EFFECT OF DIGITALIZATION ON FINANCIAL PERFORMANCE OF MICROFINANCE BANKS IN KENYA

By

MAWERE CELESTINE ANYANGO

D63/39951/2021

A MASTER OF SCIENCE PROJECT PRESENTED IN PARTIAL FULFILMENT OF THE REQUIREMENT OF MASTER OF SCIENCE DEGREE, SCHOOL OF BUSINESS AND MANAGEMENT SCIENCE, UNIVERSITY OF NAIROBI

2022

DECLARATION

I declare that this project is my original work and has not been presented in any other institution for academic award.

Signature..........................   Date...18/10/2022.........

Mawere Celestine Anyango
D63/39951/2021

SUPERVISOR'S APPROVAL

This project has been presented with my approval as the university supervisor.

Signature..........................   Date...18th October 2022
Mr. James Ng'ang'a
Department of Finance & Accounting
University of Nairobi

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

DEDICATION

In realization of this significant milestone and with humility and utmost respect, I dedicate this enormous and crucial work to my husband Prof. Shem Sam for stepping on my behalf and undertaking enormous financial and moral burden. His unwavering love and understanding pushed me to immense milestone. Moreover, he instilled rare and unique traits of persistence, creativity and innovative mindset.

Moreover, I recognize my children Achilles and Chryseis Sam who have been my best cheerleaders and they gave me a message of good will from the onset of the study to the end. I applaud my loving parents, Lawrence and Dorothy Mawere, for their prayers, steadfast and unwavering sacrifices.

ACKNOWLEDGEMENT

ABBREVIATIONS AND ACRONYMS

ANOVA   Analysis of Variance

ATM   Automatic Teller Machine

CBK   Central Bank of Kenya

FP   Financial Performance

MFB   Microfinance Banks

MFI   Micro Finance Institutions

ABSTRACT

Digitalization impacts at a firm level include; quick response to change, facilitate access to large sets of data, proper operational market analysis, increased productivity, enhanced competitive advantage and changes in business roles. In addition, it offer new business opportunities, disrupt existing models of business and effective management. It is imperative to articulate that digitalization has an impact on the decision making through effective data analysis and forecasting, improved interaction. Additionally, digitalization is pivotal for scaling up the innovation capacities and decline the time-to- market. Moreover, it is presented as critical trend causing disruption in the business environment as well as the whole global society. Therefore, the driving force of this study was to investigate the effect of digitalization on financial performance of microfinance banks in Kenya. This examination was reinforced by causal research design expounding on the causal-effect interconnection amid digitalization and financial performance. Consequently, the data was sourced from secondary means from CBK comprising of 14 microfinance banks regulated and operating under the CBK. Hence, the correlation analysis was expedited using the Pearson correlation method to ascertain the degree of interconnection between the regressed and the regressor variables. From the computational mathematics, all the predictor variables recorded a positive correlation towards the dependent variable. In addition, R-Square was 0.684, thereby, this delineates that 68.4% of changes and variation of financial performance were as a result of Electronic Wallet, Mobile Banking, ATM Banking and Internet Banking. The remaining 34.6% of variations in the financial performance of the microfinances were as a result of factors not captured in this rigorous investigation. Additionally, ANOVA test expedited posted that 0.000 hence below the P value of 0.05, meaning that the model posted statistically significant. Empirically, when all factors were held constant the financial performance constant figure was negative 0.130. This postulates that microfinance was making losses whenever, everything was maintained unchanged. Consequently, a unitary positive adjustment on the ATM Banking resulted in a decrease in financial performance by 0.022 when other factors were held at constant. As result, a small advancement of internet banking replicated an insignificant reduction on the internet banking by 0.037 when enablers are held constant. In addition, an addition of one unit of mobile banking triggered a significant correlated increment of the financial performance by 0.19 if other factors are maintained unchanged. As a subsequent, a unitary positive adjustment of electronic wallets brought about significant increase on the financial performance by 0.535 when other determinants are held constant. In summary, this study calls for the establishment micro finance strategies that promote the development of innovation, increase financial access, enhance creativity, upgrade infrastructural development, as well as the yardstick for innovation. These are major blueprints promoting the business transformation through proper reaping from existing opportunities

1.1 Background to the Study

The emergency of the Fourth Industrial Revolution has presented various challenges and opportunities simultaneously for business entities (Horvath, & Szabo, 2019). Work organization is projected to be highly flexible with regards to timeframe and speed as well as decentralized, transparent and less hierarchical workflows (Picot & Neuburger, 2014). The Fourth Industrial Revolution is distinct by customization of production, optimization and digitalization, adaption and automation, interaction between human beings and machines communication and automatic data exchange and finally value addition in services and stores (Roblek et al., 2016; Posada et al., 2015). Digitalization is driven by such variables as increased levels of competition that calls for firms to scale up their innovation capacities and decline their time- to- market. (Beuer et al., 2014), decreased workforce numbers as a result of aging population society (Jankowska & Gotz,2017), variations in consumer needs and expectations, continuously decreasing product life cycle, modern markets becoming more heterogeneous among others (Karre et al., 2017, Adoph et al., 2014,). Digitalization positively influence the operational efficiency of business firms, open avenue for new opportunities, enhance optimal resource allocation as well expansion of the entities` innovative boundaries (Manyika, Chui, Bisson, Bughin & Aharon, 2015).

This study is anchored on the theory of disruptive innovation and resource-based view theory. The theory of disruptive innovation was established by Christensen (1995). It is guided by the creative destruction theory developed by Schumpeter (1942). The principles of the theory of disruptive technology as propounded by Christensen (1995) hold that failure by good organizations can be associated to either ignorance of their

managers' new technologies or choice to fight them. It is operationalized in where low-end markets with inferior product attributes and thus low prices adopt new innovations to improve on their products to attract customers in the mainstream market thus cause a paradigm shift. Resource based view theory on the other section was established by Peteraf and Barney, (2003). It uses firm-specific resources to explain how certain firms perform better than others operating in the same industry and environment. The theory reports that the difference in performance can be alluded to the fact that resources or wealth possessed by a particular entity including human resources, technologies, capital assets, goodwill among others, are unique to that entity and thus cannot be replicated to apply to any other entity in equal measure.

Impacts of digitalization has been felt in sectors of the world economy and the retail financial services sector is not exceptional (Sadiku, 2019). Based on the theory of disruptive innovation, incumbent banking institutions are forced to adopt modern technologies necessary to design a personalized and unique customer experiences to compete favorably with new entrants in the market (Broeders & Khanna, 2015). The Kosovo banking sector for instance has undergone a prolonged period of digital transformation from the era of no-tech where every transaction was in cash, to the era of low-tech where transactions such as payment of salaries was done through the bank as well as introduction of utilization of ATMs and Debit cards, to initiate high-tech error which involved online banking where nearly all bank services were carried out online (Central Bank of Kosovo, 2018). Wadesango and Magaya (2020), empirically proves a positive effect of digital-banking services on profitability and customer satisfaction for the banking entities in Ghana while Sakanko, and David (2019) too presents a positive impact of digitalization on financial performance of microfinance banks in Niger state-Nigeria. Locally Mateka et al., (2016), Aoko, (2017), Mueni

(2017) and Mwangi, (2018) among others have shown a positive impact of digitalization on banking financial performance in Kenya.

1.1.1 Digitalization

Digitalization is presented as critical trend causing disruption in the business environment as well as the whole global society (Parviainen, Tihinen, Kaariainen & Teppola, 2017). In the literature, digitalization has been interpreted from different dimensions such as the ability to convert products into digital variants thus offering advantage to tangible products by Gassmann, Frankenberger and Csik. (2014) and as the increased adoption of digital or computer technologies by business entities in carrying out their core operations. Digitalization impacts at a firm level include; quick response to change, facilitate access to large sets of data, proper operational market analysis, increased productivity, enhanced competitive advantage, changes in business roles, offer new business opportunities, disrupt existing models of business and effective management among others while at a state level digitalization has an impact on the decision making through effective data analysis and forecasting, improved interaction in the private-public partnerships, managing corruption, supporting business startups, cut down costs of government projects as well as facilitating rapid information interchange among individual structures (Kraus, Kraus & Marchenko, 2020).

Microfinance entities are adopting digital technologies to offer digital financial services; a trend is prevalence especially in developing countries, which are dominated by MFIs (Pal, Dey, Nandy, Shahin, Singh, 2022). Bangladesh is the home of microfinance market leaders with more than 700 registered MFIs and more than 30 million borrowers who have highly contributed to the country`s development (CDF, 2020; Mujeru, 2020). To enhance financial inclusion, it is reported that MFIs should adopt digital technologies facilitated through physical infrastructure appropriate

regulations in the industry (Demirguc-Kunt et al., 2018). This is critical since there is a significant link between microfinance and SDGs where microfinance enhance women empowerment in the society by easing their access to financial support necessary to meet their medical, food expenditure, be self-reliant among others (Mia et al., 2019; Loewe & Rippin, 2015).

