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INSTITUTIONAL GOVERNANCE AND FINANCIAL PERFORMANCE IN NIGERIA'S NATIONAL MICROFINANCE BANKS

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ABSTRACT

This study examines the effect of institutional governance on the financial performance of National Microfinance Banks (NMFBs) in Nigeria for the period 2016 to 2021. Institutional governance was proxy by Board characteristics such as board size, board independence, board gender diversity, and audit committee size while financial performance was measured by the returns on assets (ROA). The study adopts a descriptive research design while panel multiple regression was used to test the hypotheses of the study. The study found that board size and board gender diversity have significant negative effects on financial performance while board independence and audit committee size have significant positive effects on the financial performance of the sampled banks. From the findings, the study concludes that institutional governance variables have a significant effect on the financial performance of the NMFBs in Nigeria. It is recommended that NMFBs should have a board with at least six non-

executive directors to guarantee board independence. The study also recommends that an audit committee size of at least four will help to enhance the financial performance of the NMFBs.

Keywords: Institutional governance, financial performance, microfinance banks, Nigeria.

INTRODUCTION

Institutional governance has been an issue of global concern long for some time now. Recently, corporate scandals during the crisis period raised serious doubts about the effectiveness of the corporate governance policies developed by companies (Diaz et al., 2017). It is pertinent, that corporate governance is keenly connected to the performance of an organization. This realization had led to quite a several empirical investigations on corporate governance's role in sustaining improved organizational performance (Akinleye et al., 2019). Accordingly, the Central Bank of Nigeria (CBN) identified poor corporate governance in microfinance banks as one of the threats to achieving its strategic plan from 2012-2016. This led to distress in some of the microfinance institutions in 2014. For instance, about 103 MFBs were found to have closed down as of December 2021 (NDIC, 2021).

There is, therefore, the need to study and x-ray the institutional governance drivers responsible for the recurrent distressing situations in the microfinance subsector to give policy recommendations on the worrying state of affairs in the subsector. This is necessary given the critical role that microfinance institutions play in facilitating the financial inclusion drive of the CBN as well as in delivering financial services to the underserved and financially-excluded low-income households, micro-entrepreneurs, micro and small enterprises which are the engine room for the development of any economy as pointed by Ashamu (2014). The debate on the nexus between institutional governance and corporate performance has gained the attention of many scholars within and outside Nigeria (Abdullahi et al., 2017; Ajala et al., 2012; Akpan & Riman, 2012; Gadi et al., 2015; Jegede et al., 2013; Joe & Kechi, 2011; Joseph & Ahmed, 2017; Khurshed & Shahid, 2016; Osundina et al., 2016).

However, the observed gap in the literature is that despite the enormity of empirical studies on the relationship between institutional

governance and financial performance, few or none of these studies focused on microfinance institutions in Nigeria on the same subject matter. As a result, a good number of empirical works on the subject matter focused majorly on other sectors such as manufacturing companies, insurance companies, pharmaceutical companies, agro-allied firms, education, hospitality and tourism industry, and other listed companies. These aforementioned domains were studied in the following studies: Al-Homaidi et al. (2019); Almajali et al. (2012); Arora (2012); Azutoru et al. (2017); EL-Maude et al. (2018); English et al. (2005); Jarboui (2015); Kajola (2008), Kajola et al. (2017); Karam & Sonia (2015); Khurshed & Shahid (2016); Lokuwaduge & Armstrong (2015); Manyuru (2005); Muriithi (2004); Muriithi (2005); Mustafa et al. (2009); Najjar (2012); Narwal & Jindal (2015); Nyongesa & Otiende (2017); Osundina et al. (2016); Roudaki (2018); Shahila (2018); among others. In addition, there are few studies that focused on the relationship between institutional governance and the financial performance of microfinance banks could currently not be extrapolated to Nigeria as they were either carried out in other countries like Ghana, Uganda and UK (Anaman & Pobbi, 2019; Anthony & Otieku, 2010; Bassem, 2009; Dato et al., 2018; Gani & Jermias, 2003; Hartarska, 2004; Mersland & Strom, 2007; Ssekiziyivu et al., 2018; Vishwakarma, 2015; and Zabojnikova, 2016). Other empirical studies on institutional governance and financial performance of microfinance institutions employed different performance variables (like ROE, Tobin's Q, NPM) and different years of coverage which could consequently present different results (Babatunde & Olaniran, 2009; Okoye et al., 2017; Oyewale & Adewale, 2014; Sholtz & Kieviet, 2018; Uwuigbe, 2011).

To address the above limitations, this study focused on the national microfinance banks that operated from 2016 to 2021 for the reason of national coverage and data availability. To the best of the researcher's knowledge, this is the first study on institutional governance that specifically focuses on national microfinance banks' performance in Nigeria over such a long period.

