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ABSTRACT

Earnings ability is a vital evaluation metric of micro finance banks' financial health in order to maintain feasible high-quality asset portfolio. The study aimed at establishing the effect of earnings ability on financial performance of DTMFBs through the GMM approach for all 13 registered DTMFBs in Kenya for the 2018-2022 financial years. The study established that earnings ability has a positive and significant effect on the financial performance of DTMFBs. The R-squared value was 0.6326 for ROA and 0.7437 for ROE at the 0.05 significance level. The positive relationship between the two variables implies that deposit taking micro finance banks in Kenya had a sound earning capability in the study period. We recommend that deposit taking micro finance banks employ quality assets for sustained profitability and ensure that their earnings are generated through ethical and sustainable practices, and that the benefits are shared appropriately among all stakeholders to further promote financial inclusion in Kenya.

Key word: *Earnings ability; Financial Performance; CAMEL ratings model; Returns on Assets, Return on Assets.*

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INTRODUCTION

The role of the financial sector in contributing to economic growth and development has taken centre stage in both development finance and development economics discourse. According to economists (McKinnon 1973, and Stigliz and Weiss 1981) financial institutions remain key stimulants of economic transformation. However, emerging debate is now shifting its focus to the Microfinance sector particularly pointing out its role in mobilizing savings and facilitating cash transfers in the formal and informal sectors in emerging economies (Rizwan Mushtaq and Bruneau (2019); the debate is also focusing on the models that continue to evolve that seem to strengthen microfinancing (Karlan et al,. 2016) and also the potential challenges that micro finance institutions face (Terberger 2003). Rizwan Mushtaq and Bruneau (2019) content that micro finance institutions foster financial inclusion, support SMEs, create jobs, and promote economic empowerment. Microfinance banks bridge the gap between formal financial services and the unbanked population, facilitating economic growth and reduce poverty in the country (Terberger 2003). Successful micro finance banking model is anchored on the intermediary role that revolves around linking depositors and borrowers by mobilizing deposits from surplus units and accumulating them in savings for easy access by borrowers through loans and advances (Terberger 2003).

DTMFBs primarily serve as intermediaries, collecting funds (deposits) from individuals, businesses, and governments, and then lending these pooled funds to those in need. This process involves depositors providing money to the bank, and the bank, in turn, lends these funds to borrowers (IMF 2018). The interest rate paid by banks for deposits and the interest earned on loans are both termed as interest income. Interest is the key income revenue for the banks which managers closely monitor on behalf of their shareholders. The question of the quantity and quality of this revenue stream and the regularity of its flow becomes very important when evaluating a bank's earning strength (CBK, 2022).Assessing a bank's earnings quality is important for understanding its ability to consistently generate profits, ensuring sustainability and growth. This evaluation, as highlighted by (Nimalathasan 2008), focuses on the profitability of the bank.

According to the Central Bank of Kenya (2019), the evaluation of banks' earning ability involves the analysis of various profitability ratios such as the interest income ratio, operating profit ratio, and return on asset ratio. It is mandated that banks maintain adequate earnings to cover all operational expenses. Generally, a higher earnings ratio is deemed more favourable, signalling increased profitability.In the literature, three key ratios are commonly used to measure earnings quality (Nimalathasan 2008) including the Operating Profit to Average Working Funds (OP/AWF) ratio which gauges a bank's ability to profit from its operations; the Percentage Growth in Net Profit (PAT Growth) ratio indicates the percentage change in net profit compared to the previous year. Lastly, the Net Profit to Average Assets (PAT/AA) ratio, emphasized by (Dang 2011), measures the efficiency of asset utilization and the return on assets employed.Wikan (2017) outlines that Current Ratio (CR), Debt Asset Ratio (DAR), Total Asset Turnover (TATO), Return On Assets (ROA), and Price Earnings Ratio (PER) can be used in predicting profit growth.

Capacity of a bank to earn sustainable income can be assessed based on income's sufficiency to cover potential losses, maintain adequate capital, and distribute reasonable dividends (Maude et al., 2019). Akay et al,. (2006) contend that many parameters contribute to this evaluation, including the composition of net income, the volume and stability of income components, the level of expenses relative to operations, the contribution of non-traditional income sources, the adequacy of provisions, and the exposure of earnings to market risks. A micro finance bank whose parameters are positive will register a higher rating in terms of the earning ability.

A study by Peter et al ,.(2013) indicates that earnings have a positive correlation between earnings quality and managerial ability. They demonstrated that capable managers are linked to fewer subsequent restatements, increased persistence in earnings and accruals, reduced errors in bad debt provision, and higher accuracy in accrual estimations. These results support the notion that managers play a significant role in influencing the quality of judgments and estimates used in shaping earnings (Peters et al,.2013).

