

**EFFECT OF CREDIT RISK ON PROFITABILITY OF DEPOSIT TAKING
MICROFINANCE INSTITUTIONS IN KENYA**

**BY
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**A RESEARCH PROPOSAL PRESENTED IN PARTIAL FULFILLMENT
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DECLARATION

I do hereby declare that this is my original work and has not been submitted to any institution of higher learning for examination.

Signed



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This research paper has been submitted for examination with my approval as university supervisor.

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DEDICATION

The journey of a thousand miles began with a simplified step. The first-fruit of rigorous work, job, classwork and assignments is ascribed to my loving parents for cheering me through this magnificent yet challenging process. I lifted the academic light so high and they kept cheering me up. In addition, they fuel the academic light to keep glowing. Their push for tenacity has finally seen the light of the day.

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GLORY TO GOD

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Figure 1: Conceptual Framework

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LIST OF ABBREVIATIONS AND ACRONYMS

| | |
|---------------|--|
| AMFI | Audited Microfinance Information |
| CAR | Capital Adequacy Ratio |
| CBK | Central bank of Kenya |
| DTM | Deposit Taking Microfinance |
| DTMFIs | Deposit taking Microfinance Finance Institutions |
| FI | Financial Institutions |
| GDP | Gross Domestic Products |
| MFI s | Microfinance Institutions |
| NPL s | Non-Performing Loans |
| RBS | Risk Based Supervision |
| ROA | Return on Assets |
| ROE | Return on Equity |
| SD | Standard Deviation |
| SPSS | Statistical Package for Social Science |

ABSTRACT

The Micro-Finance Institutions spearhead the lending, savings and investment to promote their performance. Therefore, their performance is cushioned by the operational efficiency of loans. Nevertheless, lending is the integral part of microfinance. It aims to boost savings, investment while encouraging circulation of cash between those with surplus and deficits. Moreover, credit is both integral and indispensable phenomenon. Subsequently, it has been part of business transformation as well as the area of concern. Empirically, the credit risk arises whenever the business is stuck and cannot meet the obligations. On the other side, Profitability is a crucial engine towards attainment of objectives. In addition, it is the facet of performance and illustrate the supreme role of matching up income earned according to firm's policies. The objective of study was to explore the effects of credit risk on profitability of deposit taking microfinance institutions in Kenya. Moreover, the research utilized quantitative descriptive design while targeting 14 Deposit Taking Microfinance Institution in Kenya from 2017-2021 but managed to get 13. The data was sourced from CBK and DTMFIs. The researcher promoted the quality of data by reviewing, classifying, summarizing, editing, coding then analysis through SPSS. Hence, regression analysis and ANOVA among others reinforced in-depth understanding. Similarly, multicollinearity test was undertaken using Variance Inflation Factor. Furthermore, the autocorrelation was done via Kolmogorov-Smirnova to adequately post association between explanatory and explained variable. The normality was enhanced by gauging the normal distribution state of data. Furthermore, correlation analysis posited that adequacy and liquidity management had negative correlation towards the profitability while asset quality showed a strong positive correlation towards profitability. In summary, the autonomous value was 0.154 hence concluding the profitability stood at 15.4%. Further, an increase in a single unit of capital adequacy triggered a negative adjustment on the profitability by 3.5% whenever other enabling factors are held unchanged. Additionally, an increase in a single unit of asset quality translated to drastic increment on the profitability by 52.2% all factors unchanged. Finally, in cases where other variables are held constant, the increase of a singular unit of liquidity portrayed a significant decrease in the profitability by 5%. This investigation recommends for the prudential and maximum engagement resources to increase profitability. The policy makers should analyze the international study and advise the most appropriate plans for enhancing the accountability and wealth creation. The study of financial risk, capital structure, leverage risk and financial stress verse the profitability can give comprehensive knowledge on their pattern and behavior.

CHAPTER ONE: INTRODUCTION

1.1 Background of the study

The Micro-Finance institution relies on lending, savings and investment to promote their performance. The performance of MFIs is cushion by the operational efficiency of loans (Kiplangat, 2020). Lending is the integral part of microfinance. It aims to boost savings, investment while encouraging circulation of cash between those with surplus and deficits. The credit risk arises whenever the business is stuck and cannot meet the obligations. Masheta (2018) posit that continuous research prevents the market from being saturated with loans. Credit risk must be assessed, evaluated and determined to eliminate costly uncertainties in the market that may drive business to conundrum.

The theories anchoring the study incorporates financial intermediation theory. It explains the paramount role of intermediary in accomplishment of the mandate in the financial markets. Resource dependency theory postulates the chief importance of company's resources is to guard against losses and risk. Pecking Order theory demonstrates that organization followed a specific order while sourcing for the financial support. The theories anchor the study by critically demonstrating the correlation while affirming the assumptions.

The prudent performance and prosperity of MFIs depend on credit and lending. Credit plays an indispensable part in sound development, fast growth and economic transformation. Masheta (2018) coined that credit balances the deficit that is existing in the market. Therefore, the immense resources are transferred to parts that are experiencing deficits. In addition, credit promotes efficiency and effectiveness in the

maximization of resources to earn valuable reward. The credit reinforces the economical optimization of money to grant credit multiplier. At the same time, it impacts on the capacity of currency that is circulating (Aremu et al, 2010). Therefore, money and credit generate a lending cycle that bring solutions to both the deficit area and surplus region.

1.1.1 Credit Risk

Credit risk exists in the financial markets due to asymmetric information. Han (2015) elaborated credit as the possibility of getting losses resulting whenever the borrowers fails to repay. The borrowers may break the terms and condition by failure to repay. Moreover, it exposes the business to more risk in the market. Al-Khoury (2010) outlined that the principal losses-risk, insufficient capacity, fluctuating loan framework, instability of interest rate and inadequate institutional capacity as indicators of credit risk. Moreover, the ineffectiveness, irrelevant regulation, negligence and unfavorable government policies reinforce credit associated risks. Furthermore absence of prudent guiding rules enhance the financial predicament.

Credit is both integral and indispensable phenomenon. It has been part of business transformation as well as the area of concern. Credit risk elucidates the failure to adhere to repayment procedures. Risk takers concentrate too much on the reward and time over the prevailing risk. However, MFIs strive to eliminate or mitigate against risk. The credit risk management blueprints the integral circuit that promote the decision making in the financial market. Wakaria (2016) opined that credit risk, liquidity, interest risk exposed the business to losses. Therefore, presence of credit mitigation measures cushion the business against financial losses.

The parameters for operationalization of credit risk include default ratio and cost per loan advance ratio. Cole et al. (2012) utilized CPLA to successfully gauge credit risk. Additionally, Mohammad and Garba (2014) utilized default ratio as a metric for credit risk. High credit risk increases economic predicaments. Notably, microfinance credit must be supervised and monitored to reduce exposure to major challenges creating massive consequences.

1.1.2 Profitability

Profitability demonstrates the fitness and financial sustainability of the firm. The financial magnitude and strength of MFIs enhance business stability. The performance demonstrates the prudent utilization of assets. Profitability blueprints the capability to maximize the resources at the disposal to generate incomes. Matunda (2016) emphasized that profitability is a metric for financial soundness. It gauges the policies and strategies of the organization. Quality profitability indicates prudent credit risk mitigation measures. Gibson (2012) stated that the profitability affirms if the MFIs goals have been achieved within a stipulated time.