1.1.2 Financial Performance

It is worth positing that financial performance metrics may be categorized in terms of market-based measures that include; stock returns, change in stock returns and market value of a given entity. The other category is the accounting based which includes ROA, return on capital employed, ROE, net income margin, operating income, return on sales among others (Galant & Cadez, 2017). Walker (2011) further classifies financial performance in three dimensions including profitability which measures an entity`s earnings with respect to its costs, productivity dimension which measures output efficiency with regards to inputs and market premium dimension which measures the extent to which an entity`s market value exceeds its book value. Other scholars have combined market and accounting measures to come up with Tobin`s Q and market value added (Garcia-Castro, Arino & Canela, 2010). Peng and Yang (2014) adopts factor analysis to analyze different metrics of financial performance for instance ROE, ROA, earnings per share and cash flows to asset into one single index.

The MFIs financial performance is influenced by different variables including; exchange rate risk and interest rate risk. Moreover, it liquidity risk in addition to credit risk are considered among others (Lelgo & Obwogi, 2018). Ganka (2010) reports that capital structure impacts on the FP of MFIs operating in Tanzania. In his study to investigate the linkage amid equity financing and financial performance of SMEs, operating in Nigeria found a positive correlation between the two variables where his

findings concurs with postulations by Edon and Agayi (2015). Debt financing has also been found significant in influencing financial performance of business in different contexts for instance; Abdullah & Roslan, 2012 focusing on Malaysian entities, Daniel Kebede (2011) in Ethiopian SMEs and Kajirwa (2015) in Kenya. Other variable which influences financial performance of corporate entities is the size of the firm (Grace, 2017; Salim, 2013).

1.1.3 Digitalization and Financial Performance

Adoption of digital technologies within the banking sector has been associated with drastic reduction in poverty levels (Mukherjee, 2017; Nassem, 2017; Maxima & Kim, 2018). This is due to increased efficiency in the bank processes where bank accounts are opened without the customer visiting a bank facility physically this enhances the bank`s customer base and that's the revenues (Ortstad & Sonono, 2017). Digitalization enhances also better provision of other banking services such as creation of customer details and transactions, facilitating their storage and retrieval that then helps in controlling the amount paper work, proper customer scrutiny and valuation for loan purposes among others (Gonzalez- Paramo, 2017). Adoption of digital technologies by business entities also promotes better bank-customer relationship that enhance customer loyalty, sales and profitability in the long-run (Carletti, 2017). Despite the many benefits of digitalization in the banking sectors the process is also associated with certain challenges which possess an inverse impact on the overall bank performance thus FP. For instance, digital devices are prone to the effects of viruses that may lead to data loss and loss business opportunities (Gonzalez-Paramo, 2017).

Empirical evidence shows that in Ethiopian commercial banks online banking has an insignificant positive relationship with financial performance (Yasin, 2018). In the British banking institutions, digital banking improves customer experience (Mbama,

2018). A regression and correlation analysis presents a positive relation amid financial inclusion and FP for banking institutions operating in Jordan. As a result, it is recommended that banking institutions in Jordan which are listed on the Oman financial market establish strategies in future to increase the innovative access to financial services (Al- Shahada, 2020). In the Ghanaian banking industry, the employees are trained to keep up-to date with the prevailing trends in information communication technology in order to enhance their performance and thus bank performance in the long-run (Wadesango & Magaya, 2020).

1.1.4 Microfinance Banks in Kenya

The concept of microfinance was established more than 200 years ago as money lending system, which was initially informal and based on partnership, trust and required no security or collateral to acquire credit facilities (Saibel, 2003). Over the years, the sector has undergone much advancements recording to over 140 million borrowers across the world in 2018 with 80% of them being the women residing in rural area (Convergences, 2019). In the recent past MFIs have embraced commercialization to stay competitive in the modern markets that are highly regulated by government and capital market policies (Mia et al., 2019). Digitalization of the operations of MFIs comes as a relatively new concept in the industry with major advances such as adoption of mobile financial service emerging more strongly after COVID-19 outbreak (Biswas, 2019)

In Kenya the number of registered microfinance banks as at 31 Dec 2022 was 14, three of which hold community microfinance banks licenses while the other eleven have a national wide microfinance bank license. The 14 microfinance banks include; Rafiki MFB, Key MFB, Daraja MFB, U&I MFB, SMEP MFB, Faulu MFB, Maisha MFB, Choice MFB, Kenya women MFB, Uwezo MFB, Caritas MFB, Muungano MFB,

Sumac MFB and Century MFB. Between 2020 and 2021 the MFB sectors experienced an increase in customer deposits from sh. 49.4 in 2020 billion to sh. 50.4 billion in 2021 which was associated majorly with enhanced mobilization of funds through the already existing branch networks and digital platforms. The deposits collected represented 68% of the sectors funding sources while borrowings accounted for only 12% of the funding. In the year 2021, the sector recorded a 1% drop in total assets from sh. 74.9billion in 2020 to sh. 73.9 in 2021 (CBK, 2021).

1.2 Research Problem

In the 21st century, digitalization in industries and institutions in the banking sector has become inevitable as some entities in this sector continue adopting better and more effective techniques of service delivery and other entities find digitalization process more problematic (Carbo-Valverde, 2017). The reports adoption of information and communication technologies in organizations has translated into a boost in the financial sector particularly in the provision of banking services that has increased the drive towards digitalization Abbasi and Weigand (2017). Digitalization is presented as the change in perspective that has an influence on the most traditional entities as well as affects the general society in which businesses operate (Gimpel & Roglinger, 2015). The change caused by digitalization is experienced in all dimensions of business operations in the financial sector that has greatly improved collaboration between the entities and their clients (Deutsche Bank, 2016).

The literature provides evidence that some studies have been conducted across the world around the concept of digitalization and financial performance as discussed below. At a global level, Al-Shahada et al. (2020) investigates the impact the financial inclusion poses on the ROA of bank operating in Jordan where the output of the investigation presents an immense significant and positive impact of financial inclusion

7

on firm performance. Legowo, Sorongan and Subanidja, (2022) studies digitalization of banking sector as an aid for national recovery through collaboration with Fintech industry in Indonesia where the outcome indicate a significant moderating impact of FinTech industry on bank digitalization as a driver of national economic recovery in Indonesia. Yazici, and Baloğlu (2018) investigates the effect of digitalization on branch networks and customer satisfaction among entities operating in Turkey where the investigation has failed to establish the impact of digitalization on bank branch network.

Regionally, Khamis (2021) focuses on the banks listed at Egyptian Stock Exchange between 2016 and 2020 to address how digitalization of banks impact on the periodic risks covered in the stocks Beta variable of the listed banks. The output of the study report that 37.3% of the variations Beta factor results of the listed banks is accounted for by banking digitalization. Wadesango & Magaya, (2020) investigates the impacts of conducting bank services online in the Ghanaian banking industry. The outcome of the assessment report that online banking services have a significant positive implication on customer service delivery and thus profitability. Yasin (2018) investigates the effect of online banking services on finance performance of commercial banks. Contextually, the assessment delved into Ethiopia's banks where this assessment established an insignificant positive link amid online banking and financial performance.

Locally, Aoko (2017), focuses on the impact digital disorder has on the commercial banks' performance operating in Kenya particularly Ecobank Kenya Limited. Further, the assessment reports a strong influence of technological innovations, industrial convergence, digital social trends and digital competition on financial performance. Mueni (2017) investigates the influence of digitalization on the banks' performance.

The study was executed in Kenya where the findings present a significant correlation between digitalization and bank performance. Mwangi, (2018) looks into the impact of service digitalization on the performance of commercial banks in Kenya where a positive impact of services digital on bank performance was established.

From analysis of the above studies shows that global studies by Al-Shahada et al., (2020) in Jordanian banking sector, Legowo, Sorongan and Subanidja, (2022) in the banking sector in Indonesia and Yazici, and Baloğlu (2018) in Turkish banking sector indicates that none of these studies established the impact of digitalization on FP and that all the studies have focused only on the commercial banking sector. Regional studies by Khamis (2021) on the banks listed at Egyptian Stock Exchange, Wadesango & Magaya, (2020) n the Ghanaian banking industry and Yasin (2018) in commercial banks operating in Ethiopia have majorly focused on online banking in the commercial banking sector and not digitalization. Reviewed local studies by Aoko (2017) at Ecobank Kenya Limited, Mueni (2017) focusing on commercial banks in Kenya and Mwangi, (2018) also focusing on Mwangi, (2018) have concentrated in the commercial banking sector. The researcher has failed to identify any single study in the literature that has established the impact of digitalization on financial performance of MFBs in Kenya. This forms the knowledge gap that this study aims to settle by responding to the question; what is the effect of digitalization on financial performance of microfinance banks in Kenya?

1.3 Objective of the Study

The purpose of this experimentation was to investigate the effect of digitalization on financial performance of microfinance banks in Kenya

1.4 Value of the Study

The results will offer the cornerstone pillars for the future scholars. This provided vital

avenue for referencing. The result can also build the substantial knowledge reinforce by the bundle of resources. This is lifeblood of researching the correlated sub-title as well as revamping the empirical reviews. Additionally, it provides analytical arithmetic necessary for in-depth scrutiny.

They offer chief information that enlighten the stakeholders. It can promote the knowhow of the management, employees and the investors. This is because the microfinance industry are the nerve center for economic prosperity. Hence, the management can elucidate the useful report that is fundamental for financial innovation and increasing the efficiency of the specific firms.

