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THE "WONDER WOMEN" PRESENCE AND PERFORMANCE-
THE MODERATING ROLE OF BANK SIZE

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Abstract

This article explores the impact of women board members on Malaysian bank financial performance and extends the analysis to measure the effect of the moderating function of bank size in the nexus between females on Board and firm performance. Using data on 10 Malaysian banks listed on Bursa Malaysia over the 2013 to 2021 period, we discovered a considerably beneficial effect on the number of women on Board, with at least 30% of females on Board having a significant positive influence on ROE and ROIC. Additionally, we find that the bank size moderates the relationship between gender diversity (the appearance of having at least one woman) and financial performance. These findings suggest that gender diversity on corporate boards may have varying effects on financial results for banks of varying sizes. The study regarding the association between board gender diversity and business financial success has significant implications for public policy and bank governance.

1. Introduction

Firms worldwide are expanding the number of women in their boardrooms in response to mounting pressure from regulators and society. Market participants also pay special attention to board diversity and demand more excellent supervision and prudence from banks relative to non-financial firms (Tampakoudis et al., 2022). There has been discussion on how banks might maintain their stability, financial performance (FP) and resiliency in the aftermath of the COVID-19 outbreak (Boubaker et al., 2022). The inclusion of women with diverse backgrounds and experiences on boards was promoted as a valuable tool to increase oversight abilities (Tampakoudis et al., 2022), improve the firm's access to diverse resources (Tasheva & Hillman, 2018), enhance decision making (Seierstad et al., 2017) and improve FP (Nainggolan et al., 2022).

While there is a fast-developing amount of data investigating whether female board involvement improves company results (Tosun et al., 2022), studies on this relationship in the banking sector are limited (Stefanovic & Barjaktarovic, 2020) and provide relatively mixed evidence (Marquez-Cardenas et al., 2022; Tampakoudis et al., 2022). As the banking system differs from other sectors, the conclusions drawn for different sectors cannot be generalised to banks (Bhatia & Gulati, 2021). Moreover, limited studies have been conducted in developing economies (Marquez-Cardenas et al., 2022). The regulatory environment in emerging nations differs significantly from that in industrialised economies, characterised by weak legal institutions, heavy government interference, inefficient financial markets, and significant ownership concentration (Saeed & Athreye, 2014). These institutional elements can potentially affect business structures and, as a result, corporate governance in developing economies (Fan et al., 2010). Because of this, the effect of women on the Board on FP may vary in developing economies with these kinds of corporate governance systems (Li & Chen, 2018). Moreover, earlier research on the nexus between women on Board and FP has produced conflicting findings, but few empirical studies explain why the results are contradictory. As a result, experts recommend examining moderating variables between gender diversity and FP to determine whether and how gender diversity influences FP (Li & Chen, 2018).

Thus, this study aims to look into the influence of women on Board on the FP in banking sectors in Malaysia and investigate the effect of company size as a moderator in this connection. This study focuses on the banking sector because it is a critical factor driving the global economy's revival (Demirgüç-Kunt et al., 2021), and this is especially significant for Malaysia, where banks have played an essential role in the nation's development. According to the findings of this study, the number of women on Board and a having 30% of women on Board had a beneficial influence on FP as assessed by ROE and ROIC. The findings also reveal that gender diversity on corporate boards may have varying effects on financial results for banks of varying sizes.

The remainder of the research is organised as follows: The second portion examines the research on the impact of women on boards on banking performance, as well as the moderating component in the connection. The sampling and data collection procedures, measurement of the variables, and empirical methodology used are explained in Section 3. Section 4 reports on the empirical findings. Section 5 summarises the findings and suggests some future study directions.

2. Literature Review and Hypotheses Development

2.1. Female on boards and financial performance

The mere existence of females on boards, according to critical mass theory, may not be enough to effect significant change and better boardroom corporate governance (Charles et al., 2015), and Female directors cannot fully participate in their roles on boards unless a certain level or large population of women is attained (Kanter, 1977a; Kanter, 1977b). The theory assumes that female directors contribute more significantly if at least three or more are on the Board, as one or two women are marginalised in a male-dominated boardroom (Owen & Temesvary, 2018). When the level of 30% of women directors is reached in a boardroom, because gender is no longer an impediment to tolerance and dialogue, women directors are more likely to be heard (Konrad et al., 2008). Hence, it increases firm performance (Joecks et al., 2013).