Profitability is a crucial engine towards attainment of objectives. It is the facet of performance and illustrates the supreme role of matching up income earned according to firm's policies. It gives the financial health in a snapshot. Turyabahya (2013) stated profitability as efficient usage of resources, tactical survival, growth mechanisms and fast response to the financial market opportunities. Moreover, it states the effectiveness in the utilization of resources.

Profitability has been measured using varying techniques. The financial stability of business determines the strength of business in their operation to unforeseeable future. Gibson (2012) prioritized return on equity. Matunda (2016) used return on asset to check efficiency of the business. The profitability of the business can dictate the firm's value and prospective development. High profitability causes an increase in the revenue generation. In addition, profitability increase the chances of stability, efficiency and effectiveness of the firm.

1.1.3 Credit Risk and Profitability

Credit risk and Profitability have some association that need further scrutiny. The credit risk shows that failure to adhere to the repayment period may cause havoc to the business. Gregory (2010) highlighted challenging process stating the level of credit risk. Al-Qudah and Jaradat (2013) showed that profitability eliminates the intense subjection to risk. Profitability is the recipe for positive and significant net earnings. Mutinda (2016) opined that the greater profitability stabilizes the operation of DTMFI. Gatuhu (2013) stated that an increase in the credit causes a decline in the profitability.

The higher profitability can reduce the changes of default and remove the credit risk. Profitability is the credit risks' absorber. The linkage amid the credit risk verse the profitability is pegged on the ability of DTMFIs. The profitability of microfinance demonstrates the economic capability of the firm. DTMFIs are the economic powerhouse directing the business towards greater earnings. Hasanov et al. (2017) posit that credit exposes the business to dangers while good performance boost business continuity in operation, elimination of bottlenecks to attain goals.

1.1.4 Deposit Taking Microfinance Institutions in Kenya

Kenya has recorded wide-array of transformation in the microfinance sector. The development has been facilitated by the growing population and the potential of the country to develop. GoK (2021) stipulated that DTMFIs were the drivers of economy. The justification was based on the employment, revenues and growth in GDP boosted by DTMFIs. DTMFIs are licensed, controlled and regulated by CBK. They are required to maintain a minimal of 60million float to support their nationwide undertakings and to operate sufficiently (CBK, 2021).

DTMFIs have accelerated the process of poverty alleviation. According to KNBS (2020) Kenyans have great interest in the microfinance institutions. Moreover, a significant number of people derive their livelihood from MFIs. The firms are reinforced by the government in their poverty eradication measures. MFIs innovate new technique to promote their growth, economic development and increase employment. Microfinance Act (2006) stipulated the procedures and process of operationalization of DTMFIs. The act mandated CBK to license and supervise the operation of DTMFIs.

1.2 Research Problem

The profitability of the business cannot be underestimated due to its role in sustainability, financial fitness and significant boost to growth. The credit risk can be analyzed through the fundamental techniques and technical metrics to enhance sound decision making for the businesses to increase their profitability periodically. Credit risk is critical in sound decision making regarding the profitability of the business. Nevertheless, businesses are

staring to numerous obstruction emanating from liquidity, leverage and solvency. Intensive competitions and technological advancements have caused numerous transformations in the firms. The firms innovate news of credit and financial risk mitigations remains abreast in the business while increasing their profitability.

The microfinance institutions have experienced varying changes that necessitate the business to innovate and discover new ways. The geopolitical changes, technological advancement and economic transformation in Kenya are the eye-opener towards development of prudent policies to safeguard microfinance institutions in Kenya. The Kenyan DTMFIs have steered the economy growth through employment and revenue generated to the government. Additionally, DTMFIs have increase the efforts essential for poverty eradication. CBK (2021) emphasized the importance of Microfinance institutions in the growth of GDP.

The international studies have scrutinized credit risk verse the profitability. Essandoh (2018) stated that credit risk is a predicament to performance in Ghana. The credit risk exposes the firm financial challenges. Viswanadham (2015) indicated that non-performing loans led to collapse of businesses in Tanzania. Ahlberg& Anderson (2012) postulated that credit risk evaluation led to development of sound mitigation measures in Sweden. Ntiamoah, Egyiri, Diana Fiaklou, & Kwamega, (2014) emphasized on the credit policies, lending procedures, credit analysis verse appraisal, regulation, and gauging performance to help navigate business against financial turbulence. Weak credit strategies accounted for microfinance institution failure. The global study presented a contextual gap that is addressed by this study.

Matunda (2012) stipulated the importance of policy in gearing the business towards performance. Makaria (2016) explored credit risk management and the correlation with financial performance. The study indicated that quality management improved performance. The study advocated for strong governance practices that underpinned the performance through reduction of risk exposure. The microfinance strived to improve performance by eliminating risk using the mitigation measures. Kombe and Wafula (2015) indicated that performance is a tool leading to growth of the firms. However, the credit risk is a major obstruction to performance. The prevailing study attempts to bridge conceptual and contextual gap.

In light of major contributions made internationally, regionally and locally exhibits conceptual, methodological and contextual gaps. The mechanisms against credit risk enable the MFIs to increase performance. This research creates a landmark resolving the immense knowledge gap on; what are the effects of credit risk on profitability of deposit taking microfinance institutions in Kenya? This research, therefore, aimed to bridge the existing gap by establishing credit risk and profitability of microfinance deposit taking institutions.

1.3 Research Objective

The objective of study is to explore the effects of credit risk on profitability of deposit taking microfinance institutions in Kenya.

1.4 Value of the Study

The research is critical in providing more knowledge on the credit risk, profitability and microfinance. The knowledge on DTMFIs is very important in making conclusive findings. The study enhance the understanding of the theories, presumptions, critiques and relevance for the study. The study input binding knowledge that is useful in the decision making. Moreover, the study can stimulate creativity and innovation for credit risk mitigation measures.

The study pinpoints areas of improvement, monitoring and business profitability. The credit risk analysis will compel the policy makers to make quality policies. The credit risk relating to financial leverage, solvency and liquidity can be addressed adequately to maximize the opportunities and reap greater reward. The national and the county government can stipulate policies to enhance profitability and mitigate credit risk.

The research will be valuable to microfinance institutions. The study builds in-depth knowledge to researchers. It upgrades understanding and reference material. A well-structured, elaborated analytical skill and wide knowhow bridging the gaps can help scholars to improve and innovate new ways research presentation.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

The chapter assimilates the theories that underprop the study. Additionally, it analyzes the determinants of credit risk verse the profitability. Furthermore, it reviews the preceding continental, global, regional and local studies to give greater insight to the study. Moreover, the conceptual framework through schematic representation is given adequate attention to shape the imagination concerning the correlation between the regressor and the regressed variable. Finally, the study summarizes reviews and evaluate research gaps.

2.2 Theoretical Framework

The theories underpinning this study include financial intermediation theory which explains the importance of transaction cost in cases of asymmetric information. Resource Dependency theory indicates how the organization relies on the availability of resources to sustain their operation. Pecking order theory postulates the order followed in seeking financial funding to the business.

2.2.1 Financial intermediation theory

Financial intermediation theory came into being in 1960, when it was developed by Gurley and Shaw. This theory show how financing entities make possible saving and borrowing. It was expounded in 1969 by Goldsmith. In 1992, Bisihnanos, fabricate the theory and identify financial intermediation ensures those who have funds in surplus can save the excess and those with limited can borrow. According to this, the theory prove that saving and borrowing is very important to financial institution to ensure that people can get financial support whenever they want to access.