The regulatory bodies can maximize the output in the stipulation of user-friendly policies. Furthermore, the findings can give immense contribution to existing knowledge and skills. The regulatory can provide the great yardstick and roadmap for quality performance of microfinance. The digitalization will be impactful to financial sector.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

Extensive, rigorous and exhaustive finding is intensively completed through great reinforcement of literature review. This chapter presents other researchers findings in line digitalization and financial performance both theoretically and empirically. The chapter starts with the crucial theoretical foundation enhancing the study. Correspondingly, it is followed by empirical review, determinants of financial performance and summarized gaps, critiques and then ended with knowledge loopholes.

2.2 Theoretical Review

This study was anchored on three major theories that includes; the disruptive innovation theory and Resource Based View Theory in addition to diffusion innovation theory as presented below:

2.2.1 Theory of Disruptive Innovation

Disruptive Innovation Theory concept initially introduced by Bower and Christensen (1995). Disruptive Innovation was first studied in the disk-drive industry (Nagy et al., 2016 and Christensen et al., 2015). In the first interview with the managers in the disk-drive industry, the scholars discussed resource allocation process expounded in line with innovation sustainability (Bower, 1970). This led to the focus on new product designs and development with higher profit margins where larger markets were targeted which had identifiable customers and little focus on smaller markets with less defined clientele. Disruptive innovation theory is explained in two major innovation dimensions that is; sustaining and disruptive innovations where sustaining innovation is applied to make a unique product superior for the incumbent`s prevailing customers

11

to enhance an entity`s sales and profitability.

Disruptive innovation on the other hand is adopted in situation where the market is not well established. The absence of efficient and well functional market inhibit knowledge transfer. Christensen (1979) postulated the pivotal role of disruptive innovation in execution. Therefore, it quicker than the sustainability innovation majorly due to its substantial mainstream customer. This is because market always exhibit fluctuation that is slower than the execution speed. However, King and Baatartogtokh (2015) critiques disruptive innovation concept on the background of experts that posit sustainability of innovation at slower pace to catch up with what the mainstream customers' demands.

2.2.2 Resource Based View Theory

It is pivotal in connecting the current study with past suppositions. As a consequence, Resource Based View (RBV) was fronted by Barney (1986). It looks at resources of a given entity to describe how organizations achieve sustainable competitive advantage since resources are unique thus cannot easily be transferred, purchased nor imitated. Due to uniqueness in firm resources, there exist variances in performance between firms regardless of the surrounding environment (Conner, 1991). Interestingly, RBV presents a holistic or firm-particular dimension on why some entities excelled while others collapsed in the same market region (Dicksen, 1996). The entities' resource are perceived to be non-substitutable, inimitable valuable and rare which makes it likely for an entity to establish and keep sustainable competitive advantage necessary for the superior and unique performance (Collis and Montgomery, 1995). The theory elucidates the maximization of resources to increase firms' value. In addition, the outcome by Grant (1991) and Wernerfelt (1984) coined the importance of unique

products. RBV of an entity holds that attributes related to the experiences of the firm in the past, the culture of the organization as well as competencies are cornerstone for the accomplishment of the organization (Campbell and Luchs, 1997; Hamel and Prahalad, 1996).

The limitations of RBV are presented in three key areas including; vagueness of technology where limited commonality of terms with RBV is greatly criticized. The theory has been referred to in different terms including capabilities, competencies of a firm, resource dependency theory among others, which limits the applicability of the theory. The other area of limitation is the tautological traits of some of the viewpoints underlying presuppositions that causes lack of specification on chief perspective of the RBV. Additionally, it impedes the execution of theory and credible debate. The third area is the methodological issues where Rouse and Daellenbach (1999) questioned the intense biasness relating towards a quantitative research techniques postulating that such not sufficient for RBV. Consequently, the study holds firmly the supremacy of qualitative and field-based techniques. Chan (2000) is in support of the position that suggests that the field of research may need qualitative perspective to build further understanding and concurrence.

2.2.3 Innovation Diffusion Theory

This hypothesis is pivotal in explanation of new skills, knowledge and invention. Therefore, Innovation Diffusion Theory (IDT) was established by Rodgers (1962) where he explains the association between development of new product and the time is takes to be adopted in the market. Through his argument, Rodgers holds that new product conception took time for the target customers to be convinced. One of the weaknesses of this theory is how the modern financial innovations venture into the

market within a short period as being witnessed majorly in banking industry where customers are moving fast to activate their used in order to perform their transactions. The author categorically highlights that innovation does not happen at the same instantly but as a process where some individuals adopt to the process and others take time to do so (Rodgers, 2003)

The theory holds that new skills and concepts spread into the external environment as well as the entire society once they are established (Rodgers, 2001). Changes in technology triggerr changes in the business in terms of operations to counter stiff competition that calls for innovation to remain competitive. Technology plays integral mandate role in determining adoption of innovation since the compatibility of technology with the business operations and its advantages forms foundation for innovation. Firms have the option of adopting new technology instantly or waiting to adopt it the second time after being adopted by the earlier firms. Stiff competition within the financial sector has forced firms to become innovative through establishing new ideas, new products as well as services to achieve competitive advantage.

2.3 Determinants of Firm Performance

A determinant may be interpreted as a variable that is decisive in affecting the nature or outcome of something (Frank, 1989). The main aim of financial performance is to assess how well entities can prudently make use of their resources to maximize their profits within a specified timeframe of time. In addition, financial performance can be determined by; Asset quality, management efficiency, capital adequacy as well as bank intangible asset ratio as discussed below among others.

2.3.1 Asset Quality

Myers (2005) looks at assets as economic endowment by business firms from which

future rewards are anticipated to flow into the business entity. The cash flows expected to occur in future are an outcome of benefits that arise from the forecasted operations. The assets for commercial banks include; longevity assets, short-term assets, longevity investments in loans and advances to customers, short-term loans, investment in financial assets, deposits due to other banking institutions among others. Loans constitute the highest percentage of commercial banks assets as well as assets of deposit taking microfinance banks. Prudent management of loans is thus necessary to ensure low default rate that positively influences the financial performance and thus profitability.

The quality of a given loan portfolio is a key measure of profitability of banking institutions as losses generated NPL escalate the risk. Asset quality focuses on ensuring that loans that are nonperforming are kept as low as possible which reduces the chances of losses to the banking institutions. Asset quality is expounded as a proportion of nonperforming loans to total loans or the ratio of gross loans to net assets (Ongore & Kusa, 2013). Nzoka (2015) studied how asset quality affect banking sector financial performance in Kenya between 2010 and 2014 in all the 43 commercial banks. The investigation incorporated secondary data drawn from annual CBK banks` supervision reports. The study established an inverse association between asset quality and firm performance.

2.3.2 Capital Adequacy

Capital represents the owners` claim in business (Wood, 1988). It refers to the aggregate amount that individuals invest in the banking institutions to support the banks in times of financial crisis. Adequate capital is necessary to shield the banks from financial distress. Altman, (1954) holds that the beginning of a financial distress is

noted when an entity is unable to meet its schedule of payments or when cash flow projections provide an indication that it will soon collapse and thus the firm may not be in pivotal state to pay its long-term and short-term debts as and when they become due. High number of Kenyan commercial banks going under receivership, the CBK through its regulatory framework sets a minimum capital required for banks to operate in order to protect depositor against the loss of their money in times of a financial crisis.

Ogopi and Unuafe (2013) investigated the consequences of capital adequacy on banking's performance in Nigerian settings. To increase credible and factual proposition, the study adopted time series as well as cross-sectional data drawn from the yearly reports of the bank institutions where capital adequacy was projected to positively influence ROA. In the commercial banks operating in South Africa, Molefe and Muzindutsi (2016), assessed the consequences of capital as well as the management of liquidity on profitability for the period interval 2004-2014. The investigation insinuated absence of lasting correlation between the profitability of the banks and their liquidity with capital management. However, in the short-timeframe, capital ratio posted a substantial positive results on the profitability of the banks whereas liquefy ratio fail to impact on the banks` profitability.

2.3.3 Management Efficiency

As presented by Johnson (2005), management efficiency refers to a situation in which the resources are properly applied to enhance the output levels. The major aim of management efficiency is to reduce the epitomized available scarce resources utilizing the returns for instance stock waste to gear the effectiveness and division of labor. In the case, CEO (Chief Executive Director) can pursue the organizational and chairing the entity by assuming managing director's duties. In the same spirit, operational

efficiency focuses on the proper management of operational expenses.

The management is therefore called to make sure that resources are properly deployed, operating costs minimized while profits are maximized. To measure management efficiency scholars have applied proxy management ratio that is computed by dividing the operating expenses with aggregate assets of the given entity. The higher this ratio is, the greater the financial performance, management efficiency is critical in improving the financial performance of banking institutions.