An effective board of directors should comprise the ideal individuals with specific abilities, expertise, experience, and independent aspects that align with the company's objectives and strategic goals (MCCG, 2021). MCCG (2017) advocated for more excellent female board representation and encouraged major corporations to have at least 30% female directors. While the active involvement of women on Board may enhance governance and increase shareholder value, excess monitoring acquired via the active participation of women on bank boards of directors may lower shareholder value (Gulamhussen & Santa, 2015). Farag and Mallin (2017) demonstrated that appointing up to 21% of women to a board of directors may improve a bank's FP; however, adding another woman may harm its FP. According to Gallego-Álvarez et al. (2010), diversity signifies a possible contradiction and a sluggish judgement approach, which might be especially harmful in competitive situations where decision-making speed is critical, contributing to a fall in FP. Moreover, indiscriminately adding more women to Board may be counterproductive and decrease FP among the studies that stated a negative association between women directors and the implementation of banks, including Adusei et al. (2017), Kramaric and Pervan (2016) and Manyaga et al. (2020). Several studies, on the other hand, have indicated that women on Board have little effect on the bank performance (Abubakar & Mamman, 2016; Amrani et al., 2022; Arquisola et al., 2018; El-Chaarani et al., 2022; Elgadi & Ghardallou, 2022; Ekadah & Kiweu, 2012; Eni-Egwu et al., 2022; Grover, 2022; Mohammad et al., 2018; Molla et al., 2021; Stefanovic & Barjaktarovic, 2020; Olufemi, 2021; Yar & Ahmed, 2020).

From a different perspective, several arguments are advanced against the potential benefits of female directorship, and few believe that women sitting on boards is more valuable when compared to their male counterparts (Amin et al., 2022). Noja et al. (2021) posit that women on Board are a fundamental component of improved financial successes, higher profitability for banks and risk management policies. Baselga-Pascual and Vähämaa (2021), Bhatia and Gulati (2021), Dong et al. (2017), Gulamhussen and Santa (2015), García-Meca et al. (2015), Pathan and Faff (2013), Mateus and Belhaj (2016), and Rodríguez-Ruiz et al. (2016) found that the existence of women on bank boards improves governance, which causes the bank to be more profitable. According to Jabari and Muhamad (2020), women on boards contribute distinct attitudes, viewpoints, and beliefs that improve Islamic banks' FP. The financial stability of financial firms (Uyar et al., 2022) and the importance of banks (Alharbi et al., 2022) are also improved by having a more excellent representation of women on the Board. Several other studies (Boadi et al., 2022; Bukar & Ahmed,

2020; Galletta et al., 2021; George & Muiruri, 2022; Onyekwere et al., 2019; Stefanovic & Barjaktarovic, 2020) also suggest that the benefits of having more female on Board outweigh the costs. Nevertheless, Owen and Temesvary (2018) assert that once a certain degree of gender diversity has been attained, it positively affects how well a bank does. Adusei et al. (2017) found that microfinance institutions are far more positioned to gain from gender diversity at the Board and managerial levels when they have 50% or more female board members. Following theoretical discussions and the majority of empirical evidence, our hypotheses are as follows:

H1. Having at least one woman on the Board of Malaysian banks is positively related to FP.

H2. The proportion of women on the Boards of Malaysian banks is positively related to FP.

H3. Having women on the Boards of Malaysian banks is positively related to FP only when a critical mass of women presence is reached.

2.2. Gender diversity and firm performance relationship: firm size as the moderator

The previous study on the association between women on Board and corporate performance produced contradictory findings, but few empirical studies explain why the results are contradictory (Li & Chen, 2018). Given the conflicting findings, Park (2020) correctly hypothesises that the link between gender diversity and performance is situational, nonlinear and affected by other variables. Based on Miller and del Carmen Triana's argument (2009) that there may be a factor in the firm's surroundings that prevents it from receiving the benefits of a gender-diverse board, According to Li and Chen (2018), the influence of women on Board on business performance may vary depending on the setting of the organisation. Bank size is a critical contingency variable in structural contingency theory (Child, 1975).

