

Journal of Business and Economic Options



Governance Diversity, Macroeconomic Conditions, and Firm Value: A Panel Analysis of Malaysian Firms

Abdul Karim^a, Fadzlan Habibullah^b

Abstract

This study investigates the impact of board gender diversity on firm financial performance in Malaysian financial institutions, with a focus on the distinct roles of female directors and female commissioners across banking and non-banking sectors. Grounded in agency theory, resource dependence theory, and contingency theory, the study examines how governance diversity interacts with firm-specific and macroeconomic conditions to influence return on equity. A quantitative panel data approach is employed using data from 2000 to 2024, and a random effects regression model is applied to capture cross-sectional and temporal variations while controlling for unobserved heterogeneity. The model incorporates governance variables, firm-level controls such as asset growth and leverage, and macroeconomic indicators including gross domestic product and interest rates, along with interaction effects. The empirical findings reveal that female commissioners have a positive and statistically significant impact on firm performance, particularly in the banking sector, highlighting their critical role in strengthening monitoring and governance quality. Female directors also demonstrate a positive and significant effect in banking institutions, indicating that gender diversity in executive roles enhances decision-making and operational efficiency in highly regulated environments. In contrast, the effects of gender diversity in the non-banking sector are largely insignificant, suggesting that female representation may be more symbolic in less regulated contexts. Male directors exhibit a consistent positive influence, especially in non-banking firms. Among control variables, asset growth positively affects performance, while leverage exerts a negative effect. Interest rates show contrasting sectoral effects, enhancing banking profitability but reducing performance in non-financial firms, whereas gross domestic product remains insignificant.

Keywords: Gender Diversity, Corporate Governance, Firm Performance, Financial Institutions

JEL Codes: G21, G34, J16

Article's History

Received: 30th January 2026

Revised: 20th March 2026

Accepted: 29th March 2026

Published: 31st March 2026

Citation:

Karim, A., & Habibullah, F. (2026). Governance Diversity, Macroeconomic Conditions, and Firm Value: A Panel Analysis of Malaysian Firms. *Journal of Business and Economic Options*, 9(1), 43-57.

DOI:

<https://doi.org/10.5281/zenodo.22072172>

Copyright: © 2026 by the authors.

Licensee RESDO.

This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).

1. INTRODUCTION

The effective corporate governance of companies has become an important determinant of success, particularly in financial institutions, where the role of effective regulation and risk management in strategic decisions is of paramount importance. Over the last few years, the composition of boards has increasingly been brought to the forefront as a key aspect of good governance, and focus has been paid to the diversity criteria of board members, including gender. A focus on gender diversity is connected to broader institutional and societal pressures towards greater inclusiveness, accountability and transparency, and improved corporate decision-making. Board gender diversity in this context is seen as a governance tool that can increase governance performance and effectiveness through adding variety, improving the monitoring function of the board, and reducing board decision-making bias. These factors are especially significant in the context of emerging economies, where the necessity of effective board structures is increasing as a result of the ongoing corporate governance reforms, coupled with the growth of the financial sector (Jensen and Meckling, 1976; Fama & Jensen, 1983; Shleifer & Vishny, 1997; Adams & Ferreira, 2009; Carter et al., 2003; Hillman et al., 2000; Terjesen et al., 2009; Nielsen & Huse, 2010; Ali & Naeem, 2017; Roussel & Audi, 2024; Atuahene & Xusheng, 2024; Yahaya, 2025; Babiker et al., 2025).

^a International Centre for Education in Islamic Finance (INCEIF), Kuala Lumpur, Malaysia, abdul.karim12@gmail.com

^b International Centre for Education in Islamic Finance (INCEIF), Kuala Lumpur, Malaysia