Furthermore, the extent of the literature review indicates that none of the previous studies has investigated the effect of institutional governance on financial performance (measured by return on assets, ROA) in national microfinance banks in Nigeria. It is on this note that this study expands the literature by studying the combined effect of institutional governance variables on the financial performance of national microfinance banks in Nigeria. The study has an important

role to play in filling the existing gap from the previous literature. The study would enable us to come up with useful and important findings, which would be beneficial to government agents and the related authorities in assessing the effect of Institutional governance attributes on the performance of Microfinance Banks in Nigeria. Additionally, it is hoped that most of the suggestions proffered in this research when taken into consideration will be useful in improving the performance of the Microfinance Banks in Nigeria, and will contribute positively to the economic development of Nigeria. And ultimately, the research will serve as a reference for further research. This paper is structured into five sections; introduction of the work, review of the related literature, methodology, discussion of the results of the data as well as discussion of findings and policy implications of the study.

REVIEW OF RELATED LITERATURE AND HYPOTHESES DEVELOPMENT

At this juncture, it will be pertinent to focus on financial performance in the context of the institutional governance indicators relevant to this study.

Board Size and Firm Financial Performance

Badu and Appiah (2017) examined the impact of corporate board size on firm performance for a sample of 137 listed firms in Ghana and Nigeria from 2008 to 2014 using a regression model and discovered that there is a significant and positive relationship between board size and firm performance. Also, Kajola et al. (2017) found that there is a positive and significant relationship between board size and financial performance. Similarly, Okoye et al. (2017) investigated the impact of corporate governance on the financial sustainability of Microfinance Institutions in Nigeria during the period, 2011 to 2015. In his findings, it was revealed that there is a positive relationship between board size and financial performance. More so, Gohar and Batool (2015) assert that there is a positive relationship between board size and financial performance among microfinance institutions (MFIs) in Pakistan. However, EL-Maude et al. (2018) examined the effect of board size, board composition, and board Meetings on the financial performance of listed consumer goods in Nigeria over the period of ten years from 2006 to 2015. It was revealed that board size is negatively significant. In the same vein, Olayiwola (2018) examined the influence of

corporate governance (CG) on the performance of companies and concluded that board size has a significant negative influence on performance. Based on the above arguments, board size is expected to have a significant level of influence on the financial performance of Nigeria's National Microfinance Banks. Thus, the first hypothesis is therefore hypothesized;

H^1: There is a significant relationship between board size and the financial performance of Nigeria's National Microfinance Banks.

Board Independence and Firm Financial Performance

Babatunde and Olaniran (2009) revealed that the percentage of non-executive directors had a statistically significant positive effect on performance while investigating the effects of governance on the performance of Jordanian commercial banks. In a similar study in Nigeria by Uwuigbe (2011), it was found that outside directors (non-executives) have a significant but negative impact on bank performance in Nigeria as measured in terms of ROE. Also, Borlea et al. (2017) investigated correlations between board characteristics and firm performances of Romanian non-financial listed companies. The findings revealed that board independence has a negative but statistically insignificant with performance. While, Alshetwi (2017) examined the association between board size, independence, and firm performance in Saudi nonfinancial listed firms. It was found that neither board independence nor board size was linked to firm performance. Accordingly, Okoye et al. (2017) investigated the impact of corporate governance on the financial sustainability of Microfinance Institutions in Nigeria during the period, 2011 to 2015. The findings of the study show that board independence are not statistically significant with financial sustainability. On the account of the aforementioned studies, board independence is expected to have a significant level of influence on the financial performance of Nigeria's National Microfinance Banks. Thus, the first hypothesis is therefore hypothesized;

H^2: There is a significant relationship between board independence and the financial performance of Nigeria's National Microfinance Banks.

Board Gender Diversity and Firm Financial Performance

Bennouri et al. (2018) used a sample of 394 French firms from 2001 to 2010 to study the relationship between female directorship

and firms' accounting (ROA and ROE) and market-based (Tobin's Q) performance. The study found that female directorship has a positive and significant influence on ROA and ROE. Terjesen et al. (2016) analyzed a comprehensive sample of 3876 public firms in 47 countries and found that firms with female directors have a higher return on assets and Tobin's Q. Also, Vafaei et al (2015) found that a higher proportion of female directors are associated with better financial performance in the top 500 ASX listed firms in Australia from the period 2005-2010.Ghosh, Petrova and Xiao (2015) revealed that female directors are positively related to firm's profitability and Tobin's Q. Accordingly, Carter et al (2010) found a positive and significant relationship between the number of female directors and the ROA. Similarly, Minguez-Vera (2008) investigated the relationship between the gender diversity of the board and financial performance for a sample of companies from Spain. They find that board gender diversity has a positive effect on firm value as measured by Tobin's Q. A study by Carter et al. (2003) reported that a significant positive relationship exists between the proportion of women on a board and the firm's performance. Erhardt et al. (2003) discovered that the percentage of women on the boards of directors is positively associated with the firm's financial performance.

On the other hand, Drago et al. (2011) analyzed Italian-listed companies and highlighted the effects on company value and performance of the interlocking women directors. They focused on all interlocking directors over the period between 2003–2010 to verify their gender and their role. They found a negative relationship between interlocking directors (including female interlocking directors) and the company's value and performance (measured by the equity value and the annual stock return). Similarly, Adams and Ferreira (2009) found that more gender-diverse boards devote more effort to monitoring managers but also found a negative relationship between the proportion of women on the board and Tobin's Q in an analysis of US firms.