The critique of theories includes; intermediaries in the market can collude and increase prices, cost and procedures. Moreover, it delays the operation and may waste time instead of adding value. Chepchirchir (2021) advocated for smooth operation to eliminate challenges in the market. Regarding to Diamond (1984), there are monetary market conflicts that leads to information asymmetry and transaction costs. This kind of friction in business environment especially in financial institutions is not good for business people in respect to access financial services as a result of insufficient information or high cost to access the services.

Financial Intermediation Theory, is important to this study, since it provides details on how to operate financial firms. Financial organizations access funds from depositors and then loan the funds to borrowers. Technology has played a major role in this, due to innovations that has resulted in efficiency. Financial intermediary theory advocates for pooling smaller chunks of resources to build greater investment and immense capital investments. DTMFIs are crucial in advocating for diversification of the financial assets that promote business development. Financial intermediaries like DTMFIs improve the performance by eliminating transaction cost and eliminating risk of default through thorough appraisals to enhance efficiency utilization of resources.

2.2.2 Resource Dependency Theory

Resource dependency theory was developed by Pfeiffer and Salancik in 1978. It states that enterprises depend on environment (internal and external) resources to yield its products and services. Changes in the environmental resources determines the rate of dependency at a time. Therefore no organization is complete on its own but with inter-dependence of other organizations. The business seeks to overcome challenges by

improving the resources as strategic and tactical mechanisms. DTMFIs depend on the resources to provide quality service to their clients.

The critique of theory is the assumptions that resources and power are distinctive driving force in the markets. However, the technological innovation and strategic plans have geared business towards prosperity. The presence of valuable resources without due maximization can inhibit development. Smaller firms have minimal resources but after boost by innovation, they have recorded significant performance higher than larger firms. The theory advocates for the pursuit of accumulation of resources to gain significant powers instead of maximization of those at their disposal. In a nutshell, effective, proficient and efficient utilization of resources can be more supreme than just accumulation without due optimization.

The theory is relevant in giving strategic and tactical mechanisms towards power and autonomy. It stipulates the importance of alliance and interlocks with convergence goals to realize market control. In addition, it blueprints the critical role of economies of scale and optimization of resources to respond to pressing needs. Resource Dependency theory is very important in this study, simply because it will illustrate how financial institution relates to business environment (depositor and borrower). This is crucial issue with strategic field management (Narayana 2010) and it shows that it has affected resource dependency concept

2.2.3 Pecking Order Theory

Pecking Order Theory, it was uncovered by Myers and Majluf (1984). Theory stated that, an organization need to follow a rank when considering origin of financing. The theory formulated an order followed by management in the sourcing funds. The theory

emphasize the importance of obtaining finance internally to reduce transaction and floatation cost. Additionally, the theory institutes the utilization of internal funding, then external financing, thereafter the business can resort to debts. However, equity is usually the last resort only after the first three preferences are exhaustively utilized. It assumes that firms adhere to hierarchy in funding the business.

The theory has some shortcomings that include the provision of limited variables that influence funding. It does not quantify how the information flowing influence expenditure relating to financing. Moreover, it give chief latitude to prevailing circumstances with due diligence on the practical applicability in different scenarios. Moreover, the loopholes relating to risk and rewards should be addressed to give quantitative metric paramount in guiding selection of finance.

In general, the theory provides critical consideration that validate sourcing of finance. Moreover, it is a very important guideline against the asymmetric information that is detrimental to expenses associated with funding. The theory blueprints the direction useful for funding projects with positive NPV. Theory beliefs that company select capital in regards to preference need for example through internal financing, external funding, debts then equity is critical roadmap. In a nutshell, the theory reinforces microfinances in assessing changes pertaining to capital structure, cutting unnecessary equity cost, agency setbacks and underprop the organization in controlling impacts of credit risks.

2.3 Determinants of Profitability

The determinants of profitability include ROA, asset quality, capital adequacy and liquidity. The variables are useful in making conclusive findings for this study.

Moreover, the determinants have received minimum consideration. The study of DTMFIs fills the knowledge gap and gives profound findings needed in the study.

2.3.1 ROA

Return of assets is measurement useful in the determination of efficiency and effectiveness in the optimization of assets to generate revenue. The greater the ROA, the greater the capability to maximize assets since the firm earnings are higher while the investment is lower (Herzuah, 2020). ROA postulates the firm's efficiency in utilizing available resources. The assets can be optimized to full potential. ROA are useful in comprehensive competition since it boosts the company ability. It portrays the correlation between earnings and assets while providing quality metrics for performance.

2.3.2 Asset Quality

Annor and Obing (2017) asset is paramount in the valuation assets. The assets can elaborate profoundly on the risk associated with business ability to repay debts. Valuable assets increase the capacity and the capability of company to meet its demands. Inferior asset quality exposes business to immense risk. Therefore, the stability of firm's assets eliminate the risk. Additionally, the companies with quality asset eliminate the probability of losses. The bad debts and losses can easily be mitigated against through prudent policies (Mwai, 2019). Agenor and Zilberman (2015) opined that the inferior assets increase maintenance expenses and losses.

2.3.3 Capital Adequacy

Capital adequacy is crucial for the depositors (Herzuah, 2020). The minimum capital adequacy institute the firms to have sufficient cushion to take reasonable losses. The

efficiency and effective of business can be explained by the capital adequacy. Capital adequacy is protective tool to the shareholders and the investors. It oblige the business to remain competitive, active, good, and sound in its operation. Matunda (2016) advocated for risk mitigation plans to eliminate insufficient cushion funds in form of capital adequacy.

2.3.4 Liquidity

Liquidity ratio postulates the ability of firm to clear short-term debts. Wakaria (2016) proclaimed that liquidity problem creates liquidity risk and may sink the business to operational oblivion. The illiquidity may cause financial distress in the business. The business must make key reflection on the sensitivity, loans and assets. The prudential management of assets enhance the capability of business without subjecting it to risk. The business can survive till unforeseeable future by stipulating building blocks to evade the illiquidity. DTMFIs are the pillar in the economic development. Mwai (2019) posit that liquidity resonate well with the business performance. The prudent management of resources strives to eliminate risk, errors and wastage.

2.4 Empirical Reviews

Bogale (2019) analyzed the bank profitability and its influential factors. The research was undertaken in Ethiopia context. The study maximize the private banking sector to illustrate its determinants. The time of study cumulated 10 years starting and ending in 2008 to 2017 respectively. The research optimized unbalanced panel data that was garnered from sampling 14 private banks. Profitability was explained as a function describing the price level of fluctuation among risk. Moreover, the findings postulated

that price level volatility had no significant impact on the ROA. The prevailing study analyze DTMFIs in Kenya and wide-array of credit risk is applicable.

Abubakar, A.A, Habib and Abdullahi (2018) explored the effects of credit risk management in contrast with the financial performance. The center of interest was the listed microfinance banks in Nigeria Stock Exchange. The period of study ranged from 2012 to 2017 taking a cumulative of 6 years. The data sourced went through statistical computation of Pearson association and multiple linear regression. The findings emphasize that capital adequacy was negatively associated with performance. In addition, non-performing loans exhibited a significant effect on performance. Loan loss provision was positively and significantly associated with the financial performance. The research utilized the control variable including inflation and bank size which gave a negative association. The current research concentrates in Kenya's DTMFIs.

Almaqtari, Al-Homaidi, Tabash and Farhan (2018) explored determinants of profitability in bank. The research investigated micro and macro determinants to elaborate the correlation. The procedure involved sampling of 69 commercial banks. It was done in India spanning from 2008 to 2017 aggregating to 10years. Panel regression techniques were utilized to explain the outcome. The results posit that price level fluctuation caused a significant impact on ROA. In addition, under the ROE, price fluctuation portrayed an insignificant effect. The study was done in India while the current study that analyze credit risk is based in Kenya.