As micro finance banks become formalized through registration and regulation analysts are concerned about their ability to survive and remain sustainable in the competitive financial market.However according to (Terberger 2003) recent studies 'are sceptical about the high expectations raised by the microfinance approach, since profitable microfinance institutions (MFIs) are the exception rather than the rule'. This observation aptly mirrors the overall performance of the microfinance banks in many countries including Kenya because they continue to face fluctuating performance. To illustrate, annual reports by the central bank of Kenya indicate that the financial performance of micro finance banks declined significantly by 131 percent, with a combined loss before tax of Ksh.1.4 billion for the year ended December 31, 2018.These banks reported a combined loss before tax of Ksh.622 million in December 31, 2017 only posting an improvement in their overall performance with a combined loss of before tax of ksh. 339 million in 2019 but ending at a loss before tax of ksh.2.2 billion. The poor performance of the sector has largely been attributed to the reduction in financial income by 7.6 percent or Ksh.0.85 billion, with a corresponding increase in expenses by 3.0 percent or Ksh.382 million. Consequently, the sector reported a lower return on assets and equity ratio at negative 2.0 percent and negative 13.8 percent, comparing unfavorably with negative 0.9 percent and negative 5.5 percent as reported in the previous year, respectively. Reported returns on assets, it has been observed resulted in a decrease in shareholder's funds form 5.5 percent in 2017 to 13.8 percent in 2018.

The banks' capital levels declined in 2019 as a result of cumulative losses reported by the sector, coupled by increased provisioning (CBK 2018). As a result, the ratio of core capital to total risk weighted assets deteriorated from 17.2 percent to 15.2 percent in December 2019. The ratio of total capital to total risk weighted assets however, improved from 17.9 percent as at December 31, 2018 to 18.2 percent on account of increase in tier II capital. While the sectors' capital ratios were above the minimum requirement of 10 percent and 12 percent respectively.

Continued decline in performance of these banks creates doubt about their ability to meet the huge expectations that stakeholders have on them. This doubt is summarized by (Terberger 2003) in which she makes sobering observations that 'there seems to be good reason to question the claim that microfinance —after a limited period of subsidized institution-building— can develop into a zero-cost weapon against poverty' and 'the dream of MFIs creating a "win-win solution" and of commercial banking becoming a driving force in fighting poverty seems to be highly unrealistic'. It is out of these observations that the current study identified the need to evaluate the earning capacity of these banks in order to assess their financial health, appreciate how they manage risks and attract investment amid the complex competitive environment they operate in and understand their capacity to make a positive impact on both financial and social levels while surmounting their challenges to become self-sustaining.

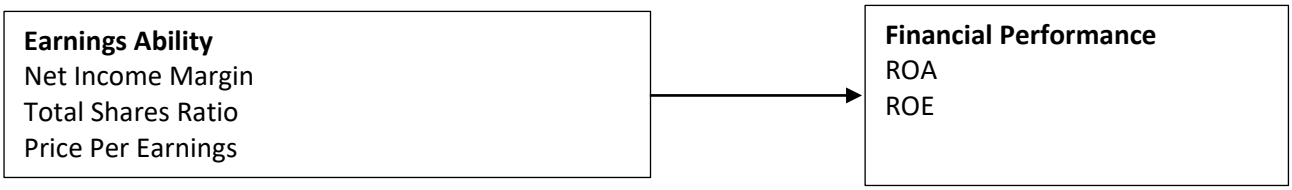
Objective

To evaluate the effect of the earnings ability on financial performance of deposit taking micro finance banks in Kenya.

Hypothesis

There is no significant effect of earnings ability on the financial performance deposit taking micro finance banks in Kenya.

Conceptual Framework



Independent Variable **Dependent Variable**

Source: Author 2023

Figure 1: Conceptual Framework

LITERATURE REVIEW

Earnings Ability of Micro Finance Banks

Gaul and Jones (2021) note that since the 2007-2009 financial crisis, problems at banks have typically involved asset quality, liquidity, and/or capital-driven with banks exhibiting elevated concentration (both assets and funding) levels with matching poor risk management practices which lead to capital erosion. The core business of DTMFBs is lending funds to their customers with the following characteristics: majority of their customers are low-income borrowers within a widespread geographical area and these borrowers have inadequate collateral to secure their loans (Addisalem 2015). Funds extended to this category of customers carry a high risk of default (King'ori 2017). The quality of assets, primarily loans, directly influences the level of default risk. A high percentage of non-performing loans (NPLs) can erode the profitability of a microfinance bank.