A number of other studies found no relationship between board gender diversity and financial performance. Such as Okoye et al. (2017) investigated the impact of corporate governance on the financial sustainability of Microfinance Institutions in Nigeria during the period, 2011 to 2015. The findings of the study show that board

independence and gender diversity are not statistically significant. Also, some other studies found no significant relation (Adams & Ferreira, 2009; Farrell & Hersch, 2005; Gregory-Smith et al., 2014; Manini & Abdullahi, 2015; Rose, 2007; Shrader, Blackburn & Iles, 1997) found no connection between the gender of board members and firm performance. Based on the above literature, board gender diversity is expected to have some level of influence on the financial performance of Nigeria's National Microfinance Banks. Thus, the first hypothesis is therefore hypothesized;

H^3: There is a significant relationship between board gender diversity and the financial performance of Nigeria's National Microfinance Banks.

Audit Committee Size and Firm Financial Performance

Laith (2015) found that there is a positive relationship between audit committee meetings and the company's profitability of listed Jordanian companies from (2009-2014). Zabojnikova (2016) discovered a significantly positive relationship between the audit committee size and firm financial performance, in a study conducted in UK by examining the impact of various audit committee characteristics (audit committee size, frequency of meetings, and financial experience) on firm financial performance. Also, Asiriuwa et al. (2018) examined audit committee attributes and audit quality with emphasis on the specific requirements of the 2011 SEC code in Nigeria. The study discovered that there is a significant positive relationship between audit committee size and financial performance. On the other hand, Ghabayen (2012) investigated the relationship between audit committee composition and firm performance using the annual reports of 102 listed non-financial firms in the Saudi market in 2011. The results revealed that audit committee composition does not affect firm performance in the selected sample. Beside, Olayiwola (2018) investigated the influence of corporate governance (CG) on the performance of companies on corporate performance (CP) in Nigeria using an exploratory research design. There is an insignificant relationship between audit committees and the performance of listed firms in Nigeria. Based on the above arguments, the audit committee is expected to have a significant level of influence on the financial performance of Nigeria's National Microfinance Banks. Thus, the first hypothesis is therefore hypothesized;

H^4: There is a significant relationship between the audit committee and the financial performance of Nigeria's National Microfinance Banks.

Therefore, considering the existing gap in the reviewed literature, the researcher deemed it necessary to examine the effect of institutional governance variables on the performance of national microfinance banks in Nigeria for the period (2016-2021). Thereby contributing to the finance literature. The study is anchored in Agency Cost Theory as well as Stakeholder Theory respectively.

METHODOLOGY

This study adopted an *ex-post facto* research design. This is because the research is aimed at examining the effects of institutional governance variables on the performance of National Microfinance Banks in Nigeria. The data were obtained from the secondary sources through the audited financial statement of the firms between (2016–2021), a period of six (6) years. The population for this study included all the eight (8) national Microfinance Banks in Nigeria licensed by CBN to operate across the length and breadth of Nigeria i.e. MFBs with national banking licenses. The study employed a purposive sampling method hinging on national coverage and data availability per study period to determine the national MFBs selected for the study. Panel multiple regression model based on ordinary least square was adopted for the analysis through the use of STATA.

Table 1

Operationalization of Variables

Variables	Definition	Measurement	Relevant Studies
BSIZE	Board Size: Number of members that constitute a board.It also refers to the total number of directors that an organization has in its board structure and responsible for the performance and management of the company	Total number of Directors on the board within a fiscal year	El-Maude et al. (2018); Lin, Ishmail & Eze (2013)

(continued)

Variables	Definition	Measurement	Relevant Studies
BIND	Board Independence: the total number of directors brought from outside the company (non-executive directors) to sit on the board divided by the board size in a given period.It constitutes the elected or appointed members who jointly take charge of affairs of a company	Ratio of Non-executive Directors to Board Size	Alshetwi (2017); Haniffa & Hudaib (2006); Rashid (2018)
ACSIZE	Audit Committee Size: Group of people appointed by the board of directors responsible for helping the auditor to keep the independency of the management	Total number of members on the Audit Committee within a fiscal year	Antonio, Carlos & Ruben (2018); Carter et al., (2003)
BGDIV	Board Gender Diversity: the proportion or number of women in the board structure. It is also seen as the total number of women in the board over the board size in a given over a period.	Ratio of Women on board to Board Size	Olayiwola (2018); Zabojnikova (2016); Al-Matari (2013)
ROA	Return on Assets: A financial performance measure that focuses on the firm's ability to make profit.	Net profit after tax / Total Assets	Bennouri et al. (2018); Borlea et al. (2017); Okoye et al. (2017)

Model Specifications

A panel multiple regression model has been employed in a bid to examine the effects of institutional governance variables on the performance of National Microfinance banks in Nigeria. The model encapsulates the contribution of board size, board independence, board gender diversity, and audit committee size on returns on assets.