There are a number of theories that offer alternative interpretations about the link between board diversity and firm performance. Based on agency theory, the function of the corporate board is basically a monitoring mechanism designed to reduce conflicts between the managers and the owners of the company, and a more diverse board would increase the independence of the board and the effectiveness of its monitoring (Jensen & Meckling 1976; Fama & Jensen 1983; Shleifer & Vishny 1997; Hermalin & Weisbach 2003; Bebchuk et al., 2009; Brown & Caylor 2006; Gompers et al., 2003; Claessens & Yurtoglu 2013; Audi & Ali, 2022; Marc et al., 2022; Adu & Roni, 2024; Ning et al., 2025). Board members offer valuable resources that can improve an organization's performance and strategic capacity, such as expertise, legitimacy, experience and professional networks (Pfeffer & Salancik, 1978; Hillman et al., 2000; Carter et al., 2003; Bear et al., 2010; Ali & Rehman, 2015; Post & Byron, 2015; Adams & Ferreira, 2009; Nielsen & Huse, 2010; Terjesen et al., 2009; Audi & Ali, 2017; Ahmad et al., 2022; Alao et al., 2024; Ali et al., 2025; Osei et al., 2025). The contingency theory also indicates that the success of governance mechanisms is reliant on the context of the firms, such as institutional environments, industry characteristics, macro-economic conditions, among others (Donaldson, 2001; Lawrence & Lorsch, 1967; Aguilera & Jackson, 2003; Filatotchev & Nakajima, 2010; Doidge et al., 2007; Kumar & Zattoni, 2016; Siddiqi et al., 2014; Adegbite, 2015; Paniagua et al., 2018; Khan et al., 2025; Nave et al., 2025).

The empirical evidence with respect to board gender diversity and firm performance is mixed and sometimes inconclusive across institutions and sectors. Positive associations have been reported in numerous studies, including: female board representation is associated with better decision-making, increased transparency of board activities, improved stakeholder relationships, and a positive effect on the firm's performance (Carter et al., 2003; Adams & Ferreira 2009; Campbell & Mínguez-Vera 2008; Terjesen et al., 2009; Post & Byron 2015; Bear et al., 2010; Nielsen & Huse 2010; Audi & Al Masri, 2024; Hillman et al., 2000; Ahmad et al., 2018; Ardhaoui et al., 2025). Other studies show results that are not statistically significant or positive, however, suggesting that the effects of gender diversity may be limited by institutional factors, organizational culture and/or symbolic compliance practices, instead of substantive governance improvements (Adams & Ferreira, 2009; Carter et al., 2003; Terjesen et al., 2009; Post & Byron, 2015; Nielsen & Huse, 2010; Bear et al., 2010; Hillman et al., 2000; Campbell & Mínguez-Vera, 2008; Marc et al., 2022; Awwad et al., 2025). There is a degree of context specificity in the governance outcomes of gender diversity when reading the inconsistencies.

However, the link between governance and the performance of firms is more complicated depending on the sectoral characteristics, particularly when banking firms and non-banking firms are compared. Banking institutions are highly regulated and the subject of significant financial risk, and have high expectations of good governance, making good governance even more important. Gender diversity on the board is more likely to have a positive effect on quality monitoring, risk management effectiveness and regulatory compliance (Adams and Ferreira, 2009; Carter et al., 2003; Terjesen et al., 2009; Post and Byron, 2015; Bear et al., 2010; Nielsen and Huse, 2010; Hillman et al., 2000; Claessens and Yurtoglu, 2013; Audi et al., 2021; Attia et al., 2024; Saleh et al., 2025). The impact of governance arrangements like gender diversity on the results of corporate performance, however, may be more limited and measurable in non-banking institutions, where the regulatory environment may be relatively loose. The disparities reflect the importance of distinguishing among different sectors when considering the effectiveness of governance.