Previous research has identified firm size as one of the most critical moderating variables that may either promote or limit the firm's actions (Li & Chen, 2018). Nevertheless, many researchers have looked at the function of firm size as a control variable in FP (for example, Carmo et al., 2022; George & Muiruri, 2022). Only Li and Chen (2018) examine the effect of size as a moderate variable on the relationship between women on Board and FP. The finding indicates that women on Board positively impact FP and that this effect diminishes as a firm's size grows. According to the results, company size considerably modifies the link between board gender diversity and firm performance by reducing the benefits of board gender diversity on firm performance. Therefore, this study examines the function of firm size as a moderator variable. As a result, we suggest the following hypothesis:

H4. The bank size moderates the relationship between having at least one woman on the Board of Malaysian banks and the FP.

H5. The bank size moderates the relationship between the proportion of women on the Boards of Malaysian banks and the FP.

H6. The bank size moderates the relationship between having women on the Boards of Malaysian banks only when a critical mass of women presence is reached and FP.

3.   Methods

3.1.   Data collection and sample selection

In this study, we used a whole population sample or purposive sampling, which entails surveying the entire population. The study population consists of all the banks listed on Bursa Malaysia. As of July 31st, 2022, ten banks were listed on the Bursa Malaysia, and all were included in our sample, yielding 90 Malaysian bank-year observations from 2013 to 2021. In this study, we utilise two sources of information, i.e., the ORBIS database; the ORBIS[1] database, which provides economic and financial information; and annual reports for the corporate governance variables for which the data were hand-collected.

3.2.   Variables

This study is considered a preliminary study of the impact of women on boards on FP, taking a sub-sample of Malaysian banks listed on Bursa Malaysia. Table 1 describes the definitions of the variables. In the paper, we also present three main types of control variables.

Table 1.   Definitions of variables

	Dependent (Financial Performance)
ROA	The net income to average total assets ratio for a fiscal year.
ROE	The net income ratio to average total equity throughout a fiscal year calculates ROE.
ROIC	ROIC is measured as the ratio of net operating profit after tax to invested capital.
EPS	EPS is calculated by dividing net income by the number of outstanding shares.
	Gender Variables
WOM	Dummy variable coded 1 if the bank has at least one female board member, 0 otherwise.
PWOM	The ratio of women to total members is used to compute the proportion of women on the Board.
WWOM	The proportion of women on the Board is obtained by dividing the number of women by the total number of members.
	Control Variables
BOARD	The natural logarithm of total members is used to calculate board size.
SIZE	The natural logarithm of total assets measures the bank size.
LEV	Leverage ratio of total liabilities to total assets.

3.2.1. Dependent variables

To provide a comprehensive analysis of the women on Boards and the impact on FP, such as profitability, efficiency, and effectiveness, for the FP, we used four different proxies. Accounting metrics are beneficial in analysing past performance and may be used to assess a company's progress (Farza et al., 2021). We used four accounting-based measures, i.e., ROA, ROE, ROIC and EPS, as these four metrics are among the most frequently employed accounting performance measures in the literature (Abd Rahman & Mohamad, 2021; Abukari et al., 2022; Mohamad & Abd Rahman, 2021; Sánchez-Ballesta & García-Meca, 2007; Simionescu et al., 2020).

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[1] The data were retrieved from the main library of Universiti Teknology MARA, Shah Alam by the main aurhor of this study in October 2021.

3.2.2. Independent variables

We investigate three alternative proxies of woman directors in this research (i) WOM: A dummy variable with the value of 1 if the firm has at least one female board member and 0 otherwise.; (ii) PWOM: the proportion of female directors on the Board; (iii) WWOM: A dummy variable coded one if the firm has at least 30% female board members and 0 otherwise. We adopted the measurements of Board diversity by following past literature that used several measures (e.g., Ben Slama et al., 2019; Shehata et al., 2017; Brahma et al., 2021).

3.2.3. Moderating variables

According to Li and Chen (2018), the relationship between women on boards and FP varies by firm size; hence to analyse the link, the interaction between women on Boards and FP, the bank size is added as a moderating variable in the model. Previous research also suggests that bank size can moderate the relationship between board diversity and FP (e.g., Dwyer et al., 2003; Miller & del Carmen Triana, 2009), implying that intervening variables exist in the link between women on Board and FP.