Through earning ability assessment micro finance banks have discovered that maintaining a high-quality asset portfolio is essential for their sustainable financial performance. Effective risk management, robust credit assessment processes, and proactive measures to address asset quality issues are crucial for ensuring the institution's long-term viability and impact (Ouma 2019). Therefore, it is imperative to consistently evaluate and assess the financial health of microfinance banks through reliable bankruptcy prediction models, as emphasized by (Charalampos-Orestis 2017). The capability to predict and identify vulnerable banks within a country's banking system serves as an early warning mechanism. Such predictions are immensely valuable in preventing or at least minimizing the impact of bank bankruptcies (Ouma 2019). In the banking industry, financial soundness denotes a bank's ability to maintain solvency, meet long-term fixed expenses, and execute long-term expansion and growth plans (Kattel 2015). Simply put, financial soundness encompasses the overall financial well-being of an individual bank or the entire banking sector when considered collectively. This includes the capacity to fulfil both short-term and long-term financial obligations promptly while adhering to regulatory requirements. Financial soundness can also be viewed as the absence of financial distress.

The earnings ability of deposit taking micro finance banks refers to their capacity to generate profits and income from their various financial activities. This typically involves activities such as lending, investing, fee-based services, and other banking operations. A bank's earnings ability is a crucial aspect of its financial health and sustainability, as it reflects its ability to cover operating expenses, provide returns to shareholders, and build capital reserves. The study used three ratios as proxies for earnings ability including:

i) Total Shares Returns

$$TSR = \frac{(P_{end} + D) - P_{begin}}{P_{begin}} \times 100 \qquad 1$$

P_{end} = the share's closing price at the end of the investment period.

P_{begin} = the share's opening price at the beginning of the investment period.

D represents any dividends or distributions received during the investment period.

According to Akileshi Ganti (Investopedia 2021) (Total Share Returns (TSR), or Total Shareholder Return, is used to measure the overall return an investor receives from holding stock over a period of time. It takes into account both capital gains (and losses) and any dividends or distributions that shareholders receive from investing in a firm. Total Shares Returns is expressed as a percentage. According to Davide Taliente et al,. (European Central Bank 2010) total shares ratio is a common metric used by investors and analysts to assess the performance of an individual stock or an entire investment portfolio.

ii) **Price Per Earning** = $\frac{Price}{\sum Earnings}$ 2

iii) **Net Interest Margin** = $\frac{Net\ Interest\ Income}{\sum Total\ Assets\ (\ Interest\ Bearing\ Assets)}$ 3

METHODOLOGY

The study employed descriptive correlational research design, which usually involves the collection and analysis of data from study units at a particular moment to assess the degree of relationships between variables, (Saunders et al., 2014); Mulwa 2013). The current study extracted quantitative data from annual reports from the Central Bank of Kenya and the Kenya Bureau of Statistics to give an insight into the status of earnings ability, Return on Equity, and Return on Assets of Deposit-Taking Microfinance Banks in Kenya for the 2018-2022 period. Because the study was a cross-sectional type, it implies that different earnings ability and financial performance ratios of the thirteen banks were examined concurrently.

Trochim, et al,. Ji, (2017) and Creswel et al,. (2003) contend that descriptive correlational research is essentially an investigation that aims to depict or characterize the attributes of a specific population. On the other hand, this design involves analyzing data to explore relationships among various variables (Creswel, 2003) focusing on understanding "what" is happening rather than delving into the "why" behind the phenomena being studied (Creswel et al,.2003). Consequently, findings from descriptive research often serve as a basis for formulating hypotheses that can be further tested using more rigorous research designs, Creswel et al,. (2003). Many researchers have utilized this research design including (Githira,et al,.2019), who examined the financial characteristics and stock returns of non-financial companies listed on East African securities exchanges. Additionally (Mokaya and Jagongo 2014) explored the relationship between the diversification of corporate loan portfolios and credit risk management, while (Ogilo 2012) focused on assessing the impact of credit risk management on banking performance in Kenya.

Several benefits of the explanatory correlational design include its ability to delve into a research topic with varying levels of depth and addressing new problems with limited or no prior research (Saunders 2007). It also forms the foundation for more conclusive research, guiding initial research design, sampling, and data collection and builds upon exploratory and descriptive research, seeking causes and reasons for a phenomenon and providing evidence to support or refute explanations (Brown 2007; Singh 2007). The choice of this design was based on the above advantages together with its embedded capability of combining quantitative with qualitative results to explain the established relationship between the hypothesised explanatory (Earnings ability) variable and dependent (return on asset and returns on equity) variables.