Other financial elements of the companies also play an important role in the companies' performance, as do macroeconomic factors. The variable effect relates to the internal financial aspects of profitability, investment ability, and risk exposure of the firm, including leverage and asset expansion. Macroeconomic variables like GDP growth and interest rates are variables that are likely to affect the firm's operations and decision-making and are outside of the control of the firm. In general, higher economic growth improves corporate performance through higher levels of investment opportunities and demand, higher interest rates increase the cost of borrowing and affect the financial decision making process (Barro, 1991; Levine, 1997; Bernanke and Gertler, 1995; Jorgenson, 1963; Taylor, 1993; Mishkin, 2007; Blanchard, 2017; King & Levine, 1993; Aguila & Wullweber, 2024; Marc et al., 2025; Cui et al., 2025). This relationship between governance and performance is then complicated by the role of the governance framework and macroeconomic conditions – external economic environments can have an impact on the effectiveness of the governance mechanisms of diversity. In the literature, the idea of a differentiated role of women directors and Women commissioners in dual board systems has emerged. Empirical studies have so far tended to aggregate gender diversity on the board, without taking into account the different functions of the executive and supervisory board. The difference becomes even more pertinent in the governance model where directors take a more active part in strategic management and decision-making with respect to operations, and commissioners are more involved in the monitoring and oversight functions. There have also been only a few empirical studies that seek to explore the relationship between the various roles within governance and the conditions of the sector and macroeconomic environments in firm performance outcomes, particularly in emerging markets such as Malaysia.

2. LITERATURE REVIEW

The association of Board gender diversity with the firm's financial performance has been the focus of significant debate in the empirical corporate governance literature, with some suggesting that women on the corporate Board contribute to improving the quality of monitoring, strategic decision-making, and firm value. The published results of research on gender diversity of boards and company performance are not conclusive; however, the results do seem to show a positive relationship between the two in countries where there is strong governance and regulatory oversight. As an example, Carter et al. (2003) note that historical precedent shows that companies with women on the board of directors are more effective than those with a higher percentage of male directors, arguing that diversity can strengthen the board's ability to perform well by providing a more diverse set of viewpoints and better oversight. Adams and Ferreira (2009) also present

evidence that gender diverse boards are associated with an improvement in governance quality and the effectiveness of governance monitoring, but the quality and magnitude of such benefits vary according to board characteristics and governance. Furthermore, empirical research in emerging economies revealed that the inclusion of women on the board was linked to the positive outcomes of transparency, accountability, and firm value, as reported by Low et al. (2015), Nguyen et al. (2020), Nguyen et al. (2021), Brahma et al. (2021), Gul et al. (2011), Terjesen et al. (2016), Liu et al. (2014), and Post and Byron (2015).

Concurrently, a second line of empirical evidence indicates that the effect of board gender diversity is not always positive and can be quite sensitive to a range of institutional factors, industrial structure, and governance quality. Some other research indicates that the presence of women on the board (even if only a small number) is negatively related to firm performance, or the correlation is not statistically significant, particularly in less regulated industries or industries with symbolic diversity policies. Rose (2007) evaluated Danish companies but did not find any significant correlation between diversity of the board and the performance of the companies, suggesting that better governance might not lead to better performance. Chapple and Humphrey (2014) also find mixed evidence, maintaining that the impact of gender diversity is very context-dependent – relying on the nature of the firm and the institutional environment. The same results are observed in developing economies where governance structures are still not as well developed. For instance, Darmadi (2011) and Wellalage and Locke (2013) found that the impact of gender diversity on firm performance is weak or insignificant, which suggests that institutional enforcement and governance quality are important factors in the outcomes of gender diversity. The linkage between governance diversity and firm value also appeared to be related to sectoral characteristics, such that a banking institution is different from a non-banking institution. In regulated banking institutions, there are additional responsibilities and constraints on good governance—due to the heightened financial risk exposure and level of monitoring obligations these institutions face—making it even more crucial. Evidence from practice suggests that board diversity is more likely to be associated with the effectiveness of governance in financial institutions; with strong regulatory oversight, monitoring quality and risk management become increasingly important for financial institutions. According to Pathan and Faff (2013), bank organizations have a higher demand for monitoring, and consequently, strong governance, such as board diversity, is important in these organizations. Berger et al. (2014) also find that the composition of the boards significantly affects bank performance and bank risk-taking. There have been several studies that have taken a more specific approach to the question of banking institutions, including Farag and Mallin (2017), Adusei (2016), Mateos de Cabo et al. (2012), García-Meca et al. (2015), Arnaboldi et al. (2021), Owen and Temesvary (2018), Palvia et al. (2015), and Setó-Pamies (2015). Evidence from non-banking sectors, however, often shows less or negligible effect, suggesting that governance diversity may have a weaker effect in low regulatory intensity environments.