3.2.4. Control variables

There are two control variables: firm-level control variables and board-level control variables. The latter category is the board size (BOARD) to examine the impact of board characteristics on FP. We used the banks' size (SIZE) and leverage (LEV) for the banks' specific features.

3.3. Research method

The multivariate regression models are estimated as follows:

$$FP_{i,t} = \beta_0 + \beta_1 Gender_{i,t} + \beta_2 Size_{i,t} \times \beta_3 Controls_{i,t} + \varepsilon_{i,t} \qquad (1)$$

$$FP_{i,t} = \beta_0 + \beta_1 Gender_{i,t} + \beta_2 Size_{i,t} + \beta_3 Gender \times Size_{i,t} + \beta_4 Controls_{i,t} + \varepsilon_{i,t} \qquad (2)$$

Where i refers to banks, t to time;

For our dependent variable, we picked four accounting-based FP measures: ROA, ROE, ROIC, and EPS. The independent variables in this study are the Board gender diversity proxy (Gender) and a set of control factors developed in prior research. To represent gender variety, this study's women on board proxies included both dummy and continuous variables. For Hypothesis 1, Hypothesis 3, Hypothesis 4, and Hypothesis 6, we used the dummy variables (WOM and WWOM) of 1 and 0 to represent gender diversity. For the analysis of Hypothesis 2 and Hypothesis 5, we used the continuous variable that captures the proportion of women on Boards. All variables are defined in Table 1. The models include year dummy variables (Year) and the error term of the derived equation (i,t). Because our data is a balanced panel, we should employ a random effects model (REM) or a fixed effects model to account for company-specific and time-invariant unobserved heterogeneity (FEM). As a result, sufficient tests are conducted for each regression to determine which estimate method gives the highest efficient estimators: pooled ordinary least squares (OLS), random effects model (REM), or fixed effects model (FEM).

4. Research Findings

4.1. Descriptive statistics

Table 2 shows the descriptive statistics of gender variables in this study. The board size spans from 5 to 14 members, with women on boards ranging from 0 (zero) to a maximum of 4. We can observe a varying number of women on Board throughout time, but from 2019 onwards, we can see a steady increase. The average proportion increased to thirty per cent due to the requirement by MCCG in 2017.

Table 2. Board gender diversity across the sample's years

	Total Number of Board Members			Total Number of Female Directors			The percentage of women on the Board (per cent)			Boards wi at Least 1 Woman	Boards wi Least 2 Women	Boards wi Least 3 Women	Boards wi at least 20 Women	Boards wi least 30% Women
Years	Min	Median	Max	Min	Median	Max	Min	Median	Max	Number of Companies				
2013	7	10	13	0	1	4	0	12	40	5	1	0	0	0
2014	7	10	13	0	1	3	0	13	33	5	2	1	0	1
2015	6	9	14	0	1	4	0	15	40	4	3	0	0	1
2016	3	9	13	0	1	3	0	18	40	4	2	2	0	1
2017	6	9	13	0	2	4	0	21	44	3	2	1	0	1
2018	5	8	11	0	2	4	0	23	43	3	4	1	1	1
2019	6	9	14	1	3	4	11	30	50	2	2	4	1	2
2020	5	9	14	1	3	3	20	30	50	1	1	8	1	1
2021	7	10	14	2	3	4	18	30	43	5	2	7	0	2

Variable definitions are as shown in Table 2. *, **, and *** imply statistical significance at 1%, 5%, and 10%, respectively.

However, 30% of women on the Board are present starting from 2014, with only one firm until 2018. From the table, only two banks have two women on Board for 2019 and the most recent year of the sample, i.e., 2021.

Table 3 displays the major descriptive statistics for the variables to be included in the study. It is important to highlight that just 90 bank-year data. The final sample for this exploratory study is between 2013 and 2021. The first dependent variable (ROA) has a mean value of 0.918, and the return is less than the amount invested in assets by the banks. The second dependent variable (ROE) has a mean value of 10.193. Return on invested capital (ROIC) is this study's third FP indicator, with a mean of 6.927. This ratio indicates how efficiently a bank uses the investors' funds to generate income. A percentage of more than two suggests that the bank efficiently uses investors' money. Earnings per share (EPS) is the fourth FP indicator. The mean value for EPS is 0.641, meaning that the shareholders only receive, on average less than RM1 per share invested.

