

# Effect of Market Structure on Financial Performance of Deposit Taking Microfinance Institutions in Nairobi City County, Kenya

Josephine Ngina Monyi<sup>1</sup> Gregory Namusonge<sup>2</sup> Maurice Sakwa<sup>3</sup>

1. School of Entrepreneurship, Procurement and Management, Jomo Kenyatta University of Agriculture and Technology

2. Department of Entrepreneurship, Technology, Leadership and Management, Jomo Kenyatta University of Agriculture and Technology

## Abstract

The purpose of this study was to investigate the effect of market structure on financial performance of Deposit Taking Microfinance Institutions (DTMIs) in Nairobi City County, Kenya. Mixed method of research design was used and data was collected using questionnaires and secondary data collection sheet. Target population was the 12 registered DTMIs in Kenya from which sixty (60) portfolio managers and credit officers were randomly selected to form the sample size. Cronbach test of 0.809 was obtained and validity of the research instruments was ensured through content, criterion and construct validity testing. Data was analyzed using descriptive statistics and inferential statistics which included correlation analysis, ANOVA and multiple regression analysis. The study established a positive statistically significant relationship between market structure and financial performance. The market structure explained 62.2% of the changes in the financial performance DTMIs in Kenya. It's recommended that, market share should be strengthened in financial institutions to enable them proactively increase their deposit accounts and number of clients.

**Keywords:** market structure, financial performance, Deposit Taking Microfinance Institutions (DTMIs)

## 1.0 Introduction

A market structure describes the key traits of a market, including the number of firms, the similarity of the products they sell, and the ease of entry into and exit from the market. Examination of the business sector of our economy reveals firms operating in different market structures. Competitive forces are like an “invisible hand” that leads people who simply pursue their own interests and, in the process, serve the interests of society. According to CGAP (2001) once microfinance institutions are committed to managing business on a commercial basis, competition quickly becomes a hallmark of the environment in which they operate and determines efficiency. The economics literature states that competition ensures well-functioning markets, protects consumers, promotes allocative and productive efficiency and provides incentives for the development of new products.

Further, greater bank penetration in the overall economy is associated with DTMIs pushing toward poorer markets, as reflected in smaller average loans sizes and greater outreach to women (Cull et al., 2007). However, Evans (2002) indicates that MFIs need to assess the nature of the competition within the marketplace, then refocus their marketing campaigns and reprioritize their capital investments. Daniels (2000) also states that thinking more carefully about the competition issues, the MFIs might realize that the actual marketplace perception of the company's products, services and prices compared to the competition would be a major help in focusing time and money on the factors and business processes that have the biggest impact on the competitive position. MFIs were largely operating as a monopolist in the early years (CGAP, 2001; McIntosh et al., 2005). Such a market power is, however, associated with allocative inefficiency, which refers to the welfare losses as a result of high prices a monopolist charge. There is even further loss if the monopolist employs inefficient technology (productive inefficiency). Besides, there may not be pressure to invest in efficient technology and introduce new products (Motta, 2004).

Therefore, it would be reasonable to assume competition due to the market structure can be beneficial in the context of microfinance market as it may result in improved and new financial product designs, better customer services, lower costs and lower interest rates. Cull *et al.* (2007) investigated the performance of MFIs under the pressure of competition from formal banks, measuring competitive pressure by using bank penetration variables such as the number of bank branches per capita and per square kilometer. Their results show that MFIs faced with high competition tend to reduce the breadth of outreach but will focus more on the depth of outreach, i.e., more loans to women borrowers and smaller loans.

However, the effect on other performance indicators, such as profitability, appears to be weak. Competition and the effort to win clients and expand market share, therefore, may lead to low screening and lending standards. There are some indications of lose MFI-clients relationship with intense competition. Increased competition is also associated with an increase in information asymmetry, which makes it difficult for MFIs to know about the general debt level of clients. This in turn may lead to multiple borrowing, heavy debt burdens, low repayment rates and poor portfolio quality.

