

**IMPACT OF FINTECH STRATEGIES ON
FINANCIAL INCLUSION IN KENYA**

ALI AHMED ABDALLA

D63/34538/2019

**A RESEARCH PROJECT SUBMITTED IN PARTIAL
FULFILLMENT OF THE REQUIREMENTS FOR THE
AWARD OF THE DEGREE OF MASTER OF SCIENCE IN
FINANCE, FACULTY OF BUSINESS AND MANAGEMENT
SCIENCES, UNIVERSITY OF NAIROBI**

2023

DECLARATION

This research project is my original work and has not been presented to any other university for the award of a Master's degree.

Signed 

Date 24/10/2023

ABDALLA ALI AHMED

REG. NO: D63/34538/2019

This research project has been submitted for examination with my approval as the University supervisor.

Signed 

Date: 21/10/2023

SUPERVISOR: PROF. JOSIAH OMOLLO ADUDA

DEPARTMENT OF FINANCE AND ACCOUNTING,

FACULTY OF BUSINESS AND MANAGEMENT SCIENCES

UNIVERSITY OF NAIROBI

DEDICATION

I dedicate this paper to my entire family and friends for their continued support and encouragement throughout the preparation of this research paper. Special dedication goes to the UON Administration for providing me with the chance to add knowledge through their continuous support.

ACKNOWLEDGEMENT

First and foremost, I give the Almighty my deepest gratitude for His endless mercy, grace, and abundant provision that have sustained me during this academic work path. I am thankful to the Most High for the divine direction that has illuminated my path and enabled me to pursue this with clarity and meaning from the very beginning of this academic endeavor to its completion.

My heartfelt appreciation reaches out to the esteemed university for availing me with the opportunity to pursue my studies and participate in this meaningful research. I would also like to express my sincere gratitude to my outstanding Supervisor, Prof. Josiah Aduda, whose advice, tolerance, and mentorship have been extremely helpful to me during this journey. I'm grateful for all of his openness and guidance, which have been of enormous value. He additionally provided me the tools I needed to overcome tough problems and build resilience as I undertook this project.

I would also like to extend my sincere gratitude to my esteemed Moderator, Dr. Herrick Ondigo, for selflessly contributing the knowledge, insight, and wisdom to this study. I appreciate all of my colleagues and friends who offered insightful comments, had great conversations, and offered helpful critiques. Lastly, I acknowledge the academic community and the researchers whose works have paved the way for this thesis. I am humbled to add a small part to the invaluable compendium of knowledge that is constantly growing because I stand on the shoulders of giants.

TABLE OF CONTENTS

DECLARATION.....	ii
DEDICATION.....	iii
ACKNOWLEDGEMENT.....	iv
TABLE OF CONTENTS	v
LIST OF TABLES.....	ix
LIST OF FIGURES	x
ABBREVIATIONS AND ACRONYMS.....	xi
ABSTRACT.....	xii
CHAPTER ONE	1
INTRODUCTION.....	1
1.1 Background of the Study	1
1.1.1 FinTech Strategies.....	4
1.1.2 Financial Inclusion	6
1.1.3 Financial Strategies and Financial Inclusion.....	8
1.1.4 Fintech in Kenya	10
1.2 Research Problem	13
1.3 Objective of the Study	15
1.3.1 General Objectives	15
1.3.2 Specific Objectives.....	15
1.4 Value of the Study.....	16
CHAPTER TWO	18
LITERATURE REVIEW	18

2.1 Introduction.....	18
2.2 Theoretical Review	18
2.2.1 Porter's Model of Generic Strategies for Competitive Advantage	19
2.2.2 Technology Acceptance Model.....	20
2.2.3 Diffusion of Innovation Theory	22
2.3 Determinants of Financial Inclusion.....	23
2.3.1 Fintech Savings	24
2.3.2 Fintech Credit.....	25
2.3.3 Regtech/Regulatory Technology.....	26
2.3.4 Fintech Transactional	28
2.4 Empirical Literature Review.....	29
2.5 Summary of Literature Review, Critiques and Research Gaps	41
2.6 Conceptual Framework.....	42
Figure 2.6 Conceptual Framework	44
CHAPTER THREE.....	45
RESEARCH METHODOLOGY	45
3.1 Introduction.....	45
3.2 Research Design.....	45
3.3 Target Population and Sample	46
3.4 Data Collection	47
3.5 Data Analysis.....	48

3.5.1 Reliability Test	48
3.5.2 Validity Test	49
3.5.3 Diagnostic Tests	49
3.5.4 Empirical Analysis	51
3.5.5 Test of Significance.....	52
CHAPTER FOUR.....	54
DATA ANALYSIS, RESULTS AND DISCUSSION.....	54
4.1 Introduction.....	54
4.2 Descriptive Statistics.....	54
4.3 Correlation Analysis	56
4.4 Diagnostic Tests.....	58
4.4.1 Autocorrelation.....	58
4.4.2 Test for Normality	59
4.4.2.1 Fintech Savings	60
4.4.2.2 Fintech Credit.....	61
4.4.2.3 Fintech Regulatory	62
4.4.2.4 Fintech Transactions.....	63
4.4.3 Multicollinearity Test	64
4.5 Regression Analysis.....	65
4.5.1 ANOVA Test.....	66
4.5.2 Model Summary	67
4.5.3 Model Coefficient.....	68
4.6 Discussion of the Findings.....	71

CHAPTER FIVE	76
SUMMARY, CONCLUSION AND RECOMMENDATIONS	76
5.1 Summary	76
5.2 Conclusion	78
5.3 Recommendation for Policy and Practice.....	80
5.4 Limitations of the Study.....	82
5.5 Suggestions for Further Study	83
REFERENCES.....	86
APPENDICES.....	104
Appendix I: Licensed Financial Institutions in Kenya	104
Appendix II: FinTech Company’s Data Collection Instrument.....	107
Appendix III: Statistical Output.....	112

LIST OF TABLES

Table 4.1 Descriptive Statistics	55
Table 4.2 Correlations Analysis	57
Table 4.3 Autocorrelation	59
Table 4.4 Multicollinearity Test.....	65
Table 4.5 ANOVAa.....	67
Table 4.6 Model Summaryb.....	68
Table 4.7 Coefficient of Determination	69

LIST OF FIGURES

Figure 2.6 Conceptual Framework.....	44
Figure 4.1 Fintech Savings.....	61
Figure 4.2 Fintech Credit	62
Figure 4.3 Fintech Regulatory	63
Figure 4.4 Fintech Transactions.....	64

ABBREVIATIONS AND ACRONYMS

ANOVA	Analysis of Variance
CBK	Central Bank of Kenya
CMA	Capital Markets Authority
DV	Dependent Variable
FINTECH	Financial Technology
FSD	Financial Sector Deepening
GDP	Gross Domestic Product
IV	Independent Variable
KBA	Kenya Bankers Association
KNBS	Kenya National Bureau of Statistics
NGO	Nongovernmental Organization
NSE	Nairobi Securities Exchange
OLS	Ordinary Least Squares
PEOU	Perceived Ease of Use
PU	Perceived Usefulness
ROA	Return on Assets
ROE	Return on Equity
SMEs	Small and Medium Enterprises
SPSS	Statistical Package for Social Sciences
SPSS	Statistical Package for Social Sciences
TAM	Technology Acceptance Model

ABSTRACT

FinTechs utilize advanced and cutting-edge technological methods to create and deliver financial products and services. Fintechs are firms that advance financial services and products by use of intensive information technology. The general objective of this study was to determine the impact of fintech strategies on financial inclusion in Kenya. The research questions below guided this study; To examine the impact of fintech strategies on fintech savings, fintech credit, fintech regulatory and fintech transactions on financial inclusion in Kenya.

A descriptive research design was adopted. The main approach for data collection was secondary data and the examination conducted spanned an extensive period from 2018 to 2022, providing a broader timespan for comprehensive analysis. This prolonged timeframe was considered sufficient to yield conclusive and reliable results. Data obtained was analyzed for descriptive statistics using SPSS and Microsoft Excel. Through the analysis of the data, crucial insights into the impact of various fintech strategies on financial inclusion were revealed. The descriptive statistics results were presented in figures and tables to clearly outline frequencies, percentages and central tendencies such as mean and standard deviation while inferential statistics for the study included simple Regression and Pearson correlation analysis.

The study explored the impact of fintech strategies on financial inclusion, focusing on Fintech Savings, Fintech Credit, Fintech Regulatory, and Fintech Transactions. When all strategies remained the same, financial inclusion fell by 0.7996 units, according to the study's analysis of the effect of fintech strategies on financial inclusion. Although there was a favorable connection between them, Fintech Savings had little overall influence. Fintech Credit greatly impacted financial inclusion but had a negative correlation. Financial inclusion was greatly impacted by fintech regulation and showed a positive correlation. Financial inclusion was significantly impacted by fintech transactions and showed positive correlation. The study discovered that these elements accounted for 29.2% of variations in financial inclusion. A normal distributed population according to the Q-Q plot's well-aligned distribution was observed.

Consequently, based on the results of the study. The areas that warrant further investigation includes; a comparative analysis of various fintech models and their impact on financial inclusion across different regions and countries can provide valuable insights. Secondly, exploring the potential impact of blockchain technology and cryptocurrencies on financial inclusion.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

The term “FinTech” is a coined word fusing together ‘finance’ and ‘technology’. FinTech is broadly defined as technology-enabled financial innovations that have the potential to new business concepts, programs, phenomena, or variables that exert a substantial impact on financial markets, organizations, and the provision of financial services. It is an all-inclusive phrase that is utilized by all (Leong et al., 2018). Despite the term's initial usage in the 1970s, it was only during the mid-2010s that it gained recognition and became firmly established in contemporary business lexicons (cf. Schueffel 2017). All financial institutions have been compelled to manage bad debts and comply with regulatory requirements as a product of the 2008 financial crisis. To safeguard depositors and safeguard the capital of commercial banks, the majority of global regulators have imposed stricter lending conditions. According to Schindele & Szczesny (2006), the financial crisis made it more expensive for many small businesses to borrow money, which led some banks to stop lending to them. However, established regulations prevented fintech businesses from materializing (Magnusson, 2019).

FinTechs use cutting-edge technological methods to create and supply financial goods and services. There are two key origins of the current FinTech wave's enthusiasm. The first is because of the maturation and integration of technologies like artificial intelligence, block chains, the Internet of Things, and data analytics, which has increased their economic potential. (Gomber et al., 2018a). The incorporation and application of

these cutting-edge technologies have transformed sectors, encompassing finance, healthcare, transportation, and various others. Their influence on operational procedures, customer interactions, and societal progress remains at the forefront, shaping the contemporary landscape of the world. These advancements have brought about groundbreaking changes, fostering innovation, and paving the way for a more sophisticated and interconnected global society (Chen et al., 2019). The second is due to the advantages it can produce. Consumers can now access and afford financial services more easily thanks to fintech (Demirgü-cunt et al., 2020). FinTech helps financial institutions operate more efficiently and offer a wider variety of services (Currie & Lagoarde-Segot, 2017). FinTech may expand and improve the timeliness and transparency of financial data for business owners, resulting in the creation and exploitation of new business prospects (see Gozman et al., 2018). Additionally, FinTech has an impact on a variety of businesses, not just the financial industry such as by enabling new professional services and e-commerce operations (Leong et al., 2020).

Arner et al. (2018) states that 1.2 billion people created their first financial accounts between 2010 and 2017 worldwide. The same report states that 1.7 billion adults over the age of 16 (31% of the global's adult population) are economically disenfranchised despite these great advancements in financial inclusion (Arner et al., 2018). Fascinatingly, the majority of those who are economically marginalized reside in the poorest neighborhoods in emerging nations as per Demirguc-Kunt et al., (2018). FinTech is said to have the ability and potential to promote financial inclusion by offering a greater range of financial services at lower costs, deeper penetration, and in places where there are no traditional financial institutions. Therefore, to foster financial inclusivity, economies are

being encouraged to enact digital financial metamorphosis endeavors (Zetsche et al., 2019). Zetsche et al. (2019) through the provision of payment solutions, insurance offerings, extended (project and corporate) funding, and savings/investment options, the accomplishment of some of the 17 Sustainable Development Goals of the United Nations is aided by fintech, both directly and indirectly (SDGs). By transforming Kenya's financial services and financial inclusion environment through a good strategic framework, fintechs is an epicenter in attaining inclusive growth and greater prosperity.

In Sub-Saharan Africa (SSA), FinTech represents a previously unavailable opportunity, as most SSA countries have flatter financial systems than other developed and emerging economies in the world. Merely 20% that is of the populace possesses a banking account, in stark contrast to the substantial 92% in prosperous nations and a mere 38% in developing nations when it comes to financial inclusion. Financial technology issues in the area are a consequence of underinvestment, subpar infrastructural progress, and relatively low levels of financial awareness. The sector is experiencing rapid growth in Kenya and the wider East Africa region, and it has greatly advanced financial inclusion by helping underprivileged people get over obstacles to accessing financial services (Kendall, 2020). According to Domat (2019), investment in African startups has quadrupled between 2018 and 2020, with over 50 deals reaching US\$725 million, and FinTech investment in 2018 from 93 listings amounted to 40% of total funding. South Africa, Kenya and Nigeria got the most deals. According to Domat (2019), mobile money accounts have enormously surpassed and overtaken traditional bank accounts among sub-Saharan Africa nations.

According to Ernst & Young (2019), there are currently over 260 businesses operating in the FinTech sector, making mobile money key catalyst for financial inclusion in Africa. Kenya, like most developing countries, incorporates a high reliance on mobile cash, therefore if data is collected and analyzed by telecommunications corporations, it might be useful to know which target markets and products would match their targets. Gaining more insight. Like South Africa, Kenya's access to financial services is highest for the 26–35-year-old demographic section (Bank of Kenya, 2019), with 18-25 and 55+ being additional economically excluded and it is how it has been. According to FinTech Africa, there are 39 FinTech companies some of which include companies such as Branch, Tala, Mobile Decisioning Africa (MoDe), PesaPal, M-Pesa, Chura and M-changa among others. The overwhelming variety of number of companies within the same industry makes Kenya an extremely competitive market. As a result of various services being offered by these companies. However, M-Pesa is the most popular and widely used because of its integration with mobile in its platform (Kangethe, 2020).

1.1.1 FinTech Strategies

FinTech companies work in a wide range of industries, including loans, personalized pricing, improved portable installments, and digital monetary standards. By eschewing traditional financial services and delivery criteria in favor of significantly more affordable and efficient alternatives, those zones are designed to make an impact in particular on Africa's unbanked population (Fatnt, 2019). The financial services sector is essentially and fundamentally changing as a result of fintech. In several areas of the financial services industry today, FinTech firms directly compete with banks to offer clients financial administrations and solutions. Fintech strategies refer to the specific

approaches and plans implemented by financial technology companies to achieve their objectives and drive innovation in the financial services segment. These strategies encompass a broad range of activities and initiatives, including the evolution and integration of technology solutions, the adoption of digital platforms, the enhancement of customer experience, and the exploration of new business models. Early on, FinTechs understood that all financial administrations must smoothly interact with the preferences of modern consumers (Marr, 2017).

Rendering of financial services can become more productive and efficient with the help of fintech (KPMG, 2018). On that note, FinTech firms which have centered on aligning and reshaping their strategic dynamism on how their strategies are enhancing economic financial delivery and continuing to be revolutionized on all matter of context and concept from the strategies employed by fintechs in savings, fintech credit, fintech regulations and fintechs transactions. The scrutiny's aim is to explore the density of effect from some of the FinTech strategies as noted in the objectives of our study which are driving for wider financial inclusion. The volume of FinTech strategies alignment towards a greater financial inclusive Kenya.

Strategic alignment is an organizational philosophy that describes the attempt to acquire better levels of performance and describes how work is carried out with a fixed set of values and beliefs (Tutar, Nart, & Bingöl, 2018). Fintech companies often prioritize the use of data analytics and customer insights to understand individual preferences and tailor their products and services accordingly. This can involve offering customized financial solutions, personalized investment advice, and intuitive user interfaces that simplify

complex financial tasks. An organization's strategic course displays the strategic path implemented via an organization to create the right set of behaviors for continued good organizational performance (Avciet al., 2021). TheFinTech strategies from this study encompassed; fintech savings, fintech credit, fintech transactional and fintech regulatory technology which aims to ascertain their impact on financial inclusion in Kenya.

1.1.2 Financial Inclusion

It is worthwhile epitomizing that financial inclusion entails lowering the cost of financial services for all or any people and enterprises, regardless of income or size. Financial inclusion is another term for inclusion of finance. Financial development includes aspects of depth, efficiency, and stability in addition to financial inclusion or access (Evans, 2018). Financial inclusion is the endeavor of guaranteeing that individuals and communities can avail themselves of reasonably priced and suitable financial offerings. It spearheads a crucial function in fostering economic development and alleviating poverty and fostering social development. It empowers marginalized populations, particularly women, youth, and low-income individuals, by creating opportunities for economic advancement and upward mobility.

Furthermore, financial inclusion fosters stability and fortitude in the financial framework, amplifies consumer safeguarding, and advocates for financial education and literacy. The capacity of the entire society to attain and employ a diverse array of responsibly and adequately provided financial solutions within a well-regulated context is denoted as financial inclusion, as indicated by UNDP (2019). Financial inclusion, as described by Mbutor and Uba (2013), pertains to the ability of financial establishments to stimulate an

upsurge in the percentage of households and individuals possessing authorized bank accounts and reaching financial institution services. The ambition of financial inclusion is to widen the availability of financial institution services to a wide array of individuals, as emphasized by Adaramola and Kolapo (2019). Gender exerts an influence on financial inclusion, particularly, and overall financial advancement holds paramount significance for economic mechanisms, as highlighted by Maina and Mungai (2019).

Two additional potential benefits of financial inclusion include a decline in pervasive corruption and terrorism by means of enhanced surveillance and regulation of financial transactions through the utilization of digital technology. They also include improved efficiency and coordination of government assistance programs (Adewoye, 2013). Financial inclusion encompasses a range of advantages, including the improved efficiency and coordination of government assistance programs (Adewoye, 2013). It refers to a state where all adults, including those traditionally marginalized by the financial system, have entryway to credit, payments, savings, and insurance services from official financial firms (GPFI, 2016). The ultimate goal is to promote the adoption of formal payment methods among the general public, such as online and mobile payments. Empirical research has introduced various indicators to measure financial inclusion, with the key elements being access, usage, and barriers (Erman, 2017). Another crucial aspect is the capability to engage in cashless transactions, warranting heightened security, speed, efficiency, and reduced costs compared to physical cash transfers (Riley et al., 2017). Additionally, digital transactions enhance transparency, as they are easier to track, minimizing the involvement of intermediaries and ensuring that the intended amounts reach the recipients without any unauthorized deductions (Hacioglu, 2019). Therefore,

this study utilized by natural log of total mobile banking/digital payments to measure financial inclusion.

1.1.3 Financial Strategies and Financial Inclusion

Financial strategies play a pivotal role in advancing and enhancing financial inclusion, which aims to ensure that individuals and businesses, especially individuals who have been historically marginalized or excluded from the conventional financial system, can henceforth access and avail themselves of a wide range of financial services. Effective financial strategies enable policymakers and institutions to cultivate an inclusive financial ecosystem that caters to the diverse needs of the population. An integral aspect of financial inclusion is financial literacy, which involves understanding the functioning of money and making informed financial decisions. Financial knowledge, according to Atakora (2017), contributes to financial stability and economic expansion. Amara and Tuesta (2018) emphasize that achieving financial inclusion requires access to both financial education and financial literacy.

Challenges in attaining financial inclusion include limited access to financial institutions and educational infrastructure, such as computers, for educators. Insufficient network coverage for mobile fintech, absence of internet connectivity for online fintech, and burdensome documentation requirements further impede individuals' access to financing from financial institutions. In their empirical study conducted in India, Chithra and Selvam (2013) discovered a material correlation in the midst of financial literacy, information, and the level of financial inclusion.

One prominent financial strategy to foster inclusion involves promoting innovative fintech strategies and solutions. Fintech, an abbreviation for financial technology, harnesses technological advancements to offer financial services in a manner that is characterized by increased efficiency, affordability, and accessibility (Yang, 2019). Mobile banking, digital payments, and online lending are examples of fintech strategies that have the potential to reach unbanked and underbanked populations, offering them opportunities for saving, borrowing, and conducting transactions. By overcoming geographical barriers and reducing transaction costs, these strategies bridge the gap between individuals and financial services, promoting greater financial inclusion.

Furthermore, financial education and literacy initiatives constitute essential components of financial strategies that aim to enhance inclusion. By advocating for financial education, individuals are equipped with the expertise and competencies needed to make informed financial choices, proficiently handle their finances, and gain entry to and effectively utilize financial offerings (Aduda & Kalunda, 2012). Initiatives focused on financial literacy empower individuals to engage in the formal financial system, comprehend the benefits and potential risks linked to different financial instruments, and enhance their overall financial welfare.

Regulatory frameworks and policies also play a central mandate in shaping financial strategies for inclusion. Governments and regulatory authorities bear the responsibility of creating an enabling environment that fosters competition, consumer protection, and stability within the financial sector. In a nutshell, financial strategies centered on innovative fintech solutions, financial education, and supportive regulatory frameworks

are instrumental in promoting financial inclusion (Blythin, 2020). These strategies reinforce the reach of financial services, upgrade financial knowledge, and create a supportive atmosphere for individuals and enterprises to engage in the conventional financial system. By tackling the obstacles that impede individuals from availing and utilizing financial services, financial technology approaches foster economic advancement, diminish poverty, and promote overall enhancements in financial welfare for all.

