe, Researcher: 0706551542

Prof. David Mathuva, Supervisor: 0710403501

Participant's Statement

I understand the information above about my involvement in the study. I had the opportunity to ask questions, and I was satisfied with the answers I received. I willingly choose to participate in this study in full. I am aware that I can withdraw from the study at any moment and that my records will be kept confidential. I am aware that whether I choose to leave the study or not, I will still

receive the same medical care, and that my choice will not affect the care I receive from the clinic today or from any other clinic at any other time.

Name of Participant

.....

.....

Signature

Date

Investigator's Statement

The volunteer has received explanations from me, the undersigned, on the study's methods, risks, and benefits in a language that they can comprehend

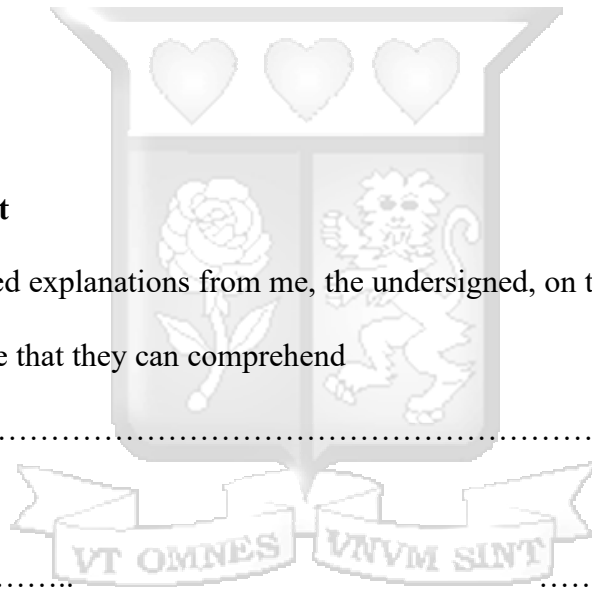
Name of Interviewer

.....

.....

Signature

Date



Appendix II: Introduction Letter

Dear Respondent

RE: Participation in Research

I am a Masters student at Strathmore University, undertaking a study on “**Factors Affecting the Adoption of Mobile Payment Platforms Among Micro-Retailers in Gikomba Market, Nairobi County.**” This study aims to examine key factors such as ease of use, transaction costs, security concerns, and the moderating effects of customer attitude, handsets, and demographics on mobile payment adoption.

The findings of this study are expected to provide valuable insights for financial institutions, mobile payment service providers, and policymakers to enhance financial inclusion and improve digital payment systems for small businesses.

I kindly seek your permission and support in study as I engage micro-retailers in Gikomba Market as part of my data collection process. Participation will involve responding to a structured questionnaire, and all responses will be treated with the highest level of confidentiality. The data collected will be used solely for academic purposes. Participation is voluntary, and you are free to stop participating at any stage should you have any reasons to do so.

Your support in facilitating this study would be highly appreciated. Please, should you require any additional information, feel free to contact me via 0706551542.

Thank you for your time and consideration. I look forward to your positive response.

Yours sincerely,

Isaac Njoroge

Appendix III: Questionnaire

QUESTIONNAIRE

This questionnaire collects data on factors affecting the adoption of mobile money technologies in Micro-retailers in Gikomba Market, Nairobi County. This will lead to the award of Masters in Development Finance at Strathmore University. The questionnaire inquiries from you about the mobile payment platforms, your knowledge on them, ease of use, transaction costs, and security concerns regarding their adoption. We really appreciate your support, which will also help with the policy proposals related to improving Kenya's availability of mobile payment technology. The micro-retailers in Gikomba Market are the target audience for these inquiries. The supplied data will all be handled with the utmost confidentiality and used only for educational reasons. If you have any inquiries or need any clarifications regarding this questionnaire, please contact:

isaac.wangombe@starthmore.edu

Cell: 0706551542

Serial No. Date...../...../...../

SECTION A: DEMOGRAPHICS

1. Type of business _____
2. Number of years business has existed _____
3. Net Earnings per Day in Kenya shillings?
0 – 500 []
501 – 1,000 []
1,001 – 2,500 []
2,501 – 5,000 []
5,001 -10,000 []
10,001 - 15,000 []
Above 15,000 []
4. Gender of respondent
a. Male []

b. Female []