## 2.0 Statement of the problem

The concept of financial performance has received significant attention from scholars in the various areas of business. It is of primary concern virtually by all business stakeholders in any sector since financial performance is an ingredient to organizational health and ultimately its survival. High performance reflects management effectiveness and efficiency in making the use of a company's resources and this contributes to the economy at large according to Ansah-Adu *et al.*, (2012). Financial inclusion has been given an upper hand in most researches with less focus on the financial stability of the concerned DTMIs. This research has a bias towards the financial performance of the DTMIs because it's their good health financially that ensures the unbanked and unreached are inclusively taken care of. The competition that Microfinance institutions face from commercial banks has pushed them to transform to deposit taking which has enabled them mobilize resources through deposits from their customers. The market share strength is measured by the number of active deposit accounts as well as the number of branches that the DTMIs have. Therefore the financial performance of the DTMI can be assessed by the depth of penetration that the institution has in the market. Based on this, the peer grouping is also dependent on how the size of clientele that the DTMI has. Therefore the study was carried to determine how the market structure of the Deposit Taking Microfinance Institution determines its financial performance.

## 3.0 Theoretical framework

### Efficient Market Hypothesis Theory (EMT)

The efficient market theory (EMT) espouses that there exists different form of market efficiencies in regard to information. For instance in a weak form of efficient market, prices do not incorporate all the relevant information. According to Annuar, Arrif & Shamsheer (1992) and Fama & French (1992) reported or predicted earnings will affect share prices hence a direct relationship between earnings volatility and share price volatility. Damodaran (2012) espouses that as long as a fundamental analysis is being pursued towards valuation, then multiples arising from revenue, net income, invested capital or asset base among others may be used.

The theory assumes that market participants apart from being utility maximizing, also have rational expectations.

This includes the assumption that even though individuals may be wrong, the population as a whole is correct; and that people adjust their expectations according to new information. When faced with new information, some investors will overreact and others will under react. In summary, reactions will be random, but will have a constant volatility, and a known distribution function. Thus, the net effect does not allow for abnormal profit to be realized especially when considering transaction costs and spreads. In its weakest form, the EMH assumes that all information are already incorporated into the pricing of assets. Therefore, no excess profits can be earned by basing investment strategies on past returns. Muchina *et al* (2015) infer this to mean that in technical analysis, which studies formations in past prices, is of no use in predicting the future, since past movements already known to the market, the current situation remains unknown. Conversely fundamental analysis yields novel information on the extent to which value drivers explain price movements and may be rewarding for those keen investors who do their homework on companies' financial statements.

### Institutional Theory

Institutional theory attends to the deeper and more resilient aspects of social and market structure. It considers the processes by which structures, including schemas; rules, norms, and routines, become established as authoritative guidelines for social and market behavior. It inquires into how these elements are created, diffused, adopted, and adapted over space and time; and how they fall into decline and disuse. Although the ostensible subject is stability and order in social life students of institutions must perforce attend not just to consensus and conformity but to conflict and change in social structures. The basic concepts and premises of the institutional theory approach provide useful guidelines for analyzing organization-environment relationships with an emphasis on the social rules, expectations, norms, and values as the sources of pressure on organizations. This theory is built on the concept of legitimacy rather than efficiency or effectiveness as the primary organizational goal (Doug and Scott, 2004).

## 4.0 Methodology

### 4.1 Research Design

The study adopted the explanatory descriptive research design with a longitudinal dimension. Explanatory studies look for explanations of the nature of certain relationships where hypothesis testing provides an understanding of the relationships that exist between variables. A descriptive research design helps provide answers to the questions of who, what, when, where, and how associated with a particular research problem. It is a description of the state of affairs as it exists (Orodho & Kombo, 2001). It is used to obtain information concerning the current status of a phenomenon and to describe what exists with respect to variables or conditions in a situation. Sekaran and Bougie, (2011) concurs with Orodho & Kombo (2001) by asserting that a descriptive study is undertaken in order to ascertain and be able to describe the characteristics of variables of interest in a

situation. This approach therefore helped in describing the status of financial performance and market structures of DTMIs in Nairobi City County.