1.1.4 Fintech in Kenya

Fintech strategies have played a crucial part in advancing financial inclusion in Kenya, a territory known for its thriving fintech ecosystem. By leveraging technology to provide financial services, fintech has fundamentally transformed the accessibility and affordability of financial by-products as well as services in the nation. In the context of Kenya financial inclusion has been championed for and instituted as part by Vision 2030. Therefore, placing significant emphasis on the financial services domain besides acknowledging its central role in the economy. The long-term goals for the financial sector encompass enhancing accessibility and broadening the range of financial services, stimulating supplementary savings to facilitate greater investment rates, enhancing the efficiency of financial service provision, ensuring increased stability within the system, cultivating a favorable financial environment that encourages active stakeholder engagement, and positioning Kenya as a prominent financial hub among emerging markets by 2030 (Aduda & Kalunda, 2012).

Introduction of innovative mobile payment solutions such as M-Pesa has provided Kenyans with convenient and secure methods to conduct financial transactions, even in remote areas with limited traditional banking infrastructure. However, Frame and White's (2014) analysis revealed inconsistent empirical findings. Similarly, Makini (2018) and Mwand (2013) argue that the link between Kenyan corporate success and financial innovation is a minority among the 24 studies on financial inclusion in internet fintech and Kenyan SME participation. This viewpoint is also supported by the Digital Lender study. It is imperative to state that access to services, financial planning tools, complimentary inquiries, and advisory services can now be easily obtained through the Google Play Store.

The advent of new mobile phone technology, as highlighted by Beck, Demirgüç-Kunt, and Levine (2016), has significantly transformed user perspectives, particularly benefiting the unbanked and underbanked populations who can now save, borrow, and conduct digital payments with ease. Additionally, fintech strategies have spurred the growth of digital lending platforms, enabling individuals and small businesses to overcome traditional financing barriers and access credit quickly and efficiently. Kenya's utilization of fintech solutions has expanded financial output to a broader populace segment, contributing to enhanced financial inclusion and socioeconomic empowerment. In addition to fintech strategies, Kenya has implemented supportive policies and regulations to foster financial inclusion.

The government has actively promoted digital financial services through partnerships with fintech companies and collaboration with financial institutions, leading to the

establishment of robust regulatory frameworks. Notably, the creation of a regulatory sandbox provides a controlled environment for fintech innovators to test their solutions. Recognizing that financial literacy is essential for accessing financial services, Kenya emphasizes the need for improved financial literacy. Research conducted by Wafula (2020) on small-scale farmers in Trans Nzoia County highlights the positive correlation between financial literacy (including savings traits, debt management techniques, investment strategies, and financial planning services) and financial inclusion. This analysis underscores the impact of M-debut Pesa on enhancing Kenya's payment infrastructure.

As per Standard & Poor Ratings Services Global Financial Literacy Survey (Klapper, Lusardi, van Oudheusden, 2018), Kenya has a financial literacy rate of 38% among its population. Financial literacy, as elucidated by the OECD, encompasses consumers' or investors' ability to develop financial tools, ideas, and effective methods to analyze financial hazards and prospects, make well-informed judgement, and improve their financial well-being. It involves a combination of self-confidence and the capacity to explore options and seek assistance (Miller et al., 2009). While research on the benefits of financial education programs has yielded mixed reactions. Wachira & Kihiu (2012) argue that such programs can enhance effectiveness and promote wider financial inclusion. These postulations were echoed by Braunstein and Welch (2012). As a result, there is limited investigations which have examined fintech companies. Furthermore, the contrasting results as well as evolution of fintech strategies in the sector necessitate an increased focus on investigation.

1.2 Research Problem

Fintech strategies and financial inclusion are intricately intertwined, with fintech playing a pivotal role in driving and promoting financial inclusion (Yang, 2019). Through the utilization of technology and innovative solutions, fintech strategies aim to provide individuals and businesses, particularly those who have limited access to traditional financial systems, with accessible, affordable, and convenient financial services (Chinoda & Mashamba, 2021). Continuous innovation and technology have exposed organizations and customers to change, resulting in risk. Christensen (2006) records that even more troubling is radical innovation, which generates opportunities for big players to maintain dominance or rivals to overtake them includes strategic and catalytic types that change game rules and satisfy unmet consumer needs through low-cost, easier model. Peer-to-peer lending platforms provide a decentralized and accessible avenue for individuals and small businesses to obtain loans directly from investors.

Approximately 2 billion individuals globally lack formal financial services and there are over 50% of adults lack access to banking facilities (World Bank, 2020). Today, 69% of adults have access to financial services (World Bank, 2020). As per Global Findex database (World Bank 2020), in Kenya, as of 2021, about 42% of Kenyan adults had some form of financial account. Comparing to 63% of the poorest two-fifths, the number now had risen to 75%, (World Bank 2020). Financial inclusion is greatly hampered by poor regulation. This is attributed to the need for regulatory supervision, which is often essential to ensure the effective assimilation and customization of digital financial advancements, stimulating their adoption and encouraging competition among providers

to ensure the equitable access of these emerging technologies to marginalized communities. This requirement for adjustments arises from the fact that progress towards enhanced financial inclusion must align with the conventional responsibilities of financial regulation and oversight, which include upholding the firmness of the financial system, preserving its integrity, and safeguarding consumers (Maina, 2018).

Kenya suffers from a lack of financial inclusion in its financial markets. Kenya's FinTech strategy falls short of fully engaging financial markets. The FSD reports that an estimated 61.6% of Kenyans still do not have bank accounts (Totoloet al. 2017). On the other hand, Kenyans excluded from all forms of financial services, declined from more than 40% of adults to 17% between 2006 and 2016. Over 71% of adults utilize mobile money services, which were a key factor in driving inclusion (FSD, 2017). According to several authors (Martin, 2016) in addition to the work of Jao (2017), FinTech solutions have emerged as the most efficient approach to extend financial inclusion to individuals lacking access to conventional banking services. In fact, it is the epicenter of transformation (He et al., 2017). Given Kenya's significant rural population facing economic difficulties, achieving financial inclusion is imperative for the country's sustainable progress.

According to Aduda and Kalunda (2012), an economy cannot flourish by catering to only a portion of its citizens while excluding the rest. In numerous developing nations, economic development is disproportionately concentrated among a small number of affluent individuals and regions, leaving the majority of the population and regions marginalized. Nonetheless, existing empirical literature in this topic predominantly

focuses on the impact of FinTech firms on financial inclusion, neglecting to explore how FinTech strategies can enhance the delivery of financial services and expand financial inclusion in Kenya. Despite some studies investigating financial regulation and financial inclusion, there are very few scholarly studies that have been done in this field to document and make sense within the local industry. Additionally, there are conceptual, contextual and methodological gaps due to different techniques used, contextual gaps due to varying sector and region where the studies took place. This highlights the predicament in assessing the precise influence of fintech strategies on financial inclusion. No published study has particularly dealt with assessing how fintech strategies impact financial inclusion in Kenya. This acts as a significant gap that this research aims to answer nevertheless become a reference point for future studies.

1.3 Objective of the Study

1.3.1 General Objectives

The general objective of this study is to examine the Impact of FinTech strategies on financial inclusion in Kenya

1.3.2 Specific Objectives

This research is guided by the following research questions.

- i. To examine the impact of fintech savings on financial inclusion in Kenya.
- ii. To assess the impact of fintech credit on financial inclusion in Kenya.
- iii. To establish impact of fintech regulatory technology on financial inclusion in Kenya.
- iv. To evaluate the impact of fintech transactional on financial inclusion in Kenya.

1.4 Value of the Study

The study is anticipated to hold significant relevance for FinTech companies operating in Kenya. The findings will enable these companies to unveil interconnected insights into how their strategies can impact the delivery of financial services to both the banked and unbanked populations in the country. Management can also receive guidance on crucial focal points to effectively implement such strategies and enhance financial inclusion in the nation.

The CBK responsible for overseeing the country's financial institutions and services, can leverage the findings to drive transformative economic policies and ensure good governance. Similarly, the ministries of finance and ICT, along with policymakers, can align their objectives, mandates, and vision to adapt to the dynamic environment, fostering creativity and innovation. Supervisors of the capital markets and insurance sectors can acquire valuable information to make informed decisions, mitigate risks, and maximize returns. With the current surge in FinTech, both the CBK and CMA have a keen interest in regulating this industry. Overall, this research can aid in the development of appropriate regulations for FinTech companies and provide insightful information about their activities. The study serves as a valuable resource for scholars and researchers, both present and future, offering literature on the subject. Furthermore, it highlights significant research gaps that may inspire further exploration in future studies.

This evaluation can function as a precious asset for scholars exploring the influence of technology on financial inclusion. It offers valuable perspectives that can enlighten policymakers and professionals engaged in regulating financial technology, enabling

them to enrich the productivity of policies and the execution of strategies pertaining to financial inclusion in progressive and newly industrialized economies. Research outcome can guide future efforts to leverage technology for reducing financial inclusion gaps in Kenya and the neighboring region.

The theories this study anchors gain knowledge from this study. These ideas include: The Technology Acceptance Model (TAM), the Theory of Financial Innovations, and Porter's Model of General Strategies for Competitive Advantage. By informing the concepts of FinTech strategy and financial inclusion, this research advances our understanding of these theories. Additionally, the research can be a valuable addition to the knowledge already available on Kenya's FinTech strategy and financial inclusion.

This study presents valuable viewpoints and enriches the existing body of literature regarding the uniting effects of FinTechs and financial inclusion. It delivers significant perspectives for researchers and scholars in the domains of finance and economics, serving as a valuable point of reference for forthcoming inquiries. Furthermore, study identifies areas of limited understanding, facilitating future explorations and advancements.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This segment warrants an in-depth inspection of FinTech strategies in conjunction with financial inclusion in Kenya. The chapter was organized into distinct sections, each serving a specific mandate. It denoted a conceptual structure that underpins the research theories. Besides that, the experimentation explores various parameters impacting on financial inclusion and recognized the contributions of previous scholars in the domain of FinTech strategies and financial inclusion under local, regional and global context. Additionally, it provided an overview and visual representation of the anticipated connection between the regressor and regressed variables. Finally, the chapter concluded by identifying gaps in the existing empirical literature, shedding light on areas for further exploration and research.

2.2 Theoretical Review

Under this segment of the investigation presents the concepts formulated by academics concerning the theoretical orientation of this research. The rationale for the exploration holds significance as it elucidates the concepts underpinning the experimentation. The theories of financial advancement, the model of technology adoption, and Porter's framework of shared strategies for competitive superiority serve as the theoretical underpinnings for this scrutiny.

2.2.1 Porter's Model of Generic Strategies for Competitive Advantage

In the early 1980s, Porter (1985) introduced Porter's overarching strategy framework. Many organizations employ concepts of competitive strategy to enhance their operations and outperform their rivals. According to Porter's General Strategy Model, strategy is defined as the actions taken to establish a defensible position in the industry (Porter, 1985). Porter identifies two primary forms of competitive advantage: cost minimization and distinctiveness. Tanwar (2013) elaborates that there are three overarching strategies for achieving superior industry performance, rooted in these two primary competitive advantage types and the level of activity a firm aspires to attain. These strategies encompass concentration, differentiation, and cost leadership. Furthermore, the strategy focus can be categorized into two variants: differentiation focus and cost focus.

While Porter's Model of Generic Strategies for Competitive Advantage has been a fundamental framework in strategic management, its application to the FinTech industry, particularly concerning financial inclusion, has faced substantial criticism. One key critique is that this traditional framework was primarily designed for conventional businesses and may not fully encompass the dynamic and disruptive nature of the FinTech sector. Schueffel (2017) contends that the model oversimplifies the intricate landscape of financial technology, where innovative solutions often challenge traditional business boundaries. Moreover, the model's assumption that firms must choose one of the four generic strategies may not align with the hybrid and multifaceted approaches commonly adopted by FinTech companies. These firms often blend elements of cost leadership, differentiation, and focus strategies to adapt to diverse market conditions and address the nuanced requirements of financial inclusion.

Nonetheless, despite these criticisms, Porter's Model of Generic Strategies remains pertinent in discussions of FinTech strategies and their impact on financial inclusion. The framework serves as a valuable foundation for understanding how FinTech firms position themselves in the market to gain a competitive edge, a critical consideration in addressing financial inclusion challenges. By examining cost leadership, differentiation, cost focus, and differentiation focus, FinTech companies can formulate strategies that align with their unique value propositions and the specific needs of underserved communities. For example, some FinTech firms effectively leverage cost leadership to offer affordable financial services to marginalized populations, while others employ differentiation strategies to create innovative, tailored solutions for specific customer segments (Thompson et al., 2018). While adaptation and nuance are required to comprehensively address the intricacies of the FinTech landscape, Porter's model underscores the importance of aligning business strategies with the goal of advancing financial inclusion, a critical objective for both regulators and FinTech innovators.

2.2.2 Technology Acceptance Model

Davis introduced one of the most renowned research frameworks for predicting individuals' acceptance and adoption of information systems and technology in 1989. Extensive research has been conducted to thoroughly investigate the Technology Acceptance Model (TAM) and validate its effectiveness in understanding how people embrace new technologies across various information system designs. TAM ensures that each user's intended use and individual perspectives serve as the foundation for how the system is actually employed. The core components of TAM include the user's attitude

toward use, perceived usefulness, perceived ease of use, external factors, and the intent to use.

Critics of this model have questioned its use as a dependent variable rather than a means to identify determinants affecting behavior, as Bashange (2015) argued. Zahid et al. (2013) noted that TAM does not account for external variables that could influence technology adoption, such as age and educational background. However, it could be argued that measuring behavior is highly challenging, and the perceived utility and ease of use of new technologies play a crucial role in their adoption. The approach suggests that while other external factors may explain technological acceptance, they are not necessarily based on it. Despite the existence of numerous theories and models explaining user receptivity to new technologies, TAM stands out as the predominantly employed framework among researchers.

Nevertheless, TAM has proven relevant in various research projects, especially those related to new systems and technologies. One study (Chuang, Liu, and Kao, 2016) combined the TAM model with trust-related characteristics and branding considerations to understand how customers behave when using FinTech services. Understanding the views and intentions of prospects and existing customers regarding FinTech products and services is essential, given that FinTech services are relatively recent technological offerings in the market. According to TAM, consumer intent influences technology adoption and features, which, in turn, affect how customers perceive the system (Mojtahed, Nunes, & Peng, 2021). As per the theory, the technology should be user-friendly and provide benefits to the user. This means that the ease of using these

technologies and the advantages they offer to consumers determine the extent of FinTech solution adoption in Kenya, as emphasized by Lule, Omwansa and Waema (2012).

2.2.3 Diffusion of Innovation Theory

Mahajan and Peterson (1985) posit that social systems quickly adopt new concepts, behaviors, or items, aiming to elucidate the adaptation and utilization of Internet and mobile banking in social structures (Clarke, 1995). Sevcik (2004) underscores that innovation adoption unfolds gradually over time rather than occurring instantaneously. The Theory of Innovation Diffusion is grounded in several fundamental tenets, presuming that the acceptance and propagation of novelties, including technological advancements, follow a predictable model within a given society or market. It asserts that individuals and groups in a population exhibit varying inclinations toward adopting novelties, contingent on their perceived attributes, and these adopters can be categorized into distinct cohorts characterized by discernible traits.

Critics of the Theory of Innovation Diffusion have expressed reservations when applying it to the realm of FinTech strategies and their role in advancing financial inclusion. A primary critique is that the theory, while informative, may not be inherently applicable in the dynamic FinTech landscape (Rogers, 1995). In the rapidly evolving field of financial technology, innovations often emerge disruptively and may not consistently align with the theory's structured diffusion phases. Detractors argue that this oversimplification may limit the understanding of how FinTech innovations gain adoption, particularly when addressing the multifaceted challenges of financial inclusion. Additionally, the theory's assumption of a linear diffusion process may not fully encompass the dynamic and

nonlinear nature of technology adoption within FinTech, where external factors like regulatory changes and market dynamics exert a significant influence on adoption patterns.

Nevertheless, the Theory of Innovation Diffusion remains profoundly relevant when scrutinizing FinTech strategies and their impact on advancing financial inclusion. The theory provides valuable insights into how innovations, including FinTech solutions, are embraced by various segments of the population (Wani & Ali, 2015). Despite the need to adapt the theory to encompass the unique attributes of FinTech innovations, it serves as a foundational framework for assessing the diffusion patterns of digital financial services (Hidayat & Mukminin, 2022). Importantly, it's crucial to recognize the theory's limitations and complement it with alternative frameworks and empirical data to gain a comprehensive understanding of the intricate interplay between FinTech, adoption, and financial inclusion

2.3 Determinants of Financial Inclusion

Financial inclusion generally is influenced by a range of factors, including various aspects that were the focus of this study. The research specifically examined four dimensions of financial inclusion, namely; fintech savings, fintech credit, fintech regulatory technology, and fintech transactional. These aspects play a crucial faction in proliferating access to financial services, promoting inclusion, and addressing barriers faced by underserved populations. By investigating these specific dimensions, the examination leads to a deeper understanding of how fintech strategies can enhance

financial inclusion and foster avenues for individuals and businesses to join the formal financial system.

2.3.1 Fintech Savings

Guild (2017) spearheaded a research on the future of finance and the impact of fintech. The main objective of the study explored how technological advancements were reshaping the financial sector. The focus of the investigation centered on Kenya and India, where the researchers examined the integration of fintech services with government policies and regulatory frameworks. The aim was to expand financial services to underserved populations and promote financial inclusion. Scrutiny highlighted the critical role of effective regulatory oversight in ensuring the success of fintech adoption. By analyzing the varying degrees of success in fintech adoption in Kenya, India, and China, the research advocated for a responsive regulatory approach that promotes financial inclusion through technological innovation, rather than an excessively interventionist framework.

The premise supporting the correlation between financial technologies and inclusive finance is that a significant portion of the marginalized population possesses a mobile device, thereby enabling the provision of financial services through mobile phones and other unified devices such as tablets and laptops. This guarantees enhanced financial access for the underserved population, promoting improved financial inclusion (World Bank, 2014). Financial technology has a variety of beneficial implications on financial inclusion. Better financial technologies can increase access to fundamental financial services, which led to greater financial inclusion. This is practical through financial

incorporation of economically disadvantaged individuals residing in remote rural regions (Demir, Pesqué-Cela, Altunbas & Murinde, 2020). Additionally, increasing access on fintech results in the distribution of financial goods to rural and underserved populations, improving bank clients' access to credit in these areas. Financial technologies that are simple to use grant a more comfortable platform for consumers to undertake fundamental financial operations, for instance paying for power, facilities, sending money to family and friends, etc. (Erman, 2017).

2.3.2 Fintech Credit

Commercial bank lending rates have an impact on financial inclusion since they either serve as a barrier or a facilitator for it. Financial Inclusion has a negative influence on high interest rates, according to Uddin and Islam (2017). Additionally, the study made notice of the possibility that minimal loan interest rates would encourage people to use financial services like loans. According to research by Oyelami, Saibu, and Adekunle (2017) on the factors that contribute to financial exclusion, interest rates have an impact on financial inclusion.

Interest rate limits significantly affect financial inclusion, according to Caballero-Montes (2020). Interest rate ceilings can promote financial inclusion. Fintech credit plays an imperative mantle in bridging the gap between financial education and financial inclusion. By leveraging technology and innovative approaches, fintech platforms provide convenient and accessible avenues for individuals to access credit services. These platforms offer streamlined application processes, quicker loan disbursements, and personalized credit options tailored to individual needs. In this context, financial

education serves as a vital complement to fintech credit by equipping individuals armed with unparalleled expertise to apprehend the terms and conditions of credit products, make informed borrowing decisions, and manage their credit responsibly. By linking financial education to fintech credit, individuals are empowered to make the most of the available financial services, contributing to their financial well-being and the overall development of the nation.

Policymakers and the general public alike have shown a lot of interest in the financial markets as a result of fintech credit. Strategies on fintech credit innovations have been suggested by some commentators to have the potential to change lending markets by lowering costs, enhancing customer experiences, and enhancing credit risk assessments. Business models that are susceptible to shifting financial conditions or concerns about investor and consumer protection could limit the expansion of FinTech credit in the future, according to a different points of view.

2.3.3 Regtech/Regulatory Technology

Lonescu (2020) conducted an assessment of digital data aggregation, analysis, and infrastructure in fintech operations. The scrutiny aimed to examine the influence and future trajectory of fintech advancements in payments and financial products, as well as the role of financial regulations. The evaluation was motivated by the digital transformation and evolution that has been expedited through the industrial revolution, resulting in the onset of technologically advanced financial services. The primary impetus for the adoption of RegTech is the financial sector's burden of regulatory compliance costs. According to McDowell (2017), banks surpass 100 billion US dollars in their

expenditures on regulatory compliance within the timescale of 2016. According to Memminger et al., (2016), governance risk and compliance (GRC) expenditures make up 15 to 20% of "run the bank cost" and 40% of "change the bank costs." 2016). Nevertheless, the existing experimentation on the influence and future trajectory of fintech in payments and financial services, along with the role of financial regulations, are limited. The findings obtained from the evaluation were inconclusive, highlighting the necessity for further comprehensive and in-depth research in this domain.