Model Specification

To complement qualitative analysis, the study adapted (Ishmail et al,. 2022) approach to establish a statistical model which defined and specified the structure and characteristics of appropriate statistical models that could effectively capture and quantify relationships between the hypothesized variables. This created a formalized model that represented these relationships in a quantitative context for a clear and structured framework for

statistical analysis and hypothesis testing as noted by (Allen 1999).

We also adapted the Blundel and Bond, (1997) models: the static long-run model and the short term dynamic model. The long run model helped to address the static characteristic of financial performance of DTMFBs if any: that the current period's performance is not influenced by the entity's performance in the preceding period implying that the model's estimation ignored the lagged and persisting dependent explanatory variables features. In contrast, the assumption of the short-run model considered the immediate previous period's performance, as represented by lagged dependent explanatory variables as having an impact on the current period's performance (Bond 1997). Additionally, it assumed the explanatory variable had an incomplete adjustment process affecting performance. To illustrate, in the short run, deposit – taking micro finance banks could use their financial performance from the previous period to partially explain their current period's performance, indicating partial adjustment in the panel model.

Null Hypothesis:

$ROE_{i,t} = f(TSR, PPE, NIM)$ ..... a

$ROA_{i,t} = f(TSR, PPE, NIM)$ ..... b

Linearization and parametric adjustment through application of natural logarithms to transform the variables led to the formulation of the long-run model in the following manner.

$ROE_{i,t} = \beta o + \beta_1 TSR_{i,t} + \beta_2 PPE_{i,t} + \beta_3 NIM_{i,t} + \alpha_i$ c

$ROA_{i,t} = \beta o + \beta_1 TSR_{i,t} + \beta_2 PPE_{i,t} + \beta_3 NIM_{i,t} + \alpha_i$ .... d

Where:

- **TSR** is Total Shares Ratio;
- **PPE** is Price per Earnings while
- **NIM** represents Net Interest Margin for DTMFB i at time t.

Therefore, the specified long run model was:

$ROE_{it} = \beta_0 + \Psi ROE_{it-1} + \beta_1 TSR_{it} + \beta_2 PPE_{it} + \beta_3 NIM_{i,t} + \alpha_{i.....}$ e

$ROA_{it} = \beta_0 + \Psi ROA_{it-1} + \beta_1 TSR_{i,t} + \beta_2 PPE_{i,t} + \beta_3 NIM_{i,t} + \alpha_{i.....}$ f

Variation in Time Estimate- Dynamic Panel Modeling

Dynamic panel models or lagged regression models, are statistical models that incorporate time lags in their analysis (Bond 1998) thereby accounting for the possibility of autocorrelation specific to individual panels or across all panels. Michael and Whited (2013) contend that dynamic panel analysis is necessary because of the presence of autocorrelation indicated by lagged residuals in auto-regression. In analyzing data related to DTMFBs, the study anticipated multicollinearity across the variables, especially in their dynamic panel data models with correlated lagged predictor variables. Consequently, the Generalized Method of Moments (GMM) techniques were employed to effectively address this problem of multicollinearity and accommodate the dynamic nature of the data. Blundel (1999) advises that GMM serve as a robust statistical approach for estimating parameters in dynamic panel data models. The technique was particularly well-suited because the number of time periods for the study was relatively small 2018 - 2022 (five years) compared to the number of cross-sectional units. Blundel and Bond (1999) observed that the GMM approach ensures a more reliable and unbiased parameter estimate while addressing the issues caused by multicollinearity and autocorrelation. Therefore, through GMM operation long-term (static) and short-term (dynamic) panel models were generated as presented in equations 3.16a up to 3.16b.

Study Population

A population is a well-defined group comprising individuals, occurrences, or objects that share common characteristics and fit within a particular description (Cooper & Schindler 2013). In this research, the entire population under scrutiny consisted of licensed deposit-taking microfinance banks (DTMFBs) operating in Kenya by December 2022. According to the Central Bank of Kenya data base (2022) indicates that there were a total of fourteen DTMFBs officially registered by the end of that financial year. We therefore used a census

survey to study 13 MFBs after excluding one micro finance bank from the analysis due to its lack of relevant financial statements, primarily because it was registered relatively late. Therefore, panel data was extracted from the annual reports of these banks, from the Kenya Bureau of Statistics and their individual websites. According to (Mugenda and Mugenda 2003), a census survey is the most desirable in situations where the target population is small. Using the whole population of the study promises to improve the validity of the collected data in that it may include some information which is likely to supplement the research study (Saunders, Lewis & Thornhill, 2009). The decision to focus the research on the micro finance sector was driven by the sector's vital role in catalyzing economic growth through its intermediary functions and promoting inclusivity through a cheaper loaning model in the Kenya's economy. This role involves facilitating the flow of funds between low income customers who need funds and DTMFBs who provide it, thereby fostering financial accessibility to finance small businesses and lending funds to a wider range of stakeholders in the economy (Murdock 2008).