2.3.4 Bank Intangible Asset Ratio

The source of income to banking institutions is the interest income generated from loans. It also entails the advancement made to the customers. The loan book therefore is critical in determining the performance of banks. The bank has the mandate to regulate the deposits since they eventually effect on the performance of the entity. Furthermore, cost-effective strategies are necessary for execution by the entities in order to translate operations into improved performance. Larger intangible asset ratio is advantageous to the banks since they enhance the bank`s capability to access large sums of deposits compared to the smaller banks (Myers, 2005). Every banking institution is guided to pay much attention to value-based management in general as well as mainly on intangible assets since they are critical drivers of value creation in the 21st economy to establish the core competencies and thus yield competitive advantage on the market thus improved stock prices.

2.4 Empirical Studies

These are divided into international and local studies as presented below

2.4.1 International Studies

Harigaya (2016) studied the effects of digitalization on financial behavior of

microfinance institutions operating in Philippines. The inquiry focuses on examining how introducing mobile banking. Contextually, it scrutinized how in-group microfinance has affected saving behavior of existing clients via randomized experiment. It was observed that in areas where there was conversion into mobile banking, the average daily balance as well as the frequency of deposits reduced by 20% over a period of two years. A higher proportion of these effects are perceived to be controlled by weakened group cohesion, sensitivity to transaction cost, as well as concentration among members whole resided from near the banking locations at the baseline and had a stronger link to their microfinance groups. It was further observed under 2.5years later, the treated members who resided near the banking locations had reduced household savings while maximizing greater percentage of informal loans. As a result, the drawbacks of this assessment is that it was spearheaded outside the Kenyan context and thus its findings cannot be generalized to MFIs operating in Kenya.

Yasin, (2018) studied the impact generated by the online banking on the FP. The study pivotal areas were the commercial banks operating in Ethiopia. The assessment drew data from 10 commercial banks from 2010 to 2016. Descriptive statistical methods in reinforcement to regression analysis were adopted to analyze the dataset collected. Based on the regression output, the capital adequacy (CA) and cost efficiency are significant and positively related to the profitability. The study further established that banking liquidity, inflammation rate as well as the rate of deposits are significantly and relatively related to financial performance of commercial banks. Online banking services was found to be insignificant and positively related to the FP for commercial banks operating in Ethiopia. The study has focused on the commercial banks and not MFIs thus its findings cannot be generalized to MFIs

Mutoni (2018) investigated the effect of digital marketing on performance. The undertaking was made possible via the commercialized banks in Rwanda. The undertaking particularly focused on identifying the common digital marketing platforms adopted; establish the degree fronting the applicability of digital marketing in contributing to customers' convenience. Therefore, it serves as a roadmap of performance for banks operating in Rwanda. Finally establish the significance of digital marketing in cutting down costs of marketing against the traditional forms of marketing adopted by commercialized banks in Rwanda. It is worthwhile paraphrasing that the study applied a descriptive cross-sectional survey design to reach the credible findings. Moreover, it drew data from a population of 95500 customer and 243 employees at a single point. Concisely, the outcome indicates that the execution of digital marketing has greatly upgrade customer experience and enhanced cost reduction contradictory to traditional marketing banks. Therefore, this procedural study was entrenched on the banking sector and not MFIs thus its findings cannot be generalized to MFIs

Subsequently, Al-Shahada, et al. (2020) investigated the consequences of financial inclusion on profitability banks. The study was spearheaded in Jordan. Further, the inquiry adopted the applied methodology as guided by the dataset published in Jordan. The researcher delve into publicly and audited statements posted by the (JCB) Jordanian Central Bank, the international bank as well as the commercial banks in Jordan which are connected to financial inclusion metrics. The study also adopted simplified regression computation to connect the variables listed in the financial inclusion as the central parameters for revenue on the assets. The context of the investigation was Jordanian commercial banks listed on the Omani financial market. Results of the investigation pinpointed a significant substantial impact as well as movement in the same direction amid ROA and the financial inclusion pointers

prioritized in such assessment. Therefore, representing them in such factors as the financial services, payments. Financial capacity building, firms and micro-enterprise, SMEs (small and medium-sized enterprise) funding, financial access, digital transfer and funding customer protection). Based on the output generated, the study recommends the necessity of listed banks to establish futuristic strategies, striving majorly at enhancing the innovative accessibility to the financial products and upgrading the infrastructural and financial services to advance the yardstick of the digital financial services compared to the middle-income states. The study has focused on the commercial banks and not MFIs thus its findings cannot be generalized to MFIs.

Wadesango and Magaya (2020) investigated the impact resulting in the digital banking services in conjunction with the financial performance. The assessment focal point was the commercial banks operating in Zimbabwe. The study deployed quantitative research methodology where the target population only comprised of one commercial bank in Zimbabwe. The data collection used a sheet in data collection Pearson correlation coefficient. In addition, the investigation prioritized regression calculation to assess the effect of digital banking services on (FP) financial performance. As a result, the output of the study indicates that ROA in CBZ (Commercial Banks in Zimbabwe) advanced because of successful deposit made online by the customers. The undertaking was successfully proclaimed through the maximum use of digital banking platform. The investigation further coined that online banking and transactions translated to improvement of total assets ratio over time. Finally, the findings indicate that higher increment in ICT expenses, fees as well as commissions to aggregate assets improved and online banking transactions had a significantly positive impact on ROA. The study has focused on the commercial banks and not MFIs thus its findings cannot be generalized to MFIs.

Cherkasova and Slepushenko (2021) exemplified the impact of digitalization on FP of business enterprises operating in Roman. This undertaking maximized operating profit as the key financial indicator that reflects the outcome of the current core business activities of the company. The study computed digitalization index based on McKinsey information data which featured six parameters including; digital product experience, digital marketing, social networks, electronic customer relationship management and e-commerce. The investigation used regression analysis for testing the hypotheses where data was obtained from 482 companies drawn from 20 industries for the period 2017-2019. The findings elucidated that digitalization index possess a positive effect on the operational efficiency of business entities but the extent of influence varies depending on the industry, age as well as the size of the enterprise. The study focused on linking digitalization to operational efficiency and not financial performance that is the focus of this undertaking.

2.4.2 Local Studies

Mwangi (2018) focused on influence of service digitalization on performance of commercial banks. The successful inquiry was made possible in the Kenyan context. The specific motive of the undertaking was to define how ATMs, mobile and internet banking influence the banking performance in Kenya. The study was directed via both disruptive innovation theory and Innovation Diffusion Theory. In addition, it adopted descriptive cross-sectional design to build solid and credible knowledge on banking sector. The study maximized first-hand and secondary data where the primary data was drawn from the respondents by maximizing structured questionnaires while the secondary data was obtained from research studies documented by other scholars, media circulations, newsletters, CBK journals, bank reports, internal circulars among others. Descriptive analysis was adopted in arithmetic computation. The output

established a linear relation between the predictor variables which included internet banking, ATMs and mobile banking against the response variable that was financial performance. They concluded that the independent variables in the study increased firm`s growth in their market share, increased earnings, reduced costs of operation, high service quality, and faster delivery of banking among others. The study has focused on the commercial banks and not MFIs thus its findings cannot be generalized to MFIs

Mohamed (2019) explored the effect of mobile banking on the banking financial performance specifically in Kenya. Therefore, the scrutiny particularly delved on establishing the consequences of mobile banking access to the financial advancement of banking sector. Further, it adopted descriptive research design while targeting a population of senior employees from entire the 43 commercial banks operationa; in Kenya. Simple random sampling was fronted in the inquiry while sampling 335 employees of commercial banks. The study drew primary as well as secondary data that were calculated through SPSS version 22.0. The correlation coefficient value of the study was 0.531 posting a moderate positive association amid the independent and dependent variable. Additionally, the output recorded a strong positive connection between mobile banking accessibility versus financial performance. Correspondingly, the assessment focused on the commercial banks and not MFIs thus its findings cannot be generalized to MFIs.

Ondiek (2021) analyzed the consequences of digital technology on its performance of Kenya commercial bank. The study incorporated a case study research design and collected primary data by use of interview guides administered to seven senior managers associated with implementing digital technology strategy at KCB bank. The

study examined data collected via interview by spearheading content analysis and presenting the outcome narrative form. The results of the scrutiny conclude that adoption of digital technology has promoted overall improvement in performance at KCB bank however; more investments need to be channeled in the areas of technological research as well as design since the market is dynamic and progressive. This conclusion has been supported by the fact that more than 90% of the transactions of the bank have been shifted to online platforms. The study also reports that digital technology adoption has play a key role at KCB bank to by improving the rate of its customer acquisition. The study has focused on the commercial banks and not MFIs thus its findings cannot be generalized to MFIs.