As emphasized in the OECD PISA Report (2012), financial literacy is an ongoing process encompassing skill acquisition, confidence building in seeking guidance, and taking effective measures to enhance financial well-being. Furthermore, financial literacy acts as a fundamental cornerstone for attaining financial inclusivity. In the intricate realm of modern finance, households confront significant choices concerning investments and borrowing. Individuals with limited financial literacy are more vulnerable to debt-related issues, exhibit lower savings rates, encounter difficulties in accessing affordable credit, and display a diminished propensity for future planning (Ramakrishnan, 2012).

The relative complexity of financial technology business models, legal entity structures, procedures, goods, services, and markets served is another factor. Furthermore, the constant changes in regulations and the need to interpret and adhere to them present a challenge for even the most prominent banks and fintech companies. The costs and intricacies involved in compliance may become unmanageable for smaller enterprises (Walker, 2018). Above-mentioned costs associated with consultants, professional

services, and IT vendors highlight the shift towards RegTech, indicating a transition away from human-dependent solutions (Marenzi, 2017).

2.3.4 Fintech Transactional

Kong and Loubere (2021) concentrated on the integration of fintech and rural development in China. The study was driven by the global transformation of financial services through digital finance. China, known for its thriving fintech sector and large user base, serves as an important case study for understanding the operations and implications of fintech expansion on socioeconomic development. Specifically, the research examined the introduction of new digital finance models in rural China by two major internet companies, JD and Alibaba. In contrast to previous unsuccessful attempts by traditional financial institutions to extend their services to rural areas, these rural fintech models offer innovative approaches to digital financial service provision. The paper conducted a thorough examination of these models, situating them within the wider framework of worldwide initiatives aimed at advancing digital financial inclusion. Additionally, it delved into possible parallels with agricultural supplier contractual frameworks in different areas and evaluated the prospective advantages and drawbacks they subject to rural progress and livelihoods in China and other regions.

The percentage of the population that uses mobile phones is known as mobile phone penetration. In their 2019 study on the factors influencing financial inclusion, Senou, Ouattara, and Houensou stated that internet and mobile phone use are essential for financial inclusion. As per Boro (2017) on the impact of mobile banking on the expansion of financial inclusion, the widespread presence of mobile phones had a considerable

influence on the accessibility of financial services. Accordingly, availability of mobile devices among the population facilitated their utilization of banking services, leading to an increase in the adoption of mobile money services. Similarly, Chinoda and Kwenda (2019) observed that the utilization of mobile phones posted a positive and notable effect on the promotion of financial inclusion.

2.4 Empirical Literature Review

Apostu, Panait, Vasile, Sharma, and Vasile (2023) worked on research on an assessment concentrating on FinTech and financial inclusion in the Balkan countries. Taking into account a range of significant elements such as the participation of governmental entities, membership in the European Union, and the extent of financial and digital knowledge among the populace, various specific metrics were employed. These included measures like internet utilization, the proportion of bank assets in relation to the gross domestic product (GDP), and individual-level indicators encompassing online shopping, internet-based bill settlement, access to online banking, mobile phone-enabled utility payments, digital transactions, account ownership, and possession of debit cards. The study sample encompassed all eight Balkan nations, namely Slovenia, Croatia, Bosnia and Herzegovina, Serbia, Montenegro, Albania, Macedonia, Bulgaria, and Romania. The research employed descriptive statistics, ANOVA, cluster computation in addition to the principal component analysis to test the hypotheses. As a consequence, findings revealed that the Balkan countries exhibited heterogeneity in terms of FinTech and financial inclusion, influenced by public policies in the financial sector, IT development, and the willingness of the population to adopt new financial services and products.

Yeyouomo, Asongu, and Agyemang-Mintah (2023) conducted a study that looked at how FinTechs helped close the gender parity in financial inclusion in countries in Sub-Saharan Africa (SSA). The study looked specifically at how FinTechs helped close the gender gap in financial inclusion in SSA between 2011 and 2017 in order to resolve the issue of financial innovation in emerging states. For empirical examination, the research optimized a multilevel logistic regression model fitted to panel data. In that scenario, outcomes denoted that financial technology companies (FinTechs) are pivotal in diminishing the gender disparity while accessing and utilizing financial services, thereby contributing to a reduction in the gender parity in financial inclusion. Nonetheless, the findings also postulate that the advancement of FinTechs alone might not be adequate to completely bridge this gap. Thus, the study emphasizes the significance of focused policy initiatives specifically designed to address and close the gender gap in financial inclusion. The research underscored the necessity of comprehensive approaches that combine the development of FinTechs with targeted policy interventions, aiming to achieve gender equality in the realm of financial inclusion.

Velazquez, Bobek, Vide, and Horvat (2022) conducted an extensive analysis of fintech companies and their contribution to financial inclusion in Peru. On top of that, scrutiny highlighted the imperative of financial inclusion in driving the economic progression of a nation via access to formal financial services. Consequently, examining successful business models and country-specific environments from other countries, such as Kenya's M-PESA, Brazil's Nubank, the Philippines' GCASH, and Pakistan's Easypaisa, the investigation sought to draw valuable lessons for enhancing financial inclusion in Peru. The study utilized a blend of qualitative and quantitative approaches, including

calculating the Pearson correlation between the proportion of individuals utilizing fintech services and chosen demand-side indicators extracted from the Global Findex Database. The results revealed that M-PESA and GCASH, which predominantly concentrate on fundamental mobile money transactions, did not exert a noteworthy influence on the availability of other financial services like savings or credit cards. However, Easypaisa showed positive effects on the indicators, possibly due to its collaboration with a microfinance institution. In the case of Nubank, despite its substantial growth, its influence on financial inclusion in Brazil remains limited. This research on fintech strategies and financial inclusion holds great significance as it expanded the scope of financial services and meticulously analyzed its impact on promoting financial inclusion in Kenya.

Chinoda and Mashamba (2021) conducted an in-depth appraisal of the connections in the midst of Fintech, the advancement of financial inclusivity, and the issue of income disparity to showcase implications for the economic landscape of Africa. The study aimed to address the issue of exclusion from formal financial markets experienced by certain households and firms as a subsequent of information asymmetry and market imperfections, which subsequently contributed to unequal income distribution. To examine this relationship, the researchers developed a fintech financial model and employed structural equation modeling techniques. For the years 2011, 2014, and 2017, 25 African nations were the focus of the study. According to the findings, financial inclusion plays a crucial role in reducing income disparity across Africa by partaking mediation in the midst of financial technology and income inequality. Fintech has the

potential to contribute to a more equitable income distribution in the region by expanding access to financial services.

Ediagbonya and Tioluwani (2023) conducted exploration to examine the mantle of fintech in buttressing financial inclusion in progressive and newly industrialized markets, with a focus on the issues, challenges, and prospects associated with this phenomenon. The research was motivated by the increasing adoption of financial technology in these markets as a means to enhance financial inclusion and integration within their respective countries, with the overarching goal of poverty eradication. The study specifically explored the effectiveness of fintech innovations in driving financial inclusion in Nigeria, serving as a case study. Through the utilization of legal, social, and cross-cultural research methodologies, the scholars examined the obstacles impeding financial inclusion and the functions fulfilled by the government, financial establishments, and fintech enterprises in tackling these impediments. The research utilized a content analysis approach, extracting information from primary and secondary sources such as laws, academic papers, news articles, and policy records. The findings revealed that despite the collaborative endeavors of governments, regulators, and financial establishments to foster financial inclusion through digital channels and endeavors such as mobile payments, ATMs, and mobile money, the discrepancy in financial inclusion has persistently expanded. Several factors contribute to this divide, including limited literacy levels, inadequate infrastructure, unreliable electricity supply, inadequate mobile network coverage in rural areas, frequent disruptions in banking networks, excessive fees, information imbalances, and concerns about data privacy. In summary, the research

underscored the significance of effectively implementing fintech-driven strategies to address financial inclusion challenges and lessen destitution in emerging markets.

In their study, Noreen, Mia, Ghazali, and Ahmed (2022) examined the mandate of government policies in fostering fintech incorporation and promoting financial inclusion in Pakistan. The focus on Pakistan was driven by the country's lower-middle-income status and comparatively lower financial inclusion rate compared to other South Asian countries. While previous studies have overlooked government policies in this context, the driving force of this scrutiny was to offer valuable perspectives on the existing policies and approaches executed by the Government of Pakistan to upscale the adoption of fintech and promote financial inclusion. Researchers gathered and examined literature from diverse secondary provenance, such as scholarly articles, conference proceedings, annual reports from the State Bank of Pakistan (SBP), and the World Bank's Global Findex report. The outcome unearthed that the Government of Pakistan has effectively executed numerous policies and strategies to foster financial inclusion during the past decade. Fintech was acknowledged as unparalleled catalyst for driving innovation and expanding the accessibility of financial services across the nation. The government also initiated Financial Literacy Programs aimed at educating the youth about managing financial resources. Furthermore, the banking on equality program was introduced to fortify gender equality in financial inclusion. While the study provided valuable insights, the author recognized the necessity for further localized research within Kenya to deepen the understanding in this field.

Yang's (2019) study examined fintech as pivotal and catalyst strategy for achieving weighty financial inclusion in the digital age. The motivation behind this investigation was the global focus on inclusive growth, with the Asia-Pacific Economic Cooperation (APEC) also prioritizing this objective. In the wake of the 2008 global financial downturn, there has been a demand for policy measures that can concurrently advance the financial empowerment of marginalized populations and bolster competition in the financial sector. Whereas the rise of fintech may not be solely coined to the effectiveness of overseers and decision-makers in responding to this appeal, its influence on financial inclusion and market competitiveness by disrupting conventional financial frameworks emphasizes the significance of fintech as a pivotal strategy and policy instrument for accomplishing inclusive economic expansion. This approach holds particular relevance for APEC member nations, including rapidly developing fintech markets like China, India, and Russia. Furthermore, the growing importance of fintech services for SMEs underscores their pertinence to the economies within the APEC region, given that SMEs constitute over 97% of businesses and employ more than 50% workforce in the area. Therefore, the scholar aimed to bridge methodological, conceptual, and contextual gaps by exploring the intersection of financial inclusion and fintech strategies.

Damilola (2022) conducted an analysis of financial technology and its impact on financial inclusion in West Africa, specifically focusing on Nigeria's SMEs market. The study emphasized the significance of the SME sector as a major employer and driver of economic activity in the region, but highlighted the challenges faced by these businesses in accessing capital. FinTech firms have identified this disparity and have emerged as suppliers of essential funding to foster the expansion and viability of SMEs. Nonetheless,

that research also recognized that the wider African region encounters distinctive obstacles that impede the advancement of financial inclusion, a predicament that FinTech companies strive to overcome. Specifically, the SME market in Nigeria has garnered substantial foreign investments and remains highly promising for economic growth. The overriding objective of this assessment was to analyze the effects of FinTech firms and the way they are promoting financial inclusion in the formal and informal sectors of Nigeria's major urban centers. Additionally, the study aimed to identify the obstacles encountered by these companies and analyze the tactics they employ to enhance financial inclusion levels. Adopting a qualitative research approach, the study specifically concentrated on three leading FinTech companies operating in West Africa: Flutter wave, Interswitch, and Paystack. Conversely, researcher aspired to overcome methodological and contextual gaps by probing the convergence of financial inclusion and fintech strategies.

Kajewski (2014) used a descriptive research approach to highlight access to credit in the FinTech industry, its benefits, barriers, and advice for practice in Australia. He used secondary data, risk manuals, and financial reports from 38 commercial banks in Australia to get a better picture of the industry's risks. To investigate the data, he employed regression analysis and autocorrelation techniques. The findings demonstrate that FinTechs have aimed to increase access to funding over time by making investments in new technological platforms. The improvements introduced per trade increased trading volume. Assessment postulated that as financial institutions have innovated, the cost of doing business has decreased, allowing them to serve their customers more effectively.

The scholar endeavored to reconcile contextual and conceptual gaps by determining the convergence of financial inclusion and fintech strategies.

Goodluck and Mori (2020) examined the impact of increased credit history and informal lender customer incentives for lenders' customers on loan repayment patterns. Specifically, the researchers acted on at multiple borrowing and progressive lending. Data were collected from his 835 borrowers of Tanzanian banks. This study used descriptive analysis and econometric modeling to determine relationships between variables. They found that customers who received more than one loan at a time tended to have poor repayment patterns. In contrast, progressive customers who benefited from their lending model actually paid their loans on agreed terms. Progressive lending therefore does help assess credit limits and accumulate repayments that can be used to fill existing information gaps.

A study by Hwang and Telez (2016) that was conducted in Nigeria questioned the growing use of digital credit. Five of the ten case studies used as the standard basis for the research were analyzed in sub-Saharan Africa. The discovery by the study showed that increasing financial inclusion is largely being facilitated by digital lending. It also made it possible for the underprivileged to offer essential financial services outside of digital payments. The scholar endeavored to reconcile contextual and conceptual gaps by investigating the convergence of financial inclusion and fintech strategies.

The nature and effects of Africa's exponential growth in access to digital finance were examined by Ndungu, Morales, and Ndirangu in 2016. The study looked at various industries in Nigeria, Tanzania, Uganda, Rwanda, and Zambia. The study's outcome

demonstrated financial inclusion in Kenyan context involves much more than just giving individuals access to affordable loans. This empirical research contradicts the view that access to digital financial resources affect financial inclusion. In specifically, a research conducted in 2016 by Suri and Jack asserted that M-PESA alone has helped 2% of Kenyan households escape poverty. Although DFS are tempting to users because they enable people to access banking services, send and receive money from anywhere at any time, and often borrow and save money in order to address short-term liquidity constraints, the broader ramifications of DFS are seriously questioned.

Costa, Deb and Kubuzanski (2018) investigated the motivations, behaviors and experiences of early adopters of her BDSC users (big data, small credit) in Kenya and Colombia. The data collection procedure included in-depth interviews with her 10 participants in each country. Researchers have found that the value proposition created by using alternative credit scoring services employed by digital lenders is very important. In fact, participants' willingness to disclose personal information in order to access digital credits outweighed concerns about the security of that data. Borrowers also have a greater incentive to repay if banks release borrower information broadly because doing so can limit their level of access to credit if they default. As a consequence, this can escalate credit availability by enhancing lending access for both families and enterprises. Sharing credit information is anticipated to significantly affect a household's creditworthiness (Bahadir and Valev, 2019).

De Young et al. (2018) looked into how literacy affected the efficiency and output of a small FinTech company in Oslo, Norway. 29 financial institutions made up the study's

target population. It was carried out between 2006 and 2019. Using descriptive research techniques, researchers discovered. Information for the online poll was gathered using primary data (information taken directly from the source) and secondary data (information gathered from yearly financial reports). The findings demonstrate that traditional local FinTechs lacking in financial literacy perform worse than FinTechs with financial literacy. This is owing to the fact that, when you add together sales and deposits, earnings are noticeably lower due to their total revenue and operating costs are higher. The study also discovered that it is challenging to close economic gaps fast, even when financial performance gaps are temporarily covered by economies of scale.

Gibson (2015) investigated how the Irish financial services sector was affected by financial technology (FinTech). The report claims that FinTech has transformed conventional financial services models by lowering entry barriers and consequently expanding financial inclusion. This has altered how clients now receive financial services. The author suggests that financial institutions develop or integrate financial technology, particularly in order to maintain business competition. According to the report, new competitors draw clients with their innovative products and services. By offering an extensive array of financial services, fintech companies have revolutionized the provision of financial services to consumers, thereby prompting traditional financial institutions to forge partnerships with them in order to adapt to this new landscape and further their own interests. The World Bank (2014) also acknowledges the merits of fintech, highlighting its various advantages. For instance, considering that a significant proportion of individuals in developing nations possess a mobile phone, fintech can subject of integral traits in promoting wider financial inclusion, extending financial

services to non-financial sectors, and enhancing access to essential services for the population. Digital finance facilitates convenient, accessible, and secure banking services for marginalized communities in emerging markets.

Waagmeester (2016) in his emphasis on financial services innovation grows, a study of the FinTech sector in the Netherlands reveals a persistent movement in the delivery of financial services from established banks to new service providers. He learned that fintech startups are creating platforms for payments as well as payment-as-a-service solutions. The growth of alternative payment platforms and the outsourcing of payment services are undermining the influence of established banks while giving clients additional chances to improve their payment experiences. Since major incumbent banks may struggle with cumbersome structures, the nature of competition from other banks, and a lack of supporting organizations that are unable to effectively nurture innovative behavior, fintech startups are frequently more successful in generating overall solutions. Furthermore, fintech companies frequently excel in creating holistic remedies in areas where established and prominent banks may encounter difficulties (Schilling, 2013). Gorham and Dorrance (2017) examined the possibilities arising from technological advancements in the financial services sector, specifically emphasizing fintech. The study revealed that fintechs possess the capacity to facilitate broader public access to dependable and cost-effective financial services.

Shaikh et al. (2020) pinpointed that stimulating Financial Innovation Related to Financial and FinTech Sector Reforms discovered a robust correlation between advancements in financial inclusion and the stimulation of a digital fintech culture in Pakistan. One of the

aims of this study is to investigate the impact of Google Play Store services on enhancing financial inclusion for SMEs. Haddad and Hornu (2016) contend that nations with well-established and inclusive financial systems generally experience fewer disruptive fintech startups, indicating that fintech ecosystems emerged partly in response to the inadequacy of accessible and budget friendly financial products. Banks, in particular, acknowledge the disruptive nature of fintechs but also recognize their vulnerability, especially concerning digitization-related innovations.

Sharma (2016) explores a growing country, seeking to explore the interrelationship in regards to large-scale financial inclusion and effect on economic growth in India from 2004 to 2013. Financial inclusion can be seen through three main principles of financial inclusion. They are linked to an increment in the populace who can access and use banking services, as well as an increment too in the number of people who do so (deposits). As the economy expands, more people can probably gain from financial inclusion, the study finds. Using Granger causality study, it was possible to establish a correlation between the number of savings and credit accounts and GDP as well as between a bi-directional and unidirectional causal relationship. In a 2018 study, Wadhe and Saluja focused on the effects of electronic banking as they looked at the profitability of fintech companies in Tanzania and Uganda from 2006 to 2014. Data on the nation's banks was utilized in the study. Although the links were meagre, some links were made between the financial institution revenues and the number of branches.

2.5 Summary of Literature Review, Critiques and Research Gaps

In this chapter, a comprehensive review of the existing literatures on the intersection of FinTech strategy and financial inclusion, both in Kenya and globally, were presented. The chapter also outlined the theoretical foundations that underpinned this research, which included the Technological Adoption Model, the Diffusion of Innovation Theory, and Porter's Model of Generic Strategies for Competitive Advantage. The empirical literature reviewed in this chapter highlighted the potential of FinTech strategies to address issues related to the unbanked, underserved populations, and small and medium-sized enterprises (SMEs) by improving access to financial resources and services. However, it was evident that there was a dearth of research in this area, particularly in understanding the specific impact of FinTech strategies on financial inclusion.

Research gaps were identified, as they were crucial in advancing knowledge in this field. While some studies had explored the effects of digital finance on financial inclusion, they often diverged from the context and scope of the proposed research. Additionally, there was a noticeable absence of studies that comprehensively examined how FinTech strategies could enhance the delivery of financial services within the framework of financial inclusion.

Furthermore, the existing literature failed to consider how FinTech strategies may have evolved, combined, or been contextually applied over time to influence financial inclusion. Given the dynamic nature of FinTech platforms, it was essential to understand how strategies adapted as these platforms matured and diversified. Future research could delve into identifying the most effective FinTech strategies for different types of

platforms (e.g., payments, financing, wealth management) and under varying contextual circumstances.

In the Kenyan market, research on FinTech remained limited, despite the growing interest in this sector and the emergence of regulatory frameworks. Consequently, there was a pressing need for comprehensive research that delved into the impact of FinTech on financial inclusion, especially as these platforms gained prominence and consumers increasingly expected their presence in the market.

The primary objective of this research project was to enhance our understanding of FinTech strategies in the realms of savings, credit, payments, and financing and their implications for financial inclusion. Focusing on the period from 2018 to 2022, a time marked by significant global interest in FinTech, this study aimed to contribute to the theoretical framework surrounding FinTech and financial inclusion within the financial services sector. The findings of this research would not only benefit researchers by providing a comprehensive reference but would also shed light on the transformative potential of FinTech in shaping a more inclusive financial landscape in Kenya.

2.6 Conceptual Framework

A conceptual framework functions as an organized portrayal of abstract notions and their interdependencies within a research endeavor, directing the research trajectory and simplifying the comprehension of intricate phenomena. Typically, it incorporates elements such as theoretical constructs, variables, and their interlinkages. In the research, Figure 2.1 offers a visual rendition of the schematic interconnections among these variables, with a specific emphasis on the evaluation of the repercussions of diverse

FinTech strategies (e.g., fintech savings, credit, transactional, regulatory technology) on financial inclusion in Kenya. By assimilating these strategies into the conceptual framework, the investigator furnishes a visual aid for grasping the convoluted associations and concepts scrutinized within the examination.