RESULTS AND DISCUSSIONS

Diagnostic Tests

Diagnostic tests were conducted to detect potential problems with residuals and model specification. In order to rely on the estimated coefficients and consider them accurate representations of true parameters, it was important that the assumptions of linear regressions formulated in the Gauss-Markov theorem are met. Most of the assumptions related to the characteristics of the regression residuals, (Larocca 2005). The various diagnostic checks that were conducted to ensure adequacy of the panel regression model include:

a) Panel Unit Roots Test for Stationarity

The study conducted a panel unit roots test with the intention of ascertaining the order in which variables became integrated. The primary goal of this test was to establish whether the variables were stationary or non-stationary across all levels within the panel. The objective regression equation adapted was of the linear form structured as shown below.

$$\Delta y_{(it)} = \alpha + \beta y_{(t-1)} + \gamma \Delta y_{(t-1)} + \delta * \Delta y_{(t-2)} + \ldots + \varepsilon_{(t)}$$

Where $\Delta y_{(it)}$ represents differenced values of the time series, and the terms α, β, γ, δ, etc., are parameters to be estimated; t = 1……5 years, i= 13 DTMFBs while y represents ROA and ROE. According to (Granger et al., 1974) if ρ = 1, it implies that the current observation Y_{it} is influenced by its lag value Y_{it-1}, indicating non-stationarity in the data. Conversely, if ρ < 1, it suggests that the current observation Y_{it} is not influenced by its lag value Y_{it-1}, indicating stationarity in the variable.

We used the Levin, Lin, and Chu t unit root test to determine whether the time series under investigation exhibited stationarity or possessed a unit root. The core assumption of the test was that the time series featured a unit root, indicating non-stationarity therefore a stochastic trend (Blunder 1999). From Table 1 the respective unit root tests of Levin, Lin & Chu, ADF - Fisher Chi-Square and PP - Fisher Chi-square that were carried out on the earnings ability variables, posted $p<0.05$ at the 0.05 significance level. Additionally, all the chi-square values were above the 2.17 critical point implying that the results did not support the hypothesis of non-stationarity in earnings ability variables. Consequently, the study did not accept the null hypothesis and confirmed the alternative hypothesis (no unit root) which paved the way for carrying out the regression analysis without considering the lagged time series values of the earnings ability estimators' panel data set.

Table 1: Panel Unit Roots Test for Earnings Ability

Variable	Method	Statistic	Prob.
TSR	Levin, Lin & Chu t*	-5.5558	0.0000
	ADF - Fisher Chi-Square	145.5910	0.0000
	PP - Fisher Chi-square	271.1740	0.0000
PPE	Levin, Lin & Chu t*	-5.4264	0.0000
	ADF-Fisher Chi-square	122.2510	0.0004
	PP - Fisher Chi-square	206.5440	0.0000
NIM	Levin, Lin & Chu t*	-4.7724	0.0000
	ADF-Fisher Chi-square	134.763	0.0000
	PP-Fisher Chi-square	187.328	0.0000

b) Panel Tests of Multicollinearity

Lindner et al., (2022) emphasize that multiple interconnected aspects of variables can have separate and combined effects on the outcome variables under investigation. According to (Kalnins 2022), in this circumstance , the findings may be misleading because when two closely related variables show a high degree of correlation, it's possible that both are influenced by an exogenous third variable not considered in the regression analysis. This unobserved common factor, as illustrated by (Kalnins, 2022), can exacerbate the inaccuracies in the coefficient estimates of the correlated variables. From the above insights**,** the assessment of multicollinearity in earnings ability predictor variables was significant in order to maintain accuracy of the statistical model used to evaluate the predictive power of the earnings ability variables therefore potentially preventing any distortion in the relationships among these variables. If not addressed, multicollinearity could potentially lead to inaccurate predictions regarding changes in Return on Assets and Return on Equity. Consequently, we used the Variance Inflation Factor to detect the presence of multicollinearity in the panel data set. The results in Table 2 show that the VIF values that were generated ranged between 1.307 and 2.288, with the aggregate average of 2.010 however these values significantly fell below the 10 point threshold. As per (Gujarat 2009) guidelines, a VIF below 10 indicates that when these independent variables are collectively incorporated into the model, they do not introduce distortions in its predictive outcomes. On the basis these results the hypothesis that there was a presence of multicollinearity in earnings ability variables was rejected.