2.5 Summary of the Literature Review

This chapter has presented the theoretical and empirical review as well as determinants of financial performance. Theories, which guide this study, include the Theory of Disruptive innovation as propounded by Bower and Christensen (1995) and the Resource Based View (RBV) theory established by Barney (1986). Additionally, determinants of asset quality analyzed in this study include; asset quality, capital adequacy, management efficiency and bank intangible asset ratio. The empirical studies reviewed include a study by Cherkasova and Slepushenko (2021) on the output of digitalization on financial performance of business enterprises operating in Romans, Harigaya (2016) on the effects of digitalization on financial behavior of microfinance institutions operating in Philippine. Furthermore, Al-Shahada, et al. (2020) concentrated on the relation that connect the financial inclusion to the financial performance of commercial banks operating in Jordan. Yasin (2018) delve into the consequences of online banking products on the FP of commercial banks operating in Ethiopia. In addition, Wadesango and Magaya (2020) scrutinized the results of digital

banking services on FP of commercial banks operating in Zimbabwe. Nevertheless, Mutoni (2018) on the effect of digital marketing on performance of commercial banks in Rwanda. Additionally, Mwangi (2018) on influence of service digitalization on performance. The study focal point were the commercial banks in Kenya. Furtherance to preceding scrutiny, Ondiek (2021) analyzed the effect of digital technology on the performance of Kenya commercial bank and Mohamed (2019) scrutinized mobile banking and FP of commercial banks in Kenya. The empirical studies reviewed above have majorly concentrated on the commercial banks thus the researcher has not found any study in literature, which addresses the impact of digitalization financial performance of microfinance banks, which forms the knowledge gap that this study aims to fill.

Figure 2.1: Conceptual Framework
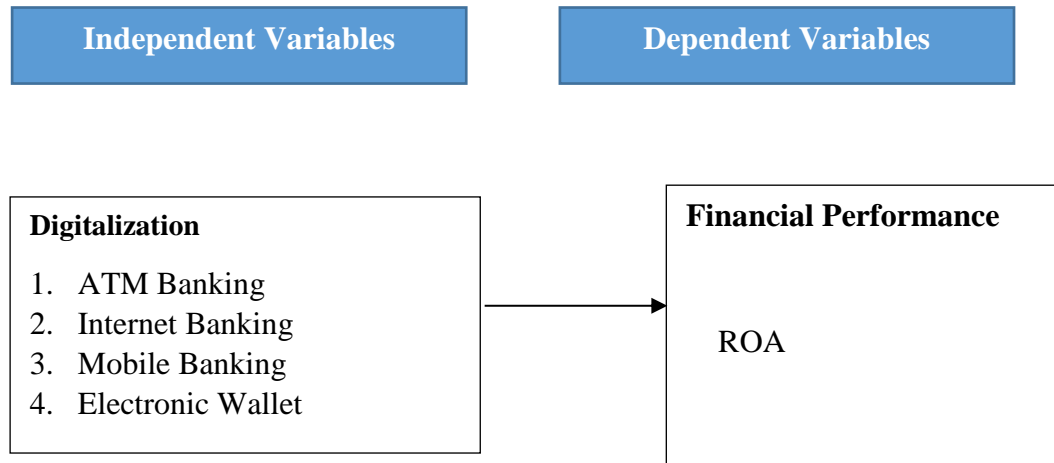
CHAPTER THREE
RESEARCH METHODOLOGY

3.1 Introduction

The study strives at assessing the influence of digitalization on the (ROA) financial performance of MFBs in Kenya. This section therefore, presents the various methods adopted in conducting the research, such as research design, target research population, methods adopted in data assembled as well as research analyzed

3.2 Research Design

Akhtar (2016) elucidates research design as a defined-layout that acts as a short plan for proposed research. Research design is a blueprint for conducting research; it organizes the outline of assortment, measurement, and examination of data. It tries to provide respond to specific questions about how, why, what, and when of research. This study used causal research plan. According to Kabir (2016), causal research is interpreted as an explanatory examination, and it was administered to ascertain the degree and behavior of cause-and-effect between two variables. Additionally, variance in the predictor variable was mapped to generating adjustment on the response variable. This assessment chose causal research in order to explain the changes that digitalization cause on financial outcome of MFBs in Kenya in order to draw conclusions and make recommendations accordingly.

3.3 Target Population

Target population demonstrates the units from where the research inferences are drawn for data of objects under study (Lavrakas, 2008). The targeted population for this undertaking comprised of 14 microfinance banks regulated and operating under the CBK. (Central Bank of Kenya, 2021) as seen in appendix I.

3.4 Sampling Design

Importantly, sample design is a frame, or clear plan, that shapes assortment of a survey sample while also influencing many other essential elements of the survey (Lavrakas, 2008). The study shall use a census approach. A census can be interpreted as complete scrutiny of the representative and specific population (Evans, Hower, & Pachter, 2010). The census approach increases the reliability of results since it eliminates sampling bias (Port, Wolfe, Held, & Young, 2003). Therefore, all fourteen regulated microfinance banks in Kenya shall form a census for the study.

3.5 Data Collection Instrument

This experimentation concentrated on the collection of tributary data with the assistance of a document review guide for 2017-2021. This document consists of all information of key variable measures such as total assets, net income, and the value and volume of the transactions through the ATM. In addition, it incorporated the Internet Banking transactions. Similarly, the value of the Mobile Banking transactions was considered. Finally, value of electronic and correlated wallet transactions were also factored in among others. The reliance on experts' validity of data tests was involved. See appendix II.

3.6 Data Analysis

In this study, descriptive statistics was the primary data analysis technique, which employed the use of an individual's correlation coefficient and analysis of panel regression. Analysis of data is defined as the process in which data is evaluated through the use of investigative and logical reasoning in the examination of each component of the information that has been extracted (AlBenna, Al-Ajam, Way & Steinstraesser 2010). Descriptive statistics was mainly used in the description of a single or more than

one variable. It was also used to describe then already analyzed data, which was then presented in the form of simple quantitative measures, including mean, mode, median and range.

3.7 Regression Model

Below is the regression model established by the study;

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4$$

Where= Financial performance measure (Return on assets)

β_0= Proportion of financial performance that is not determined by digitalization

$\beta_{1, 2, 3, 4, 5}$= Coefficients of the predictor variables

X_1= value of the transactions via the ATM

X_2= value of Internet Banking transactions

X_3= value of the Mobile Banking transactions

X_4= value of electronic Wallet transactions

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION OF RESULTS AND DISCUSSION

4.1 Introduction

The chapter is the bedrock of data analysis hence elaborating on the computed data. Moreover, it help the research to compare the preceding studies with the current results. Therefore, the empirical raised earlier can be reexamine to ensure that the gaps are addressed adequately and sufficiently. This chapter embodied the inferential and descriptive statistics to expound on the existing knowledge and create new one. The results are presented extensively and discussed comprehensively to increase the knowledge. This is fundamental road map toward conclusive findings supported by facts and scientific computations.

This chapter demystifies the mandate of the study in analyzing the digitalization on the (ROA) financial performance of DTMFIs in Kenya. The targeted population for this undertaking comprised of 14 microfinance banks regulated and operating under the CBK. (Central Bank of Kenya, 2021). These findings were based on secondary data obtained for 5 years covering ((2017-2021). Furthermore, the study embodied SPSS for computing the data into meaningful and understandable work. Therefore, a detailed presentation, discussion of data analysis and the results were conclusively expedited in this study.

4.2 Descriptive Statistics

The analysis below shows the minimum, maximum, mean and SD of the variables that were under study. The descriptive was included in the study due its simplification of data and understandable interpretation. In a nutshell, the raw data was voluminous and complex for interpretation, hence, descriptive aided the extensive computation. Subsequently, it elaborated on trend and pattern aided the visualization and quick

observation of any changes. Additionally, the descriptive reinforced the summary and conclusive tests.

Table 4.1: Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Financial Performance (ROA)	70	.0883	.4461	.258624	.1389161
ATM Banking	70	.1402	1.8146	.895229	.4558768
Internet Banking	70	.2362	1.5766	.619486	.3148598
Mobile Banking	70	.0780	1.4082	.478871	.3116599
Electronic Wallet	70	.2305	.8756	.636004	.2099404
Valid N (listwise)	70				

Financial performance registered a minimum of 0.0883 and maximum of 0.4461. The findings also showed that the regressed variable averaged at f 25.86 with SD of 0.1389. The ATM banking recorded the least entry of 0.1402 and maximum value of 1.8146. Internet banking least amount was 0.0780 with maximum of 1.4082. The electronic wallet, showed a minimum value of 0.2305 and maximum value of 0.8756. It is imperative to note that all the SD did not vary so much with the mean. As a result, there was very small variability among the variable.

4.3 Correlation

The study undertook correlation to boost the decision making. The correlation analysis facilitated the comprehension of the behavior of different predictor variables towards the predicted variable. Therefore, the findings were the eye-opener and predictive in nature. In that scenario, it reduced uncertainties and boost the prediction. It was crucial in the quantification of strength and determination of existing connection. This was grounded on rigorous observation, logical and computational mathematics into the meaningful results.

The correlation analysis was accessed using the Pearson correlation method to ascertain the degree of interconnection between the explained and the explanatory variables. From the tabulation 4.2 below, all the predictor variables recorded a positive correlation towards the regressed variable. Electronic wallet showed a strong positive correlation of (r=0.7441) towards the dependent variable while ATM Banking, Internet Banking and Mobile Banking had weak positive correlation of (r=0.3384, 0.2466, r=0.29947) respectively.