Independent variable

Dependant variabl

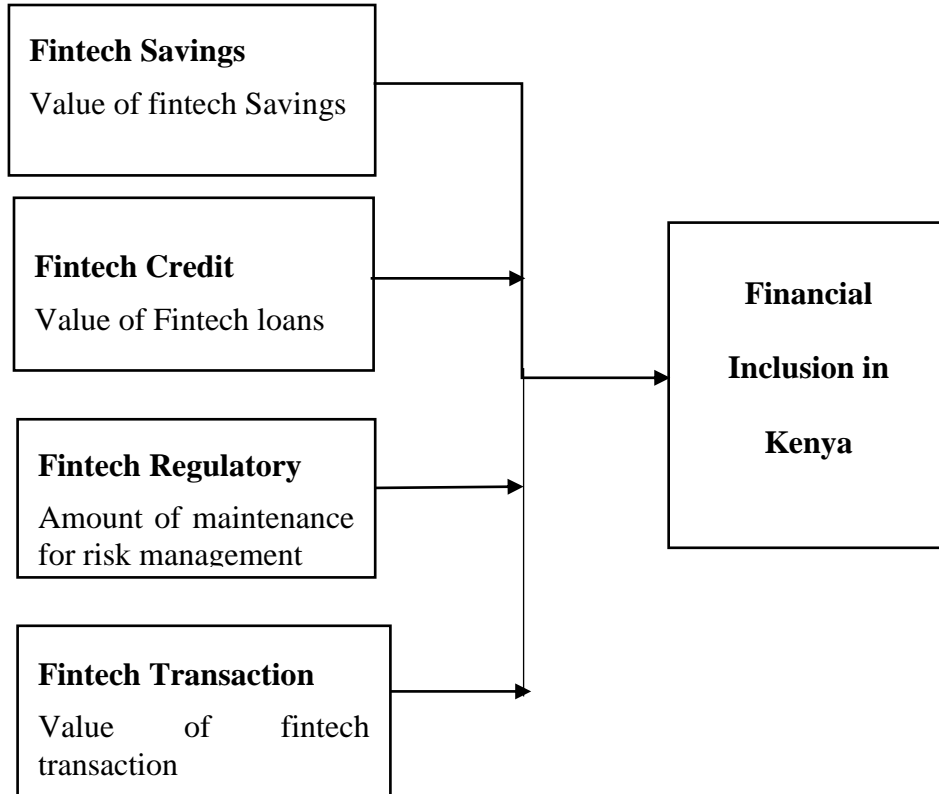


Figure 2.6 Conceptual Framework

Source: Author, 2023

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter commenced by providing compendium of the study designs employed to ensure the comprehensive examination of the research questions stated earlier. The procedures employed for compiling and analyzing the identified variables within the study design are also outlined. Additionally, this section delineated the target population and sample design, elucidated the methods used for data collection through reports, and elucidates the survey procedures implemented. Furthermore, the chapter expounded upon the data analysis methods employed to derive meaningful insights from the collected data. By delving into these aspects, the chapter established a strong foundation for the subsequent analysis and interpretation of the study's findings.

3.2 Research Design

According to Cooper and Schindler (2014) The study design outlined plans used by researchers to collect, measure and analyse data to find the most appropriate answer to their research question pointing to the blueprint. Creswell and Creswell (2003) states descriptive study aims to try to explain a problem in a systematic way or try to provide important information about a situation with the intention of showing what is dominant with about the problem. According to DeLisle, (2011), ascertains that the technique embraced is inherent of secondary dataset and grounded on a census. This allowed the researcher to uncover richer data.

This study employed a descriptive research design that provides insight as to who, what, when, where and how the research question is related to the factors. According to (Quinlan, Babin, Carr and Griffin 2019), research studies that rely on descriptive research designs typically yield data that help determine certain unique characteristics of populations. This approach helped to facilitate the collection of detailed information to answer research questions related to the variables. A descriptive approach was adopted in this study to provide detailed information on the impact of FinTech strategies on financial inclusion in Kenya. It also made it easier to identify factors and understand relationships in the midst of financial inclusion which was the predicted variable versus the predictor variables; fintech saving, fintech credit, fintech transactional, fintech regulatory.

3.3 Target Population and Sample

According to Bell, Bryman and Harley (2018) populations in research studies are complete populations of people, cases, and objects with recognisable characteristics of a particular species that are distinct from the other populations. The target population is the totality of items for which a researcher longs to draw some conclusion (Cooper & Schindler, 2016). Kenya has 38 banks licensed in Kenya. Therefore, the study undertook a census examination.

By focusing on this specific time range, the study captures the evolution and developments in fintech services over the years, encompassing the significant growth and advancements observed since the inception of M-Pesa. This defined scope allows for a targeted examination of the key milestones, trends, and transformations within the fintech

landscape during this period. Therefore, all of the licensed together with publicly traded financial institutions were selected for this study. The population was systematically selected from the CBK (2022) annual report for the end of the 2022 financial year. This was a desirable population as it provides the data needed for FinTech strategies and impact on financial inclusion in Kenya.

3.4 Data Collection

The methodology for data collection plays a crucial role in research, encompassing the acquisition and compilation of data to facilitate analysis and draw meaningful conclusions. In this specific study, the researchers opted to predominantly employ secondary data as the primary method for data collection. Secondary data refers to information that has previously been gathered and documented by external sources, such as fintech companies, and is utilized for observational purposes within the study (Takerdoost, 2016). The research centers on the period from 2018 to 2022, a timeframe marked by a substantial global surge of interest in fintechs. The data was sourced from KBA, CBK and individual banks. Utilizing secondary data serves to contribute to the comprehension of trends and patterns related to fintech strategies and their impact on financial inclusion, emphasizing their pivotal role in shaping the future of the business landscape. The outcomes of this research hold significance for researchers, offering them a comprehensive reference point to create a detailed map of financial inclusion. This dataset was employed to scrutinize and decipher patterns within the fintech industry in Kenya. The adoption of secondary data collection is regarded as an efficient tool for acquiring well-structured information, streamlining the processes of coding and analyzing the gathered data, as expounded by Cooper and Schindler (2016).

3.5 Data Analysis

Secondary data collection, particularly in form of historical data, confers various advantages. As expounded by Catherine, Ann, and Gina (2020), secondary data offers a proficient means of gathering information from substantial data sources within a restricted timeframe and at a diminished cost. SPSS tools was used to analyse all the data after it has been encoded. By harnessing historical data, which is derived from past records and information, this study attains valuable insights into preceding advancements in the fintech industry, thereby facilitating a more profound comprehension of the subject matter. The utilization of secondary data as a data collection methodology empowered the researcher to leverage existing resources and capitalize on the abundant wealth of information accessible, consequently amplifying the efficiency and effectiveness of the study.

3.5.1 Reliability Test

The notion of reliability, as elucidated by Cooper and Schindler (2016), pertains to the degree of consistency and dependability exhibited by a measuring instrument in producing reliable outcomes. In the assessment of reliability, researchers frequently employ Cronbach's Alpha, a statistical metric utilized to gauge internal coherence of a scale or questionnaire. Typically, a Cronbach's Alpha value of 0.7 or greater is considered acceptable, signifying a dependable measurement tool (Opie, 2019). Ensuring reliability assumes paramount importance, especially when dealing with secondary data, as the accuracy and consistency of the collected information directly impact the research validity and credibility of the findings.

3.5.2 Validity Test

This study employed content validity, which assesses how well a measure accounts for all factors under investigation. Ensuring that the research topic is accurately represented on the research instrument, this is carried out with the research assistant's guidance. Validity encapsulates the magnitude whereby the research tool accurately measures the intended phenomenon within the specific context of the study. Validity is typically categorized into three distinct types, highlighting the rigor of the procedures employed and the exactitude and veracity of the research pronouncement (Taherdoost, 2016). Validity of a construct is determined by how well the measurements utilized adequately represent the underlying concept. Criterion or reference validity examines the extent to which a measurement result aligns with other reliable measurements based on the same concept. In this study, content validity was employed, which evaluates how effectively a measure captures all relevant factors under investigation. Content validity ensured that the measurement tool comprehensively covers all relevant aspects of the phenomenon being studied, demonstrating the thoroughness and accuracy of the research finding.

3.5.3 Diagnostic Tests

To guarantee dependability of the parameter estimates in the regression model, the study undertook various diagnostic tests. One crucial aspect involved evaluating the assumption of normality, which assumes that the data adhere to a normal distribution with equal mean and median. Skewness and kurtosis serve as indicators of normality, and tests like Shapiro-Wilk and Kolmogorov are utilized for this purpose. Normality is indicated by a

kurtosis value of 3 and a skewness value of zero. (Campbell, Lo, & MacKinlay, 2012). This study optimized graphical method via Q-Q Model.

The presence of multicollinearity, referring to strong correlations among predictor variables, is examined through the use of the VIF. A variance inflation factor value of 10 or less suggests low multicollinearity. Another important consideration was the homogeneity of variances, which assumes that the data exhibit constant variance within a limited range. To detect autocorrelation, the study employed residual plots and tests such as Durbin-Watson. Furthermore, the investigation explored the existence of serial correlation, pinpointing that the variable data in the examination were not highly correlated with their corresponding follow-up data. Cumulative measures were taken and assessed to ascertain the magnitude and nature of any identified abnormalities or impediments within the dataset. These diagnostic tests were integral in comprehending direction and strength in regards to the associations being examined.

Performing diagnostic tests was vital to guarantee the precision and dependability of the dataset, thereby averting incorrect deductions and deceptive interpretations. In the event of identifying any anomalies, additional examinations like graphical tests were executed to attain a more comprehensive comprehension. Likewise, if concerns regarding autocorrelation arise, the data underwent the Breusch-Godfrey test to facilitate further analysis. Additionally, should complications have arisen from multi-collinearity arise, it could have imperative to exclude predictor variables exhibiting high correlation characteristics. These measures play an indispensable role in upholding integrity and the credibility of the outcomes of the research.

3.5.4 Empirical Analysis

Inference statistics utilized in this study's data analysis to determine whether the relationship between the regressor variables (fintech savings, fintech credit, fintech regulatory and fintech transactions) was statistically significant to the regressed variable (financial inclusion) a multiple linear regression analysis model shown below was used.

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon$$

Where

y = Is financial Inclusion (natural log of total mobile banking/digital payments)

β_i = Each independent variable's coefficient

X_i = Represents the independent variables that include; fintech savings, fintech credit, fintech regulatory and fintech transactions. A multiple regression analysis with the following models below is used to test for the overall target

$$y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon$$

Where: Y – Financial Inclusion (natural log of total mobile banking/digital payments)

X_1 = Variable representing fintech savings (The natural unit of the quotient of the number of fintech savings transactions to their value)

X_2 = Variable representing fintech credit (Natural unit of the quotient of value of FinTech credit transactions/number of FinTech credit transactions)

X_3 = Variable representing fintech regulatory (Natural log of the amount allocated for regulatory risk management by the fintech industry)

X_4 = Variable representing fintech transactional (Normal unit of quotient with value of FinTech transactions compared by the quantity of FinTech service transactions)

β_0 = Constant

$\beta_1 \beta_2 \beta_3$ = Regression co-efficient

ε -error term

In summary, a correlation computation was performed to investigate the connections between the explained dependant variable (financial inclusion) and the explanatory variables (fintech savings, fintech credit, fintech regulatory, and fintech transactional). To evaluate the strength and direction of these inter-connections, Pearson correlation analysis, a statistical technique, was employed. This analysis offered valuable insights into the extent of association between variables, facilitating an enhanced comprehension of their interrelationships and interdependencies.

3.5.5 Test of Significance

Explained variable, financial inclusion, and the regressor variables, such as fintech savings, fintech credit, fintech regulatory, and transactional fintech were evaluated using the useful correlation analysis tool. By computing the correlation coefficients, the review expected to measure the degree of the relationship between these factors. The statistical significance of the relationships was then determined by examining the p-values associated with the correlation coefficients at the 0.05 significance level. A p-value below 0.05 suggests that the explanatory variable has a significant impact on the regressed variable, indicating that the observed relationships are unlikely to occur by chance alone.

The study employed ANOVA as a complementing statistical method to the correlation analysis. The means of various groups or categories within the investigated variables can be compared using ANOVA. The study uncovers the significance and differences in the

relationships by examining the variation between these groups. In addition to the evidences of the correlation analysis, ANOVA provided a deeper comprehension of the overall impact of the independent variable on the predicted variables. In the context of financial inclusion and fintech, the study aimed to ensure a robust and comprehensive examination of the relationships and exemplify the significant impact of the explanatory variables on the predicted variable by utilizing both methods in the case of Kenya.

CHAPTER FOUR

DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

In this imperative chapter, it explores the essence of data arithmetic computation, acting as the cornerstone for the entire investigation. Hence, carefully assessing the representations and drawing all-encompassing deductions, the integration of secondary data bolsters the comprehension of the firm under scrutiny. Dataset was scrupulously drafted, painstakingly analyzed, encoded, and condensed through SPSS computation, facilitating an extensive analysis to substantiate the scientific credibility of the results. Optimization of descriptive in addition to inferential scientific computations, the research offers a broad perspective and condensed conclusions. Ultimately, this section critically discusses and interprets the impact of Fintech strategies on financial inclusion in Kenya, illuminating light on the potential ramifications for the country's financial landscape and paving the way for more effective Fintech policies to foster greater financial inclusivity.

4.2 Descriptive Statistics

Tabulated evidences posted as descriptive statistics warranted indispensable insights into each variable, shedding light on their central tendencies and variability. The variable "financial inclusion" exhibits a wide range, stretching from 0.0010 to 8.9168, signifying substantial variability within the observed data. Conversely, "financial savings" display a narrower range, ranging from 0.0134 to 1.0218, indicating relatively reduced variability compared to financial inclusion. Similarly, "fintech credit" demonstrates a relatively small range of 0.0084 to 1.1581, implying a high concentration of data points around the

mean. Likewise, "fintech regulatory" and "fintech transactions" show limited ranges, with values spanning from 0.3705 to 0.8407 and 0.2228 to 0.5521, respectively.

Furthermore, the descriptive statistics shed additional light on the variables' characteristics. "Financial inclusion" reveals a mean of 1.2694 and a SD on of 1.6651, indicating a wide dispersion of data points around the mean. On the other side, "fintech savings" boast a mean of 0.5324 and a smaller SD of 0.1524, suggesting a more tightly clustered distribution. "Fintech credit" demonstrates an even lower standard deviation of 0.2643, signifying a highly concentrated dataset with minimal variability around the mean of 0.4723. Fintech regulatory and fintech transaction both display average values of 0.47199 and 0.3507, along with relatively low standard deviations of 0.07837 and 0.04976, respectively. These low standard deviations postulate that the data points for both variables are closely centered around their respective mean values, indicating a more concentrated distribution. These extensive descriptive statistics offer imperative groundwork for further computations and interpretation, heightening comprehension of the characteristics and distribution of these variables within the dataset

Table 4.1 Descriptive Statistics

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Financial Inclusion	190	.0010	8.9168	1.269445	1.6651986
Fintech Savings	190	.01340	1.02180	.5324577	.15249746
Fintech Credit	190	.00824	1.15805	.4723443	.26434245
Fintech Regulatory	190	.370500	.840760	.47199308	.078373993
Fintech Transactions	190	.222885	.552100	.35072903	.049763727
Valid N (listwise)	190				

4.3 Correlation Analysis

In this research, a correlation analysis was utilized to explore the connections and intensities among the variables under scrutiny. Correlation computation is a statistical method employed to gauge the extent of association between two or more variables (Cooper & Schindler, 2014). Its purpose is to ascertain whether a linear relationship exists between the variables and to figure out direction and magnitude of this mutual influence. The researcher in this study employed the Pearson correlation coefficient, which quantifies the potency and directionality of a linear connection in the midst of two continuous variables.

The analysis focused on examining the relationships between the variables related to Fintech strategies (Fintech savings, Fintech credit, Fintech regulatory, and Fintech transactions) and the degree of financial inclusion. The Pearson correlation table displayed the correlation coefficients, which are numerical values spanning from -1 to +1. A positive correlation coefficient portrays a direct or positive relationship, while a negative coefficient suggests an inverse or negative interrelationship. Consequently, outcomes revealed that all the Fintech variables moved in coherence and tendency direction with financial inclusion. This implies that as the values of Fintech savings, Fintech credit, Fintech regulatory, and Fintech transactions increased, there was a tendency for the magnitude of financial inclusion to progress upwards as well. However, the strength of these relationships varied. Fintech savings, Fintech regulatory, and Fintech transactions exhibited weak positive correlations, with correlation coefficients of 0.185, 0.191 and 0.267, respectively. On the other hand, Fintech credit demonstrated a robust negative interconnection with financial inclusion, with a correlation coefficient of -0.375.

Table 4.2 Correlations Analysis

		Financial Inclusion	Fintech Savings	Fintech Credit	Fintech Regulatory	Fintech Transactions
Financial Inclusion	Pearson Correlation	1	.185*	-.375**	.191**	.267**
	Sig. (2-tailed)		.011	.000	.008	.000
	N	190	190	190	190	190
Fintech Savings	Pearson Correlation	.185*	1	-.318**	-.115	.360**
	Sig. (2-tailed)	.011		.000	.113	.000
	N	190	190	190	190	190
Fintech Credit	Pearson Correlation	-.375**	-.318**	1	.131	-.489**
	Sig. (2-tailed)	.000	.000		.072	.000
	N	190	190	190	190	190
Fintech Regulatory	Pearson Correlation	.191**	-.115	.131	1	-.586**
	Sig. (2-tailed)	.008	.113	.072		.000
	N	190	190	190	190	190
Fintech Transactions	Pearson Correlation	.267**	.360**	-.489**	-.586**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	190	190	190	190	190

*. Correlation is significant at the 0.05 level (2-tailed).

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

4.4 Diagnostic Tests

In this endeavor, the researcher fast-tracked diagnostic examinations to evaluate the soundness of the data intended for constructing a modeling equation. The diagnostic assessments included the Autocorrelation test, Multicollinearity test, and the Normality test. These evaluations are crucial to ensure the dependability and precision of the data before developing the modeling equation. The Autocorrelation test investigates the existence of correlations between a variable and its lagged values, potentially identifying issues related to time-series data. Conversely, the Multicollinearity test scrutinizes whether there are high correlations among predictor variables in a regression model, which could lead to unstable and unreliable coefficient estimates. Lastly, the Normality test ascertains if the data adheres to a normal distribution, a vital requirement for certain statistical methods and assumptions in modeling. Through these diagnostic tests, the researcher establishes the validity of the data used in the modeling equation, meeting necessary assumptions and bolstering the credibility and overall validity of the research outcomes.

4.4.1 Autocorrelation

Durbin-Watson computation is fundamental in regressing the variables to cross-check the existence of autocorrelation under their residuals model. Autocorrelation alludes to the kinship in the midst of residuals model at distinct time points. The Durbin-Watson value spans from 0 to 4, with a value close to 2 implying no autocorrelation, a value below 2 signifying positive autocorrelation, and a value above 2 indicating negative autocorrelation.

In this specific case, the Durbin-Watson value of 0.740 falls under the accepted range for the statistic. Since the value is between 0 and 2, it indicates a positive autocorrelation in the trend of the residuals. The existence of positive autocorrelation pinpoints that the residuals posit a positive inter-correlation with each other across various time points. This implies that when a residual deviate significantly from the expected value at a particular time, neighboring time points are also likely to exhibit similar deviations. Positive autocorrelation can significantly impact the model's accuracy, necessitating additional adjustments or considerations during the analysis process. This finding can have implications for the reliability of the regression model and may necessitate further investigation or adjustments in the analysis.

Table 4.3 Autocorrelation

Model	Durbin-Watson
1	.740

4.4.2 Test for Normality

The test for normality using Q-Q plots is a widely used statistical technique to evaluate whether a dataset adheres to a normal distribution. A Q-Q plot, short for quantile-quantile plot, visually compares the quantiles of the observed data against those of a theoretical normal distribution (Tekin & Kozat 2023). When the data points align more or less across a straight line, it fast-tracks that the dataset follows a normal distribution. During the test, the researcher plots the observed data quantiles against the expected quantiles from a normal distribution, and if the points form a straight line, it indicates a good fit to

normality. On the contrary, significant deviations from a straight line indicate departures from normality, such as skewness or heavy tails (Sun, Kong & Pal, 2023). The simplicity and interpretability of Q-Q plots enable researchers to swiftly gauge whether the data can be reasonably assumed to be normally distributed, thereby informing appropriate statistical analyses and cautioning against making assumptions when dealing with non-normal data.

4.4.2.1 Fintech Savings

From the observation of the table, it can be deduced that the data of fintech saving is uniformly distributed along a straight line. This compellingly suggests that the data in question has been derived from a population that follows a normal distribution. The alignment of the data points along the straight line in the table's Q-Q plot indicates a good fit to normality, reinforcing the assumption that the underlying population from which the data was collected conforms to a normal distribution. This has important implications for statistical analysis and interpretations, as it provides confidence in employing methods that assume normality when analyzing this dataset.