Table 2: Panel Multicollinearity test for Earnings Ability

		Collinearity Statistics	
Dependent Variable		Tolerance	VIF
ROE	NIM	0.587	1.704
	TSR	0.765	1.307
	PPE	0.432	2.315
ROA	NIM	0.436	2.294
	TSR	0.437	2.288
	PPE	0.465	2.150

c) Panel Serial Autocorrelation Test

If autocorrelation is present in a time series, it can impact the validity of statistical analyses and forecasting as it violates the assumption of independence of residuals, which can lead to unreliable coefficient estimates and inflated standard errors (Gujarati, 2009). Therefore, the study tested serial auto correlation using the Breusch Godfrey test at 0.05 significance level. The null hypothesis for the test was that there was no autocorrelation in the time series data of the earnings ability variables. The rule of thumb is that

when we get a p-value of less than 0.05 in the Breusch-Godfrey test, it indicates that the data is auto correlated. Table 3 results indicate that all the p values were greater than 0.05 implying that there was no serial correlation among the proxies of the earnings ability variables.

Table 3: Panel Breusch-Godfrey LM Serial Autocorrelation Test

Variable	Lags (p)	Chi2	d.f	Prob > chi2
TSR	1	1.321	1	0.78249
PPE	1	1.126	1	0.38249
NIM	1	1.287	1	0.64128

d) Panel Hausman Test

The Hausman test determined the choice between the fixed effects or random effects models for the regression analysis. The test assessed whether the differences between the coefficients in the fixed and random effects models were systematic or not. Analysis output in Table 4 shows that the generated p-values from the test were below 0.05 significance level. Additionally, the chi-square values for ROA and ROE were (28.06512 and 31.987211) respectively which were greater than the critical point 9.49 at 0.05 significance level. The null hypothesis assumed that the random effects model was consistent and efficient, while the fixed effects model was consistent but inefficient. From the results we rejected the alternative hypothesis in favor of the null hypothesis, consequently, the study settled on the fixed effects model as the preferable model.

Table 4: The Hausman Test

Dependent	Test Summary		Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
ROA			28.06512	4	0.0000
	Variable	Fixed	Random	Var (Diff.)	Prob.
	Net Income Margin	0.314934	0.312341	0.000200	0.0067
	Total Shares Ratio	0.221564	0.424544	0.000233	0.0000
	Price Per Earning	0.518611	0.550987	0.001213	0.0000
	Test Summary		Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
ROE			31.987211	4	0.0000
	Variable	Fixed	Random	Var (Diff.)	Prob.
	Net Income Margin	0.213768	0.3241676	0.000021	0.0000
	Total Shares Ratio	0.231567	0.5631238	0.000072	0.0000
	PPE	0.216747	0.3154327	0.000031	0.0000

We conducted an analysis of partial correlations among the three earnings ability predictor variables and financial performance indicators (ROA and ROE) throughout the entire five-year period spanning 2018 to 2022. The partial correlation results detailed in Table 5 show that ROE exhibited the largest partial correlation with coefficients for net income margin, total share ratio and price per earning of about 0.521, 0.743 and 0.623 respectively. Additionally, all the metrics related to earnings ability were positively associated with both Return on Assets and Return on Equity with the correlation coefficients (r- values) of 0.2197, 0.376, and 0.415 for ROA in relation to net income margin, total shares ratio, and price per earnings, respectively.However, there was no auto-

correlation among the earnings ability parameters but the results posted a high correlation of 0.768 percent between ROA and ROE, however this strong relationship was addressed by separately analysing these two dependent variables.

Table 5: Correlation Analysis Matrix

		ROA	ROE	NIM	TSR	PPE
		1				
ROA						
	Pearson Correlation	.768**	1			
ROE						
	Sig. (2-tailed)	0.000				
	N	65	65			
NIM	Pearson Correlation	.2197**	.621**	1		
	Sig. (2-tailed)	0.000	0.000			
	N	65	65	65		
TSR	Pearson Correlation	.376**	.743**	.513**	1	
	Sig. (2-tailed)	0.000	0.000	0.000		
	N	65	65	65	65	
PPE	Pearson Correlation	.415**	.623**	.457**	.349**	1
	Sig. (2-tailed)	0.000	0.000	0.000	0.000	
	N	65	65	65	65	65

Hypothesis Tests

The study's primary objective was to evaluate the direct effect of earnings ability on the financial performance of Deposit-Taking Microfinance Banks in Kenya. By regressing financial performance on earnings ability and evaluating the output, both the strength and magnitude of their relationships was established and assisted to measure the anticipated direct effect of earnings ability on ROE and ROE by confirming the result's beta coefficients. The quantity and magnitude of the effect was gleamed from the specified short run and long run linear models as indicated in equations 3.1a – 3.1f. In addition, the predictive accuracy of the generated models was gauged using the R-squared value, while their suitability was assessed by the F-statistic value at a significance level of 0.05. Finally, the statistical significance of the study variables was determined by examining their p-values at the 0.05 significance level.