$ROA_{it} = \alpha_o + \beta_1 BSIZE_{it} + \beta_2 BIND_{it} + \beta_3 BGDIV_{it} + \beta_4 ACSIZE_{it} + e_{it}$

Where:

ROA = Return on Assets

BSIZE = Board Size

BIND = Board Independence

BGDIV = Board Gender Diversity
ACSIZE = Audit Committee Size
α = Constant
e = Error term
i = firm
t= time

RESULTS AND DISCUSSION

This section presents the results of the data analysis and tests of hypotheses formulated earlier in the paper. First, descriptive statistics, followed by the correlation matrix table and the summary of Regression results are presented and analyzed, and then policy implications and recommendations were made based on the findings.

Table 2

Descriptive Statistics

Variable	Min	Max	Mean	Std. Dev.
ROA	0.0004	0.7483	0.0928	0.1220
BSIZE	4.0000	11.0000	6.8572	1.7189
BIND	0.2857	0.9091	0.61953	0.2021
BGDIV	0.0000	0.5714	0.2942	0.1267
ACSIZE	3.0000	6.0000	4.0477	0.8540

Source: E-view output 2022

Table 2, reports the descriptive statistic for the dependent and independent variables respectively (ROA= Return on Assets, BSIZE= Board Size, BIND= Board Independent, BGDIV= Board Gender, ACSIZE= Audit Committee Size). The profitability indices measured by ROA show a mean value of 0.0928, which indicates that ROA is approximately at 9.2 percent and implies that the average return on assets of the microfinance banks in Nigeria is 0.0928 and it ranges between the minimum and maximum value of 0.0004 and 0.7483 during the period of 2016-2021. The board size (BSIZE) shows a

mean value of 6.8572. This signifies that the average numbers of directors on the board within the fiscal year in Nigerian microfinance banks are 6.85. While board independence (BIND) has a mean value of 0.61953, which suggested that board independence enjoyed about 61.9 percent average ratio of non-executive directors in microfinance banks in Nigeria. And board gender diversity (BGDIV) shows a mean value of 0.2942 and it implies that on average board gender diversity ratio is 29.4 percent in microfinance banks in Nigeria. Moreover, the audit committee size (ACSIZE) has been identified with a mean value of 4.0477, which signifies that the average number of audit committee members within a fiscal year in microfinance banks in Nigeria is 4.7 percent.

Table 3

Correlation Matrix

Variable	1	2	3	4	5
1. ROA	1				
2. BSIZE	-0.648997	1			
3. BIND	0.289526	-0.22609	1		
4. BGDIV	0.122354	-0.74497	0.341108	1	
5. ACSIZE	0.565069	0.000000	-0.371417	-0.354867	1

Source: E- view output 2022

From Table 3 the relationship between BSIZE and ROA of microfinance banks in Nigeria is negative as indicated by the correlation coefficient of 0.648997. There is a positive relationship between BIND and ROA of the sampled firms by the correlation coefficient of 0.289526. This implies that the number of non-executive directors has a positive association with the profitability of the microfinance banks in Nigeria. Similarly, BGDIV has a positive association with ROA of the microfinance banks in Nigeria at a correlation coefficient of 0.122354. In addition, ACSIZE has a positive association with ROA with a correlation coefficient of 0.565069.

Table 4

Regression Results

Variable	VIF	Tolerance
BSIZE	2.760489	9.35
BIND	1.241159	5.09
BGDDIV	3.15433	3.37
ACSIZE	1.526532	1.55
R^2		0.99422
F-Stat.		1599.078
F- Sig		0.00000
Hettest Chi 2		0.23320
Hausman Chi		1.00000

Source: E- view output 2022

From Table 4, the result shows that the variance inflation factors were consistently smaller than ten (10) which indicates the absence of a multicollinearity effect within the independent variables of the study (Tobachmel & Fidell, 1996). And the cumulative R^2 (0.99) which is the multiple coefficients of determination gives the proportion of the total variation in the ROA explained by BSIZE, BIND, BGDDIV, and ACSIZE jointly, has revealed that 99 percent of the total variation in profitability of the microfinance banks in Nigeria is caused by board size, board independent, board gender diversity, and the audit committee size respectively. Also, the F- Statistics is 1599.078. This indicates that the model of the study is fit and the independent variables are properly selected combined and used. This is confirmed by the F- Sig which is significant at 1 percent. While the result for the heteroskedasticity test shows a p-value of 0.00 which indicates a deviation from the OLS assumption, which may likely affect standard errors to be biased. As such, a robust standard error was used, and conclusions were offered according to this technique which has been recognized to be more reliable especially when heteroscedasticity has been identified.