Kohlscheen et al. (2018) analyzed various determinants of profitability of banks. The pivotal area of study were the 19 emerging markets while sampling entailed 534 private

commercial banks. The data was assembled from several countries located in different continents including 7 Asia, 5 from central and Latin America, South Africa, Israel and Eastern Europe. The timeframe ranged from 2000 to 2014 cumulating to 15 years. The findings from analytical computation opined that price level fluctuation significantly and negatively affected ROA. The study scrutinize wide-array of economies without specific country outcome. This study analyzed the Kenyan context.

Muraina (2018) investigated factors that affected the profitability. The sector of firms analyzed were deposit money banks in Nigeria. The sampling intended to generalize the findings after making 125 observations. The sample size was 14 banks listed in Nigeria Stock Exchange utilizing the secondary sourcing of data. The time scope spanned from 2008 to 2016 aggregating to 9years. The approaches employed include correlation and panel regression. Moreover, fixed impact model was critical in hausman test. The analytical outcome postulated that price fluctuation was not significant. The study was done in Nigeria and this compel for a local study.

Gizaw, Kebede and Selvaraj (2015) empirically investigated the effect of credit in relation to profitability. The context of the study were the Ethiopian banks. The data was sourced through 8 sampled banks. Their annual reports were crucial yardstick for the computation. The year of study covered a timeframe aggregating to 12years starting from 2003-2014. Descriptive statistics ease the discussion and interpretation. The study opined that capital adequacy, loan loss provisions, credit risk, non-performing loans influenced the profitability in Ethiopian Banks. The study seeks to bridge the contextual gap via the local study that empirically consider DTMFIs.

Byusa and Nkusi (2012) explored the credit policy and the performance. The research was done in Rwandan Banks. The objective was to give general perspective on the policies and performance of banking sector. The study opined that intensive competition among banks enhanced spreads. The findings concluded that high spread portrayed an ineffectiveness. Moreover, high interest margin indicated the ineffectiveness. The current research is concentrating on local DTMFIs in Kenya.

Muturi (2016) assessed effect of credit management practices in relation to the performance of loans. The study was done in Kenya analyzing DTMFIs. The study descriptive computations were employed to give chief latitude of outcomes. Moreover, the average and SD were computed to facilitate the presentation. In addition, inferential statistics assisted by linearity analysis boost the study. The study concluded that credit policies, credit terms, collection policies and standards influenced performance. The current study analyze credit risk and performance to nail in-depth understanding.

Ndyagyenda (2020) explored the management of credit risk and the performance of firms. The epicenter of the study was Uganda. The outcome indicated that credit appraisal portrayed the capability of banks to sustain and survive. The results emphasized the importance of a strong well-designed association amidst risk identification, risk appraisal and ROA of MFIs. The study was undertaken in Uganda's MFIs assessing the management of credit risk while the current study is based in Kenya's DTMFIs.

Kisala (2014) explored the association existing between the management of risk the performance of loans. The study was done in Kenya using the descriptive research design. The study strived to provide exhaustive findings on the management of credit

risk. The data was garnered from secondary and primary means. The data was collected from 5 MFIs. ROE was expressed as the ramification of CAR and NPL. The findings indicated that CAR and NPL negatively and significantly affected ROE. The current study use the ROA as a metric for performance and DTMFIs to bridge the gaps.

Murage (2014) concentrated on the association between the credit risk and the corporate liquidity. The study employed secondary techniques to garner the data. This was possible through CBK and AMFI in Kenya. The period of study took great assessment of sample of 5 DTMs. The timeframe spanning from 2011-2013 was sufficient to make conclusive study. The use of correlation computation, regression and empirical descriptive aid the study. Moreover, the function of corporate liquidity was the operating expense ratio, portfolio risk ratio and the portfolio ratio but gave negative correlation. The current study strive to bridge the gap through a thorough assessment of credit risk and ROA.

2.5 Summary of the Literature Reviews and Gaps

The preceding studies have been reviewed periodically ranging from continental studies to global studies. Moreover, the studies done regional in Africa and Sub-Saharan African have been analyzed to inform the study. Additionally, local research based in Kenya context have been examined to blueprint the study. The past studies incorporated in-depth knowledge, models, analytical computation, quality presentation and wide array of methodologies that may have improved interpretation and outcome and in many cases caused mixed and inconclusive findings.

Kohlshcheen et al (2018) analyzed determinants of profitability in several countries. The study sampled 534 commercial banks to generalize the findings. The research did not

specify where and which country where the findings were applicable hence leaving a contextual gap. Almaqtari, Al-Homaidi, Tabash and Farhan (2018) investigated the influencers of profitability in bank. The study was motivated by the credit risk thereby settling on the micro and macro factors. The study applied several analytical and methodologies which the current study wants to bridge. Muraina (2018) assessed the Nigerian determinants of profitability. The study concentrated on deposit taking banks. The current study strive to fill the conceptual and contextual gap. Bogale (2019) analyzed Ethiopian context while Murage (2014) and Murage (2014) considered Kenya set-up. From the analysis there are theoretical, conceptual, contextual and methodological gap. Moreover, the study bridged the time and knowledge gaps.

2.6 Conceptual Framework

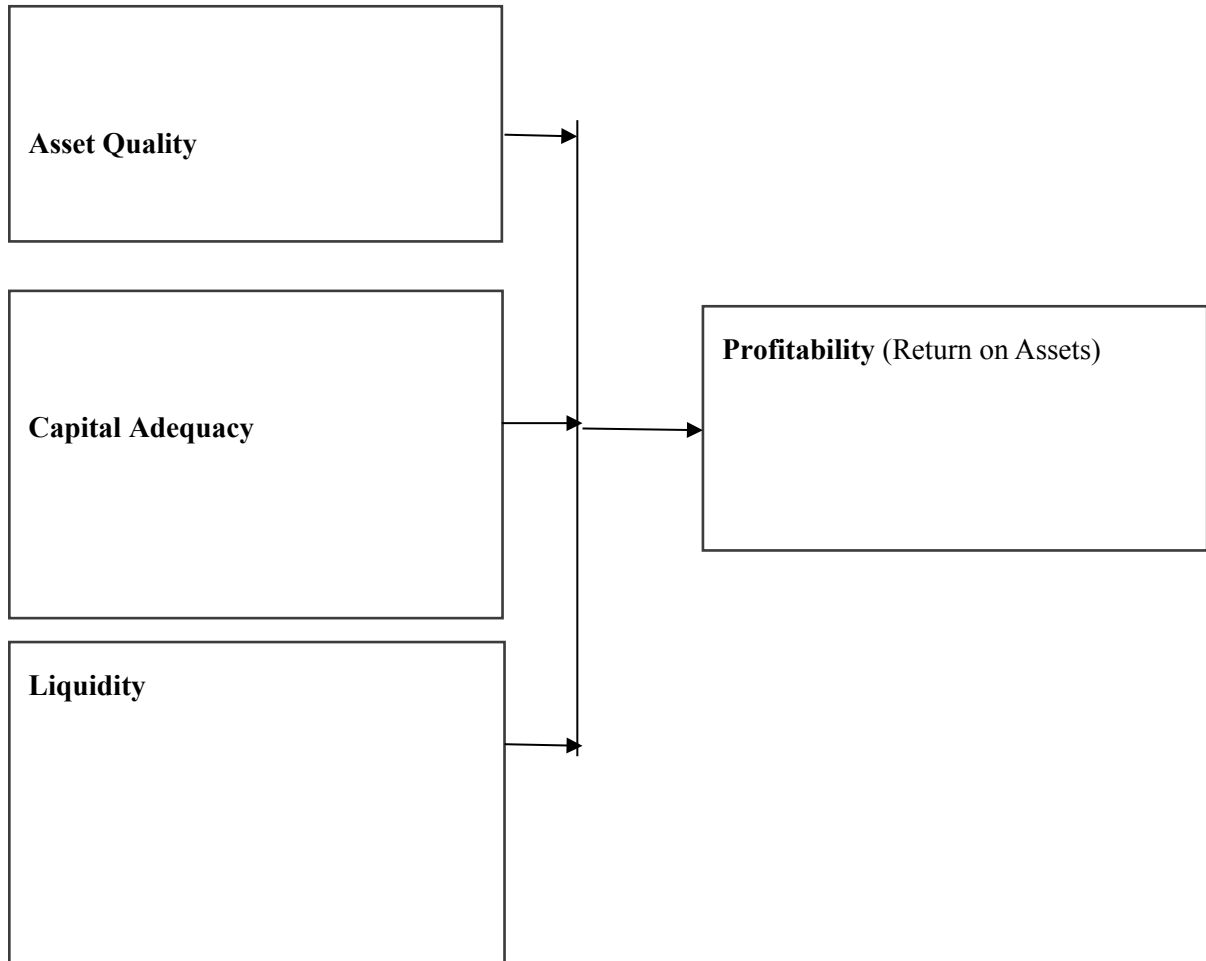
The conceptual framework provide the correlation amid the explanatory and the explained variable in the snapshot. It is a schematic diagram that attempts to create imagination concerning correlation. Moreover, it delineate knowledge among the variables that are under investigation. The study utilize Asset Quality, Capital adequacy and Liquidity as a function of profitability.