Table 3. Descriptive statistics

Variable	Mean	Std. dev.	Min	Max
ROA	0.918222	0.425033	-2.25	1.56
ROE	10.19289	5.272827	-23.04	22.4
ROIC	6.927444	3.284838	-11.44	14.3
EPS	0.641	0.545173	-1.27	2.000
WOM	0.867	0.3285	0.0000	1.000
PWOM	21.333	13.79518	0	50.00
WWOM	0.322	0.470	0.0000	1.000
BOARD	2.1795	0.28408	1.099	2.639
SIZE	25.78408	0.993158	23.124	27.512
LEV	0.099667	0.040487	0.02	0.17

The study's continuous gender diversity variable, i.e., PWOM, shows that banks in the sample have an average of nearly 21.33% of women as board members. PWOM is a woman on Boards variable with the smallest zero value and a maximum of 50%. The mean of dummy gender diversity variables, i.e., WOM and WWOM, is 0.867 and 0.322, respectively, indicating that more than half of the banks in the sample hire women directors on the Board, and nearly 30% of banks in the model have at least 30 per cent women on Board. The natural logarithm of the number of members on the Board (BOARD) ranges from 1.099 to 2.639, and the mean value of 2.180. The bank size, SIZE variable, and the natural logarithm of the book value (Díaz-Chao et al., 2021) of total year-end assets vary substantially between banks, ranging from 23.124 to 27.512, with a mean of 25.784. As demonstrated by the LEV variable, all banks in the sample have their cash position financed by liabilities at an average rate of 10% of their assets (0.10).

4.2. Correlation analysis

The correlations between the variables included in the regressions are shown in Table 4. The coefficient of PWOM confirms a statistically significant and positive association with EPS. There are mixed findings on the association between other dependent and independent variables. The correlation coefficients between the independent variables are low, with the greatest being 0.610, indicating that multicollinearity is not a concern in this study. Furthermore, the variance inflation factor (VIFs) for specific variables ranges between 1.07 and 1.47. While the total VIF is less than 10, multicollinearity does not appear to be an issue in any models (Hair et al., 2012).

Table 4. Correlation matrix (Pearson correlations)

	ROE	ROA	ROIC	EPS	WOM	PWOM	WOB	BOARD	SIZE	LEV
ROE	1.000									
ROA	0.892***	1.000								
ROIC	0.813***	0.885***	1.000							
EPS	0.512***	0.5012***	0.672***	1.000						
WOM	-0.055	-0.033	0.042	0.164	1.000					
PWOM	-0.077	-0.022	0.145	0.2730***	0.610***	1.000				
WWOM	-0.010	0.074	0.164	0.178	0.270**	0.786***	1.000			
BOARD	0.041	-0.083	-0.219**	-0.386***	0.036	-0.241**	-0.238**	1.000		
SIZE	0.106	0.049	0.023	0.197*	0.499***	0.257**	0.127	0.105	1.000	
LEV	-0.244**	-0.286***	-0.490***	-0.363***	0.094	-0.169	-0.177*	0.248**	0.315***	1.000

Variable definitions are shown in Table 2. *, **, and *** imply statistical significance at 1%, 5%, and 10%, respectively.

4.3. Regression analysis

For each regression, sufficient tests are run to identify which estimate strategy produces the best efficient estimators: pooled ordinary least squares (OLS), random effects model (REM), or fixed effects model (FEM).

4.3.1. Controlling for unobserved bank characteristics (panel data model)

Because our data is a balanced panel, we should utilise a REM or a FEM to account for time-invariant and company-specific unobserved heterogeneity. Therefore, for each regression, sufficient tests are run to

identify which estimate strategy produces the most efficient estimators: FEM, REM, or pooled ordinary least squares (OLS). The regression findings reported corresponding to the most efficient estimating approach determined using the F statistic and the Hausman tests. However, due to collinearity issues for the estimations involving the moderating variable (GENDER*SIZE), Because of the limited number of observations, we use the OLS to generate the most efficient estimators in our research. The regression analysis results are shown in Table 5. We used four FP measures. Panel A, C and D represent the ROA, ROIC and EPS, respectively and Panel B for ROE.