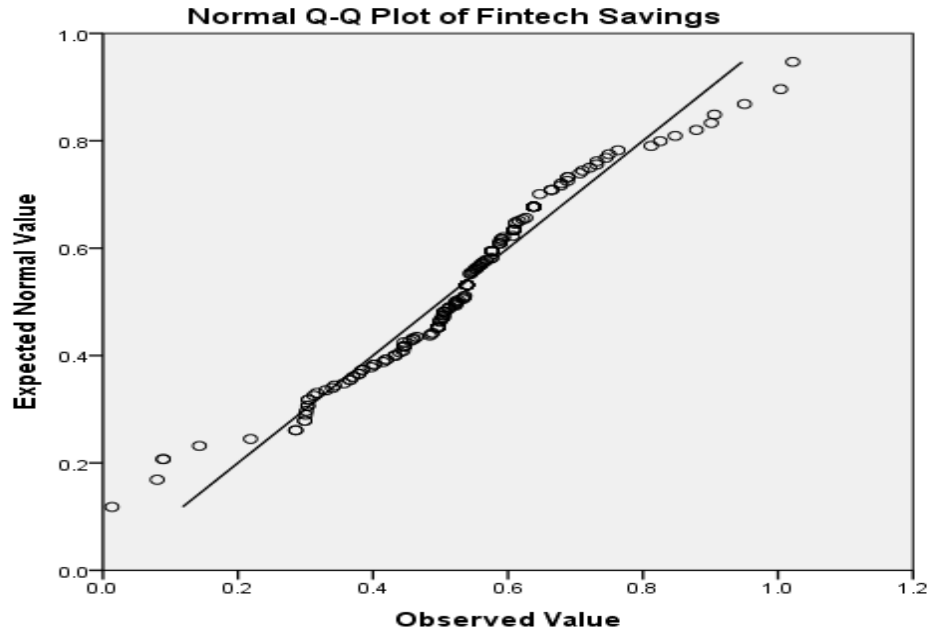


Figure 4.1 Fintech Savings

4.4.2.2 Fintech Credit

The Q-Q plot for fintech credit depicted below exhibits a linear distribution of data points, signifying a close fit to a straight line. This visually suggests that the dataset being analyzed has been derived from a population that adheres to a normal distribution. Q-Q plots are a valuable tool in assessing the normality assumption of data, as they compare the quantiles of the observed dataset to those expected from a theoretical normal distribution. In this case, the alignment of the data points along the straight line confirms the normality assumption, providing a degree of confidence in utilizing statistical methods that assume normal distribution when analyzing this dataset. This finding strengthens the validity and appropriateness of employing various statistical techniques in the analysis, interpretation, and inference drawn from the data.

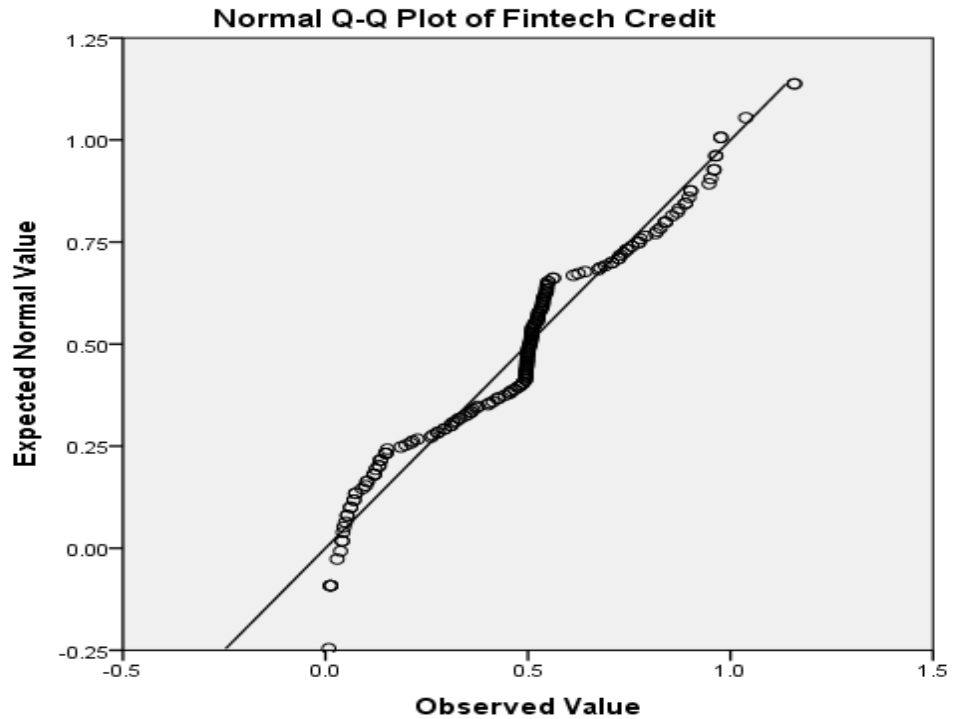


Figure 4.2 Fintech Credit
4.4.2.3 Fintech Regulatory

In the Q-Q plot for fintech regulatory, the data points are observed to be concentrated along a straight line. This finding is imperative as it postulates that the dataset under consideration follows a normal distribution. Q-Q plots are a valuable graphical tool used in statistical analysis to assess the normality assumption of data. Accordingly, juxtaposing the observed dataset quantiles to the expected quantiles from a theoretical normality distribution, researcher can determine the degree of conformity to normality. In this case, the alignment of the data points along the straight line pinpoints a good fit to normality, providing evidence that the fintech regulatory variable has been sampled from a population that follows a normal distribution. This is essential for valid statistical inference and justifies the application of statistical methods that assume normality when analyzing and interpreting the data related to fintech regulatory.

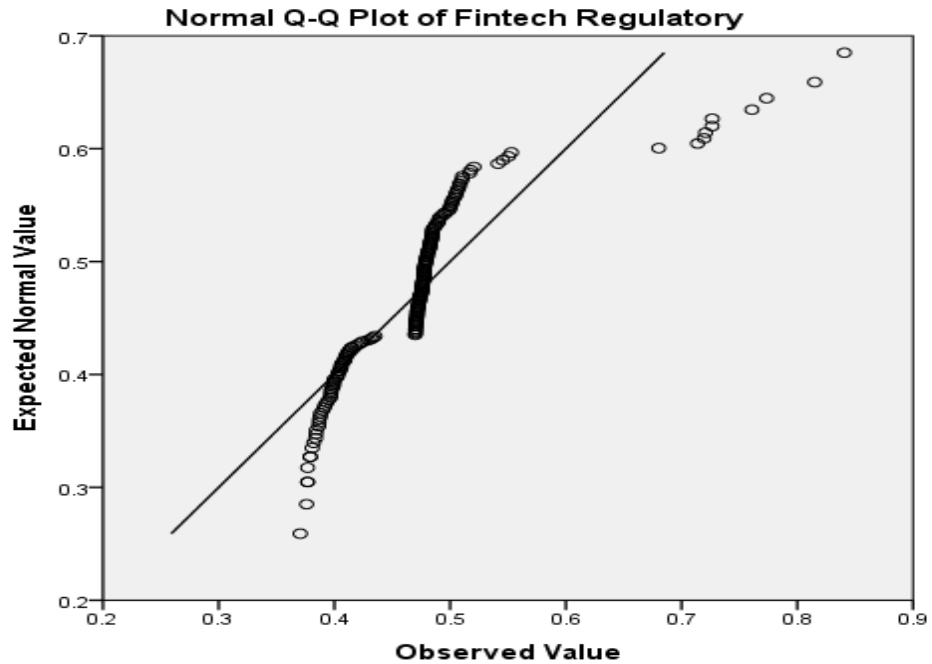


Figure 4.3 Fintech Regulatory

4.4.2.4 Fintech Transactions

In the Q-Q plot for fintech transactions, all data points exhibit precise alignment along the straight line, bearing substantial scientific significance as it strongly suggests close adherence of the dataset to a normal distribution. Q-Q plots serve as potent tools in statistical analysis, visually comparing observed data quantiles with those expected from a theoretical normal distribution, facilitating evaluations of conformity to normality. The flawless alignment of data points in this case provides compelling evidence that the fintech transactions variable has been sampled from a normally distributed population. This crucial observation ensures the validity and reliability of applying statistical methods assuming normality, fostering robust and accurate statistical inference when analyzing and interpreting fintech transactions data.

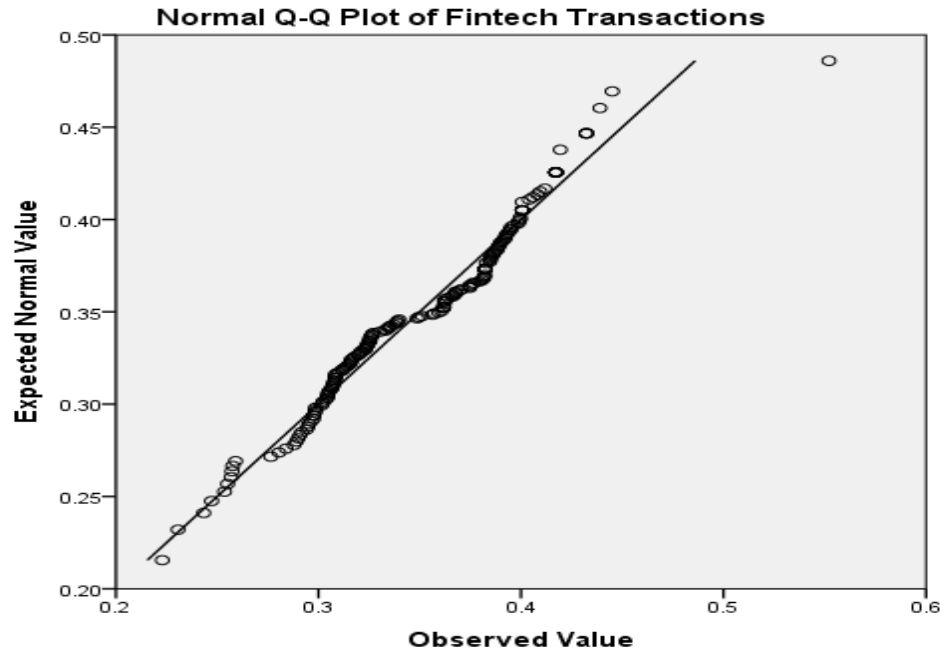


Figure 4.4 Fintech Transactions

4.4.3 Multicollinearity Test

In this study, a comprehensive experimentation of multicollinearity was performed, optimizing the VIF and Tolerance values as diagnostic measures. Remarkably, all VIF values (ranging from 1.414, 1.615, 1.195 to 2.209) were comfortably below the critical threshold of 10, and the corresponding Tolerance values (ranging from 0.453, 0.619, 0.707 to 0.837) comfortably exceeded the minimum requirement of 0.2. These compelling findings collectively indicate the absence of significant multicollinearity among the explanatory variables. In consequence, VIF values below 10 and Tolerance values above 0.2 provide evidence of the independence of the variables, ensuring stable relationships within the regression model. Consequently, the regression analysis can be confidently deemed reliable and valid, enhancing trust in the accuracy and credibility of the study's results. This robustness facilitates precise and dependable interpretations of the intricate

interrelationships between the predictor variables and the regressed variable, bolstering the overall rigor and soundness of the assessment’s findings.

Table 4.4 Multicollinearity Test

Model	Collinearity Statistics		
	Tolerance	VIF	
1	Fintech Savings	.837	1.195
	Fintech Credit	.707	1.414
	Fintech Regulatory	.619	1.615
	Fintech Transactions	.453	2.209

a. Dependent Variable: Financial Inclusion

4.5 Regression Analysis

Researcher administered regression calculation in this study to construct a mathematical equation that can predict the future trends of financial inclusion. The analysis encompassed discussions on ANOVA, model summary, and model coefficients. ANOVA was prioritized to assess its substantive and fitness of the regression technique, indicating whether the variation in financial inclusion could be adequately articulated by the included independent variables. The model summary provided essential information on the goodness of fit, with the R-squared value indicating the proportion of variance in financial inclusion explained by the independent variables. Moreover, the model coefficients revealed the estimated effects of each independent variable on financial inclusion, elucidating the direction and magnitude of their relationships. This systematic regression analysis offers valuable insights, enabling researchers to understand and

predict future trends in financial inclusion, and supports data-driven decision-making for financial policies and strategies.

4.5.1 ANOVA Test

It is imperative to coin that ANOVA table demonstrates a highly significant p-value of 0.000, which is substantially lower than the selected significance level of 0.05. This signifies the regression model's statistical significance and its efficacy in serving as an effective tool for modeling purposes. ANOVA test showcased general confidence hence pinpointing if the dataset was fit for computation. It aided the juxtaposition of deviations and expounding on Regression Sum of Squares as well as unexplained deviations (Residual Sum of Squares). In this particular case, the Regression Sum of Squares is 153.078, whereas the Residual Sum of Squares amounts to 370.998. The mean squares, representing the mean values of the respective sums of squares, are 38.269 for the Regression and 2.005 for the Residual, accompanied by corresponding degrees of freedom of 4 and 185, respectively. These values offer valuable insights into the extent of variability in the regressed variable (financial inclusion) that is accounted for by the predicated variables present in the model. Notably, the F-statistic further accentuates the statistical significance of the regression model, unequivocally affirming its practicality in accurately predicting and modeling future trends in financial inclusion based on the selected independent variables.

Table 4.5 ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	153.078	4	38.269	19.083	.000 ^b
	Residual	370.998	185	2.005		
	Total	524.076	189			

a. Dependent Variable: Financial Inclusion

b. Predictors: (Constant), Fintech Transactions, Fintech Savings, Fintech Credit, Fintech Regulatory

4.5.2 Model Summary

Correlation coefficient (R) revealed in the table indicates a robust correlation of 0.540 among the variables investigated. This implies that approximately 54.0% of the variability in one variable can be ascribed to the variability in another variable. Furthermore, coefficient of determination, coined as R Square, further illuminates the relationship between the variables. In this context, R Square discloses that 29.2% of the deviations in financial inclusion can be rationalized for by the combined influences of Fintech Transactions, Fintech Credit, Fintech Savings, and Fintech Regulatory. Nonetheless, it is essential to acknowledge that around 70.8% of the changes in financial inclusion are affected by factors not explicitly considered in this particular study. The coefficient of determination imparts valuable insights into the share of variability in the regressed variable (financial inclusion) that can be clarified by the regressors variables (Fintech Transactions, Fintech Credit, Fintech Savings, and Fintech Regulatory), underscoring the noteworthy impact of these factors on financial inclusion while

acknowledging that other unidentified factors also contribute to shaping the final outcome.

Table 4.6 Model Summaryb

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.540 ^a	.292	.277	1.4161187	.292	19.083	4	185	.000	.740

a. Predictors: (Constant), Fintech Transactions, Fintech Savings, Fintech Credit, Fintech Regulatory

b. Dependent Variable: Financial Inclusion

4.5.3 Model Coefficient

The researcher employed the regression coefficient table to develop the mathematical model, a pivotal aspect of the study. Fintech Savings demonstrated a positive correlation, but its impact on financial inclusion was statistically insignificant, as indicated by the coefficient ($\beta=0.142$, $P=0.848$). In contrast, Fintech Credit exhibited a negative correlation and significantly influenced financial inclusion, with a coefficient of ($\beta=-1.396$, $P=0.003$). Interestingly, Fintech Regulatory displayed a positive correlation towards the FI and also significantly affected the dependent variable as seen through ($\beta=10.103$, $P=0.000$). Finally, Fintech Transactions showed a positive correlation and had a significant impact on financial inclusion, as illustrated by the coefficient ($\beta=14.48$, $P=0.000$).

The regression coefficients, coupled with their associated p-values, provide vital insights into the direction and significance of the relationships between the predictor variables

(Fintech Savings, Fintech Credit, Fintech Regulatory, and Fintech Transactions) and the dependent variable (financial inclusion). The p-values reflect the likelihood of obtaining the observed results under the null hypothesis assumption. Significantly low p-values intensify confidence in the statistical significance of the interrelationships, hinting that the associations between certain variables and financial inclusion are unlikely to have arisen by chance. These evidences enhance the intensive ruggedness and authenticity of the examination's outcome, backing well-informed expositions and deductions regarding the influence of the predictor variables on financial inclusion.

Table 4.7 Coefficient of Determination

Model	Unstandardized Coefficients		Standardized Coefficients		Sig.	95.0% Confidence Interval for B		Collinearity Statistics	
	B	Std. Error	Beta	t		Lower Bound	Upper Bound	Tolerance	VIF
1 (Constant)	-7.996	1.752		4.565	.000	-11.452	-4.541		
Fintech Savings	.142	.738	.013	.192	.848	-1.315	1.599	.837	1.195
Fintech Credit	-1.396	.463	-.222	3.013	.003	-2.310	-.482	.707	1.414
Fintech Regulatory	10.103	1.671	.475	6.048	.000	6.807	13.398	.619	1.615
Fintech Transactions	14.488	3.077	.433	4.709	.000	8.418	20.558	.453	2.209

a. Dependent Variable: Financial Inclusion

$$Y = \alpha_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$$

$$\text{Hence } Y = -7.996 + 0.142X_1 - 1.396X_2 + 10.103X_3 + 14.488X_4 + \varepsilon$$

The analysis indicates that the constant term in the model is -7.996, meaning that when all fintech strategies are kept unchanged, the financial inclusion experiences a negative change of 7.996 units. Consequently, a positive unit increase in fintech savings results in an insignificant increment of 0.142 units in financial inclusion, while other determinants remain constant. Conversely, a unitary increment in fintech credit leads to a significant decrease of 1.396 units in financial inclusion, with all other enablers are held constant. However, a solitary unit increment in fintech regulatory causes a substantial increment of 10.103 units in financial inclusion when all enablers remain unchanged. Finally, the addition of a single unit of fintech transactions has a greater impact, triggering a 14.488 increment in financial inclusion, this effect is significant when all other factors are maintained constant.

These outcomes underscore the varying degrees of influence that each predictor variable has on financial inclusion, emphasizing the importance of considering multiple factors when examining their impact on the dependent variable. In light of the significant findings, it is pertinent to highlight that meaningful and conclusive results can be effectively articulated through a well-developed equation. Based on the analysis, the researcher was able to construct a mathematical equation that only includes the variables with a significant impact on financial inclusion, namely Fintech Credit and Fintech Regulatory. The formulated equation, therefore, stands as follows:

$$Y = -7.996 - 1.396X_2 + 10.103X_3 + 14.488X_4 + \varepsilon$$

Whereby

Y = Financial Inclusion

X₂ = Fintech Credit

X₃ = Fintech Regulatory.

X₄ = Fintech transactions

4.6 Discussion of the Findings

The results obtained from the model summary revealed that the four regressor variables were able to account for 29.2% of the deviation in the financial inclusion of the sample firms. This significant proportion of explanation indicates a good influence of Fintech Transactions, Fintech Credit, Fintech Savings, and Fintech Regulatory on financial inclusion. However, it is important to acknowledge that approximately 70.8% of the deviations in financial inclusion were attributed to other enablers that were not considered in the model. Moving on to the ANOVA test, it further corroborated the significance and utility of the model in predicting financial inclusion for the firms. The F-statistics value of 19.0832 and the p-value of 0.000, thereby beneath the chosen significance level of 0.05, provided strong evidence of the model's statistical significance. This ANOVA analysis indicated that the regression representation was indeed effective in capturing the relationships between the independent variables and financial inclusion. Moreover, the detailed statistics for the regression sum of squares, mean square, and degrees of freedom provided additional insights into the distribution of variance in the model and its residuals, reaffirming the reliability and credibility of the model's predictions.

In the Diagnostic analysis, the Durbin-Watson value of 0.74 fell under the acceptable range of Durbin-Watson values, indicating a positive autocorrelation in the data. This

finding suggests that there is a linear interconnection between the variables at different time points, a significant consideration in time-series data analysis. Furthermore, the examination for normality, conducted using Q-Q plots, demonstrated that the majority of the variables were obtained from a population that adheres to a normal distribution. This deduction was made based on the observation that the data points in the Q-Q plots were systematically aligned along a straight line, indicating a favorable fit to normality. This adherence to the normality assumption is essential, particularly for specific statistical methods and assumptions utilized in the analysis.

The computation of the regression coefficient table yields crucial insights into the interrelationship between the regressor variables and financial inclusion. The constant term in the model stands at -7.996, indicating that when all fintech strategies are held constant, the financial inclusion experiences a negative change of 7.996 units. This observation highlights the baseline effect on financial inclusion in the absence of any changes to the independent variables. Numerous research studies have illuminated the pivotal mantle of FinTechs in driving financial inclusion and reshaping the financial services landscape. Kajewski's (2014) work highlighted the strategic investments made by FinTechs in cutting-edge technological platforms, aiming to enhance access to funding and boost trading volume. On the other hand, Goodluck and Mori (2020) revealed how customers with multiple loans experienced poor repayment patterns, while progressive borrowers under the lending model exhibited better repayment behavior. As financial institutions embraced innovation and streamlined operations, they became better equipped to serve their customers more efficiently.

Furthermore, the examination of individual explanatory variables reveals their respective impacts on financial inclusion. For instance, foreign savings, represented by the variable Fintech Savings demonstrates a positive correlation with financial inclusion, but the effect is statistically insignificant, with a coefficient (β) of 0.142. This suggests that a positive unit increase in fintech savings results in a marginal and statistically insignificant increment of 0.142 units in financial inclusion, assuming all other determinants remain constant. Hwang and Telez (2016) brought to light the significant contribution of digital lending in boosting financial inclusion, providing essential financial services beyond digital payments, particularly for underprivileged individuals. In contrast, Ndungu, Morales, and Ndirangu's (2016) study challenged the notion that access to digital financial resources directly correlated with financial inclusion. Meanwhile, Suri and Jack's research in 2016 demonstrated the broader impact of digital financial services, such as M-PESA, in aiding impoverished Kenyan households, lifting them out of poverty.