Independent Variable

Dependent Variable

Credit Risk

Performance



Source: Researcher's Compilation (2022)

Figure 1: Conceptual Framework

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

The part concentrated on facets of methodology which include the research design that is suitable to the study based on the nature of data and objective of the research. Moreover, it assessed the population that is sufficient and adequate. In addition, the data collection tools suitable to the data analysis enhance the conclusive finding. The segments address the credit risk and profitability of DTMFIs.

3.2 Research Design

The research utilized quantitative descriptive design to guide the study. The design is appropriate to the research topic. The design is guided by targeted population, analysis and the collection of data. Creswell (2014) indicated descriptive design as a layout directing the study. It attempts to relate particular phenomena traits, association and circumstances. In summary, it warrants a smooth process with minimal predicaments.

3.3 Population

A population incorporates elements or objects either in groups or constituents. The category is identified through their similarity traits. The individual and items studied can be measured using similar parameters. Maxwell (2012) postulated that population is subjected to measurement to conclusively reach findings. This study analyzed 14 Deposit Taking Microfinance Institution in Kenya from 2017-2021.

3.4 Data Collection

The researcher gathered data from secondary means. DTMFIs management are supervised by CBK. Risk Based Supervision approach (RBP) stipulated the mandates of CBK and MFIs in their undertakings, financial statements and reports. The data was sourced from CBK and DTMFIs. The data collected was quantified to reinforce the statistical computation. The period of study relates to 2017-2021 aggregating to 5years. The data was sufficient to provide deeper insight and conclusive findings.

3.5 Data Analysis

The assembled, quantified and reviewed data was subjected to statistical computation to aid juxtaposition, inferences and the presentation. The researcher promoted the quality of data by reviewing, classifying, summarizing, editing, coding then analysis through SPSS. Regression analysis and ANOVA among others reinforced in-depth understanding. Descriptive statistics via tables and charts and graphs enhance the data analysis.

3.5.1 Diagnostic Tests

The research prioritizes diagnostic tests to evaluate association among the regressor variables through multicollinearity test. The test was undertaken using Variance Inflation Factor. Furthermore, the autocorrelation was done via Kolmogorov-Smirnova to adequately post association between explanatory and explained variable. The normality was enhanced by gauging the normal distribution state of data.

3.5.2 Data Analysis Models

Multiple regression model stipulate correlation amid all the variables.it provide a link that intends to locate the line of best fit. The empirical model elaborates the association and

linearity state. The variables can easily be checked to have a hint on the association. The association is summarized as;

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

Whereby

Y = Profitability (ROA)

A_0 = y intercept of the regression (constant variable)

X_1 = Asset Quality (Non-Performing Loans divided by Total loan)

X_2 = Capital Adequacy (Core capital divided by total assets)

X_3 = Liquidity management (Current asset divided by current liabilities)

ε = error term

3.5.3 Inferential Statistics

The Pearson association was computed and quantified to postulate the magnitude and direction. The statistical significance was done using T-test and F-test to blueprint the study. The analysis indicates $P \leq 0.05$, and $P > 0.05$ which will be interpreted to demonstrate statistical significance and insignificance respectively. ANOVA will elaborate the findings.

CHAPTER FOUR: DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

This chapter describes the outcome of the secondary data. The correlation, analysis of variance and the regression was used to interpret the relationship of credit risk management in regards to profitability of MFIs in deposit taking in Kenyan context. Regression computation was dispensed to give intensive detailed and credible results. The data was completed via SPSS. Prior to the examination and computation, the data was determined for coherence and completeness. Consequently, the data was computed, interpreted and presented thereto. The data was collected from 2017-2021 targeting 14 firms but managed to get complete data for 13 firms.

4.2 Descriptive Statistics

The descriptive statistics was performed by the researchers to ascertain the nature of data of each variable in the study. The findings showed that profitability as measured using ROA registered a minimum 0.0232, a maximum 0.4111, mean of 0.1831 and SD of 0.08696. The meaningful summarization of data aids the description of pattern and the nature of the data. Descriptive statistic is paramount for making conclusive analysis beyond the raw data thereby reaching extensive outcome. The descriptive elucidates the mean to define the averages while standard deviation exemplifies the variability of data. The minimum and maximum pinpoints the least and greatest value respectively. Consequently, capital adequacy had minimum of 0.2070, maximum of 1.5644, mean of 0.71166 and SD of 0.2397. This showed that average capital adequacy was 0.71166. Some MFIs had as low capital as 0.2070 and others had a maximum of 1.5644. The

capital adequacy points out to a skewness of 0.799 and kurtosis of 2.188 thus manifesting a positive skewed distribution.

Asset quality had a minimum of 0.0066, maximum of 0.4077, mean of 0.1545 and standard deviation of 0.09835. This implied that on average asset quality was 0.1545 with some MFIs having low asset quality of 0.0066 while others had high asset quality of 0.4077. The asset quality registered a skewness of 0.473 and kurtosis of -0.298 implying a positively skewed and lowly peaked distribution. The liquidity management had a minimum of 0.0869, maximum of 0.9817, mean of 0.5298 and standard deviation of 0.1904. This finding indicated that on average liquidity management had an average of 0.5298 with some MFIs having a very low liquidity management of 0.0869 while others had high liquidity management of 0.9817. Further, liquidity management recorded a skewness of 0.387 and Kurtosis of -0.292 implying that the distribution was positively skewed with a low peaked distribution.