#### *4.2. Sample and sample size*

Out of the population of 13 DTMIs in Nairobi City County as at December 2012, the researcher arrived at a purposive sample of 9 DTMIs; those that had been licensed and were involved in the CBK's annual supervisory report in 2013 and 2014. Yumane (1967) suggested that a theoretical sample may be used where a theoretical sample purposively select organizations that exhibit the desired features focusing on the researcher's study. Out of the population of 71 employees within the selected DTMIs and in the relevant category (portfolio managers and officers), the researcher obtained a sample of 60 respondents.

#### *4.3. Sampling procedures*

Simple random sampling was used to select proportional samples of respondents comprising of portfolio managers and credit officers from each of the sampled DTMI. Simple random sampling is a probability sampling design in which every element in the population is accorded equal and independent chance of being selected into the sample. This minimizes selection bias hence the sampling error. All the DTMIs have headquarters in Nairobi thus justifying the study's scope.

#### *4.4. Data collection methods*

Both primary and secondary data were collected. Primary data was collected using self-administered questionnaires. These facilitated the collection of information based on opinions and ideas. The secondary data was drawn from the CBK annual supervision reports, journals and other publications.

#### *4.5. Pilot study*

A pre-test of the research instrument was done on a small sample of three DTMIs selected using convenience sampling. This was to evaluate the reliability of the research tool. The pilot study was carried out on the DTMIs not included in the research sample. This facilitated the improvement of the questionnaires and secondary data collection schedule.

#### *4.6 Data Analysis*

Descriptive statistics such as measures of central tendency, dispersion, skewness and percentages were obtained to describe the characteristics of the data. This helped in the assessment of the normality of the data for the purposes of parametric tests. The effects of the DTMIs' market a structure on their financial performance was then measured using correlation and regression analysis. The goodness of fit of the obtained regression model was then tested to determine its suitability in explaining the relationship between market structures and financial performance of the DTMIs. Ms Excel (Analysis Tool Pak) and SPSS were used as the data analysis tools.

### **5.0 Findings**

#### *5.1 Primary Data*

The primary data yielded a response rate of 86.67% indicating excellent response rate and a Cronbach's alpha of 0.809 indicating high reliability of the data collection instruments used. The sample constituted of 61.5% female respondents and 38.5% male respondents. 11.54% of the sampled officers were portfolio managers while 88.46% were credit officers.

##### *5.1.1 Financial performance*

Financial performance was the study's dependent variable. Using a 5-point Likert scale it was found that;

- i) Regardless of the changes in the operating environment, the DTMI will still grow in its profits.
- ii) DTMIs are not at the verge of closing any of their branches due to financial constraints. As such they are not in any financial crisis that would result to some or all of their branches being closed down.
- iii) There are no plans at the DTMIs to increase investment in new technology so as to aid efficient operations and service delivery. This is a major cause for alarm since lack of investment and adaptation to the changes in the dynamic world of technology may lead obsolete and irrelevant methods of service delivery and products in the long run.
- iv) DTMIs do not always have enough cash flow to finance any of its client's projects. This indicates limitation of cash flow within the DTMIs hence limitation in their ability to meet their immediate customer needs.
- v) There is consistent growth in the annual net income of the DTMI. As such, despite the challenges identified previously, the DTMIs have recorded a consistent growth in their annual net income over the years.

### 5.1.2 Market Structure

The study hypothesized market structure as a determinant with a significant effect on the financial performance of the DTMI. It was found that;

- i) Market research and development is an integral part of the DTMI's operations. As such DTMI's do conduct market research regularly in order to consistently develop their market structure.
- ii) The financial products offered by the DTMI are designed with reference to the market demands. This goes a long way in ensuring that the DTMI's are keeping pace with the changes in the market demand as well as ensuring that their products penetrate the market and are accepted by the customers.
- iii) Advertising for product differentiation is not given priority at the DTMI's. This results to the challenges faced by the DTMI's in achieving the set market structure objectives.
- iv) Innovation of new DTMI products is usually driven by market forces. DTMI's do not develop new products in isolation, but in consultation with the customers who are the target market for the new products, and in consideration of the prevailing market forces.
- v) Pricing of DTMI products is determined by the market forces.