Table 4.2: Correlation Analysis

	Financial Performance (ROA)	ATM Banking	Internet Banking	Mobile Banking	Electronic Wallet
Financial Performance (ROA)	1				
ATM Banking	0.338413	1			
Internet Banking	0.246605	0.283237	1		
Mobile Banking	0.299466	0.223898	0.690008	1	
Electronic Wallet	0.744138	0.420494	0.070132	-0.06583	1

4.4 Diagnostic Test

These tests were spearheaded to establish the appropriateness of the dataset. Accordingly, the results were evaluated and tested comprehensive before clearing the data for more computational analysis. The researcher did diagnostic test through multicollinearity test, normality test and the autocorrelation analysis. It is worthwhile noting that diagnostic tests are always fundamental for pinpointing input for greater sophisticated analysis.

4.4.1 Multicollinearity Test

The test was important in determining if the regressor variables were linearly explaining each other. As a result, the dataset were examined for multicollinearity problems. In this scenario, the study wanted to explain if a small change in one predictor variable translated to erratic changes on the other predictor variable. Therefore, researcher maximized the Tolerance and VIF values under the coefficients. The assumption was that; if tolerance value exceeding 0.2 and values below 5 for VIF shows that there is no Multicollinearity.

Table 4.3: Multicollinearity Test

Model		Collinearity Statistics	
		Tolerance	VIF
	(Constant)		
	ATM Banking	.748	1.338
1	Internet Banking	.502	1.990
	Mobile Banking	.503	1.986
	Electronic Wallet	.790	1.266

From the findings above, the Tolerance Values obtained (0.748, 0.502, 0.503 and 0.790) were all greater than 0.2 while the VIF values (1.038, 1.990, 1.986 and 1.266) were less than 10. This indicated that there was no Multicollinearity existing among the Independent variables.

31

4.4.2 Normality Test

Dataset is critical and was tested to check if it was well-modelled, meeting the threshold and appropriate for the study. The Kolmogorov and Shapiro work were the bedrock of this determination. The techniques relied on the statistical tool to come up with conclusive outcome. Therefore, normality test was significant in articulating whether data was generated from normally distributed phenomena, the direction and intensity of interrelation of the data.

Table 4.4: Test of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	Df	Sig.	Statistic	Df	Sig.
Financial Performance (ROA)	.206	70	.000	.817	70	.000
ATM Banking	.118	70	.016	.954	70	.012
Internet Banking	.169	70	.000	.854	70	.000
Mobile Banking	.149	70	.001	.885	70	.000
Electronic Wallet	.259	70	.000	.811	70	.000

a. Lilliefors Significance Correction

The researcher capitalized the Kolmogorov-Smirnova in addition to Shapiro-Wilk test to detect normality. For that reason, the Significance values of both Kolmogorov-smirnov and Shapiro –walk test were less than 0.05. This showed normal distribution of data and thus Null Hypothesis was rejected in the sound judgement. Therefrom, the data was fundamental for computation under the Pearson correlation matrix since the dataset did not have contamination.

4.4.3 Autocorrelation

The procedure of arriving at the dependable, systematic and new knowledge was intertwined with diligent inquiry. As a consequence, the autocorrelation test was expedited so as to find out the interconnection of error terms across the timeframe of

analysis. In addition, the research accomplished the Durbin Watson test to detect autocorrelation. From the table below the Durbin Value obtained was 0.771. This value lies within the normal and the required values of the Durbin Watson test.

Table 4.5: Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.827[a]	.684	.665	.0804050	.771

a. Predictors: (Constant), Electronic Wallet, Mobile Banking, ATM Banking, Internet Banking

b. Dependent Variable: Financial Performance (ROA)

4.5 Regression Analysis

The critical examination of dataset to come up with valid knowledge incorporated the regression analysis. On this account, it sought to provide an instrumental statistical tool that allowed examination of the prevailing relationship and interactions. Researcher performed the linear regression analysis to come up with a mathematical model formula that was useful in predicting the future changes in the financial performance of the Micro Finance institution. Financial performance was regressed against Electronic Wallet, Mobile Banking, ATM Banking, and Internet Banking.

4.5.1 Model Summary

From the model summary above R, which is 0.827 representing 82.7% thereby, represented and explained correlation coefficient. This exemplifies a strong positive interconnection among the assessed variables. R Square (coefficient of determination) is 0.684. This indicates that 68.4% of changes and variation of financial performance were as a result of Electronic Wallet, Mobile Banking, ATM Banking and Internet Banking. The remaining 34.6% of changes in the financial performance of the microfinances were as a result of factors not captured in this rigorous investigation.

Table 4.6: Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.827[a]	.684	.665	.0804050	.771

a. Predictors: (Constant), Electronic Wallet, Mobile Banking, ATM Banking, Internet Banking

b. Dependent Variable: Financial Performance (ROA)

4.5.2 Analysis of Variance (ANOVA)

The undertaking of diligent inquiry was possible through computational analysis of ANOVA. Researcher executed the ANOVA test to access the level of significance of the model generated in the coefficient of determination. The sum of squares regression was 0.911 and mean squares of 0.228 with 4 degrees of freedom, while the sum of squares residual was 0.420 with mean squares of 0.006 and 65 degrees of freedom. As consequence to the findings, the F statistics value was 35.241 while the significance value tabulated was 0.000. This value lies beneath the P value of 0.05, meaning that the model was statistically significant.

Table 4.7: ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	.911	4	.228	35.241	.000[b]
	Residual	.420	65	.006		
	Total	1.332	69			

a. Dependent Variable: Financial Performance (ROA)

b. Predictors: (Constant), Electronic Wallet, Mobile Banking, ATM Banking, Internet Banking

4.5.3 Coefficient of Determination

The table of coefficients was useful in coming up with a mathematical model. Column B in the unstandardized coefficients demonstrated that the ATM banking and the internet banking both had negative effect on the FP while mobile banking and the electronic wallet had positive effect on the dependent variable. Hence, when all factors are held constant the financial performance constant figure was negative 0.130. This postulates that microfinance was making losses whenever, everything was maintained unchanged. As a result, a unitary positive adjustment on the ATM Banking resulted in a decrease in financial performance by 0.022 when other factors were held at constant. Moreover, a small advancement of internet banking replicated an insignificant reduction on the internet banking by 0.037 when enablers are held constant. Correspondingly, an addition of one unit of mobile banking triggered a significant correlated increment of the financial performance by 0.19 if other factors are maintained unchanged. Subsequently, a unitary positive adjustment of electronic wallets brought about significant increase on the financial performance by 0.535 when other determinants are held constant.

Table 4.8: Coefficients[a] of Determination

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
	(Constant)	-.130	.036		-3.615	.001		
	ATM Banking	-.022	.025	-.074	-.915	.364	.748	1.338
1	Internet Banking	-.037	.043	-.084	-.855	.395	.502	1.990
	Mobile Banking	.190	.044	.427	4.351	.000	.503	1.986
	Electronic Wallet	.535	.052	.809	10.321	.000	.790	1.266

a. Dependent Variable: Financial Performance (ROA)

With the findings above, the researcher generated a mathematical Regression Model as

Y=-0.130 – 0.022X1 – 0.037X2 + 0.190X3 + 0.535X4

Whereby;

Y = Financial performance

X_1 = ATM banking

X_2 = Internet banking

X_3 = Mobile banking

X_4 = Electronic wallet

4.6 Discussing the Research Findings

The descriptive findings showed that the net average financial performance in five years was 0.2586 and that of ATM banking was 0.8952. The findings also showed that average internet outcome in the internet banking was 0.6195 while that for mobile banking was 0.4789. The last variable, Electronic wallet registered a net average of 0.6360 in the five-year study. Additionally, ATM Banking, Internet Banking, Mobile Banking and Electronic Wallet posted SD of 0.4559, 0.3149, 0.3117 and 0.2099 respectively. This stipulated minimal variability hence the dataset was quality for informed and sound judgment.

The study posted that the ATM banking posted negative influence on the financial performance. Nonetheless, on keen analysis and in-depth scrutiny it showed that the correlation was insignificant at 5% confidence range. This shows that the ATMs banking do not substantial lead to changes on the financial performance. Furthermore, the increment on the internet banking translated to minimal negative changes on financial performance. Nevertheless, after comprehensive scrutiny, the association was insignificant at 5% confidence level. Moreover, the increment of a single unit of mobile banking triggered a substantial adjustment on financial performance which exhibited

high significance at 5% confidence level. Finally, Electronic wallet corresponded positively with the electronic wallet at 5% confidence range.

The regression computational analysis concluded that digitalization influence financial performance significantly. This conclusion concurred with Harigaya (2016) conclusion that digitalization is fundamental for shaping the economy and enhancing pivotal transformation. Moreover, it pointed out that majority population relies on loans to undertake their activities in Philippines. Additionally, it is consistent to Yasin (2018) opinion that online banking is critical for the financial performance. The study postulated accentuated that online banking is positively yet having insignificant influence on FP. Contrary the current study appraised the positive and significance correlation.

The current outcome explained that continuous ATM and Internet Banking exhibited insignificant inverse correlation with financial performance. Nevertheless, Mwangi (2018) focal point of the analysis were the commercial banks. The in-depth scrutiny posted that digitalization was objective in efficiency and maximum output. On account of this, ATM and Mobile Banking created a clear framework for improvement of the financial performance thereby contradicting the current outcome.