Table 4.1 Descriptive Statistics

Descriptive Statistics

| | N | Minimum | Maximum | Mean | Std. Deviation | Skewness | Kurtosis | | |
|----------------------|------------------|------------------|------------------|------------------|-----------------------|------------------|------------------|-------------------|-------------------|
| | Statistic | Statistic | Statistic | Statistic | Statistic | Statistic | Statistic | Std. Error | Std. Error |
| Profitability | 65 | .0232 | .4111 | .183123 | .0869646 | .324 | .297 | -.317 | .586 |
| Capital Adequacy | 65 | .2070 | 1.5644 | .711660 | .2397063 | .799 | .297 | 2.188 | .586 |
| Asset Quality | 65 | .0066 | .4077 | .154508 | .0983526 | .473 | .297 | -.298 | .586 |
| Liquidity Management | 65 | .0869 | .9817 | .529806 | .1904101 | .387 | .297 | -.292 | .586 |
| Valid (listwise) | N 65 | | | | | | | | |

4.3 Correlation

Researchers employed a Pearson correlation matrix to establish the relationship between the regressed variable and the regressor variables. As seen from the table below capital adequacy and liquidity management had negative correlation towards the profitability while asset quality showed a strong positive correlation towards profitability. A correlation computation is very important in the identification of feasible input for greater sophisticated computation and prompting the predictive model.

The correlation is cardinal since it poises the understandable and interpretable outcome. Besides the identification of the predicaments in the dataset, it gives credible information on the strength among the variables. As seen capital adequacy had ($r=-0.347$, $p=0.005$),

Asset quality had ($r=0.615$, $p=0.000$) while liquidity management had ($p=-0.003$, $r=0.984$). These results are crucial for rapid problem solving and specifying risk and returns.

Table 4.2 Pearson Correlation

| Correlations | | Profitability | Capital Adequacy | Asset Quality | Liquidity Management |
|----------------------|---------------------|----------------------|-------------------------|----------------------|-----------------------------|
| Profitability | Pearson Correlation | 1 | -.347** | .615** | -.003 |
| | Sig. (2-tailed) | | .005 | .000 | .984 |
| | N | 65 | 65 | 65 | 65 |
| Capital Adequacy | Pearson Correlation | -.347** | 1 | -.439** | -.092 |
| | Sig. (2-tailed) | .005 | | .000 | .464 |
| | N | 65 | 65 | 65 | 65 |
| Asset Quality | Pearson Correlation | .615** | -.439** | 1 | .165 |
| | Sig. (2-tailed) | .000 | .000 | | .190 |
| | N | 65 | 65 | 65 | 65 |
| Liquidity Management | Pearson Correlation | -.003 | -.092 | .165 | 1 |
| | Sig. (2-tailed) | .984 | .464 | .190 | |
| | N | 65 | 65 | 65 | 65 |

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

4.4 Diagnostic Test

The tests are pivotal in the elaboration of the pattern of dataset. Additionally, the diagnostic computation is fundamental in making conclusion on the sensitivity to changes by the dataset. It is crucial in detecting problems and avoiding risk which may cause the

misleading information on inferences. The construction of research questions is made easier through in-depth analysis. The knowledge on the pattern, magnitude and nature not only ease interpretation but eliminate the wrong conclusions. More importantly, the diagnostic test seeks to prediction while looking for specificity and sensitivity.

4.4.1 Multicollinearity test

The researcher utilized the VIF and the Tolerance values to establish if the variables had multicollinearity issue. The findings are as shown on the table below. All the variables under study had tolerance values beyond 0.2 and the VIF value below 10. This then implied that the absence of multicollinearity problem among the regressor variables. Multicollinearity portrays how the predictor variables are intercorrelated hence can be predictive to another with specified degree of accuracy (Kothari, 2014). The outcome can impede accuracy and precision thereby resulting to errors in rejecting or failing to reject null hypothesis.

Table 4.3 Collinearity Test

| Model | | Collinearity Statistics | |
|-------|----------------------|-------------------------|-------|
| | | Tolerance | VIF |
| 1 | (Constant) | | |
| | Capital Adequacy | .807 | 1.240 |
| | Asset Quality | .792 | 1.263 |
| | Liquidity Management | .972 | 1.028 |

4.4.2 Autocorrelation

Researchers utilized the Durbin-Watson value to interpret the findings. From the table 4.3 the Durbin value is 1.959. This value lies within the required range of the Durbin Watson

values. Autocorrelation is vital for description of numbers of time gaps. The outcome spans from 0-4 for Durbin-Watson. The close proximity to 2 defines a minimal level of autocorrelation while a resulting figure close to 0 defines a stronger positive autocorrelation. Nevertheless, a product closer to 4 implicates a stronger though negative autocorrelation. Therefore, it expounds on the pattern of change caused by other factors

Table 4.4 Model Summary^b

| Model | R | R Square | Adjusted Square | RStd. Error of the Estimate | Durbin-Watson |
|--------------|-------------------|-----------------|------------------------|------------------------------------|----------------------|
| 1 | .630 ^a | .397 | .367 | .0691836 | 1.959 |

a. Predictors: (Constant), Liquidity Management, Capital Adequacy, Asset Quality

b. Dependent Variable: Profitability

4.4.3 Normality test

Normality test was interpreted using the Kolmogorov Smirnov and the Shapiro-Wilk test. This test was important in establishing if the data used in the study had been gotten from a normal distribution. Normality test is prerequisite for comprehensive data analysis. Therefore, many statistical computations aimed at detecting if dataset adheres to the normality presupposition in the parametric tests. As seen below, the variables recorded significance that fall within the required range for both tests. This indicated that the data was obtained from a normally distributed population.

Table 4.5 Tests of Normality

| | Kolmogorov-Smirnov ^a | | | Shapiro-Wilk | | |
|----------------------|---------------------------------|----|-------|--------------|----|------|
| | Statistic | Df | Sig. | Statistic | df | Sig. |
| Profitability | .074 | 65 | .020* | .977 | 65 | .030 |
| Capital Adequacy | .115 | 65 | .033 | .939 | 65 | .003 |
| Asset Quality | .094 | 65 | .020* | .960 | 65 | .033 |
| Liquidity Management | .107 | 65 | .043 | .970 | 65 | .019 |

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

4.5 Linear Regression Analysis

The regression is predominant in the explanation of association via the mathematical formula. Therefore, its generation is simple with bold interpretation. As a consequence, it has gained colossal attention as the proven mechanism for scientific forecasting. Subsequently, as elaborated comprehensively, the line of best-fit is pre-eminent in the generation and prediction thereby eliminating discrepancies. It worthwhile pointing out that mass data can be transformed into actionable information. Therefore, this analysis strived to provide better apprehension via uncovering pattern and interconnections. Arbitrary, profitability was regressed against capital adequacy, asset quality and liquidity. Researchers performed the least squares method form of linear regression whereby the model was generated in the form $Y = \alpha_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon$

4.5.1 Model Summary

The model summary has R=0.630 correlation coefficient depicting that there was 63.0% correlation among the variables in this study. Empirically coefficient of determination, provided greater insight on the dataset. Moreover, the analysis aided the intensification and extensive results for sound judgment. R-Square, is 0.397. Consequently, this indicates that 39.7% of change in variation of profitability was explained by Liquidity Management, Capital Adequacy and Asset Quality with the remaining 60.3% being explained by factors not in the above research.