H_0: There is no significant effect of earnings ability on the financial performance of DTMFBs in Kenya.

To confirm the above hypothesis, the study investigated whether earnings ability had a significant influence on financial performance DTMFBs in Kenya in the study period as hypothesized above. The results, as presented in Table 6, indicate that earnings ability had a significant effect on Return on Assets (ROA) with an F-value of 25.5772 at a significance level of $p<0.05$. The R-squared value that was generated was 0.6326 indicating that earnings ability explained 63.26 percent of the variations in ROA at the 0.05 significance level, while other factors not included in the model contributed to approximately 36.74 percent variation in ROA. Additionally, the analysis revealed that net income margin had a positive and significant effect on Return on Assets (ROA) with a beta coefficient of 0.1836. This implies that a one-unit increase in net income margin improved returns on assets by 18.36 percent, when the price per share and total shares ratio variables are held constant. Furthermore, the total shares ratio also positively and significantly influenced ROA. The output beta coefficient of the influence was 0.5718 at a 0.05 significance level. This indicates that a one-unit increase in the total shares ratio resulted

in a corresponding 0.5718 unit increase in ROA, while holding net income margin and price per earnings constant. Lastly, the analysis showed that price per earnings had a beta coefficient of 0.3823, indicating that a one-unit change in the price per earnings led to a significant 38.23 percent increase in ROA at the 0.05 significance level.

ROA= -0.3658 + 0.1836*NIM + 0.5718*TSR + 0.3823*PPE 6

Table 6: Fixed Effects on Effect of Earnings Ability on ROA

Variable	Coefficient	Robust Std. Error	t-Statistic	Prob.
C	-0.3658	0.5150	-0.1858	0.5555
NIM	0.1836	0.0700	0.5261	0.0011
TSR	0.5718	0.0468	2.1001	0.0000
PPE	0.3823	0.0025	2.1225	0.0000
R-squared	0.6326			
Adjusted R-squared	0.6123			
F-statistic	25.5772			
Prob(F-statistic)	0.0000			

When ROE was regressed on earnings ability composite variables the analysis provided more evidence that this variable had a positive significant effect on financial performance of DTMFBs. From Table 7 the beta coefficients for the variables are all positive thus: NIM=0.3447; TSR=0.6819 and PPE=0.5934 implying that while keeping TSR and PPE constant, a one-unit increase in NIM contributes to a 0.3447-unit improvement in ROE. Similarly, a one-unit increase in the TSR results in a 0.6819-unit enhancement in ROE holding NIM and PPE constant and finally one-unit increase in PPE contributes to a 0.5934 unit increase in ROE while holding both TSR and NIM constant. Evidence in table 7 also shows that the r-squared value was 0.7437 implying that earnings ability explained 74.37 percent changes ROE.

ROE =-0.3769 + 0.3447*NIM + 0.6819*TSR+0.5934*PPE 7

Table 7: Fixed Effect on Effect of Earnings Ability on ROE

Variable	Coefficient	Robust Std. Error	t-Statistic	Prob.
C	-0.3769	0.4150	-0.1758	0.5655
NIM	0.3447	0.0800	0.5361	0.0011
TSR	0.6819	0.0358	2.1101	0.0000
PPE	0.5934	0.0025	2.1325	0.0000
R-squared	0.7437			
Adjusted R-squared	0.7234			
F-statistic	36.6883			
Prob(F-statistic)	0.0000			

In Table 8, the results reveal a significant short-term effect of earnings ability on the financial performance of Deposit-Taking Microfinance Banks (DTMFBs) in Kenya, as indicated by the Wald Chi-square statistic of 35.962 at a significance level of less than 0.05. Specifically, earnings ability had a positive and significant effect on the lagged return on Return on Assets (ROA), with each variable displaying a positive influence: NIM (β= 28.6165); TSR (β=22.2712) and PPE (β=29.51354) all at the 0.05 significance level. This implies that a one-unit increase in net income margin contributes to a 28.616 unit increase in ROA, assuming the other two variables remain constant. Similarly, a one-unit increase in TSR leads to a 22.2712 unit increase in ROA with NIM and PPE remaining constant, while a one-unit increase in PPE results in a 29.51354 unit

increase in Return on Assets , with the other two variables held constant.