5. Age of Respondent

20 – 25 years []

26 – 30 years []

31 – 35 years []

36 – 40 years []

41 – 45 years []

46 – 50 years []

50+ years []

6. Marital Status

Single []

Married []

Separated []

Divorced []

7. Highest level of education reached

KCPE []

KCSE []

Certificate []

Diploma []

Degree []

None []



8. Which money transfer method do you prefer?

a. Cash []

b. Mobile Payment Technology []

9. Why do you prefer that money transfer method?

.....
.....

SECTION B: EASE OF USE OF MOBILE PAYMENT PLATFORM

10. Do you use mobile money payment platforms in your business?

a. Yes [] b. No []

11. If yes to (10) above, how often do you use the platforms?

1=very rarely []

2=rarely []

3=averagely []

4=often []

5=very often []

12. If yes to (10) above, which mobile payment platform do you usually use?

a. Mpesa Send Money []

b. Mpesa Buy Goods []

c. Mpesa PayBill []

d. Pochi La Biashara []

e. Airtel send Money []

f. Airtel Money PayBill []

g. Airtel Money Till []

h. Equitel Send Money []

i. Equitel eazypay[]

j. T-kash Send Money []

l. Others (Specify).....

12b. Explain what usually informs your choice of a preferred platform in question 10 above

.....
.....

13. To what extent do the following inform your choice of a preferred mobile payment platform?

Use a scale of 1-5 where 1= no extent. 2 = less extent, 3 = moderate extent, 4 = great extent, 5 = very great extent

	Reason for use	1	2	3	4	5
i	Usefulness					
ii	Accessibility					
iii	Convenience					
iv	Effectiveness					

14. Do you sometimes have challenges using any of the platforms you usually use?

a. Yes []

b. No []

SECTION C: TRANSACTION COSTS OF THE MOBILE PAYMENT PLATFORM.

15. Do you use any mobile payment platform because it is cheap?

a. Yes []

b. No []

16. If Yes to (15) above which one of the mobile payment platforms do you use because it is cheap?

- a. Mpesa Send Money []
- b. Mpesa Buy Goods []
- c. Mpesa PayBill []
- d. Pochi La Biashara []
- e. Airtel send Money []
- f. Airtel Money PayBill []
- g. Airtel Money Till []
- h. Equitel Send Money []
- i. Equitel eazypay[]
- j. T-kash Send Money []
- l. Others (Specify).....

17. How long have you used this mobile payment platform offering because it is cheap?

18. Apart from the transaction costs, why else do you use the mobile payment platform that you use? Please, explain.

19. To what extent do the following inform your choice of a preferred mobile payment platform? Use a scale of 1-5 where 1= no extent, 2 = less extent, 3 = moderate extent, 4 = great extent, 5 = very great extent

	Reason for discouragement	1	2	3	4	5
i	Familiarity level					
ii	Opportunity cost					
iii	Third-party assistance					
iv	Efficiency					

SECTION D: SECURITY CONCERNS OF MOBILE PAYMENT PLATFORM

20. Have you ever been discouraged from using mobile money payment platforms in your business because of security concerns?

- a. Yes []
- b. No []

21. If yes to (20) above, how often were you discouraged?

- 1=very rarely []
- 2=rarely []
- 3=averagely []
- 4=often []
- 5=very often []

22. If yes to (21) above, which mobile payment platform were you discouraged from using?

- a. Mpesa Send Money []
- b. Mpesa Buy Goods []
- c. Mpesa PayBill []

- d. Pochi La Biashara []
- e. Airtel send Money []
- f. Airtel Money PayBill []
- g. Airtel Money Till []
- h. Equitel Send Money []
- i. Equitel eazypay[]
- j. T-kash Send Money []
- l. Others (Specify).....