Additionally, Mutoni (2018) explains the chief digital marketing and its chief mandate on performance. The researcher recommended for the upgrade of the digital marketing to enhance performance. This study expounded that by looking at digital finance in the micro finance institution. Furthermore, Al-Shahada, et al. (2020) clarified that financial access and digital transfer reinforce ROA. This outcome is consistent with the current study's precision that the association between digitalization and ROA is positive and substantial.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

The part is fundamental for providing the summarized outcome and comprehensively elucidating the areas extensive scrutiny. It delineates the conclusion that resulted after rigorous and systematic procedures. Moreover, it give great latitude to the recommendations relating to practises, theories and policies and wrap-up by expounding on limitation that belittle the study and corrective measures undertaken to promote accuracy, validity and sound findings. Finally, this assessment blueprints the areas calling for more investigations.

5.2 Summary of the Findings

The study intended to accentuate the existing correlation amid the digitalization in comparison with financial performance of microfinance institution. Subsequently, the examination was driven by numerous evolution, transformation, globalization and proliferation in the digital market. Moreover, the major unprecedented problem have caused series of counteractive actions such as innovation and digitalization. Therefore, the goal of the study was to explore the influence of digitalization on the (ROA) financial performance of MFIs in Kenya.

In the descriptive findings, financial performance showed a mean average of 25.86% and standard deviation of 13.89%. ATM banking and the Internet banking both recorded averages of 89.52% and 45.59% respectively with standard deviations of 45.58% and 31.49% respectively. The findings further showed that mobile banking had mean average of 47.88% and 31.17%. Electronic wallet showed mean average of 63.60% and 20.99%. From close and systematic examination, there was minimal

variability hence the data was well-modelled for scientific computation. According to Mutoni (2018) quality data exhibits minimal variability from the averages.

The explanatory variables in this examination posted absence multicollinearity obstructions. This was delineated by the outcome in the test for multicollinearity where the variables had their Tolerance values exceeded 0.2 and the VIF values was below 10. The data in this research was also obtained from a normally distributed population. The findings in the test for normality using the Kolmogorov and the Shapiro walk test showed that the significance values of each variable in the study was less than 0.05. The Durbin Watson value 0.771 lied within the required values of the Durbin Watson. As a consequence, it concurred with Harigaya (2016) opinion that dataset should meet the minimal threshold for analysis.

In the correlation findings, all the four regressor variables moved in the same direction with the response variable. Electronic wallet, registered a strong positive correlation of 0.7441 against the financial performance. ATM banking, internet banking and the mobile banking showed a weak positive correlation to the financial performance. Wadesango and Magaya (2020) posits that digital banking is the master plan for disruptive innovation aimed at changing the economy, banking platform while increasing efficiency. The study concurred with the prevailing investigation by emphasizing that banking and expenses caused corresponding increase in the performance.

In respect to regression findings, the R correlation value was 0.827 which showed that there was 82.7% strong correlation among the study variables. The R Square, correlation coefficient, 0.684, posted that the predictor variables in this examination explained 68.4% of change in the financial performance. The significance value

obtained 0.000 was less than the P value of 0.05. This implied that the model was statistically significant and could be used in predicting the future. In concurrence, Cherkasova and Slepushenko (2021) examined the centrality of digitalization on FP. Subsequently, the rigorous assessment concluded that digitalization is the key driver of operation efficiency and influencing the performance. Moreover, Mohamed (2019) examined the mobile banking in versus the FP. The outcome sharpen and deepen the outcome by stating the movement in the same direction for mobile banking accessibility and FP.

In the model equation generated, **$Y = -0.130 - 0.022X_1 - 0.037X_2 + 0.190X_3 + 0.535X_4,$** it was evident that both ATM banking and the internet banking had negative effects on the financial performance while, mobile banking and the electronic banking showed positive effect to the financial performance. Hence, it simply delineates that for an advancement in financial performance, there was need to increase awareness on the mobile banking and the electronic wallet.

5.3 Conclusion

The pivotal objective was to nail the existing connection amid digitalization versus the financial performance. Since the dataset was cleared from multicollinearity problem, it was appropriate for analysis. Subsequently, the data was assembled from a normally distributed population as delineated in the normality table. The autocorrelation value of Durbin Watson met the mandated thresholds. A rigorous and systematic examination posted a positive link amid the ATM banking and the financial performance. This was evident by (r=0.338, p=0.004). Internet banking showed positive correlation of (r=0.247, p=0.040). Further to the findings internet banking displayed a positive interlink with financial performance as seen by (r=0.299, p=0.012). Electronic wallet depicted a strong positive correlation with financial performance of (r=0.744, p=0.000).

Nevertheless, there was a very weak insubstantial negative relationship between the ATM banking and the financial performance. In addition, the results showed that a unit changed in the ATM banking resulted in a reduction in financial performance by 0.022. This little negative change can be attributed to the in-availability of the ATM booths and minimal transactional charges. They are majorly located in the town areas and thus not accessible in people living in upcountry. This outcome were inconsistent with Yasin (2018) stipulation showing substantial milestone resulting from digitalization.

Correspondingly, internet banking also showed a negative insignificant relationship towards the financial performance. As a consequence, the outcome posited that whenever a unit changed in the internet banking, financial performance records a decrease by 0.037. This negative effect can be attributed to majority of residents not aware on how to do internet banking. This involves use of the modern gadgets such as phones and laptops which are not so user-friendly with majority of the residents. On contrary Al-Shahada, et al. (2020) advocated for expedition of internet banking to increase performance.

In addition, mobile banking registered a positive effect towards the financial performance of the microfinance firms. This positive results can be attributed to many micro finance coming up with simple numbers that can be entered on mobile phones so as to help in accessing your banks. In agreement, Ondiek (2021) exemplified digital technology as the master plan for continued and drastic performance. Successively, the study stated existence of a substantial improvement on the financial performance whenever there was a corresponding increase in the digital platform. The findings wrapped-by instantiating supremacy of extensive incorporation of digital platform as turn-wheel towards performance.

5.4 Policy Recommendations

From this diligent scrutiny, it recommends that the microfinance come up with methods on how it can do public education on various banking methods. The firms should also role out the use of ATMs in small towns in the upcountry where they are reliable and efficient. The increase in ATMs in malls and supermarkets can secure environment, can increase the transaction thereby enhancing the financial performance. As a consequence, the financial analysts should expedite concrete and credible evaluation of ATM Banking and advise the microfinance to keep up with technological advancement proliferation.

This study calls for the establishment of micro finance strategies that promote the development of innovation, increase financial access, enhance creativity, upgrade infrastructural development, as well as the yardstick for innovation. These are major blueprints promoting the business transformation through proper reaping from existing opportunities. Moreover, gauging the risk and reward can lead to quality decision making.

Negative findings stipulated on internet banking and financial performance is associated with interbank transfers and banking which are expensive and ignorance of the clients about their existence. Therefore, the marketing platforms should be enhanced, proper dissemination of information and timely address of issues to reach a conclusive outcome. Subsequently, communication to the public and potential is paramount for timely delivery of information hence may change the consumption and financial performance.

5.5. Limitation of the study.

The investigation was constricted to only five years in the periods of 2017 to 2021. A longer period of timeframe of more than 10 years so as to find out more information about the firms that may include recessions and booms. The diligent inquiry is paramount for exhaustive results and increasing the knowledge based on different fiscal, political and environmental circumstances.

Nonetheless, the data used in this study was secondary, thereby missing the first-hand information. As a result, this analysis is historical and may not display the trending issues in the microfinance the change in fast-paced environment is drastic and exponential. Moreover, the examination made quality use of the most current information.

5.6 Suggestion for Further Study

Furthermore, researcher recommend that the next study should focus on using the primary data in their analysis. In this way, a more accurate information on factors affecting the financial performance of firms can be found.

REFERENCES

Abul-Ezz, N. (2021). The Impact of the applying of financial digitalization Technology on the Financial Inclusion in the Banking Sector in African Countries. *Journal of Politics and Economics*, Faculty of Higher African Studies, Cairo University, Volume (11) Issue (10), April.

Akl, Y. H., Zohry, A. F. (2020). Development of the accounting Disclosure of banking digitalization to enhance the Quality of Financial Reports for Banks Operating in the Egyptian Environment: An Applied Study. *The Scientific Journal of Business Studies and Research*, Faculty of Commerce and Business Administration, Helwan University, No. 4.

Al Shehadeh, A., Qassem, A. & Al-Rifai, Gh. A. (2020). Indicators of financial inclusion and their Impact on the financial performance of the Jordanian banks listed on the Amman Stock Exchange. *Al-Ain University Journal of Business and Law*, 2ndedition, 4th year.

Al-Sayyad, A. M. A. (2020). The Impact of the Financial Report Quality, and selection of the auditor on Maximizing the Value of the Enterprise from the Perspective of Shareholders - An Applied Study on the Companies Listed in the Egyptian Stock Exchange. *Alexandria Journal of Accounting Researches*, Accounting and Auditing Department, Faculty of Commerce, Alexandria University, No. 3, V. 4.