$ROA = -36.22053 - 0.14047*ROA_{t-1} + 28.6165*NIM+22.2712*TSR +29.5135*PPE$ 8

Table 8: Dynamic Panel Model on Effect of Earnings Ability on ROA

roa	Coef.	Std. Err.	P>| z |	[95% Conf. Interval]	
L1.	-.14047	.12897	0.000	0.28827	.214729
NIM	28.6165	1.7839	0.000	22.746	33.18644
TSR	22.2712	2.18717	0.000	6.2418	7.29100
PPE	29.51354	2.2264	0.000	10.1080	36.0549
-cons	-36.22053	3.3371	-22.39	29.4751	-20.2146

Wald Chi square = 39.62, p< 0.05.

In Table 9, the findings point to a significant short-term impact of earnings ability on the Return on Equity (ROE), within Deposit-Taking Microfinance Banks (DTMFBs) in Kenya. This significance is highlighted by the Wald Chi-square statistic, which stands at 28.59 at a significance level below 0.05. More so, earnings ability had a positive and significant influence on the lagged return, in relation to Return on Assets (ROE). The results show that Net income margin (NIM) had a beta of 27.505, while Total Shares Ratio (TSR) had a beta of 21.16010, and Price Per Earnings (PPE) showed an effect of 30.41421. These effects were observed at a significance level of 0.05. It implies that a one-unit increase in net income margin led to a 27.505 unit increase in ROE while keeping the other two variables constant. Similarly, a one-unit increase in total shares ratio resulted in a 21.16 unit increase in ROE, and a one-unit increase in price per earnings contributed to a 30.41421 unit increase in Return on Assets (ROE), with all other factors held constant.

$ROE = -30.14053 - 0.1204*ROE_{t-1} + 27.50542*NIM+21.16010*TSR +30.14053*PPE$

Table 9: Dynamic Panel Model on Effect of Earnings Ability on ROE

roe	Coef.	Std. Err.	P>| z |	[95% Conf. Interval]	
LI.	-.1203624	.01786	0.000	.12345	.214729
NIM	27.50542	0.67212	0.000	20.6430	33.18644
TSR	21.16010	2.96360	0.000	6.12070	7.29100
PPE	30.41421	2.11456	0.000	10.0080	35.0549
-cons	-30.14053	3.22341	-20.39	-29.3641	-21.214

Wald Chi=28.59; p< 0.05

The above results corroborate a study by (Barus, et al,.2017) that established a direct effect of earnings ability on financial performance of savings and credit societies in Kenya from an analysis of 83 SACCOS for the 2011-2015 financial years. On the other hand (Ausina-Tortosa 2012) explored the correlation between earnings quality and bank performance in Spain, and showed that, contrary to expectations, earnings management did not significantly impact profitability. Dash (2017) suggests that analysing earnings performance reveals how banks generate profits and provides insights into future growth and sustainability.

Earnings ability serves as a crucial metric reflecting a bank's current and future initiatives aimed at bolstering its income-generating capacities. Assessing earning ability, as highlighted by (Sathyamoorthi et al. 2017), provides insights into a bank's capacity to cover potential losses and distribute dividends. It also signifies a bank's ability to accumulate capital for future expansion (Munir and Bustamam 2017). In a study by (Kong'ori, 2012) in which the influence of CAMEL variables on the efficiency of commercial banks was investigated, the results revealed that Capital Adequacy, Earnings, and Liquidity ratios exhibited a negative relationship with efficiency ratio, whereas Management quality and Asset Quality demonstrated a positive relationship.

Proença et al,. (2023) research investigated the influence of earnings management on the efficiency of Eurozone banks, spanning its temporal progression up to the implementation of International Financial Reporting Standard 9. The analysed data from 70 banks and their study revealed that earnings management, specifically discretionary loan loss provisions, has a detrimental effect on efficiency. Interest income, derived from loans to third parties, significantly influences a bank's overall profitability. However, a bank with a more diversified income stream, including non-interest income, tends to be more profitable than those heavily reliant on interest income. Salike (2017); Zagherd and Barghi (2017) quantified the earning ability of Iranian banks by examining the ratio of earning expenses to total income and emphasized its substantial impact on bank performance. Munir and Bustamam (2017) assessed the earning ability of Islamic banks in the Gulf Cooperation Council (GCC) using Return on Equity (ROE) and found a significant negative impact on return on investment.

CONCLUSION AND RECOMMENDATION

Results from this study indicate that earnings ability has a significant effect on DTMFBs in Kenya. In the ever-changing financial ecosystem in Kenya systematic risk assessment should be undertaken as a continuous strategic risk management process. Evaluation of a micro finance banks' earning ability should be part of this process in order to establish the financial health of these banks to avoid the pitfalls of bank failures that are common with bankrupt institutions. DTMFBs should avoid uncontrolled expansion through branch expansion because engaging in such expansion with stagnant or bank declining performance contributes to declining shareholder returns.

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