Table 5. Regression results estimation

	Panel A—FP Measured by ROA					
	WOM		**PWOM**		**WWOM**	
	REM	OLS	REM	OLS	FEM	OLS
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Intercept	-2.152*	2.640	-1.826	-1.439	-1.879*	-1.532
	(1.183)	(4.342)	(1.115)	(1.820)	(1.086)	(1.382)
GENDER	-0.124	-5.533	-0.003	-0.023	0.084	0.557
	(0.136)	(4.692)	(0.003)	(0.082)	(0.095)	(2.600)
BOARD	0.142	0.187	0.117	0.092	0.169	0.128
	(0.147)	(0.159)	(0.153)	(0.163)	(0.153)	(0.163)
LEV	-3.606***	-4.005***	-3.731***	-3.987***	-3.397***	-3.617***
	(1.068)	(1.201)	(1.106)	(1.189)	(1.089)	(1.196)
SIZE	0.125***	-0.070	0.113**	0.104	0.106**	0.099*
	(0.048)	(0.178)	(0.045)	(0.074)	(0.042)	(0.054)
GENDER* SIZE		0.216		0.001		-0.024
		(0.190)		(0.003)		(0.100)
N	90	90	90		90	90
Adj. R2	12.33%	9.06%	12.70%	13.88%	8.72%	11.30%
F-Test	3.65***	2.77**	3.08***	2.71**	3.60***	2.14*
Haussman test	4.69	-	6.16	-	22.68***	-
	Panel B—FP Measured by ROE					
	WOM		**PWOM**		**WWOM**	
	REM	OLS	FEM	OLS	FEM	OLS
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Intercept	-13.722	87.271	-14.006	-24.341	-16.006	-19.550
	(14.349)	(53.613)	(12.354)	(22.716)	(11.982)	(16.973)
GENDER	-0.235	-113.882*	0.073**	0.802	2.699**	51.635
	(1.643)	(57.938)	(0.041)	(1.027)	(1.053)	(31.930)
BOARD	-0.746	0.423***	-0.296	-1.176	-0.054	-0.259
	(1.780)	(1.966)	(1.731)	(2.028)	(1.692)	1.997
LEV	-42.901***	-52.141***	-37.256***	-45.847***	-37.063***	-40.384***
	(12.935)	(14.830)	(12.409)	(14.836)	(12.016)	(14.691)
SIZE	1.164**	-2.970	1.047**	1.672*	1.130**	1.334**
	(0.581)	(2.202)	(0.496)	(0.918)	(0.469)	(0.660)
GENDER* SIZE		4.552*		-0.034		-1.996
		(2.348)		(0.040)		(1.231)
N	90	90	90	90	90	90
Adj. R2	10.23%	14.96%	4.79%	12.86%	6.55%	13.06%
F-Test	5.83***	2.95*	6.26***	2.48**	7.26***	2.52**
Haussman test	7.01	-	89.91***	-	18.37***	-
	Panel C—FP Measured by ROIC					
	WOM		**PWOM**		**WWOM**	
	FEM	OLS	FEM	OLS	FEM	OLS
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Intercept	-4.494	50.723*	-5.557	-10.579	-7.303	-9.377
	(8.127)	(29.974)	(7.405)	(12.765)	(7.339)	(9.471)
GENDER	1.045	-61.229*	0.053**	0.417	1.379**	24.965
	(0.945)	(32.392)	(0.024)	(0.577)	(0.645)	(17.817)

BOARD	-1.336	-0.871	-0.793	-1.466	-0.834	-1.177
	(1.030)	(1.099)	(1.038)	(1.140)	(1.036)	(1.114)
LEV	-43.536***	-47.105***	-40.209***	-42.353***	-41.237***	-40.906***
	(7.411)	(8.291)	(7.438)	(8.337)	(7.360)	(8.198)
SIZE	0.689**	-1.550	0.663**	0.976*	0.765***	0.888**
	(0.329)	(1.231)	(0.297)	(0.516)	(0.287)	(0.368)
GENDER* SIZE		2.480**		-0.017		-0.957
		(1.313)		(0.023)		(0.687)
N	90	90	90	90	90	90
Adj. R2	27.43%	27.47%	24.13%	24.88%	26.08%	26.09%
F-Test	3.71***	7.73***	4.31***	6.90***	4.27***	7.28***
Haussman test	127.36***	-	38.05***	-	102.18***	-