Hariyanto, D. (2021). Effect of Trading Volume, Market Capitalization, Firm Size in explaining Return on Vultures. Journal of Advanced Research in Economics and Administrative Sciences, 2(2), 50-64. https://doi.org/10.47631/jareas.v2i2.228

Andrus, G., Kejriwal, S., & Wadhwani, R. (2016). Digital transformation in financial services: The need to rewire organizational DNA. *Dostupno na poveznici: https://www2. Deloitte. Com/insights/us/en/industry/financialservices/digital-transformation-in-financialservices. HTML (18.12. 2017.).*

Annual reports and monthly statistical publications of the methods of payments and information technology issued by the Central Bank of Egypt during the period from January 2020 to March 2021.

Aoko, L. (2017). *Effect of digital disruption on the financial performance of commercial banks in Kenya: a case of Ecobank bank Kenya limited* (Doctoral dissertation).

Bose, S., Saha, A., Khan, H. Z., & Islam, S. (2017). Non-financial disclosure and market-based firm performance: The initiation of financial inclusion. *Journal of Contemporary Accounting & Economics*, *13*(3), 263-281.

Dang, U. (2011).The CAMEL rating system in banking supervision.A case study.

Davis, F. D. (1989), Perceived usefulness, perceived ease of use, and user acceptance of information technology,*MIS Quarterly.* 13 (3): 319–340

Delgado, J., Hernando, I. and Nieto, M. J. (2004), Do European Primarily Internet Banks Show Scale and Experience Efficiencies? *Working Paper No*. 0412, Banco de España, Madrid.

Delgado, J., Hernando, I. & Nieto, M. J. (2006), Do European Primarily Internet Banks Show Scale and Experience Efficiencies? *European Financial Management.*

Desta, T. S. (2016). Financial performance of the best African banks: a comparative analysis through CAMEL Rating. *Journal of Accounting and Management*, 6(1), 1-20.

DeYoung, R (2001a), the Financial Performance of Pure Play Internet Banks, *Economic Perspectives*, 25 (1), 60-75.

DeYoung, R. (2001), The Financial Progress of Pure-Play Internet Banksi*as Papers No 7.*

DeYoung, R. (2001), Learning-by-Doing, Scale Efficiencies, and Financial Performance at Internet-Only Banks, *Working Paper 2001-06*, Federal Reserve Bank of Chicago, September.

DeYoung, R. (2005), The Performance of Internet-based Business Models: Evidence from the Banking Industry, *Journal of Business*, Vol. 78 No. 3, pp. 893-947.

DeYoung, R. , Rice, T. (2003), Noninterest Income and Financial Performance at U.S. Commercial Banks, *Emerging Issues Series*, Supervision and Regulation Department, Federal Reserve Bank of Chicago.

Diamond, D. W. & Dybvig, P. H., (1983), Bank Runs, Deposit Insurance, and Liquidity, *Journal of Political Economy*; 91(3), 401-19

Drehmann, M., & Nikolaou, K. (2013).Funding liquidity risk: definition and measurement. *Journal of Banking & Finance*, 37(7), 2173-2182.

Duttweiler, R. (2009).*Managing Liquidity in Banks:* A Top down Approach. John Wiley and Sons, p1

Egland, K. L., Furst, K., Nolle, D., E. & Robertson, D. (1998). Banking over the Internet.*Quarterly Journal of Office of Comptroller of the Currency*, 124 -156.

Furst, K., Lang, W. W. & Nolle, D. E. (2000), Internet Banking: Developments and Prospects, Economic and Policy Analysis, *Working Paper No*. 2000-9

Furst, K., Lang, W. W. & Nolle, D. E. (2002), Internet Banking: Developments and Prospects, *Working Paper*, Center for Information Policy Research, Harvard University, April.

Furst, K., Lang, W. W. and Nolle, D. E. (2002b), Internet Banking, *Journal ofFinancial Services Research*, 22 (1), pp. 93-117.

Galant, A., & Cadez, S. (2017). Corporate social responsibility and financial performance relationship: A review of measurement approaches. *Economic research-Ekonomska istraživanja*, *30*(1), 676-693.

Gassmann, K. Frankenberger and M. Csik. (2014).The St. Gallen Business Model Navigator[Online].Available:http://www.im.ethz.ch/education/HS13/MIS13/B usiness_Model_Navigator.pdf

Getahun, M. (2015).*Analyzing financial performance of commercial banks in Ethiopia: CAMEL Approach.*Unpublished Thesis, Addis Ababa University Ethiopia.

Gopalakrishnan, S., Wischnevsky, J. &Damanpour, F. (2003).A multilevel analysis of factors influencing the adoption of internet banking. *IEEE Transactions on Engineering Management*, 50(4), 413-426.

Grier, W. A. (2007). Credit Analysis of Financial Institutions. 2nd ed. Euro money Institution Investor PLC

Horvath, D., & Szabo, R. Z. (2019). Driving forces and barriers of Industry 4.0: Do multinational and small and medium-sized companies have equal opportunities? *Technological forecasting and social change*, *146*, 119-132.

Kraus, N., Kraus, K., & Marchenko, O. (2020). II. Relevant issues of digitalization and servisation processes influence on economic performance. *Ukraine in the context of global and national modern servisation processes and digital economy*, 80.

Lelgo, K. J., & Obwogi, J. (2018). Effect of financial risk on financial performance of micro finance institutions in Kenya. *International Academic Journal of Economics and Finance*, *3*(2), 357-369.

Sadiku, A. (2019). Digitalization of Banking Services in Kosovo: Trends and Comparison with the Neighborhood Countries. In *Thriving on Future Education, Industry, Business and Society; Proceedings of the Make Learn and TIIM International Conference 2019* (pp. 379-392). ToKnowPress.

Parviainen, P., Tihinen, M., Kääriäinen, J., & Teppola, S. (2017). Tackling the digitalization challenge: how to benefit from digitalization in practice. *International journal of information systems and project management*, *5*(1), 63-77.

Pal, A., Dey, S., Nandy, A., Shahin, S., Singh, P.K. (2022). Digital Transformation in Microfinance as a Driver for Sustainable Development. In: Leal Filho, W., Azul, A.M., Doni, F., Salvia, A.L. (eds) Handbook of Sustainability Science in the Future. Springer, Cham. https://doi.org/10.1007/978-3-030-68074-9_74-1

Sakanko, M. A., & David, J. (2019). The effect of electronic payment systems on financial performance of microfinance banks in Niger State. *Esensi: Jurnal Bisnis dan Manajemen*, *9*(2), 143-154.

Tan, T.S. and Auyong H.N. (2017). The Role of Women Directors on Corporate Boards in Firm Performance: A Review and Research Agenda. The 5th International Conference on Business, Accounting, Finance and Economics (BAFE) at Karepar, Malaysia.

Technoserve Report. (2014). A Guide to Working with Informal Financial Institutions in Business Solution to Poverty.

Tee, E. (2017). Asset Liability Management and Profitability of Listed Banks in Ghana. Journal of Economics and Finance 08 (03), 09 -14

Teeboom, L. (2019). Role of Microfinance Institutions. Retrieved from smallbusiness.chron.com//difference-between-microloanmicrocredit-39307.html

Turyahebwa, A., Ssekajugo, D. and Sunday, A. (2013). Financial Management Practices and Business Performance of Small and Medium Enterprises in Western Uganda.

Twesige, D., Uwamahoro, A., Dukund, A., Muvunyi, E., and Ndikubwimana, J. (2019). Loan Management and Performance of Microfinance Institutions in Rwanda. A Case of Musanze District. Rwanda: Research Gate Journal.

Uyanik, G. K. and Guler, N. (2013). A Study on Multiple Regression Analysis. A Journal of Social and Behavioral Sciences. 106, 234 – 240. World Bank Annual Report (2015). Financing the Post-2015 Sustainable Development Agenda. WBAnnualReport2015EN.pdf

Xu, F., and Liu. (2019). Evaluating the Sustainability of Microfinance Institutions Considering Macro-Environmental Factors. A Cross-Country Study in China.

Yassin, A. S. (2019). Financial Management Practices and Financial Performance of Service Companies in Somalia. Research Journal of Finance and Accounting, 10, No.4.

Zeller, C. L. (2008). Distribution, Growth, and Performance of the Microfinance Institutions in Africa. . Savings and Development, 87-111.

APPENDICES

Appendix I: List of Microfinance Banks in Kenya

1. Kenya Women Microfinance Bank Limited

2. FauluMicrofinance Bank Limited

3. RafikMicrofinance Bank Limited

4. SmepMicrofinance Bank Limited

5. Caritas-Microfinance Bank Limited

6. Key Microfinance Bank Limited

7. U & I Microfinance Bank Limited

8. UwezoMicrofinance Bank Limited

9. DarajaMicrofinance Bank Limited

10. MaishaMicrofinance Bank Limited

11. CenturyMicrofinance Bank Limited

12. MuunganoMicrofinance Bank Limited

13. ChoiceMicrofinance Bank Limited

14. Salaam Microfinance Bank Limited

Source: CBK Report 2021

Appendix II: Data Collection Instrument

Name of the Microfinance Bank

_____

Variable	2021	2020	2019	2018	2017
Net Income for the year (M. Kshs)					
Total assets for year					
value of the transactions via the ATM					
value of Internet Banking transactions					
value of the Mobile Banking transactions					
value of electronic Wallet transactions					