### 5.2 Secondary Data

Secondary data on the indicators of financial performance and market structure were gathered from the CBK for all the nine sampled DTMI's, through the annual bank supervision reports for years 2013 and 2014.

In the year 2013, the mean net income of the DTMI's stood at Sh. 65.56 Millions, the mean ROE stood at 0.5% and ROA at -1.89%. The skewness values ranged from -1.4 to 1.151 (Std. Error = 0.717) which indicate slight negative/positive skewness.

In the year 2014, the mean net income of the DTMI's stood at Sh. 86.11 Millions, the mean ROE stood at -3.56% and ROA at -1.21%. The skewness values range from -1.424 to 1.300 (Std. Error = 0.717) which indicate slight negative/positive skewness. This skewness was found not significant since the coefficients lie within the range;  $\pm 2 * \text{Std. Error}$ , i.e. [-1.434, 1.434]. As such, the data are approximately normally distributed.

To determine whether the observations of financial performance indicators are dependent on years, and to rule out the possibility of years being a confound in the analysis, a two-way Analysis of variance (Two-Way ANOVA) was conducted at 5% significance level to test the hypotheses;

H<sub>01</sub>: Variation in years does not affect the financial performance of the DTMI's

H<sub>02</sub>: Variation in the indicators of financial performance does not affect the financial performance of the DTMI's

H<sub>03</sub>: There is no statistically significant interaction between years and indicators of the financial performance of the DTMI's

The P-value for "Years" (0.58838) is greater than the significance level of the test (0.05). Also, the computed F-statistic (0.29586) is much less than the critical F-statistic (3.99092). For these reasons, H<sub>01</sub> fails to be rejected. This implies that variation in years does not affect the financial performance of the DTMI's.

P-value for "Indicators" (0.00112) is less than the significance level (0.05). Also, the computed F-statistic (6.01828) is greater than the critical F-statistic (2.74819). For these reasons, H<sub>02</sub> is rejected. This implies that variation in the indicators affects the financial performance of the DTMI's.

The P-value for the "Interaction" (0.93120) is greater than the significance level (0.05). Also, the computed F-statistic (0.14706) is less than the significance level (0.05). H<sub>03</sub> is therefore not rejected, and the interaction between years and the indicators of financial performance is not statistically significant. The results of the two-way ANOVA rule out the possibility of years being a confound variable in the explanation of the variations in the financial performance of the DTMI's.

#### 5.2.1 Model variables and their indicators

The study examined three indicators of financial performance of the DTMI's, and three indicators of capital structure.

Table 1: Model variables and indicators

Variable	Financial Performance (Dependent)	Market structure (Independent)
Indicators	<ul style="list-style-type: none"> <li>• Net Income</li> <li>• ROE</li> <li>• ROA</li> </ul>	<ul style="list-style-type: none"> <li>• Market share</li> <li>• Number of branches</li> <li>• Number of active deposit accounts</li> </ul>

In order to determine the strongest hence the preferred indicator of financial performance of the DTMI's, an explorative correlation analysis was conducted using the Pearson's product moment coefficient of correlation.

Table 2: Correlation matrix

		Year 2013			Year 2014		
		Net Income	ROE	ROA	Net Income	ROE	ROA
Net Income	Pearson Correlation	1	.646	.418	1	.536	.397
	Sig. (2-tailed)	.	.060	.263	.	.137	.290
ROE	Pearson Correlation	.646	1	.897(**)	.536	1	.985(**)
	Sig. (2-tailed)	.060	.	.001	.137	.	.000
ROA	Pearson Correlation	.418	.897(**)	1	.397	.985(**)	1
	Sig. (2-tailed)	.263	.001	.	.290	.000	.
Market Share	Pearson Correlation	.994(**)	.626	.387	.969(**)	.454	.322
	Sig. (2-tailed)	.000	.071	.304	.000	.220	.397
No. of Branches	Pearson Correlation	.838(**)	.761(*)	.465	.902(**)	.506	.382
	Sig. (2-tailed)	.005	.017	.208	.001	.165	.310
No. of Active Deposit A/cs	Pearson Correlation	.978(**)	.631	.416	.799(**)	.323	.227
	Sig. (2-tailed)	.000	.068	.265	.010	.396	.557