Table 5

Summary of Pooled Ordinary Least Square Robust Regression

Variable	Coefficient	t-values	P-values
Constant	0.060422	11.20469	0.018
BSIZE	-0.014222	-42.57261	0.0000
BIND	0.075289	30.52855	0.0000
BGDIV	-0.0147457	-23.25982	0.0000
ACSIZE	0.013742	31.9393636	0.0000

It is observed that board size has a p- value of 0.0000 and a beta value of -0.0142, which is significant at 1 percent. This also implies that board size is negatively and significantly influencing the performance of the microfinance banks in Nigeria. This revealed that for every number of increases in board size there would be a decrease in the performance of the microfinance banks in Nigeria by 1.4 percent. This could be due to lack of coordination, delayed decision making (due to divergent of views), high board management cost, conflict of interest and other associated agency costs. The interplay of these factors could result in poor financial performance of microfinance banks.Therefore, this study agrees with the findings of Musa (2006), Olayiwola (2018), Sanda et al. (2004), Scholtz and Kieviet (2018), and Uwuigbe (2011) that board size has negative effect on financial performance of the firm but disagrees with the findings of Badu and Appiah (2017), Dato et al. (2018), Kajola et al. (2017), Okoye et al. (2017). Similarly, board independence has a positive and significant influence on the firm financial performance at 1 percent as revealed by the p- value of 0.0000 and coefficient of 0.0752 respectively. Hence, every increase in the number of board independence will lead to an increase in the firm financial performance of the microfinance banks in Nigeria by 7.5 percent. The finding is in line with the findings of Babatunde and Olaniran (2009), Musa (2006) that board independence has a signigficant positive effect on the financial performance of the firm but disagrees with the findings of Agrawal & Kneoeber (1996), Akpan & Amran (2014), Borlea et al. (2017), Fauzi & Locke (2012), and Uwuigbe (2011) that board independence has a negative effect on the financial performance of the firm. An increase in the number of non-executive directors on the board will affect the performance of microfinance banks positively as evident by the result of the study.

In addition, the results also show that board gender diversity and firm financial performance has a p- value of 0.0000 and beta value of -0.0147, which is significant at 1 percent. This shows that board gender is negatively and significantly influencing the firm financial performance of the microfinance banks in Nigeria. This also implies that every increase in the value of board gender diversity will lead to an increase in the firm financial performance of the microfinance banks in Nigeria by 1.5 percent. This is supported by the findings of Drago et al. (2011), Manini and Abdillahi (2015), Okoye et al. (2017), Smith et al. (2006), but not in line with the finding of Bennouri et al. (2018), Campbell and Mínguez-Vera (2008), Carter et al. (2010), Ghosh et al., (2015), Gohar and Batool (2015), Luckerath-Rovers (2013), and Terjessen et al. (2016). This could be largely possible where the appointment of such female board members was based on parochial considerations (such as family ties, cronyism, and politics) rather than based on technical competence and relevant experience. Moreover, the result shows that audit committee size and firm financial performance have a p-the value of 0.0000 and a beta value of 0.0137 and it is significant at 1 percent. This revealed that audit committee size has a positive and significant effect on the firm financial performance of the microfinance banks in Nigeria, which further suggested that for every increase in the number of audit committees' size there will be an increase in the firm financial performance of the microfinance banks in Nigeria by 1.4 percent. This is in consonance with the study of Asiriuwa, et al. (2018), Laith (2015), Olayiwola (2018), Triki and Bouaziz (2012), and Zabojnikova (2016), but disagrees with the study of Ghabayen (2012), Narwal and Jindal (2015). This could be as a result of proper checks, audits, and internal control measures that may be established by the audit committee to guide actions and safeguard the assets and resources of the banks so as to mitigate the adverse effects of mismanagement, fund misappropriation, corporate abuse, fraud, pilferage on the financial performance of the banks.

CONCLUSION

The paper investigates the effect of institutional governance attributes in relation to the financial performance of Microfinance Banks in Nigeria. And it was found that board size has a negative and significant influence on the financial performance of the microfinance banks in Nigeria. But board independence has a positive and significant influence on the firm financial performance of the microfinance banks in Nigeria. On the other hand, board gender diversity has negative and

significant effects on the financial performance of the microfinance banks in Nigeria. While audit committee size is positively and significantly influencing the financial performance of the microfinance banks in Nigeria.

Therefore, it is recommended that a few boards size should be maintained in order to improve the financial performance of the banks. On the other hand, the bank should as much as possible maintain the maximum number of non-executive directors that are responsible for aligning or mitigating the conflicting interest between the management and shareholders which will have a positive influence on the firm's financial performance. The study further suggests that involving higher number of females on the boards of microfinance banks will have a negative impact on financial performance. Therefore, the regulatory agencies such as the CBN should, in the short term, employ moral suasion to ensure minimal female gender representation on the boards of MFBs. Hence, there is a need to review the microfinance policy towards addressing the board gender inclusiveness in the microfinance subsector. Furthermore, the study suggests for a higher audit committee size will help to enhance the greater financial performance of the MFBs. It is imperative, to maintain the maximum required number of the audit committee size as recommended by the law to enable them effectively oversee audit functions, enhance financial information disclosure and strengthen internal control, and accountability systems which would ultimately and sustainably improve the financial performances of the MFBs.