In contrast, the variable Fintech Credit exhibits a significant negative correlation with financial inclusion, evident from its coefficient (β) of -1.396. A unitary increment in fintech credit triggers a substantial and statistically significant decrease of 1.396 units in financial inclusion, while all other factors remain unchanged. This finding highlights the considerable impact of fintech credit on enhancing financial inclusion within the studied context. Costa, Deb, and Kubuzanski (2018) emphasized the importance of alternative credit scoring services adopted by digital lenders, which outweighed concerns about data security, making accessing digital credits more enticing for participants. Additionally, De Young et al. (2018) uncovered that FinTechs lacking financial literacy performed

inferiorly compared to their financially literate counterparts, influencing their earnings due to higher operating costs. Furthermore, Gibson (2015) delved into the transformational role of fintech companies, warranting a comprehensive range of financial products and services, compelling traditional financial institutions to forge partnerships to remain competitive and adapt to this evolving landscape.

Interestingly, Fintech Regulatory displays a positive correlation with financial inclusion, with a significant coefficient (β) of 10.103. A solitary unit increase in fintech regulatory leads to a notable and statistically significant increment of 10.103 units in financial inclusion, assuming all other enablers remain constant. This suggests that regulatory factors may have a constraining effect on financial inclusion in the examined scenario. Chinoda and Mashamba (2021) made a critical discovery, demonstrating the vital role of financial inclusion in mitigating income disparity across Africa by mediating in the midst of financial technology and income inequality. However, Ediagbonya and Tioluwani's (2023) research indicated that despite efforts to promote financial inclusion through digital channels, the gap in financial access continued to widen. Noreen, Mia, Ghazali, and Ahmed (2022) recognized fintech as a catalyst for innovation and expanded financial service accessibility, exemplified by initiatives like the banking on equality program aimed at advancing gender equality in financial inclusion.

Lastly, the variable Fintech Transactions demonstrates a positive correlation with financial inclusion, as evidenced by its coefficient (β) of 14.488. A single unit increase in fintech transactions triggers a modest and statistically significant increment of 14.488 units in financial inclusion, but this effect is only significant when all other enablers are held constant. Accordingly, Apostu, Panait, Vasile, Sharma, and Vasile (2023) and

Yeyouomo, Asongu, and Agyemang-Mintah (2023) echoed the close interconnection between FinTech and financial inclusion, with FinTechs significantly lessening the gender gap in accessing financial services. Velazquez, Bobek, Vide, and Horvat (2022) took a comprehensive approach, employing qualitative and quantitative methods to assess the impact of fintech services on financial inclusion. Their findings suggested that certain mobile money services had limited influence on the availability of other financial products like savings or credit cards.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Summary

The primary aim of the investigation was to thoroughly explore the ramifications of diverse fintech strategies on financial inclusion. The study was meticulously designed to establish meaningful correlations between these variables, providing a holistic and profound comprehension of their impacts. Hypercritical analysis empowered businesses to acquire valuable discernments into the patterns and dynamics of these fintech strategies, enabling them to make well-informed choices and uphold their competitiveness in the rapidly evolving financial landscape. The research period encompassed a sufficient timeframe, facilitating an extensive and all-encompassing summary of the findings. Consequently, the study produced decisive outcomes pertaining to the influence of Fintech Savings, Fintech Credit, Fintech Regulatory, and Fintech Transactions on financial inclusion. Through in-depth examination of these variables, the research contributes to the existing knowledge base and enlightens future strategies and policies aimed at propelling financial inclusion through fintech innovations.

The examination was conducted over an extensive period, spanning from 2017-2022, providing a wider timespan for comprehensive analysis. This prolonged timeframe was deemed sufficient to yield conclusive and reliable results. The analysis of the data revealed crucial insights into the impact of various fintech strategies on financial inclusion. The constant term in the model was calculated to be -7.996, indicating that when all fintech strategies remained unchanged, financial inclusion experienced a negative change of 7.996 units.

Moreover, the research delved into the ramifications of specific fintech approaches on financial inclusion, while keeping other influencing factors constant. A positive incremental change in fintech savings exhibited a negligible impact of 0.142 units on financial inclusion. Conversely, a unitary increase in fintech credit showcased a notable negative effect, resulting in a decrease of 1.396 units in financial inclusion. However, the study also revealed that a solitary unit increment in fintech regulatory measures had a substantial adverse effect, leading to an increment of 10.103 units in financial inclusion, holding all other variables unchanged. This emphasizes the significance of tackling regulatory challenges to create an environment conducive to fintech innovations that foster financial inclusion.

Furthermore, the addition of a single unit of fintech transactions demonstrated a minor impact, triggering a mere 0.264 units' increment in financial inclusion. Nonetheless, this effect was deemed meaningful only when all other factors were consistently maintained, highlighting the necessity of considering multiple variables in the context of fintech transactions.

The study's findings unearth that the Durbin-Watson value of 0.740 lies within the accepted range, indicating a positive autocorrelation in the trend. Additionally, the researcher conducted an in-depth scrutiny for multicollinearity on the regressor variables to ascertain the presence of any potential issues. The results demonstrated that all Variance Inflation Factor (VIF) values, namely 1.195, 1.414, 1.615 and 2.209, were below the threshold of 10, while the Tolerance values, such as 0.837, 0.707, 0.619, and 0.453, surpassed the minimum requirement of 0.2. Hence, these findings suggest the absence of any significant multicollinearity problems among the independent variables.

Moreover, the ANOVA table presented a remarkable significance value of 0.000, which is notably lower than the p-value of 0.05. This signifies the statistical significance of the model, affirming its effectiveness for modeling purposes. ANOVA serves as a pivotal and indispensable instrument in diverse fields for hypothesis testing and discerning meaningful correlations between variables. Regression sum of square value was recorded at 153.078, accompanied by a mean square of 38.269 and 4 degrees of freedom. Concurrently, the residual exhibited a sum of square value of 370.998, with a mean square of 2.005 and 185 degrees of freedom.

The Q-Q plot's coherent alignment along the straight line in the study indicates that the data originated from a population adhering to a normal distribution. This observation significantly bolsters the research's credibility, reaffirming the robustness of the statistical analyses performed. The outcomes offer valuable and substantial insights for future research endeavors and informed decision-making, as they clearly establish the data's representativeness of the broader population under scrutiny. This enables policymakers, financial institutions, and other stakeholders to confidently employ the study's findings in practical scenarios, devising impactful strategies to advance financial inclusion and cultivate a more all-encompassing and sustainable financial landscape.

5.2 Conclusion

Gathered data for the research was sourced from secondary information obtained from diverse banks, as well as published and audited data from organizations like KBA, KNBS, CBK, and NSE, which significantly contributed to generating essential data. The substantial dataset was subjected to a meticulous and thorough examination, editing, and

finalization procedure to guarantee its precision and comprehensiveness before being organized and analyzed using SPSS. This enabled researcher to conduct descriptive computation and inferential calculations, yielding valuable insights. The descriptive analysis offered a snapshot of the dataset, highlighting essential parameters like minimum, average, and maximum values, while the standard deviation provided a deeper comprehension of the magnitude and degree of variability present in the data.

As economies continue to grow, financial inclusion is expected to benefit a larger segment of the population. While their findings revealed limited connections between financial institution revenues and the number of branches, the research contributes valuable insights to the evolving fintech landscape. Together, these studies provide a comprehensive understanding of the dynamic interplay between fintech, financial inclusion, and the broader financial services landscape.

ANOVA is of immense eminence as it empowers researchers to expedited an in-depth calculation of the means, thereby pinpointing substantive differences and serving as a comprehensive statistical approach fundamental for hypothesis testing and evaluating the impact of numerous variables on a predicted variable. ANOVA test produced an extremely low significance value of 0.000, signifying statistical substantive and affirming the appropriateness of the model for data modeling. The R correlation coefficient exhibited a correlation of 54.0% among the variables, underscoring their interconnectedness. Furthermore, the R square value unveiled that a substantial 29.2% of variations in financial inclusion could be rationalized scientifically to the factors listed in this study. Drawing on these compelling findings, the researcher formulated a predictive mathematical model to predict the future of financial inclusion, factoring the

aforementioned factors. These results highlight the diverse and meaningful impacts of each predictor variable on financial inclusion, accentuating the necessity for a comprehensive analysis that incorporates multiple factors to comprehend their collective influence on the dependent variable.

In cognizance of the evidences, Fintech credit, Fintech regulatory and Fintech Transactionssignificantly affected the financial inclusion. In conclusion, these findings offer valuable insights into the varying degrees of influence exerted by distinct fintech strategies on financial inclusion. Policymakers, financial institutions, and fintech companies can leverage these insights to devise effective strategies that encourage greater financial inclusion and bridge the gaps in access to financial services. By addressing regulatory challenges, enhancing fintech credit accessibility, and capitalizing on the potential of fintech innovations, stakeholders can collaboratively work towards cultivating a more inclusive financial landscape.

5.3 Recommendation for Policy and Practice

In light of the meticulous analysis and insightful results obtained, a comprehensive array of valuable recommendations is proposed to enhance financial inclusion. Importantly, it is imperative to bolster the accessibility of fintech credit. As a consequence, examination brought to light the significant positive impact of fintech credit on financial inclusion. To achieve this objective, close collaboration between financial institutions and fintech companies is essential. Together, they can work towards expanding the accessibility to credit products. Streamlining the credit application and approval processes, adopting

alternative credit scoring methods, and tailoring credit products to offer the diverse needs of different segments of the population are all vital steps in this endeavor.

Moreover, addressing the challenges posed by fintech regulatory is of utmost importance. Accordingly, study concluded that fintech regulatory measures posted a notable negative effect on financial inclusion. Policymakers and regulators must work hand in hand with fintech firms to address these challenges effectively. Creating a conducive environment for fintech innovations can be achieved through simplifying compliance requirements, establishing clear guidelines, and promoting regulatory sandboxes to encourage responsible experimentation.

Another critical recommendation is the promotion of financial education and literacy. The study revealed that individuals may require additional financial education to fully harness the benefits of fintech services. Initiatives focused on enhancing financial literacy, especially among underserved populations, can empower individuals to make insightful financial judgement and capitalize on the advantages offered by fintech services.

Diversifying fintech offerings is also essential to maximize impact. While fintech credit demonstrated a substantive positive effect on financial inclusion, the scrutiny also delineated on the limitations of certain fintech services, such as mobile money transactions, in influencing other financial services. Hence, fintech companies should diversify their offerings to encompass a wider range of financial services, including savings, insurance, and investment options. This catered to the diverse financial needs of their users and promote a more inclusive financial landscape.

Continuous monitoring and assessment of fintech strategies partake a fundamental mantle in ensuring ongoing success. The study underscored the importance of regularly evaluating the impact of fintech initiatives on financial inclusion. By establishing mechanisms for ongoing monitoring, stakeholders can promptly identify emerging challenges and make data-driven adjustments to improve outcomes over time.

Lastly, fostering collaboration between fintech companies and ancient financial institutions is a strategic move. Partnerships between these two sectors can facilitate the seamless integration of fintech innovations into existing financial systems, making them more accessible and inclusive for a wider range of individuals and businesses. As a consequence, executing these commendations, stakeholders can harness the full potential of fintech strategies to drive financial inclusion. The ultimate goal is to ensure that more individuals and communities have access to affordable and accessible financial services, ultimately leading to greater economic empowerment and prosperity for all.

5.4 Limitations of the Study

Examination on the impact of fintech strategies on financial inclusion provided valuable insights, but it was essential to acknowledge its limitations. Firstly, the size and scope of the sample used for analysis might have been a limitation. The study encompassed a broad examination of secondary for the period from 2017 to 2022, allowing for a more extensive and comprehensive view of the subject matter. As a consequence, the study did not include primary data specifically gathered for this research, which could have offered more detailed insights into various changes and developments over time. Secondary data, being historical in nature, may have limitations in providing futuristic perspectives or

blueprints for the future, potentially making it susceptible to errors or overlooking emerging trends. Incorporating primary data collection methods in future research could mitigate such limitations and enhance the study's accuracy and foresight in understanding the relationship between fintech strategies and financial inclusion.

The evidences of the study might have been specific to the set-up and timeframe in which the research was conducted, limiting their applicability to other settings or periods. Additionally, external factors such as changes in economic conditions or regulatory environments might have influenced the results but were not fully accounted for in the analysis. Additionally, the scrutiny might have concentrated on a specific set of variables related to fintech strategies and financial inclusion, potentially overlooking other relevant enablers. The study's timeframe might not have captured the long-term impact of fintech strategies on financial inclusion, which could have evolved over time.

5.5 Suggestions for Further Study

To further enrich our comprehension of fintech and financial inclusion, as well as to foster innovation within the financial realm, several domains merit further exploration. Firstly, conducting a comparative analysis of diverse fintech models and their ramifications on financial inclusion across various regions and nations can yield valuable insights. By discerning strengths and weaknesses and ascertaining best practices, policymakers and practitioners can devise more efficacious fintech strategies. Secondly, with the emergence of blockchain technology and cryptocurrencies, investigating their potential influence on financial inclusion becomes imperative. Examining how

blockchain-based solutions can facilitate financial access for underserved populations and in developing countries can elucidate the future prospects of fintech in this domain.

Additionally, scrutinizing the role of artificial intelligence (AI) and big data in fintech services and their impact on financial inclusion holds substantial significance. Comprehending how AI-driven solutions can facilitate credit access and risk assessment for the unbanked can pave the way for more inclusive financial services. The implications of the digital divide on fintech adoption and financial inclusion also necessitate attention, as identifying barriers and devising strategies to bridge the gap can extend fintech benefits to all strata of society.

Furthermore, dedicating attention to the role of fintech in supporting SMEs and microenterprises can prove invaluable. Exploring how fintech solutions can cater to their financial needs, encompassing access to credit and digital payment solutions, can foster economic growth and job creation. Policy and regulatory frameworks that foster fintech innovations and advance financial inclusion necessitate in-depth examination. Analyzing the repercussions of diverse regulatory approaches on fintech growth and access to financial services can underpin evidence-based policymaking.

The social and environmental impact of fintech innovations, such as promoting responsible lending practices and sustainable financial services, merits exploration to cultivate a more inclusive and ecologically mindful financial ecosystem. Understanding the factors influencing user adoption and trust in fintech services can elevate financial inclusion. Investigating user perceptions and preferences assist in fashioning user-centric fintech solutions. Finally, scrutinizing the nexus between financial inclusion and climate

change can engender innovative solutions to address the unique financial challenges faced by vulnerable communities impacted by climate-related events.

Accordingly, immersing themselves in these research domains, scholars, policymakers, and practitioners can contribute to the advancement of fintech's role in enhancing financial inclusion and devising effective strategies for a more comprehensive and sustainable financial future.

REFERENCES

- Abeer, Abd & Youssef. (2022). Detecting of Multicollinearity, Autocorrelation and Heteroscedasticity in Regression Analysis. *Advances*, pp. 140-152.
- Acikgoz, F., Elwalda, A., & De Oliveira, M. J. (2023). Curiosity on Cutting-Edge Technology via Theory of Planned Behavior and Diffusion of Innovation Theory. *International Journal of Information Management Data Insights*, 3(1), 100152.
- Adewoye. (2013). Impact of Mobile FinTech on Service Delivery in the Nigerian Commercial Banks. *International Review of Management and Business Research*, 2(2), 333-344.
- Aduda O. J, and E. Kalunda. (2012). Financial Inclusion and Financial Sector Stability with Reference to Kenya: A Review of Literature. *Journal of Applied Finance & Banking*, Vol. 2, no. 6, (2012), 95-120.
- Aduda, J., & Kalunda, E. (2012). Financial Inclusion and Financial Sector Stability With Reference To Kenya: A Review of Literature. *Journal of Applied Finance & Banking*, 2(06), 95-120.
- Aglionby, J. (2016). US FinTech Pioneer's Start-up in Kenya, Financial Times News Article. Available:<https://www.ft.com/content/05e65d04-3c7a-11e6-9f2c-36b487ebd80a> .
- Agufa, M.M. (2016). The Effect of Digital Finance on Financial Inclusion in the FinTech Industry in Kenya. *Unpublished Research Project, University of Nairobi, Kenya*.
- Allajams & Cartwright. (2016). Financial inclusion and financial stability in Sub Sahara Africa (SSA). *International Journal of Social Sciences*, 36(1), 2305 – 4557.

- Apostu, Panait, Vasile, Sharma and Vasile. (2023). FinTechs and financial inclusion—Balkan experience: Digital perspectives on financial markets. *The Electronic Journal of Information Systems in Developing Countries*, e12257.
- Arner, D. W., Buckley, R. P., Zetsche, D. A., & Veidt, R. (2020). Sustainability, FinTech and financial inclusion. *European Business Organization Law Review*, 21, 7-35.
- Asif, M., Khan, M. N., Tiwari, S., Wani, S. K., & Alam, F. (2023). The impact of fintech and digital financial services on financial inclusion in india. *Journal of Risk and Financial Management*, 16(2), 122.
- Atakora, A. (2017). Measuring the effectiveness of financial literacy programs in Ghana. *International Journal of Management and Business Research*, 3(2), 135-148.
- Avci, U., Madanoglu, M., & Okumus, F. (2021). Strategic Orientation and Performance of Tourism Firms: Evidence from a Developing Country. *Tourism Management*, 32, 147-157.
- Bahadir, B. and Valev. (2019). Credit information sharing and the shift in bank lending towards households. *International Journal of Finance and Economics*, Vol. 26, pp. 60-72.
- Barrales-Molina, V., Bustinza, Ó. F. & Gutiérrez, L. J. (2013). Explaining the causes and effects of dynamic capabilities generation: A multiple-indicator multiple-cause modelling approach. *British Journal of Management*, 24(4), 71 – 591.

- Bateman, M., Duvendack, M., and Loubere, N. (2019). Is fin-tech the new panacea for poverty alleviation and local development? Contesting Suri and Jack's M-Pesa findings published in science. *Review of African Political Economy*, 46, 1–16.
- Bell, M. (2018). Effect of Mobile Banking on Financial Inclusion in Kenya. *Unpublished MBA Project, University of Nairobi*.
- Bello-Orgaz G., Jung J. J. & Camacho D. (2021). Social big data: Recent achievements and new challenges, *Information Fusion* . *Information Fusion*, 28 (1) 45-59.
- Bethlehem, J. (1999). *Cross-sectional Research*. In H. J. Adèr & G. J. Mellenbergh (Eds.). *Research methodology in the life, behavioral and social sciences*. London: UK: Sage.
- Blythin. (2020). *Financial Inclusion in Africa*. London: Cass Business School.
- Brownsteri, M. (2018). *Fin-tech as a destructive force in the field of local economic development*. In 2nd International Conference SINCERE.
- Carmen, L. (2017). *Nurturing a FinTech ecosystem: The case of a youth microloan startup in China*. <https://www.sciencedirect.com/science/article>. Retrieved on 9th April 2020.
- Central Bank of Kenya. (2022). FinAccess Management Partners. *Retrieved October 20, 2022,* *from*
https://www.centralbank.go.ke/uploads/financial_inclusion/2064908903_2021%20FinAccess%20Survey%20Report%20Launched_15%20Dec%202021.pdf.

- Chen, H., Chiang, R.H.L. & Storey. (2012). Business intelligence and analytics: from big data to big impact, *MIS Quarterly*, 36(4), 1165-1188.
- Chen, R., & Divanbeigi, R. (2020). Can Regulation Promote Financial Inclusion? *The World Bank. Policy Research Working Paper*, 8711, 1-16.
- Chinoda, T., & Mashamba, T. (2021). Fintech, financial inclusion and income inequality nexus in Africa. *Cogent Economics & Finance*, 9(1), 1986926.
- Chithra, J., & Reilly, A. (2009). *An Exploratory Analysis of Financial Difficulties among those Living below Poverty Lines in Ireland*. Dublin: Working paper series.09/02. Poverty Research Initiative.
- Chuang, L., Liu, C. and Kao, H. (2016). The Adoption of Fintech Service: TAM perspective. *International Journal of Management and Administrative Sciences*, 3(7).
- Cooper, D., & Schindler, P. (2014). *Business Research Methods*. New York: McGraw Hill.
- Costa, A., & Ehrbeck, T. (2015). *A Market-Building Approach to Financial Inclusion*. *Technology, Governance, Globalization*: 10(1–2), 53–59.
- Creswell, J. W., & Creswell. (2003). *Research design*. Thousand Oaks, CA: Sage publications.
- Creswell, J. Y., Lo, A. W., & MacKinlay, A. C. (2012). *The econometrics of financial markets*. London: Princeton University press.

- Currie and Segot. (2017). Booms, crises, and recoveries: a new paradigm of business cycle and its policy implications. *IMF Working Papers*, no WP/17/250, November.
- Damilola. (2022). FinTech and Financial Inclusion in West Africa: Nigeria's SMEs Market. *International Journal of Multidisciplinary and Current Educational Research*, 4, 210-218.
- Davenport, T.H. (2013). Analytics 3.0, Harvard Business Review. *Harvard Business Review*, 91(12), 64-72.
- Davis, F.D. (1989). Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology. *MIS Quarterly*, pp.319-339.
- De Young et al. (2015). The Evolution of FinTech. Retrieved from <https://www.forbes.com/sites/falgunidesai/2015/12/13/the-evolution-of-FinTech>.
- Demirgüç-Kunt et al, & Lehmann, A. (2020). Tackling Europe's crisis legacy: a comprehensive strategy for bad loans and debt restructuring. *Policy Contribution*, 14(11), 1-12.
- Domat. (2019). Financial Inclusiveness: The Role of Mobile Money and Digital Financial Services. *Socrates*, 3(1), 95-112.
- Ediagbonya, V., & Tioluwani, C. (2023). The role of fintech in driving financial inclusion in developing and emerging markets: issues, challenges and prospects. *Technological Sustainability*, 2(1), 100-119.