Empirical research in recent years has also raised the issues of the differentiated governance roles of female board members, namely between the role of the executive director and non-executive (nondir) board commissioner. Earlier studies have revealed that autonomous women directors are more likely to improve the quality of governance because they offer more monitoring benefits and reduce agency conflicts. Terjesen et al. (2016) report that independent female directors have a positive effect on firm performance, particularly in a firm with poor governance. Adams et al. (2015) also find that female directors attend more board meetings and are more likely to be responsible for the governance activities of the company, improving governance. Furthermore, emerging economy studies show a positive impact of women commissioners and independent women directors on the objectivity and quality of management (Arun et al., 2015; Loukil & Yousfi, 2016; Green & Homroy, 2018; Ben-Amar et al., 2017; Gulamhussen & Santa, 2015; Saeed et al., 2016; Pucheta-Martínez et al., 2016; Conyon & He, 2017; Ali & Audi, 2023; Ermawati & Dianawati, 2024; Khalid et al., 2025; Al Naim & Alomair, 2025). The findings are significant in the context of sectors that are subject to regulation; in the banking sector, the role of supervision is a critical aspect of good governance.

In governance research, firm-level financial attributes still play a significant role in corporate performance. Profitability and firm value are frequently related to growth in assets and leverage. Evidence suggests that companies with more asset growth perform better on the financial measures; more investment opportunities allow companies to grow in operations and their competitive advantage (Lang et al., 1996; Titman et al., 2004; McConnell & Servaes, 1995; Brush et al., 2000; Evans, 1987; Delmar et al., 2013; Coad, 2009; Penrose, 1959). But financial leverage can be linked to poorer firm performance, as it entails greater financial risk and interest payments. Fama & French (1998), Rajan & Zingales (1995), and Booth et al. (2001) have found that highly leveraged companies may be short of funding for investment necessary to grow. This leverage can, however, differ in various fields, as banking institutions employ more debt-based financial mechanisms in their regular business model.

The macroeconomic environment also influences the governance-performance relationship; for example, a recession and policy changes in emerging markets have a huge impact on firm performance. An important macroeconomic determinant is the level of interest rates, because they have an impact on the cost of borrowing, investment, and overall profitability of the companies. Empirical evidence indicates that in the non-financial sector, an increase in interest rates tends to hurt the performance of firms, raising the cost of capital, whereas in the banking sector, the positive effect on their interest margins during the periods of higher interest rates has been observed (Demirgüç-Kunt and Huizinga, 1999; Athanasoglou et al., 2008; Claessens et al., 2018; Borio et al., 2017; Albertazzi & Gambacorta, 2009; Beck et al., 2013; Dietrich & Wanzenried, 2011; Trujillo-Ponce, 2013; Khan et al., 2025; Umair et al., 2025; Pandey & Chaturvedi Sharma, 2025). In general, GDP growth is expected to have a positive effect on firm performance because an increase in economic activity will increase market demand and investment opportunities, although some studies show that GDP growth has a negative impact or a negligible impact on firm performance during periods of structural instability or macroeconomic uncertainty.

(Levine, 2005; Beck et al., 2000; Rajan & Zingales, 1998; Demirgüç-Kunt et al., 2004; Rioja & Valev, 2004; Arcand et al., 2015; Law & Singh, 2014; Cecchetti & Kharroubi, 2012; Arshi et al., 2025; Naeem et al., 2025; Wu et al., 2025). Malaysia is a particularly relevant institutional context to investigate the relationship between governance diversity and macroeconomic conditions, as corporate governance continues to be a matter of reform and the focus on board diversity initiatives is growing. Malaysian companies have seen positive results in empirical research where the proportion of women on the board has increased considerably in recent years, attributed to policy and regulatory steps taken to achieve gender diversity. However, the cost in terms of money for board diversity of Malaysian companies is not as clear. Abdullah et al. (2016) conclude that inclusion of women on the board is beneficial for firm performance, particularly for firms with good governance. Other studies, however, have only reported non-statistically significant relationships, possibly because the boards were not substantially integrated, and the females on the board were not given board roles at all (Yasser et al. 2017; Hassan & Marimuthu 2018; Liew et al. 2015; Rahman & Saima 2018; Isa & Lee 2020; Zainal et al. 2013; Haniffa & Cooke 2005; Abdul Rahman & Ali 2006; Marc, 2024; Longston et al., 2025; Cersosimo & Colasanti, 2025). The findings highlight the importance of considering the influence of different factors, such as governance structure, institutional quality, sectoral differences, and macroeconomic conditions, when analyzing how the board's gender composition affects the financial performance of firms.