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APPENDIX

A. Raw Data for Institutional Governance and Financial Performance Variables

Name of MFB	Year	Board Size (BSIZE)	Board Independence (BIND)	Board Gender Diversity (BGDIV)	Audit Committee Size (ACSIZE)	PAT	TOTAL ASSETS (TA)
NPF MFB	2016	7	6/7	1/7	4	391,320,000.00	8,680,638,000.00
	2017	8	5/8	1/8	5	477,816,000.00	10,865,189,000.00
	2018	9	7/9	1/9	5	514,598,000.00	12,334,021,000.00
	2019	9	7/9	1/9	5	554,903,000.00	12,361,872,000.00
	2020	10	7/10	0/10	5	631,890,000.00	15,952,341,000.00
	2021	10	7/10	1/10	4	195,749,000.00	17,597,552,000.00
ACCION MFB	2016	7	6/7	2/7	3	389,534,000.00	3,953,263,000.00
	2017	7	6/7	2/7	3	622,555,000.00	5,086,236,000.00
	2018	7	6/7	2/7	3	545,941,000.00	6,789,014,000.00
	2019	7	6/7	2/7	3	538,220,000.00	7,538,090,000.00
	2020	11	10/11	2/11	4	809,761,000.00	8,746,431,000.00
	2021	11	10/11	2/11	3	1,050,137,000.00	11,012,082,000.00
LAPO MFB	2016	6	5/6	1/6	3	1,739,007,000.00	27,571,821,000.00

(continued)

Name of MFB	Year	Board Size (BSIZE)	Board Independence (BIND)	Board Gender Diversity (BGDIV)	Audit Committee Size (ACSIZE)	PAT	TOTAL ASSETS (TA)
	2017	6	1/6	1/6	3	2,808,239,000.00	39,628,233,000.00
	2018	6	1/6	1/6	5	3,291,061,000.00	52,398,893,000.00
	2019	9	6/9	4/9	5	4,546,755,000.00	62,721,182,000.00
	2020	9	6/9	4/9	6	3,909,212,000.00	67,348,385,000.00
	2021	7	4/7	4/7	6	39,992,120,000.00	350,011,000,000.00
BAOBAB MFB (Formerly Microced MFB)	2016	5	5/5	2/5	4	10,530,000.00	100,898,870.00
	2017	5	5/5	2/5	4	654,512,746.00	18,799,960,688.00
	2018	5	4/5	2/5	4	290,000,000.00	1,999,991,000.00
	2019	5	4/5	2/5	4	10,175,000.00	3,798,160,000.00
	2020	6	5/6	2/6	4	223,970,000.00	5,317,216,000.00
	2021	7	6/7	2/7	4	100,009,000.00	2,129,045,520.00
LETSHEGO MFB (Formerly FBN MFB)	2016	4	¾	2/4	3	382,903,185.00	12,714,885,061.00
	2017	5	3/5	2/5	3	674,512,746.00	16,585,960,688.00
	2018	6	4/6	2/6	3	583,703,900.00	19,937,673,246.00
	2019	7	3/7	2/7	4	586,255,583.00	20,878,651,920.00

(continued)

Name of MFB	Year	Board Size (BSIZE)	Board Independence (BIND)	Board Gender Diversity (BGDIV)	Audit Committee Size (ACSIZE)	PAT	TOTAL ASSETS (TA)
	2020	7	3/7	2/8	4	140,332,000.00	4,522,576,300.00
	2021	5	4/5	2/5	4	364,458,000.00	39,700,060,000.00
AB MFB	2016	6	2/6	2/6	4	210,248,000.00	1,269,348,000.00
	2017	6	2/6	2/6	4	266,420,000.00	999,132,400.00
	2018	7	3/7	2/7	5	500,076,100.00	1,599,991,000.00
	2019	7	3/7	2/6	5	587,137,000.00	20,099,208,200.00
	2020	7	3/7	2/7	5	1,004,580,070.00	56,699,210,000.00
	2021	7	3/7	2/7	5	2,200,010,000.00	54,999,993,000.00
PARALLEX MFB	2016	5	2/5	1/5	3	5,448,855,000.00	55,601,990,000.00
	2017	5	2/5	1/5	3	6,746,821,200.00	45,352,721,500.00
	2018	6	3/6	2/6	4	78,999,000.00	608,000,000.00
	2019	6	3/6	2/6	4	71,508,389.00	589,999,999.00
	2020	6	3/6	2/6	4	29,299,990.00	799,999,999.00
	2021	5	4/5	2/5	4	73,587,000	1,265,199,100.00

B. Computed Data for Institutional Governance and Performance Variables

Name of Microfinance Banks (MFB)	Year	Board Size	Board Independence	BGD	Audit Committee Size	ROA
NPF MFB	2016	8	0.857142857	0.1429	4	0.04508
	2017	8	0.625	0.125	5	0.043977
	2018	9	0.777777778	0.1111	5	0.041722
	2019	9	0.777777778	0.1111	5	0.044888
	2020	10	0.7	0	5	0.039611
	2021	10	0.7	0.1	4	0.011124
ACCION MFB	2016	7	0.857142857	0.2857	3	0.098535
	2017	7	0.857142857	0.2857	3	0.1224
	2018	7	0.857142857	0.2857	3	0.080415
	2019	7	0.857142857	0.2857	3	0.0714
	2020	11	0.909090909	0.1818	4	0.092582
	2021	11	0.909090909	0.3333	3	0.095362
LAPO MFB	2016	6	0.833333333	0.1667	3	0.063072
	2017	6	0.333333333	0.1667	3	0.070865
	2018	7	0.285714286	0.1667	5	0.062808
	2019	9	0.666666667	0.4444	5	0.072492
	2020	9	0.666666667	0.4444	6	0.058045
	2021	7	0.571428571	0.5714	6	0.121021
BAOBAB MFB (Formerly Microced MFB)	2016	5	0.4	0.4	4	0.140294