The only strong correlation among the proposed indicators of financial performance is that between ROE and ROA (0.897 and 0.985 for 2013 and 2014 respectively). This indicates that ROE and ROA are more or less equal measures of financial performance of the DTMI, and so they can be used interchangeably. The correlation between each of these and the net income is relatively weak; 0.646 and 0.418 respectively for 2013, and 0.536 and 0.397 respectively for 2014. As such, neither ROE nor ROA can substitute net income as an indicator of financial performance.

It is further observed that the correlations between each of the indicators of market structure and ROE as well as ROA are relatively weak. On the other hand, most of the correlations between the indicators of market structure and the net income are relatively strong. This implies that net income is best explained by the listed indicators of market structures than the ROE and ROA. Further, it implies that variations in the net income as a measure of financial performance can be explained significantly by the variations in the indicators of market structures. Consequently, net income was selected as the strongest and the preferred measure of financial performance of the DTMI.

It is also observed that market share has the strongest correlation with net income in both years (0.994 and 0.969 respectively). As such, market share was selected as the measure for market structure.

### 5.2.3 Regression results

To determine the functional relationship between financial performance of the DTMI and market structure, a simple linear regression model was developed for each year and then for the two years. The model structure;

$$FINPERF = \beta_0 + \beta_1 MS + \varepsilon$$

Where: FINPERF is the financial performance of a DTMI

MS is the market structure of the DTMI

The regression model for year 2013:

$$Y = -20.2629 + 772.3664MS$$

It is observed that in the year 2013, the net income that was not influenced by market structure was Sh. (20.2629) Million. The model also indicates an increase of sh. 772.3664 million in net income per 1% increase in the market structure. The model is associated with 0.987 coefficient of determination indicating a very powerful model, and a high F-value (623.925) indicating that the model is statistically significant. The Durbin Watson statistic is 1.885 indicating absence of autocorrelation, while the t-statistic for market structure as a predictor is high (24.9785) indicating that it is a statistically significant and strong predictor of financial performance of the DTMI. This confirms that using the year 2013 data, market structure is a significant determinant of financial performance of a DTMI.

The regression model for year 2014:

$$Y = -35.6867 + 11.0502MS$$

In the year 2014, the net income that was not influenced by the market structure was Sh. (35.6867) Million. Further, the model indicates an increase of sh. 11.0502 million per 1% increase in the market structure. The

model is associated with 0.939 coefficient of determination indicating a very powerful model, and a high F-value (107.504) indicating that the model is statistically significant. The Durbin Watson statistic is 1.92 indicating absence of autocorrelation, while the t-statistic for market structure as a predictor is high (10.3684) indicating that it is a statistically significant and strong predictor of financial performance of the DTMI. This again confirms that using the year 2014 data, market structure is a significant determinant of financial performance of a DTMI.

The regression model for years 2013 and 2014 average data:

$$Y = -26.8289 + 931.3435MS$$

Using the average data, the net income that is not influenced by market structure was Sh. (26.8289) Million. The model indicates an increase of sh. 931.3435 million per 1% increase in the market structure. The model is associated with 0.966 adjusted coefficient of determination indicating a very powerful model, and a high F-value (227.292) indicating that the model is statistically significant. The Durbin Watson statistic is 1.878 indicating absence of autocorrelation, while the t-statistic for market structure as a predictor is high (15.0762) indicating that it is a statistically significant and strong predictor of financial performance of the DTMI. This again confirms that using the average data, market structure is a significant determinant of financial performance of a DTMI.