3. THEORETICAL LINKS

Theoretically, agency theory, resource dependence theory, and contingency theory suggest that board gender diversity may affect firm financial performance. Each theory provides a specific explanation of the link between board gender diversity and firm financial performance, in different sectors and institutional structures. According to agency theory, the role of the corporate board is to monitor managers' agency use, and the more diverse the composition of the board, the more effectively it can monitor agency use, since diversity will prevent groupthink and improve the quality of the monitoring process (Jensen & Meckling, 1976; Fama & Jensen, 1983). In this view, the presence of female directors (Fem_Dir) and female commissioners (Fem_Com) is expected to have a positive impact on the effectiveness of supervision and enhance the performance of the firm, especially in regulated industries, like banking institutions, where the quality of supervision and the monitoring of risks are particularly relevant. The resource dependence theory suggests that diversity among boards can provide the firm with greater resource availability, knowledge, external connections, institutional acceptance, and facilitate better organizational decisions and organizational performance (Pfeffer & Salancik, 1978; Hillman et al., 2000). Female directors tend to have less of a managerial orientation, more focus on stakeholders, and comparatively less risk attitudes (Adams & Ferreira, 2009; Carter et al., 2003), especially in financial institutions in which compliance and risk management processes play an important role in the stability of the operations. From this perspective, the positive correlation identified between female directors and return on equity (ROE) in the banking sector is understandable because good governance affects the performance of banking institutions, as well as market confidence in the banking institutions. The contingency theory, however, says that the governance mechanisms do not function the same way in all institutional and industrial contexts: they are only effective when the context of the institution or industrial world is specific, such as regulatory pressure, organizational structure, and macro environment (Donaldson, 2001; Lawrence & Lorsch, 1967). A higher level of board gender diversity is likely to have positive governance outcomes in banking institutions because they have more formal board governance institutions and are subject to more rigorous regulatory scrutiny. The influence of female directors and female commissioners may be less pronounced in non-banking sectors, which have less systematic governance and are less well regulated by regulators. This interpretation is in line with empirical findings: The influence of the directors' gender and of the commissioners' gender on the firms' performance is not statistically significant, once accounting for firm-specific characteristics and macroeconomic variables.

However, since governance outcomes are not only a function of firm characteristics, but also of the wider economic conditions, the theoretical structure also includes macroeconomic moderators, such as gross domestic product (GDP) and interest rates (INT_rate). Economic growth in terms of GDP is generally associated with a rise in economic activity, greater investment opportunities, and higher market demand, which should boost the profitability of these firms and their expansion (Barro, 1991; Levine, 1997). However, the effect of GDP on the moderating effect is still relatively small, when governance quality and internal firm characteristics have stronger direct effects on the performance outcomes. Interest rates, on the other hand, have direct effects on the borrowing costs, financing conditions, and investment decisions, and are particularly important for financial institutions, because their profitability is crucially affected by financial intermediation activities and the price of credit market conditions (Bernanke & Gertler, 1995; Mishkin, 2007). The functional relationship can be specified as follows:

$ROE = f(\text{Fem_Com}, \text{Male_Com}, \text{Fem_Dir}, \text{Male_Dir}, \text{AssetGrowth}, \text{DER}, \text{GDP}, \text{INT_rate}, \text{GDP} \times \text{governance variables}, \text{INT_rate} \times \text{governance variables})$

Fem_Com and Fem_Dir are proxies for female representation in board structures, while Male_Com and Male_Dir are control variables for the composition of the board. AssetGrowth is a measure of firm growth, DER is a measure of financial leverage, GDP is a measure of macroeconomic conditions, and INT_rate is a measure of interest rates. The interaction terms represent moderating effects. The difference between the role of director and commissioner is most crucial in dual board setups where directors make strategic decisions, and commissioners monitor and oversee. In banking institutions, the greater impact of Fem_Com indicates that women have a substantive role in the monitoring functions as per agency theory. On the other hand, the declining relevance in non-banking areas suggests that women's participation in these areas could be more symbolic than it is actually impacting firm outcomes.