(continued)

Name of Microfinance Banks (MFB)	Year	Board Size	Board Independence	BGD	Audit Committee Size	ROA
	2017	5	0.4	0.4	4	0.034976
	2018	5	0.8	0.4	4	0.140077
	2019	5	0.8	0.4	4	0.002679
	2020	6	0.833333333	0.3333	4	0.042122
	2021	7	0.857142857	0.2857	4	0.046223
LETSHEGO MFB (Formerly FBN MFB)	2016	4	0.75	0.5	3	0.01
	2017	5	0.4	0.3333	3	0.035487
	2018	6	0.6	0.3333	3	0.000389
	2019	7	0.428571429	0.2857	4	0.74829
	2020	7	0.428571429	0.1429	4	0.031426
	2021	5	0.8	0.4	4	0.009191
AB MFB	2016	6	0.333333333	0.4	4	0.165641
	2017	6	0.333333333	0.4	4	0.267093
	2018	7	0.428571429	0.25	5	0.310755
	2019	7	0.428571429	0.25	5	0.029233
	2020	7	0.428571429	0.375	5	0.01772
	2021	7	0.428571429	0.2857	5	0.04
PARALLEX MFB	2016	5	0.4	0.2857	3	0.097997
	2017	5	0.4	0.2857	3	0.148763
	2018	6	0.5	0.1429	4	0.129869
	2019	6	0.5	0.4286	4	0.121201
	2020	6	0.5	0.4286	4	0.036636
	2021	5	0.8	0.4	4	0.058162

C. Descriptive Statistics

	ROA	BSIZE	BIND	BGDIV	ACSIZE
Mean	0.092792	6.857143	0.619528	0.294163	4.047619
Median	0.060485	7.000000	0.645833	0.285714	4.000000
Maximum	0.748290	11.00000	0.909091	0.571429	6.000000
Minimum	0.000389	4.000000	0.285714	0.000000	3.000000
Std. Dev.	0.122043	1.718925	0.202132	0.126617	0.854040
Skewness	3.969917	0.777873	-0.071522	-0.196443	0.385328
Kurtosis	21.20525	3.006708	1.436838	2.424384	2.429977
Jarque-Bera	690.3263	4.235683	4.311889	0.849964	1.607964
Probability	0.000000	0.120291	0.115794	0.653781	0.447543
Sum	3.897244	288.0000	26.02017	12.35483	170.0000
Sum Sq. Dev.	0.610676	121.1429	1.675157	0.657303	29.90476
Observations	42	42	42	42	42

D. Correlation Matrix

	ROA	BSIZE	BIND	BGDIV	ACSIZE
ROA	1.000000	-0.648997	0.289526	0.122354	0.565069
BSIZE	-0.648997	1.000000	-0.226088	-0.744973	0.000000
BIND	0.289526	-0.226088	1.000000	0.341108	-0.371417
BGDIV	0.122354	-0.744973	0.341108	1.000000	-0.354867
ACSIZE	0.565069	0.000000	-0.371417	-0.354867	1.000000

E. Variance Inflation Factor (VIF)
Variance Inflation Factors
Date: 04/14/22 Time: 10:27
Sample: 1 42
Included observations: 42

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
BSIZE	9.35E-08	338.1600	2.760489
BIND	5.09E-06	124.6839	1.241159
BGDIV	3.37E-05	17.57676	3.154330
ACSIZE	1.55E-07	151.1266	1.526532
C	2.44E-05	1078.935	NA

F. Heteroskedasticity Test
Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	1.358193	Prob. F(4,37)	0.2332
Obs*R-squared	8.104805	Prob. Chi-Square(4)	0.2305
Scaled explained SS	190.2043	Prob. Chi-Square(4)	0.0000

Test Equation:
Dependent Variable: RESID^2
Method: Least Squares
Date: 04/14/22 Time: 10:28
Sample: 1 42
Included observations: 42

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-3.48E-05	1.22E-18	-2.85E+13	0.0000
BSIZE	1.38E-06	7.55E-20	1.83E+13	0.0000
BIND	9.92E-06	5.58E-19	1.78E+13	0.0000
BGDIV	2.80E-05	1.43E-18	1.96E+13	0.0000
ACSIZE	2.80E-06	9.73E-20	2.88E+13	0.0000
R-squared	1.000000	Mean dependent var		8.35E-07
Adjusted R-squared	1.000000	S.D. dependent var		1.20E-06
S.E. of regression	2.41E-19	Sum squared resid		2.14E-36
F-statistic	2.53E+26	Durbin-Watson stat		2.404543
Prob(F-statistic)	0.000000			