Table 4.6 Model Summary^b

| Model | R | R Square | Adjusted Square | RStd. Error of the Estimate | Durbin-Watson |
|--------------|-------------------|-----------------|------------------------|------------------------------------|----------------------|
| 1 | .630 ^a | .397 | .367 | .0691836 | 1.959 |

a. Predictors: (Constant), Liquidity management, Capital Adequacy, Asset Quality

b. Dependent Variable: Profitability

4.5.2 ANOVA

ANOVA is instrumental in the comparison of the continuous variables. The hallmarks of ANOVA include T-Test and Z-Test and often maximized in sound decision-making. The analysis of variance (ANOVA) findings was to establish if the model was substantial and relevant for prediction. The significance model was predictive and appropriate. From empirical viewpoint, the sum-square obtained from mathematical computation is 0.192

with mean squared at 0.064 for regression with 3 degrees of freedom. Whereas sum square generated from residual computation is 0.292 and a squared mean of 0.005 in 61 degrees of freedom. As seen below, the F statistics values were 13.375 with significance value of 0.000 which is less than the P value of 0.05. This then implied that the model was statistically significant.

Table 4.7 ANOVA^a

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|--------------|------------|-----------------------|-----------|--------------------|----------|-------------------|
| 1 | Regression | .192 | 3 | .064 | 13.375 | .000 ^b |
| | Residual | .292 | 61 | .005 | | |
| | Total | .484 | 64 | | | |

a. Dependent Variable: Profitability

b. Predictors: (Constant), Liquidity management, Capital Adequacy, Asset Quality

4.5.3 Coefficient of Determination

From column B, researchers generated a mathematical model. If all the factors the profitability that was measured using ROA is 0.154 when the other factors Liquidity management, capital adequacy and asset Quality are held at constant. A unit change in capital adequacy when other factors are held at constant resulted to decrease in profitability by 3.5%. This shows a negative relationship between capital adequacy and profitability. A unit change in asset quality, resulted in an increase in profitability by 52.2% indicating a positive relationship between this factor and profitability when all other factors are equated to 0. Liquidity management showed that if all factors were held at constant, then there would be reduction in profitability by 5.0%.

Table 4.8 Model coefficient

| Model | Unstandardized Coefficients | | Standardized Coefficients Beta | Correlations | | | Collinearity Statistics | |
|----------------------|-----------------------------|------------|--------------------------------|--------------|---------|----------------|-------------------------|-------|
| | B | Std. Error | | Zero-order | Partial | Part Tolerance | VIF | |
| (Constant) | .154 | .045 | | | | | | |
| Capital Adequacy | -.035 | .040 | -.098 | -.347 | -.112 | -.088 | .807 | 1.240 |
| Asset Quality | .522 | .099 | .590 | .615 | .560 | .525 | .792 | 1.263 |
| Liquidity Management | -.050 | .046 | -.109 | -.003 | -.137 | -.107 | .972 | 1.028 |

With the above information, the mathematical model obtained therefore is

$$Y = 0.154 - 0.035 X_1 + 0.522 X_2 - 0.050 X_3 + \epsilon$$

4.6 Discussion of the Findings

Empirically, Pearson correlation expounded a negative association interlinking capital adequacy and profitability which applied similarly to liquidity. However, asset quality registered a positive interconnection with the profitability. It is imperative to clarify that correlation is fundamental for in-depth analysis, clear understanding and conclusive results. The outcomes concurred with Kisala (2014) explanation that capital adequacy is inverse interconnected with profitability. Byusa and Nkusi (2012) concluded that credit risk has substantial effect on the performance hence concurring with the prevailing study. Muraira (2018) highlighted credit has one of the bottlenecks to the financial performance.

The preceding studies assessed different issues and concluded differently. According to Murage (2016) credit risk is inversely corresponding to the financial performance. Moreover, Kisala (2014) postulates that capital adequacy and non-performing loan increase chances of failures for the business. This was defined in the analysis hence concurring with prevailing study. Gizare, Kabedi and Selvaray (2015) credit risk needs a special attention for the continuity of firm. As a result, capital adequacy and non-performing created a series of challenges to profitability. This output is consistent with the prevailing experimentation.

Descriptive analysis gave a true picture of the dataset by expounding on the mean and maximum values. Moreover, the standard deviation was incorporate to elaborate much on the variability in the data. According to Muturi (2016) descriptive is critical for spotlighting the behavior of data. It is worth pinpointing that importance of description of data to open up avenues for more analysis (Murage, 2014). From this viewpoint, descriptive is indispensable for understanding and interpretation of data. The descriptive statistics showed that capital adequacy had a high positively skewed distribution with a high peaked distribution. All the other variables profitability, asset quality and liquidity management were positively skewed but of low peaked distribution as shown by negative kurtosis values.

The model coefficient provided a conjoint interrelation among the variables. This was conclusively posted after extensive mathematical computation that resulted in the summary to detail data. The outcome presupposes that when all variables are held unchanged, the autonomous value is 0.154 hence concluding the profitability stood at 15.4%. Additionally, an increase in a single unit of capital adequacy triggered a negative

adjustment on the profitability by 3.5% whenever other enabling factors are held unchanged. Moreover, an increase in a single unit of asset quality translated to drastic increment on the profitability by 52.2% all factors unchanged. Finally, in cases where other variables are held constant, the increase of a singular unit of liquidity portrayed a significant decrease in the profitability by 5%. This can be well-stipulated as;

$$Y=0.154 - 0.035 X_1 + 0.522 X_2 - 0.050 X_3 + \epsilon$$

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This section deals with the summary, conclusion and the recommendations of the research study. The researchers wanted to establish the effects of credit risk on profitability of deposit taking microfinance institutions in Kenya. This section is cardinal in exemplifying the research outcome to give the meaningful details. Technically, summarizing, concluding and giving overall recommendation are prioritized. The part gives an in-depth overview of the shortcoming, suggestion for intensive scrutiny and address the policy formulation.

5.2 Summary of the Findings

The assessment strived to explore the effect of credit risk on the profitability of the deposit taking microfinance institutions. The predicted variable was the ROA maximized as profitability while the explanatory variables were capital adequacy, asset quality and liquidity. The secondary mechanisms were optimized in generating complete data for scrutiny. In addition, the timeframe of study stemmed from 2017 to 2021 for 13 firms having complete data. Extensively, the experimentation input the descriptive and inferential computation to reach a far-reaching conclusion. Moreover, SPSS was fundamental for the expedition of dataset.

The study targeted 14 firms but managed to get complete dataset from 13 companies. The data was sourced from the published statement that had been audited for timeframe spanning from 2017-2021. The years selected offered sufficient information for the fact-reaching fact finding. The data was edited and completed before substantial steps of data

analysis. Subsequently, classification and coding followed closely and systematic. After the comprehensive investigation process, the data was reviewed and analyzed to assist in creating information from the mass data. The analysis was executed through the maximization of SPSS.

The resulting information addressed through descriptive statistics pinpointed the central facts. The profitability recorded an average of 0.1831, SD 0.08696, whereas minimum of 0.0232 representing the lowest profit and a maximum of 0.4111. Furthermore, capital adequacy averaged at 0.7116 and with SD of 0.2397. In addition, asset quality portrayed a minimum of 0.0066, maximum of 0.4077, average of 0.1545 and SD of 0.09835. These results pinpointed that the asset quality average was at 0.1545 with the lowest asset quality being 0.0066 and the highest value of 0.4077. The liquidity management had 0.5298 mean, 0.1904 standard deviation, 0.0869 minimum and 0.9817 maximum. Gizaru, Kebedi and Selvaray (2015) posits that descriptive is an avenue for further experimentation by giving overview results hence the outcome can be gauged in a snapshot.