### 5.3 Discussion

Results indicated that there were effective policies that guided the operations of DTMI in relation to the competition from the other DTMI. Specifically, the DTMI have differentiation of products in the market, pricing is determined by the market forces and research and development is an integral part in the operations of the DTMI

Correlation analysis indicated that there exist a strong direct relationship between market structure and financial performance of the DTMI. The results of simple regression showed that market structure is a statistically significant determinant of the financial performance of the DTMI, where an increase in the market structure causes a significant improvement in the financial performance of a DTMI.

## 6.0 Conclusion

Despite the challenges faced by DTMI in Nairobi City County, there has been a consistent growth in their annual net income over the years. Market structure has been established to be a significance determinant of the financial performance of the DTMI. Market research and development in DTMI operations have gone a long way in informing the management about the actual feelings of the target customers about the products offered by the DTMI. Further, this informs the management's decisions on advertisement and marketing as well as the new grounds to explore to widen the market scope. The financial products offered by the DTMI are designed with reference to the market demands, ensuring that the DTMI keep in pace with the changes in the market demand and the products penetrate the market. Advertising for product differentiation is not given the priority it deserves and this leads to reduced awareness levels on the products offered by the DTMI as well as the varieties and their benefits.

### 6.1 Recommendations

The study highly recommends that managers in these DTMI should strive to increase their market share. DTMI should have policies that govern how pricing of products is done, and how research and development is used in decision making. The increase in active deposit accounts correlates significantly with the financial performance of the financial institution. Systems and structures should be put in place to enable the DTMI make their presence felt in the market as well as differentiating their products for customers attraction and retention.

### 6.2 References

- Almazari A. A. (2011). Financial Performance Evaluation of Some Selected Jordanian Commercial Banks. *International Research Journal of Finance and Economics*. ISSN 1450-2887 Issue 68 (2011) EuroJournals Publishing, Inc. 2011.
- Al-Tamimi, H., Hassan, A. (2010). Factors Influencing Performance of the UAE Islamic and Conventional National Banks. *Department of Accounting*. Finance and Economics, College of Business Administration, University of Sharjah.
- Altman, W. (1968). Financial ratios, discrimination analysis and the prediction of corporate bankruptcy, *Journal of Finance*, 31, 589-609
- AMFI. (2013). 2012 Annual Report on Microfinance Sector in Kenya. 17-46.
- Arko, S.K. (2012). Determining the causes and impact of nonperforming loans on the operations of microfinance institutions: A case of Sinapi Aba Trust. An executive MBA thesis. Kwame Nkrumah University and Technology, Accra, Ghana.[5]

- Arief, A. (2010). *The Global Economic Crisis: Impact on Sub-Saharan Africa and global policy responses*, Congressional Research Service.
- Brealey, R., Leland, H. E., and Pyle, D. H. (2012). Informational asymmetries, financial structure, and financial intermediation. *The Journal of Finance*, 32(2), 371-387.
- Brownbridge, M., (1998). *Banking in Africa: the impact of financial sector reform since independence*. Lagos: James Currey Publishers.
- Bryman, A. and Cramer, D. 2012). *Quantitative Data Analysis with SPSS for Windows*. Routledge, London
- Caprio, J., & Klingebiel, D. (2002). Episodes of systematic and borderline Financial Crises. *Journal of Banking and Finance*. 29, 196- 204.
- CBK. (2013) Annual financial supervision report. Central Bank of Kenya.
- CBK. (2014) Annual financial supervision report. Central Bank of Kenya.
- Central Bank of Kenya. (2014). *Financial Markets, Trends & Policies*. Nairobi: CBK. [10]
- CGAP. (2001). *Financial sustainability, targeting the poorest, and income impact: Are there trade-offs for micro-finance institutions?* Focus Note No. 5. Washington, D.C.: CGAP, December.

#### **About the first author**

Josephine N. Monyi is professional trainer in Public Finance and Accounts in The Kenya School of Government-Nairobi, the official government training institution. She also heads the Centre for Public Finance in the School which is mandated to train, consult and advise on Public Financial Management in the Government of Kenya. In addition she has a training experience of 12 years in both public and private sectors. She holds a Bachelor's Degree in education-Arts, Master's Degree in Business Administration-finance, Degree in Philosophy in Business Administration, finance and also a Certified Public Accountant.