23. To what extent do the following inform your discouragement from using a preferred mobile payment platform?

Use a scale of 1-5 where 1= no extent, 2 = less extent, 3 = moderate extent, 4 = great extent, 5 = very great extent

	Reason for use	1	2	3	4	5
i	Confidentiality					
ii	Money reversals					
iii	Identity theft					
iv	PIN leakage/sharing					

24. Which factors do you find important in your adoption of a Mobile Payment Technology offering. Number in order of importance from 1-10. If the factor is not important, please number it zero (0)

- (i). Information is easily available []
- (ii). The cost is affordable for me []
- (iii). The cost is affordable for the customer []
- (iv). It is easy to use for me []
- (v). It is easy for the customer to use []
- (vi). It is easy to apply for []
- (vii). Time taken for a transaction to reflect []
- (viii). Other factors..... []

25. Kindly tick your answer in the table below. You can tick as many answers as you like.

I do not use the below Mobile Payment Technology Offering because:

Mobile Payment platform Offering	Cost	Functionality	My Clients are not using it	Others are not using it
Mpesa Send Money				
Mpesa Buy Goods				
Mpesa PayBill				
Pochi La Biashara				
Airtel send Money				
Airtel Money PayBill				
Airtel Money Till				
Equitel Send Money				
Equitel eazypay				
T-kash Send Money				

SECTION E: MODERATING EFFECT OF CUSTOMER ATTITUDE, HANDSETS, AND DEMOGRAPHICS IN THE ADOPTION OF MOBILE PAYMENT PLATFORMS

26. How does customer attitude influence the relationship between ease of use and the adoption of mobile payment platforms among micro-retailers in Gikomba Market?
27. How do handsets moderate the relationship between transaction costs and the adoption of mobile payment platforms among micro-retailers in Gikomba Market?
28. How do demographics (e.g., age, education level, and income) moderate the relationship between security concerns and the adoption of mobile payment platforms among micro-retailers in Gikomba Market?

Thank you for your time & responses

Start Time..... Finish Time..... Questionnaire No.

Appendix IV: NACOSTI Research Permit



REPUBLIC OF KENYA

NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY AND INNOVATION

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NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION

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This is to Certify that Mr. Isaac Wangombe of Strathmore University, has been licensed to conduct research as per the provision of the Science, Technology and Innovation Act, 2013 (Rev.2014) in Nairobi on the topic: FACTORS AFFECTING ADOPTION OF MOBILE PAYMENT PLATFORMS AMONG MICRO-RETAILERS IN GIKOMBA MARKET, NAIROBI COUNTY for the period ending : 28/May/2025:

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Appendix V: Ethics Review Certificate



22nd April 2024

Mr Wangombe Isaac,
isaac.wangombe@strathmore.edu

Dear Mr Wangombe,

RE: Factors Affecting Adoption of Mobile Payment Platforms among Micro-Retailers in Gikomba Market, Nairobi County

This is to inform you that SU-ISERC has reviewed and **approved** your above **SU-masters** research proposal. Your application reference number is **SU-ISERC2121/24**. The approval period is from **22nd April 2024 to 21st April 2025**.

This approval is subject to compliance with the following requirements:

- i. Only approved documents including (informed consents, study instruments, MTA) will be used.
- ii. All changes including (amendments, deviations, and violations) are submitted for review and approval by SU-ISERC.
- iii. Death and life-threatening problems and serious adverse events or unexpected adverse events whether related or unrelated to the study must be reported to SU-ISERC within 72 hours of notification.
- iv. Any changes anticipated or otherwise that may increase the risks or affected safety or welfare of study participants and others or affect the integrity of the research must be reported to SU-ISERC within 72 hours.
- v. Clearance for the export of biological specimens must be obtained from relevant institutions.
- vi. Submission of a request for renewal of approval at least 60 days prior to the expiry of the approval period. Attach a comprehensive progress report to support the renewal.
- vii. Submission of an executive summary report within 90 days of completion of the study to SU-ISERC.

Before commencing your study, you will be expected to obtain a research license from National Commission for Science, Technology, and Innovation (NACOSTI) <https://research-portal.nacosti.go.ke/> and obtain other clearances needed.

Yours sincerely,

**Mr Ambrose Rachier,
Chairperson; SU-ISERC**