G. Pooled Regression
Dependent Variable: ROA
Method: Panel Least Squares
Date: 04/14/22 Time: 10:16
Sample: 2016 2021
Periods included: 6
Cross-sections included: 7
Total panel (balanced) observations: 42

Variable	Coefficient	Std. Error	t-Statistic	Prob.
BSIZE	-0.014222	0.000306	-46.51042	0.0000
BIND	0.075289	0.002257	33.35233	0.0000
BGDIV	-0.147457	0.005803	-25.41127	0.0000
ACSIZE	0.013742	0.000394	34.89036	0.0000
C	0.060422	0.004936	12.24109	0.0000
R-squared	0.994249	Mean dependent var		0.037734
Adjusted R-squared	0.993627	S.D. dependent var		0.012199
S.E. of regression	0.000974	Akaike info criterion		-10.91924
Sum squared resid	3.51E-05	Schwarz criterion		-10.71237
Log likelihood	234.3039	Hannan-Quinn criter.		-10.84341
F-statistic	1599.078	Durbin-Watson stat		3.500000
Prob(F-statistic)	0.000000			

H.h. H. Fixed Effect Regression
Dependent Variable: ROA
Method: Panel Least Squares
Date: 04/14/22 Time: 10:18
Sample: 2016 2021
Periods included: 6
Cross-sections included: 7
Total panel (balanced) observations: 42

Variable	Coefficient	Std. Error	t-Statistic	Prob.
BSIZE	-0.014222	0.000334	-42.57261	0.0000
BIND	0.075289	0.002466	30.52855	0.0000
BGDIV	-0.147457	0.006340	-23.25982	0.0000
ACSIZE	0.013742	0.000430	31.93636	0.0000
C	0.060422	0.005393	11.20469	0.0000
Effects Specification				
Cross-section fixed (dummy variables)				
R-squared	0.994249	Mean dependent var		0.037734
Adjusted R-squared	0.992393	S.D. dependent var		0.012199
S.E. of regression	0.001064	Akaike info criterion		-10.63352
Sum squared resid	3.51E-05	Schwarz criterion		-10.17842
Log likelihood	234.3039	Hannan-Quinn criter.		-10.46671
F-statistic	535.9073	Durbin-Watson stat		3.500000
Prob(F-statistic)	0.000000			

I. Random Model Regression
Dependent Variable: ROA
Method: Panel EGLS (Cross-section random effects)
Date: 04/14/22 Time: 10:18
Sample: 2016 2021
Periods included: 6
Cross-sections included: 7
Total panel (balanced) observations: 42
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
BSIZE	-0.014222	0.000334	-42.57261	0.0000
BIND	0.075289	0.002466	30.52855	0.0000
BGDIV	-0.147457	0.006340	-23.25982	0.0000
ACSIZE	0.013742	0.000430	31.93636	0.0000
C	0.060422	0.005393	11.20469	0.0000

Effects Specification			
		S.D.	Rho
Cross-section random		0.000000	0.0000
Idiosyncratic random		0.001064	1.0000
Weighted Statistics			
R-squared	0.994249	Mean dependent var	0.037734
Adjusted R-squared	0.993627	S.D. dependent var	0.012199
S.E. of regression	0.000974	Sum squared resid	3.51E-05
F-statistic	1599.078	Durbin-Watson stat	3.500000
Prob(F-statistic)	0.000000		
Unweighted Statistics			
R-squared	0.994249	Mean dependent var	0.037734
Sum squared resid	3.51E-05	Durbin-Watson stat	3.500000

J. Hausman Specification

Correlated Random Effects - Hausman Test

Equation: Untitled

Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	0.000000	4	1.0000

* Cross-section test variance is invalid. Hausman statistic set to zero.

** WARNING: estimated cross-section random effects variance is zero.

Cross-section random effects test comparisons:

Variable	Fixed	Random	Var(Diff.)	Prob.
BSIZE	-0.014222	-0.014222	0.000000	1.0000
BIND	0.075289	0.075289	0.000000	1.0000
BGDIV	-0.147457	-0.147457	0.000000	1.0000
ACSIZE	0.013742	0.013742	0.000000	1.0000

Cross-section random effects test equation:

Dependent Variable: ROA

Method: Panel Least Squares

Date: 04/14/22 Time: 10:19

Sample: 2016 2021

Periods included: 6

Cross-sections included: 7

Total panel (balanced) observations: 42

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.060422	0.005393	11.20469	0.0000
BSIZE	-0.014222	0.000334	-42.57261	0.0000
BIND	0.075289	0.002466	30.52855	0.0000
BGDIV	-0.147457	0.006340	-23.25982	0.0000
ACSIZE	0.013742	0.000430	31.93636	0.0000

Effects Specification			
Cross-section fixed (dummy variables)			
R-squared	0.994249	Mean dependent var	0.037734
Adjusted R-squared	0.992393	S.D. dependent var	0.012199
S.E. of regression	0.001064	Akaike info criterion	-10.63352
Sum squared resid	3.51E-05	Schwarz criterion	-10.17842
Log likelihood	234.3039	Hannan-Quinn criter.	-10.46671
F-statistic	535.9073	Durbin-Watson stat	3.500000
Prob(F-statistic)	0.000000		