It is imperative to demystify that correlation computation reinforced the conclusive results. This is because the data scrutinized were chiefly purposed for understanding, sound decision making and prediction. As a consequence, the resulting products gave credible Knowledge on the directional movement and its objectivity. Empirically, correlation matrix opined that asset quality was strongly and positively interconnected with the profitability as replicated via ($r=0.615$, $p=0.000$). Additionally, capital adequacy and the liquidity management demonstrated an inverse correlation of ($r=0.347$, $p=0.005$) and ($r=-0.003$, $p=0.984$) respectively towards the dependent variable. According to

Murage (2014) and Ndyanyenda (2020), credit risk should be managed prudently and opportunistic should be analyzed for quick returns.

5.3 Conclusion

The assessment depicted a far-reaching conclusion on the credit risk and profitability. The study alluded that except for quality assets, capital adequacy and liquidity gave an inverse interconnection with the profitability. The information was paramount for futuristic decision making, taking corrective measures and mitigating against risk. From the empirical views, the credit risk should be analyzed periodically with the core objective of reaping from the existing opportunities (Muturi, 2016).

Subsequently, regression calculation expounded the existing correlation and direction. Besides accentuating the magnitude, it articulated much of conjoint relationship. The mathematical analysis posted R and R-Square of 0.397 while adjusted R of 0.367. Grounded on the prevailing results, R-Square of 0.397 is pivotal in the explanation and elaboration that 39.7% change in profitability relates to capital adequacy, liquidity and asset quality. Similarly, 60.3% represented the variable excluded in the computation.

The assessment of ANOVA implicated a significance level. The study obtained significance figure of 0.000 while F registered explained 13.375. In a nutshell, the significance figure was below 0.005 hence illustrating the significance. The business makes sound decision based on the information at their disposal. Quality and prudent decisions are informative and useful to the business. The findings elucidate that data was suitable and appropriate in the conclusive results.

In the multicollinearity test, the findings showed that the independent variables in this study had no multicollinearity problem. The Tolerance values were all greater than 0.2 and the VIF values were all less than 10 which met the rule that for multicollinearity issue not to exist, Tolerance values should be greater than 0.2 and the VIF values should be less than 10. The Durbin Watson value obtained of 1.959 lied within the accepted values of the autocorrelation. This findings resonates well with conclusion by Nyawira (2021) and Jagongo and Mutua (2021).

The mathematical assessment of joint connection among the variables implicated that all the variables factored had a connection with the profitability. The results demystify that a unitary positive adjustment of capital adequacy is followed closely by 3.5% negative variation on the profitability only when other determining variables are constant. On the other side, a unitary but positive advancement of asset quality translate to movement in the same direction by the profitability hence indicating 52.2%. Finally, a small adjustment of single unit of liquidity is a recipe for negative fluctuation on profitability by 5% whenever all the predictors are maintained unchanged. However, the autonomous figure was 0.154 hence defining 15.4% changes on profitability when entire variables are held constant.

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

$$Y = 0.154 - 0.035 X_1 + 0.522 X_2 - 0.050 X_3 + \varepsilon$$

Y = Profitability (ROA)

A_0 = y intercept of the regression (constant variable)

X_1 = Asset Quality (Non-Performing Loans divided by Total loan)

X_2 = Capital Adequacy (Core capital divided by total assets)

X_3 = Liquidity management (Current asset divided by current liabilities)

ε = error term

5.4 Recommendation for Policy and Practice

The outcome posted a negative correlation between the capital adequacy and liquidity verse the profitability while asset quality contradicted by coining the positive association. This study recommends for the prudential and maximum engagement resources to increase profitability. The policy makers should analyze the international study and advise the most appropriate plans for enhancing the accountability and wealth creation.

The study calls for continuous yet futuristic examination of the business and holistic development to its value. The capital adequacy should receive concrete advice from the financial analyst periodically to brief the company adequately. From the review, capital has chief influence on the profitability. The capital adequacy is crucial in the solvency determination hence an optimum level that can increase the business failure should be standardized for the deposit taking MFIs. This is pivotal by aiding the firms to avoid losses, pay liabilities and responding to credit risk exhaustively.

Asset quality posted a positive connection with the profitability. This indicated that asset quality is the cornerstone for profitability. The business yield should be kept abreast to stimulate the economic prosperity. It worth noting that superior asset quality is reduces risk relative to firm with hence promoting the futuristic growth and increasing business stability. Nevertheless, inferior asset quality post great danger to the business. Therefore, this investigation recommends for quality and superior asset quality to enhance profitability.

Liquidity is the epicenter of credit management. It defines the economic prospect of the firm through the assets and liabilities. In this scenario, it is the driving force toward productivity, economic growth, and provide the multiple functionality and wide-array of use including maximization of assets in derivation of revenues and eliminating liquidity risk. Additionally, continuous improvement is vital for enhancing profitability.

5.5 Limitation of the Study

The investigation was apprehended comprehensively and extensively, however, the study concentrated some on capital adequacy, asset quality and liquidity. The study advocates for incorporation of control and moderating variables to realize a conclusive outcome. The variable maximized in the study did not exhaust all the variables determining the profitability of MFI. Hence, an increase of scope and regressor variables is worth advocating for.

The research was undertaken in the timeframe of five years. The interval spanned from 2017-2021 hence giving a trend and pattern of 5years as well as the prediction. Nevertheless, the assessment period is not adequate for mass decision making. Therefore,

an extended study covering more than 10years can capture different traits thereby leading to candid and sound judgment. Moreover, the dynamic in the microfinance, market trends and globalization has undergone significant evolution hence longer timespan of investigation is supreme for the study.

5.6 Suggestion for Further Study

The rigorous undertaking arrived at a diligent conclusion. It is imperative to state that credit risk is enormous sector with varying perspective and issues. The study gives concrete suggestion on the areas for comprehensive scrutiny to aid the optimization of profitability. This research advocates for the examination of credit risk verse the performance. Additionally, the study of credit risk strategies on the financial stability can help in fast-tracking the mitigation measures.

The study of financial risk, capital structure, leverage risk and financial stress verse the profitability can give comprehensive knowledge on their pattern and behavior. Their interrelationship can go a long way in policy making, making investment decisions and promoting the going concern. Finally, a concrete study of credit risk verse the financial fragility of the banking sectors by rigorous scrutiny can aid the policy formulation and comprehension thereby avoid enormous predicaments.

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APPENDICES

Appendix I: List of Licensed Deposit Taking Microfinance as at 31st December, 2021

| | |
|-----|---------------------------------------|
| 1. | Cantas Microfinance Bank Limited |
| 2. | Century Microfinance Bank Limited |
| 3. | Choice Microfinance Bank Limited |
| 4. | Daraia Microfinance Bank Limited |
| 5. | Faulu Microfinance Bank Limited |
| 6. | Kenya Women Microfinance Bank Limited |
| 7. | KEY Microfinance Bank Limited |
| 8. | Maisha Microfinance Bank Limited |
| 9. | Muongano Microfinance Bank Limited |
| 10. | Rafiki Microfinance Bank Limited |
| 11. | SMEP Microfinance Bank Limited |
| 12. | Sumac Microfinance Bank Limited |
| 13. | U & I Microfinance Bank Limited |
| 14. | Uwezo Microfinance Bank Limited |

Appendix II: Data Collection Instrument

| YEAR | ROA | Asset Quality | Capital Adequacy | Liquidity |
|-------------|------------|----------------------|-------------------------|------------------|
|-------------|------------|----------------------|-------------------------|------------------|

| | | | | |
|------|--|--|--|--|
| 2017 | | | | |
| 2018 | | | | |
| 2019 | | | | |
| 2020 | | | | |
| 2021 | | | | |