Panel D—FP Measured by EPS					
	WOM		**PWOM**		**WWOM**	
	REM	OLS	REM	OLS	REM	OLS
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Intercept	-2.220	6.515	-2.367**	-0.430	-2.520*	-1.836
	(1.449)	(4.779)	(1.348)	(2.024)	(1.327)	(1.523)
GENDER	0.075	-9.812*	0.002	-0.115	-0.019	-2.650
	(0.163)	(5.164)	(0.004)	(0.092)	(0.108)	(2.864)
BOARD	-0.625***	-0.560***	-0.606***	-0.572***	-0.632***	-0.637***
	(0.175)	(0.175)	(0.179)	(0.181)	(0.179)	(0.179)
LEV	-5.260***	-5.980***	-5.168***	-5.374***	-5.345***	-5.491***
	(1.287)	(1.322)	(1.317)	(1.322)	(1.307)	(1.318)
SIZE	0.182***	-0.178	0.186***	0.108	0.197***	0.171***
	(0.059)	(0.196)	(0.054)	(0.082)	(0.052)	(0.059)
GENDER* SIZE		0.401*		0.005		0.102
		(0.209)		(0.004)		(0.110)
N	90	90	90	90	90	90
Adj. R2	43.04%	36.80%	34.04%	35.30%	33.90%	34.56%
F-Test	13.05***	9.78***	43.86***	9.17	11.09***	8.87***
Haussman test	2.60	-	4.68	-	3.34	-

Table 2 defines the variables. Each column displays the gender proxy estimate results and the most efficient model determined by the F statistic and the Hausman test. *, **, and *** represent statistically significant levels of 1%, 5%, and 10%, accordingly. Standard parenthesis mistakes are robust.

4.3.2. Do women on boards affect bank performance?

We present the regression analysis results summary using the most efficient estimation approaches in Table 5 based on the best results after conducting the Breusch, and Pagan Lagrangian Multiplier (LM) test was used to compare the Pooled Ordinary Least Squares (OLS) model and the random effects (RE) model (Breusch & Pagan, 1980). Stakeholders may consider the inclusion of more women on boards as increasing bank performance, gaining future cash flow, being less risky, and having a better reputation since the banks will not be labelled or face non-compliance fines (Buallay & Alhalwachi, 2022; Galletta et al., 2021). Only the proportion of women on Board (PWOM) and the existence of at least 30% of women on Board (WWOM) indicate a significant and positive impact on ROE and ROIC, as shown in Table 5.

However, the dependent variables, ROA and EPS, do not show any significant relationship as expected. The result is consistent with Onyekwere et al. (2019) and leads us to conclude that the effect of gender diversity on FP is not linear because the existence of at least one woman on the Board does not present statistically significant coefficients for all performance measures. Our findings support the critical mass theory, demonstrating that gender diversity affects FP only when 30% of female presence, or 30% of women, is reached. The statistical conclusion of at least 30% of women on Board in this study is consistent with Brahma et al. (2021), who indicated that a critical mass of three women was required. The lack of statistically significant results for the gender dummy variable of having at least one woman on the Board

(WOM) shows that until there are two or more women on the Board of directors, a woman's presence is unlikely to make a big difference in the company's FP (Konrad et al., 2008; Liu et al., 2014).

Let us revisit our Hypotheses regarding the impact of gender diversity on the FP;

H1. Having at least one woman on the Board of Malaysian banks is positively related to FP.

H2. The proportion of women on the Boards of Malaysian banks is positively related to FP.

H3. Having women on the Boards of Malaysian banks is positively related to FP only when a critical mass of women presence is reached.

It is clear now that the existence of female directors positively impacts the FP. Nevertheless, the impact is only apparent when the higher the proportion of women, the better the FP, or we can conclude that the presence of wonder women of at least 30 per cent on Board will positively impact the FP in terms of the ROE and ROIC of banks. The direct relationship is not convincing and mixed results as our second objective is to examine the intervention of bank size on the relationship between gender diversity and FP.

4.3.3. Is the favourable influence of gender diversity on bank performance undermined by bank size (moderating variable)?