- Edward, D. (2018). The shame of jobless Kenyans. *Standard Digital Media*. Retrieved from; <https://www.standardmedia.co.ke/business/article/2001274158/the-shame-of-jobless-Kenyans>.
- Erman, C. (2019). Financial Technologies Effect on Financial Services from an Open innovation Perspective. Master's Thesis. *Lappeenranta University of Technology*.
- Ernst and Young. (2019). Financial Technologies Effect on Financial Services from an Open Innovation Perspective. Master's Thesis. *Master's Thesis. Lappeenranta University of Technology Finland*.
- Evans, C. (2018). FinTechs excel at customer experience. Retrieved from: <https://www.capgemini.com/2018/03/fintechs-excel-at-customer-experience/>
Accessed 25th August 2018.
- EY.(2017).Fintechadoption index 2017. [http://www.ey.com/Publication/vwLUAssets/ey-fintech-adoptionindex-2017/\\$FILE/ey-fintech-adoption-index-2017.pdf](http://www.ey.com/Publication/vwLUAssets/ey-fintech-adoptionindex-2017/$FILE/ey-fintech-adoption-index-2017.pdf) [Accessed 19 Oct. 2022].
- Fant, A. & Makina, D. (2019). The Relationship between Technology and Financial Inclusion: Cross-Sectional Evidence [Unpublished Post-Doctoral Research]. University of South Africa.
- Fatehi, K., & Ghadar, F. (2014). A measure of international managers' mindset. *international Journal of Commerce and Management*, 24 (4), 321-333.
- FinAccess. (2006). Financial Sector Deepening, Kenya.
- FinAccess. (2009). Financial Sector Deepening, Kenya.

- Geetha, R. (2016). Market orientation in international business. *International Journal in Management and Social Science*, 4 (9), 31-40.
- Geetha, R. (2016). Market orientation in international business. *International Journal in Management and Social Science*, 4 (9), 31-40.
- Gomber, P., Koch, J.A., & Siering, M. (2017). Digital Finance and FinTech: current research and future research directions. *Journal of Business Economics*, 87(5), 537-580.
- Goodluck, Mari & Jovanovic, B. (2020). Financial Development, Growth, and the Distribution of Income. *Journal of Political Economy*, 98(51), 1076-1107. <https://doi.org/10.1086/261720>.
- Gould, R. R. (2002). International market selection–screening technique: Replacing intuition with a multidimensional framework to select a short-list of countries. *Dissertation. Melbourne. RMIT University*.
- Gozman et al J. (2018). Microfinance and the challenge of financial inclusion for development. *Cambridge Journal of Economics*, 37(6), 1203–1219.
- GPII – Global Partnership for Financial Inclusion. (2016). GPII – Global Partnership for Financial Inclusion. Global Standard-Setting . *The Evolving Landscape*, Available Online: <http://www.gpii.org/publications/global-standard-setting-bodies-and-financial-inclusion-evolving-landscape> [Accessed 28 August 2022].
- Guild, J. (2017). Fintech and the Future of Finance. *Asian Journal of Public Affairs*, 17-20.

- Huang, K. S., Park, S. J., & Kim, J. B. (2016). A Study on the Trends of Fin Tech. *International Journal of u-and e-Service, Science and Technology*, 9(7), 71-80.
- Ionescu. (2012). Financial Instability and Financial Innovations. *Economy Transdisciplinarity Cognition*, 15(2), 30-37.
- Irimia-Diéguez, A., Velicia-Martín, F., & Aguayo-Camacho, M. (2023). Predicting FinTech innovation adoption: the mediator role of social norms and attitudes. *Financial Innovation*, 9(1), 1-23.
- Kajewaki, M. (2014). Effect of FinTech strategy on financial services delivery to the unbanked low income earners in Nairobi County. *Doctoral dissertation, University of Nairobi*.
- Kangethe. (2020). Financial Inclusion, Growth and Inequality: A Model Application to Colombia. *International Monetary Fund, IMF Working Paper No. 14/166*.
- Keegan, W. J., & Mark C. Green. (2012). *Global Marketing: International Edition. (7th Ed)*. Upper Saddle River, NJ: Pearson/Prentice Hall. Upper Saddle River, NJ: Pearson/Prentice Hall.
- Kendall. (2020). *Financial Inclusion, Bank Stability, Bank Ownership and Financial Performance of Commercial Banks in Kenya*. Unpublished PHD Thesis. Nairobi: University of Nairobi.
- Kim, Y. Park, Y. J., & Choi, J. (2016). The Adoption of Mobile Payment Services for “FinTech. *International Journal of Applied Engineering Research*, 11 (2), 1058-1061 .

- Klapper, I. (2018). Emergence of FinTech Companies in Southeast Asia: Rising Hopes of a Solution to Financial Issues. *Japan Research Institute*. <https://www.jri.co.jp/MediaLibrary/file/english/periodical/rim>. [Accessed on 1st October 2022].
- KNBS. (2019). Fin Access Household Survey on financial inclusion. .
- Kong, S. T., & Loubere, N. (2021). Digitally down to the countryside: Fintech and rural development in China. *The Journal of Development Studies*, 57(10), 1739-1754.
- Kotabe, M., & Helsen, K. (2018). *Global Marketing Management* . New York: (4th Ed.). Wiley and Sons.
- KPMG . (2018). Fintech: A game changer, transforming sustainable finance across Asia. *Asia-Pacific Business Forum*.
- Kucza, G., & Gebauer, H. (2021). Global approaches to the service business in manufacturing companies. *Journal of Business & Industrial Marketing*, 26 (7), 472–483.
- Lagna. (2018). *On the FinTech Revolution: Interpreting forces of innovation, disruption and transformation in financial services*. NY: MA: MIT Press.
- Le, T.D. (2022). A shift towards household lending during the FinTech era: the role of financial literacy and credit information sharing. *Asia-Pacific Journal of Business Administration*, Vol. ahead-of-print No. ahead-of-print. <https://doi.org/10.1108/APJBA-07-2021-0325>.

- Leong, Kelvin and Sung, Anna. (2018). What is It and How to Use Technologies to Create Business Value in FinTech Way? *International Journal of Innovation, Management and Technology*, 9 (2). pp. 74-78.
- Liu, B., & Fu, Z. (2021). Relationship between strategic orientation and organizational performance in born global: A critical review. *International Journal of Business and Management*, 6 (3), 109-115.
- Luo, B., Khan, A. A., Safi, A., & Yu, J. (2023). Research methods in economics to evaluate the role of energy efficiency and financial inclusion in achieving China's carbon neutrality target. *Economic research. Ekonomska istraživanja*, 36(1), 1774-1802.
- Magnuson, W. J. (2019). Financial Regulation in the Bitcoin Era.
- Mahajan & Peterson. (1985). Financial inclusion –issues for central banks. *BIS Quarterly Review*, 11(6), 83-96.
- Maina, S. M., Kibera, F. N., & Munyoki, J. M. (2018). Influence of perceived value on the relationship between consumer national ethnocentrism and willingness to buy commercial FinTech services in Kenya. *European Scientific Journal*, 11 (19), 100- 113.
- Malady, & L. Buckley, R. (2016). The New Regulatory Frontier: Building Consumer Demand for Digital Financial Services. *The Banking Law Journal* 35, Accessed from; <https://www.consumersinternational.org/media/154710/banking-on-the-future-full-report.pdf> on 15th September 2022.

- Manyika, J., Lund, S., Bughin, J., Woetzel, J., Stamenov, K. & Dhingra, D. (2016). Digital Finance for All: Powering Inclusive Growth in Emerging Economies. *McKinseyGlobal Institute Report*, Available Online: <http://www.mckinsey.com/business-Functions/digitalmckinsey/our's-Insights/digital-globalization-the-new-era-of-Global-flows> [Accessed 11 October 2022].
- Marr, B. (2017). The Complete Beginner's Guide To FinTech Everyone Can Understand. *Forbes*, Retrieved from: <https://www.forbes.com/sites/bernardmarr/2017/02/10/a-complete-beginners-guide-to-fintech-in-2017/#1f8052ae3340>. Accessed 15th August 2018.
- Mbevi, E. M. (2015). The Effect of Innovation Strategies on the Financial Performance of Commercial Banks in Kenya. *Unpublished Research Project, University of Nairobi, Kenya*.
- Mearian, L. (2017). What is blockchain? The most disruptive tech in decades. *Computerworld*, 1- 8.
- Michelle, A. M. (2016). The Effect of Digital Finance on Financial Inclusion in the Banking Industry in Kenya. *Unpublished MBA Project, University of Nairobi*.
- Miller, P., Alamsyah, A., & Widiyanesti, S. (2009). An Effort to Measure Customer Relationship Performance in Indonesia's FinTech Industry. *Arxiv preprint arXiv: 2102.08262*.
- Mojtahed, R., Nunes, J. M. B. & Peng, G. C. (2021). The Role of the Technology Acceptance Model in Information Systems Research. *In Proceedings of the*

International Workshop on Information Systems Research Trends, Approaches and Methodologies Rome, Italy.

Monsen, E., & Boss. (2009). The Impact of Strategic Entrepreneurship inside the Organization: Examining Job Stress and Employee Retention. *Entrepreneurship Theory and Practice*, 33 (1), 71-104.

Mugenda, O. M., & Mugenda, A. G. (2013). *Research Methods: Quantitative and Qualitative Approaches*. Nairobi: Acts Press.

Muigai, S. (2020). Muigai, S. *Kenya FinTech Report 2020: FinTech and emerging Digital Financia Solutions (DFS)*, Retrieved from: <https://www.linkedin.com/pulse/kenya-fintech-report-2020-emerging-digital-financial-solutions/>.

Mukherjee, D., Lahiri, S., Mukherjee, D. & Billing, T.K. (2012). Leading virtual teams: how do social, cognitive, and behavioral capabilities matter? *Management Decision*, 50 (2), 273-290.

Muthiora, B. (2018). Enabling Mobile Money Policies in Kenya: Fostering a Digital Financial Revolution. *GSMA Report*, Available Online: http://www.gsma.com/mobilefordevelopment/wpcontent/uploads/2018/02/2015_MMU_Enabling-Mobile-Money-Policies-in-Kenya.pdf.

Ndungu, M.K., Ghobadian, A. and O'Regan, N. (2016). Generic strategies and performance: evidence from manufacturing firms. *International Journal of Productivity and Performance Management*, 60 (3), 222-251.

- Njoroge. (2013). *FinTech and Sustainable Development Accessing the Implication*. Geneva. *UN Publications*.
- Noreen, M., Mia, M. S., Ghazali, Z., & Ahmed. (2022). Role of Government Policies to Fintech Adoption and Financial Inclusion: A Study in Pakistan. *Universal Journal of Accounting and Finance*, 10, 37-46.
- OECD PISA . (2012). *Students and Money Financial Literacy Skills for the 21st Century*. OECD PISA 2012 Results: Students and Money Financial Literacy Skills for the 21st Century. Volume VI, (2012).
- Okiro, K. & Ndungu, J. (2013). The impact of mobile and internet FinTech on performance of financial institutions in Kenya. *European Scientific Journal*, 9(13), 146–161.
- Opie, T. S. (2019). *International Marketing Research. Research Paper*. North Miami, Florida: Atlantic International University.
- P. Odera. (2013). *Speech by the Chairman of the Uganda Bankers Association at the launch of the UBA Financial Literacy Program on Friday, 6th December 2013*. Kampala Hotel: Press Hall.
- Pati, S. Y. (2018). An Analysis of the Technology Acceptance Model in Understanding University Students' Behavioral Intention to Use e-Learning. *Educational Technology & Society*, 12 (3), 150–162.
- Porter, M. E. (1985). *Competitive Advantage*. New York: The Free Press.

- Pretorius, M. (2008). When Porter's generic strategies are not enough: complementary strategies for turnaround situations. *Journal of Business Strategy*, 29 (6), 19-28.
- Quinlanl, R., & Harley, M. (2019). Demand-side Factors for Financial Inclusion: A Cross-country Empirical Analysis. *International Studies*, 56(2-3), 163-185.
- Rindova, V. P. & Fombrun, Ch. J. (1999). Constructing competitive advantage: The role of firm-constituent interactions. *Strategic Management Journal*, 20(8) 691 – 710.
- Rogers W. R. . (1995). *Econometric Analysis of Cross Section and Panel Data (2nd Ed.* Cambridge, MA: MIT Press.
- Rouder, J. N., Schnuerch, M., Haaf, J. M., & Morey, R. D. (2023). Principles of model specification in ANOVA designs. *Computational Brain & Behavior*, 6(1), 50-63.
- Sakaran, S. (2015). Financial Regulation in Low-Income Countries: Balancing Growth with Stability. *Unpublished*.
- Salkind, N. J. (2010). *Encyclopedia of Research Design*. SAGE Publications: Thousand Oaks, CA.
- Sathyamoorthy, S. (2020). Data Mining and Information Security in Big Data. *International Journal of Scientific Research in Computer Science and Engineering*, 5(3) 86-91.
- Saunders, M., Lewis, P., & Thornhill, A. (2012). *Research Methods for Business Students (6th Ed.)*. Harlow, UK: Pearson.
- Schueffel, P. (2017). *The concise fintech compendium*. Fribourg, Switzerland.

- Senyo et al, János, B., & Ross, B. (2015). The Evolution of FinTech: A New Post-Crisis Paradigm? *University of Hong Kong*, Research Paper No. 2015/047.
- Sercik. (2004). Financial Regulation in Low-Income Countries: Balancing Growth with Stability. Part1 and 2. *Unpublished*.
- Shaikh. (2020). The rationales of financial inclusion in the changing European private law. *European Review of Contract Law*, 11(1), 22-45.
- Sharma, A. J. (2016). When debt comes knocking. *Emerald Emerging Markets Case Studies*, 6(4), 76-121.
- Sharma, M, Sy Maina & Pias, J. (2012). Financial Inclusion and Development. A cross country Analysis. *Journal of International Development*, 23(5), 613-628.
- Snowden, D.J. & Boone, M.E. (2007). A leader's framework for decision making. *Harvard Business Review*, 85(11), 69-76.
- Sun, J., Kong, M., & Pal, S. (2023). The Modified-Half-Normal distribution: Properties and an efficient sampling scheme. *Communications in Statistics. Theory and Methods*, 52(5), 1591-1613.
- Surendran, P. (2012). Technology acceptance model: A survey of literature. *International Journal of Business and Social Research*, 2(4), 175-178.
- Suri, T. and Jack, W. (2016). The long-run poverty and gender impacts of mobile money. *Science*, 354 (6317), 1288–1292.
- Sweeney, D. (2018). What is Fintech and what does it mean for small businesses. Retrieved March 12th 2020 from [www. Business.com](http://www.Business.com).

- Sy, A. N. R., Maino, R., Massara, A., Perez-Saiz, H., & Sharma, P. (2019). FinTech in Sub-Saharan African countries: A game changer? *IMF*, Departmental Papers. No. 19/04. Retrieved October 10, 2022.
- Takerdoost. (2016). Financial Innovation and Poverty Reduction: Evidence from Rural Northern Nigeria. *African Development Bank.*, MFW4A Working Paper No. 1.
- Tanwar, R. (2013). Porter's Generic Competitive Strategies. *IOSR Journal of Business and Management*, 15 (1), 11–17.
- Tekin, S. F., & Kozat, S. S. (2023). Crime prediction with graph neural networks and multivariate normal distributions. *Signal, Image and Video Processing*, 17(4), 1053-1059.
- Thompson et al. (2019). Theory of Economic Development. *Harvard University Press*.
- Turban, E., Aronson, J.E. & Liang, T.P. (2005). *Decision Support Systems and Intelligent Systems, 7th ed.* Upper Saddle River, NJ: Pearson Prentice Hall.
- Tutar, & Tapscott, A and Bingol. (2018). The Impact of the Block chain Goes beyond Financial Services. *Harvard Business Review*, Retrieved from <https://hbr.org/2016/05>.
- Velazquez, P. V., Bobek, V., Vide, R. K., & Horvat. (2022). Lessons from remarkable fintech companies for the financial inclusion in Peru. *Journal of Risk and Financial Management*, 15(2), 62.

- Verma, V. K. (2022). Analysis and treatment of data multicollinearity problem occurs due to independent variables for machine learning model. *Journal of East China University of Science and Technology*, 65(4), 8-19.
- Waagmeester, F. C. (2016). *Responsible Innovation In Platform Based Fintech Start-Ups: An Explorative Case Study. Master Thesis, University of Technology Delft, Netherland.*
- Wachira, L., Dolata, M., & Schwabe, G. (2012). The FinTech phenomenon: antecedents of financial innovation perceived by the popular press. *Financial Innovation*, 2 (16), 1-16, DOI: 10.1186/s40854-016-0036-7.
- Wadhe, M. (2020). Banks take on FinTech for the youth market. Retrieved from <https://africanbusinessmagazine.com/african-banker/banks-take-on-FinTech-forthe-youth-market> on 15th June 2020.
- Wafula, H. (2018). Value of FinTech. *KPMG Tech journal V20. London: KPMG,.*
- Wang, C. L., Senaratne, C., Raffiq, M. (2018). Success traps, dynamic capabilities and firm performance. *British Journal of Management*, 26(1) 6 – 44.
- Wani, T. A., & Ali, S. W. (2015). Innovation diffusion theory. *Journal of general management research*, 3(2), 101-118.
- Welbers, K., van Atteveldt, W., Kleinnijenhuis, J., & Ruigrok, N. (2018). A gatekeeper among gatekeepers. *Journalism Studies*, 19 (4), 315–333.
- World Bank. (2014). *Global Financial Development Report. Financial Inclusion.* Washington, DC:: World Bank .

- Xu, L., Jiang C., Wang J., Yuan J. & Ren, Y. (2014). Information Security in Big Data. *Privacy and Data Mining*, Retrieved May 12th, 2020 from doi:10.1109/ACCESS.2014.2362522.
- Yang, H. (2019). Fintech as a Strategy of Financial Inclusion in the Age of Digitalization. *Journal of APEC Studies*, 11(2), 93-106.
- Yeyouomo, A. K., Asongu, S. A., & Agyemang-Mintah, P. (2023). Fintechs and the financial inclusion gender gap in Sub-Saharan African countries. *In Women's Studies International Forum*, Vol. 97, p. 102695.

APPENDICES

Appendix I: Licensed Financial Institutions in Kenya

1.AfricanBankingCorporationLtd
2.BankofAfricaKenyaLtd
3.BankofBaroda(K)Ltd
4.BankofIndia
5.ABSA BANK
6.CFC StanbicBank
7.CharterhouseBank
8.Citibank
9.NCBA
10.ConsolidatedBank
11.Co-operativeBank
12.Credit-Bank
13.DevelopmentBankofKenya
14.DiamondTrust-Bank
15.DubaiBank-Kenya

16.Ecobank-Kenya
17.EquatorialCommercialBank
18.EquityBank
19.Family-Bank
20.FidelityCommercialBank
21.Fina-Bank
22.FirstCommunityBank
23.Giro-Commercial
24.Guardian-Bank
25.Gulf-African
26.Habib-A.G. Zurich
27.Habib-Bank
28.I&M Bank
29.Jamii-Bora
30.KenyaCommercialBank
31.K-Rep
32.OrientalCommercial

33.ParamountUniversal
34.Prime-Bank
35.StandardChartered
36.Trans-National
37.UBA-KenyaBank
38.VictoriaCommercial-Bank

Source: Cytton, 2022

Appendix II: FinTech Company's Data Collection Instrument

Financial Inclusion	Fintech Savings	Fintech Credit	Fintech Regulatory	Fintech Transactions
0.5508	0.1428	0.4972	0.3705	0.3303
2.0983	0.3569	0.5074	0.3759	0.3386
1.5858	0.0134	0.5046	0.3791	0.3487
2.03	0.0803	0.5089	0.3844	0.3618
0.2858	0.4016	0.4974	0.3879	0.3391
0.7158	0.5042	0.5036	0.388	0.3347
1.0792	0.3793	0.5096	0.3867	0.3747
2.4562	0.5577	0.5096	0.3769	0.4006
0.3464	0.2989	0.497	0.382	0.3606
0.2814	0.2856	0.4982	0.392	0.4006
0.0732	0.5756	0.4949	0.3967	0.3988
0.0055	0.3034	0.4939	0.3989	0.3823
1.0519	0.0892	0.5166	0.4025	0.2765
1.2005	0.4328	0.5158	0.4043	0.3618
0.7393	0.3659	0.51	0.4058	0.3159
0.565	0.4596	0.5083	0.4079	0.3386
0.1678	0.3168	0.4984	0.4102	0.3618
2.1847	0.4551	0.5241	0.409	0.4172
2.8907	0.6113	0.5368	0.4094	0.3622
1.9491	0.2186	0.5411	0.4148	0.3622
2.3885	0.647	0.5457	0.4207	0.4172
2.1005	0.415	0.5475	0.423	0.3888
1.3049	0.4328	0.5325	0.4243	0.4172
1.4	0.5533	0.5353	0.4291	0.3622
1.5164	0.4863	0.5368	0.432	0.4172
0.9524	0.5934	0.5258	0.4333	0.4006
1.23	0.3123	0.5366	0.4351	0.3823
1.4639	0.3703	0.5058	0.3768	0.3918
0.1268	0.4997	0.4952	0.3808	0.4006
0.1148	0.5443	0.4953	0.3841	0.439
0.129	0.522	0.4955	0.387	0.3996
0.1251	0.6068	0.4955	0.3865	0.3821
0.6481	0.6782	0.5016	0.3934	0.3677
1.2574	0.3971	0.5065	0.3995	0.3823
1.741	0.4462	0.5091	0.3999	0.3823

0.018	0.4016	0.4939	0.3975	0.3823
3.0191	0.5042	0.5116	0.3971	0.3823
0.0175	0.3793	0.494	0.3768	0.3036
0.8437	0.5577	0.5013	0.3791	0.3748
0.3798	0.2989	0.4977	0.3838	0.4006
0.4115	0.2856	0.4986	0.39	0.5521
0.3749	0.5756	0.4995	0.3968	0.4095
0.4158	0.3034	0.5006	0.3992	0.4172
0.3743	0.0892	0.5014	0.4032	0.4006
2.3797	0.4328	0.5444	0.4059	0.4323
2.0699	0.3659	0.5467	0.4064	0.4172
0.1191	0.8477	0.4968	0.4106	0.4172
0.6022	0.9504	0.5004	0.3949	0.4323
2.5786	0.8254	0.5244	0.3997	0.4451
1.7879	1.0039	0.5244	0.4027	0.4194
2.1016	0.7451	0.5264	0.4057	0.3966
2.1103	0.7317	0.5411	0.4094	0.3823
0.6371	1.0218	0.5097	0.412	0.3823
1.0033	0.7496	0.5232	0.4122	0.3618
0.4792	0.5354	0.5074	0.4133	0.3618
0.1311	0.879	0.4977	0.4148	0.4172
0.0169	0.8121	0.4943	0.4176	0.4172
2.8016	0.9058	0.538	0.3912	0.4323
1.9737	0.763	0.5252	0.3972	0.4323
2.3453	0.9013	0.5304	0.4043	0.4118
0.88670	0.53910	0.77340	0.510800	0.302300
0.94460	0.49640	0.88920	0.509500	0.304600
0.86190	0.49640	0.72380	0.505100	0.308100
0.98180	0.53910	0.96370	0.501700	0.306700
0.98800	0.57610	0.97600	0.520600	0.307500
0.85360	0.52610	0.70720	0.510600	0.308300
0.97980	0.53910	0.95950	0.508000	0.311700
1.07900	0.53610	1.15810	0.502400	0.313800
0.91980	0.56760	0.83960	0.498300	0.316400
0.95080	0.49640	0.90160	0.470800	0.280500
0.90740	0.41960	0.81480	0.470800	0.284000
0.97350	0.53910	0.94710	0.479300	0.289100
0.90940	0.41960	0.81890	0.470600	0.290000
0.83710	0.49640	0.67420	0.470100	0.318000

1.01900	0.43960	1.03810	0.470000	0.321200
0.82050	0.56390	0.64100	0.476000	0.294200
0.92810	0.50390	0.85610	0.475900	0.294700
0.91980	0.50390	0.83960	0.475700	0.296300
0.86390	0.53910	0.72790	0.475800	0.295300
0.89500	0.34300	0.78990	0.840800	0.222900
0.84530	0.33000	0.69060	0.815100	0.230700
0.97560	0.30430	0.95120	0.773500	0.243300
0.94870	0.30000	0.89750	0.760900	0.247200
0.88880	0.30430	0.77750	0.726400	0.257700
0.86810	0.38400	0.73610	0.713800	0.259100
0.87840	0.34010	0.75680	0.720800	0.256900
0.83910	0.30120	0.67830	0.719500	0.257300
0.80610	0.38400	0.61210	0.726400	0.255100
0.93630	0.44600	0.87270	0.680300	0.253600
0.91360	0.44460	0.82720	0.483300	0.290800
0.93420	0.46460	0.86850	0.484200	0.287900
0.88670	0.49880	0.77340	0.483100	0.291700
0.94460	0.44600	0.88920	0.481300	0.297700
0.86190	0.45990	0.72380	0.481000	0.298400
0.98180	0.48840	0.96370	0.480000	0.302000
0.98800	0.44600	0.97600	0.479200	0.304500
0.85360	0.48410	0.70720	0.476600	0.313100
0.97980	0.44600	0.95950	0.477500	0.309900
1.07900	0.44600	1.15810	0.476900	0.311900
0.06930	0.56090	0.83960	0.478700	0.319800
0.07670	0.58800	0.90160	0.480400	0.323100
0.05210	0.58800	0.45500	0.478200	0.325600
0.05710	0.58800	0.35980	0.477500	0.326500
0.06740	0.68800	0.47570	0.478500	0.325300
0.06810	0.57610	0.31020	0.476600	0.325600
0.05160	0.56120	0.55010	0.469700	0.335800
0.06200	0.51180	0.56250	0.470600	0.337200
0.06950	0.52260	0.29360	0.471600	0.333100
0.10940	0.58860	0.54590	0.471500	0.333200
0.04490	0.53910	0.74450	0.484800	0.306800
0.00310	0.53300	0.42600	0.475300	0.308600
0.09290	0.52220	0.48800	0.474000	0.314900
0.08780	0.51220	0.40120	0.473500	0.317400

0.08020	0.53910	0.53350	0.472700	0.321100
0.06920	0.54910	0.40530	0.471600	0.323100
0.03980	0.53910	0.26060	0.471400	0.324400
0.00750	0.52290	0.62450	0.471400	0.324400
0.05130	0.53910	0.22740	0.471300	0.325300
0.00810	0.53460	0.44250	0.471500	0.324000
0.00750	0.57610	0.42600	0.484100	0.301400
0.00410	0.54440	0.31430	0.490100	0.304600
0.00270	0.53910	0.37640	0.487700	0.308400
0.00270	0.56780	0.27710	0.482800	0.315700
0.00160	0.55210	0.53760	0.482500	0.316200
0.00910	0.50520	0.48390	0.480000	0.320100
0.00410	0.52310	0.36400	0.477800	0.323500
0.00300	0.53910	0.32260	0.476400	0.325500
0.00160	0.50520	0.34330	0.475400	0.327000
0.00140	0.59050	0.26470	0.472400	0.326400
0.00150	0.59050	0.19850	0.477600	0.297400
0.07150	0.53910	0.45910	0.477300	0.298600
0.06550	0.50520	0.41360	0.477600	0.297700
0.78980	0.50520	0.45500	0.477400	0.298400
0.68210	0.51390	0.35980	0.475900	0.305700
0.52100	0.49640	0.47570	0.470300	0.307200
0.55640	0.49640	0.31020	0.470300	0.308300
0.50300	0.49640	0.55010	0.470300	0.307700
0.52100	0.49640	0.56250	0.470300	0.305000
0.57440	0.61090	0.29360	0.480500	0.385100
0.64670	0.62210	0.54590	0.486100	0.384600
0.43060	0.57610	0.74450	0.494900	0.385300
0.55640	0.63790	0.42600	0.470100	0.384700
0.39530	0.63790	0.48800	0.489400	0.386900
0.68210	0.53910	0.04140	0.484500	0.389200
0.98770	0.63790	0.05370	0.499600	0.391000
0.73620	0.57610	0.06210	0.516900	0.392300
0.57440	0.57610	0.10340	0.500000	0.393900
0.02300	0.57610	0.13650	0.500500	0.394800
0.02420	0.50040	0.14890	0.482400	0.376600
0.02210	0.53910	0.11990	0.473500	0.379400
0.02140	0.54640	0.13230	0.473600	0.381300
0.02030	0.53910	0.33090	0.473800	0.382700

0.01890	0.63790	0.01250	0.485000	0.381700
0.01640	0.55210	0.07440	0.475900	0.386500
0.01790	0.68850	0.01250	0.490200	0.386500
0.01800	0.53910	0.11990	0.469800	0.388400
0.01880	0.67900	0.00820	0.474100	0.390000
0.01840	0.63790	0.15300	0.490700	0.393000
0.01850	0.60880	0.21100	0.505000	0.362700
0.01900	0.68850	0.18610	0.506800	0.366200
0.02170	0.63790	0.02890	0.501500	0.370800
0.02240	0.63790	0.01250	0.507900	0.375900
0.33490	0.60880	0.09930	0.506000	0.380600
0.41070	0.63790	0.03730	0.517700	0.384800
1.23220	0.61640	0.13650	0.541400	0.389700
0.47140	0.66440	0.12410	0.545400	0.394800
0.73030	0.62640	0.07030	0.550300	0.398600
0.74560	0.66440	0.04960	0.553000	0.400600
0.57790	0.63790	0.09100	0.475000	0.369600
0.63900	0.73120	0.07030	0.477800	0.374600
0.65430	0.70630	0.14890	0.477200	0.381700
0.50190	0.71060	0.21510	0.482000	0.388200
0.50190	0.72120	0.04550	0.472100	0.392500
1.08760	0.66440	0.04360	0.478100	0.395200
0.96620	0.63790	0.04140	0.491800	0.399600
0.56320	0.60880	0.05370	0.503700	0.404000
0.57790	0.57610	0.06210	0.495200	0.406100
0.06570	0.63790	0.10340	0.487200	0.408100
0.15300	0.60880	0.13650	0.470100	0.334900
0.14310	0.60880	0.14890	0.471900	0.339800
0.12290	0.60880	0.11990	0.477300	0.349500
0.09000	0.53910	0.13230	0.472900	0.351200
0.13800	0.53910	0.33090	0.482600	0.356300
0.10920	0.57610	0.01250	0.480000	0.359300
0.07480	0.57610	0.07440	0.484000	0.364400
0.12100	0.53910	0.37220	0.473100	0.367700
0.14400	0.60880	0.46730	0.479000	0.367700
0.15470	0.60880	0.35150	0.484700	0.366500
0.08610	0.63790	0.51690	0.484700	0.357200
0.11090	0.63790	0.27710	0.472700	0.362100

Appendix III: Statistical Output

Descriptive Statistics

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Financial Inclusion	190	.0010	8.9168	1.269445	1.6651986
Fintech Savings	190	.01340	1.02180	.5324577	.15249746
Fintech Credit	190	.00824	1.15805	.4723443	.26434245
Fintech Regulatory	190	.370500	.840760	.47199308	.078373993
Fintech Transactions	190	.222885	.552100	.35072903	.049763727
Valid N (listwise)	190				

Correlations

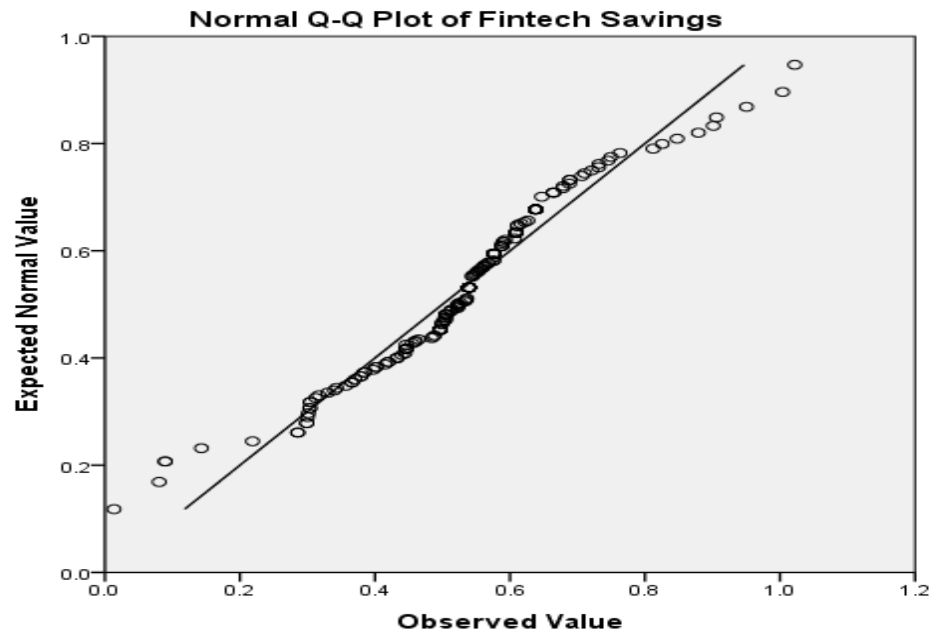
			Financial Inclusion	Fintech Savings	Fintech Credit	Fintech Regulatory	Fintech Transactions
	Pearson Correlation	1	.185*	-.375**	.191**	.267**	
Financial Inclusion	Sig. (2-tailed)	(2-	.011	.000	.008	.000	
	N	190	190	190	190	190	
	Pearson Correlation	.185*	1	-.318**	-.115	.360**	
Fintech Savings	Sig. (2-tailed)	(2-	.011	.000	.113	.000	
	N	190	190	190	190	190	
	Pearson Correlation	-.375**	-.318**	1	.131	-.489**	
Fintech Credit	Sig. (2-tailed)	(2-	.000	.000	.072	.000	
	N	190	190	190	190	190	
	Pearson Correlation	.191**	-.115	.131	1	-.586**	
Fintech Regulatory	Sig. (2-tailed)	(2-	.008	.113	.072	.000	
	N	190	190	190	190	190	
	Pearson Correlation	.267**	.360**	-.489**	-.586**	1	
Fintech Transactions	Sig. (2-tailed)	(2-	.000	.000	.000	.000	
	N	190	190	190	190	190	

*. Correlation is significant at the 0.05 level (2-tailed).

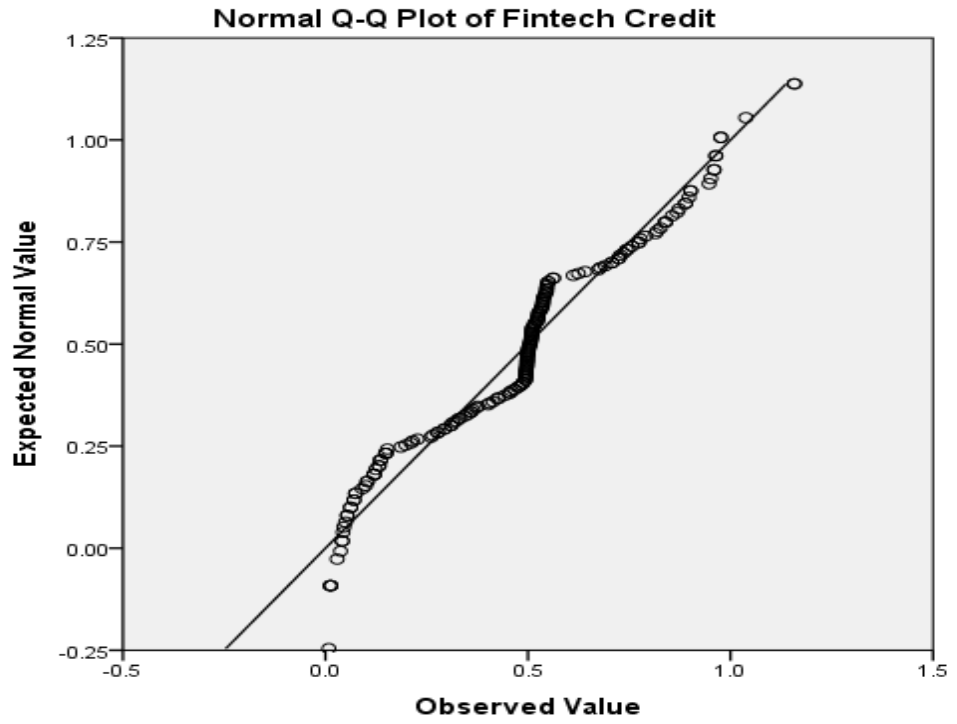
** . Correlation is significant at the 0.01 level (2-tailed).

Autocorrelation

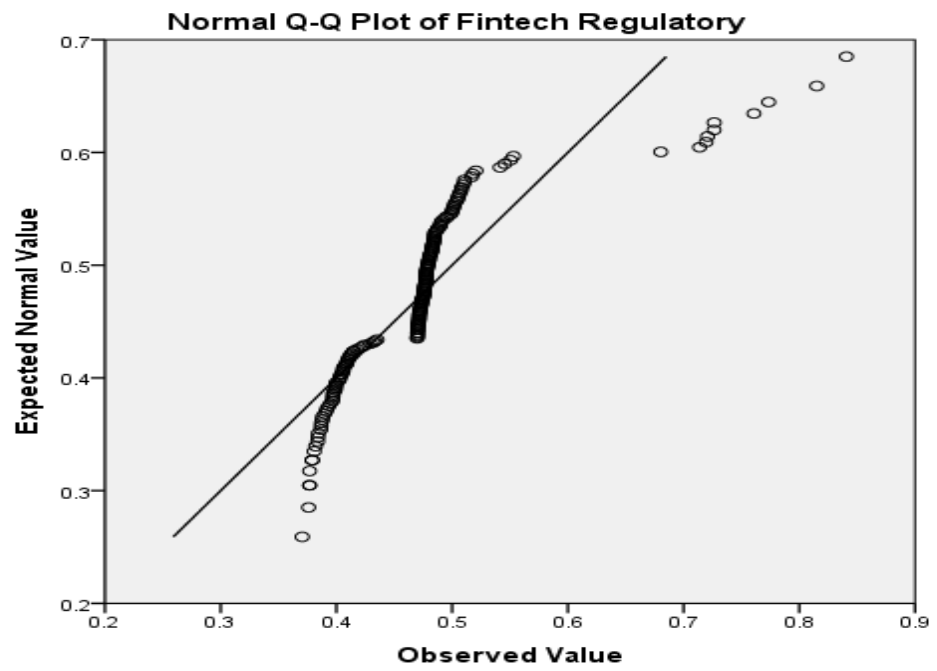
Model	Durbin-Watson
1	.740

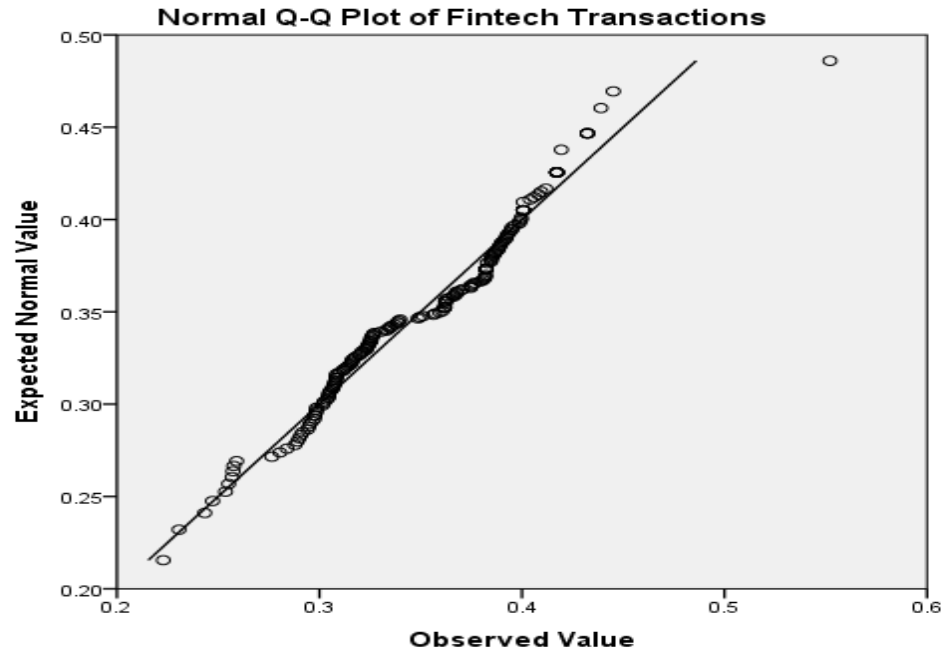


Fintech Savings



Fintech Credit





Fintech Transactions

Multicollinearity Test

Model	Collinearity Statistics		
	Tolerance	VIF	
	Fintech Savings	.837	1.195
	Fintech Credit	.707	1.414
1	Fintech Regulatory	.619	1.615
	Fintech Transactions	.453	2.209

a. Dependent Variable: Financial Inclusion

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	153.078	4	38.269	19.083	.000 ^b
1	Residual	370.998	185	2.005		
	Total	524.076	189			

a. Dependent Variable: Financial Inclusion

b. Predictors: (Constant), Fintech Transactions, Fintech Savings, Fintech Credit, Fintech Regulatory

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. Change	F
1	.540 ^a	.292	.277	1.4161187	.292	19.083	4	185	.000	.740

a. Predictors: (Constant), Fintech Transactions, Fintech Savings, Fintech Credit, Fintech Regulatory

b. Dependent Variable: Financial Inclusion

Coefficient of Determination

Model	Unstandardized		Standardized	Sig.	95.0% Confidence		Collinearity			
	Coefficients		Coefficients		Interval for B			Statistics		
	B	Std. Error	Beta		Lower Bound	Upper Bound	Tolerance	VIF		
1	(Constant)	-7.996	1.752							
	Fintech Savings	.142	.738	.013	.192	.848	-1.315	1.599	.837	1.195
	Fintech Credit	-1.396	.463	-.222	-3.013	.003	-2.310	-.482	.707	1.414
	Fintech Regulatory	10.103	1.671	.475	6.048	.000	6.807	13.398	.619	1.615
	Fintech Transactions	14.488	3.077	.433	4.709	.000	8.418	20.558	.453	2.209

a. Dependent Variable: Financial Inclusion