According to the findings in Table 5, the interaction between women on Boards and bank size has a considerable positive impact on bank performance, implying that as a firm's size increases, so does its performance. To examine the effect of the interaction variable, SIZE, on gender diversity and FP, we estimate using Model 2, which utilises the OLS regression. The coefficient of variable interaction SIZE with GENDER (the inclusion of at least one female board member) and FP, i.e., ROE, ROIC and EPS, shows a positive and significant. These findings suggest that gender diversity on corporate boards may have varying effects on financial results for banks of varying sizes. Our empirical findings indicate that the firm size significantly alters the relationship between the women on Board and firm performance by strengthening the positive impact of the women on Board and firm performance. Therefore, we can accept Hypothesis 4: The bank size moderates the relationship between having at least one woman on the Board of Malaysian banks and the FP. Large banks with at least one woman on Board would probably have more favourable performance compared to smaller banks without a woman on Board. This argument suggests that banks with more resources could hire top-notch women on Board to make better decisions and, consequently, perform better. Our finding contradicts a study by Li and Chen (2018), which found that women on Board and firm size significantly impact firm performance. Previous studies on the impact of size on the relationship between women on Board and firm performance shows mixed results. However, our data in this study does not support Hypotheses 5 and 6. The findings suggest that for larger banks, it would be more efficient to have at least one woman on Board to make a difference.

5. Conclusions

This paper studied the effects of women on Boards on FP in a sample of 90 banks in Malaysia from the period from 2013 to 2021. Referring to the revised version of MCCG in 2017, Malaysian firms must have gender diversity on their boards, implying that at least 30% of the board members must be women. Our data indicate that the inclusion of women positively affects FP, supporting the economic case for more

gender-diverse boards. This effect, however, does not correlate linearly with the proportion of women on boards or when only one woman is present, adding validity to the critical mass theory. In addition, a positive impact on ROE and ROIC was only detected when at least three women were on the Board or when the proportion of women on boards was monitored. Banks that adhere to the MCCG 2017 criteria convey a positive signal to the market regarding their financial stability and future risk. Including at least 30% of women on boards can be seen as a bank's devotion to social ideals and legal compliance, which will strengthen the bank's reputation. However, when examining the interaction variable of bank size, only the independent variable that measures a dummy variable of 1 for a bank with at least one female on Board and 0, if otherwise, shows a significant and positive estimator.

This study adds four noteworthy new findings to the literature. First, it provides an economic justification for the gender diversity requirement imposed on organisations, legitimising the needs and motivating firms to meet them as soon as possible, making the evidence revealed crucial for managers, investors, and regulators. Second, it contributes to the little research on the implications of women on Boards on FP in Malaysian banks. Third, by providing a greater understanding of bank size as a contingency factor impacting the link between women on Boards and FP, this study adds to the gender diversity and corporate governance literature. Fourth, it provides empirical information on the levels of female representation that impact the FP of Malaysian banks considering the updated MCCG 2017 mandate of having at least 30% of women on Malaysian boards.

Gender equality on corporate boards also aids banks in meeting the fifth Sustainable Development Goal (SDG) - Gender Equality and the Empowerment of Women and Girls. This study has ramifications for existing procedures as well. This study suggests that banks focus their efforts on appointing the appropriate number of women on the Board and capitalising on the potential benefits of a gender-balanced board since greater diversity may help establish banks on a more stable foundation, ultimately improving company performance. This study also offers a policy response to corporate governance standards that set objectives and gender quotas on the Board of Directors. However, whether or whether regulatory actions should be taken in the event of resistance remains an essential topic for further investigation.

Despite its contributions, this study has certain drawbacks. The first is the small sample size, as this paper is simply a preliminary examination of Malaysian banks focusing on banks listed on Bursa Malaysia. A second limitation is that the time studied ends in 2021, making it unable to fully understand the implications of attaining the 30% threshold because the new MCCG on gender diversity was first issued in 2017. Finally, various personal qualities of women may influence the association between FP and women on Board. Unique features such as thinking behaviour of women on Board, masculinity, or feminism of directors, professionalism, scepticism of women on Board, education, and experience, have not been studied due to a lack of information on these aspects, as this study only considers secondary data for analysis. Future studies might investigate these variables in their research and may feel the existence of women on other committees or top management positions. The association of gender diversity and the impact on sustainability or earnings management are two dimensions that need more future studies.

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