Table 1: Variable Descriptions and Data Sources

Variables	Definitions	Data Sources
ROE	Net income divided by total equity	Financial statements
GDP	Malaysia's annual GDP (in trillion IDR)	Statistics Malaysia
INT_rate	Bank Malaysia's benchmark interest rate	Bank Malaysia
Male_Dir	Number of male directors	Financial statements
Fem_Dir	Number of female directors	Financial statements
Male_Com	Number of male commissioners	Financial statements
Fem_Com	Number of female commissioners	Financial statements
Asset.Growth	Annual growth of total assets	Financial statements
DER	Total debt divided by total equity	Financial statements

The research approach used in this study is quantitative research, and the data that is used here are panel data for Malaysian financial institutions from 2000-2024. This is suitable because it allows the use of panel data methods, which are able to take advantage of the cross-sectional information across firms and the time-series variation, while controlling for the unobserved heterogeneity that may affect firm performance outcomes (e.g., Baltagi, 2005; Hsiao, 2014). The data cover both banking and non-banking institutions, allowing for comparison of governance dynamics and patterns in various sectors that are subject to different regulatory frameworks and operating practices.

The estimation of the empirical model is done using a random effects regression model, where the entity-specific effects are assumed to be uncorrelated with the explanatory variables entered in the model. In this case, the random effects approach allows for more efficient estimation than fixed effects estimation, as it preserves the within-entity and between-entity variance of the errors (Greene, 2012; Wooldridge, 2010). The validity of the random effects specification is typically assessed with the Hausman specification test, which tests whether the effects are systematically related to the regressors. This procedure enhances the robustness of the chosen estimation framework and helps to ensure model coherence.

Governance-related variables like female directors (Fem_Dir), male directors (Male_Dir), female commissioners (Fem_Com), and male commissioners (Male_Com) are included in the regression specification. Other firm characteristics, including asset growth (AssetGrowth) and debt-to-equity ratio (DER), are also included, as these can often have an impact on the firm's profitability, financial risk exposure, and operational efficiency. To capture the overall economic landscape that impacts firm performance and financial market activity, macroeconomic indicators such as gross domestic product (GDP) and interest rates (INT_rate) are included in the framework. The moderating effects of the interaction terms of governance indicators with macroeconomic variables are also added to explore whether the economic conditions reinforce or weaken the influence of board gender diversity on firm performance.

To deal with the well-known problem of serial correlation and heteroskedasticity associated with the panel data structure, robust standard errors are implemented throughout the estimation process. Banking and non-banking sectors are estimated separately in order to uncover the structural differences within industries and whether different governance mechanisms are applied for different regulatory conditions. The preliminary statistical analysis involves descriptive statistics and correlation analysis to give the first idea of the distribution of variables, differences between sectors, and relationships between variables with each other among the explanatory variables. Multicollinearity problems are checked by the correlation coefficients to see if the explanatory variables are too highly correlated, which may result in a bias in coefficient estimates. The statistical significance of the models, coefficient stability of the models under different specifications, and the overall stability of the estimation results are used to evaluate the adequacy and reliability of the models. The multi-model estimation structure allows for a more thorough empirical investigation of the linkage between board gender diversity and firm financial performance among financial institutions in Malaysia and enhances the robustness and reliability of the results.

4. RESULTS AND DISCUSSION

Table 2 shows the descriptive statistics of the distributional characteristics of firm performance, governance structure, firm-specific attributes, and macroeconomic indicators in Malaysian financial institutions. The mean of return on equity is 0.1853, the minimum value is -2.1418, and the maximum value is 0.7166, suggesting high variation in profitability of the sampled firms. This is reflected in the wide spread between the minimum and maximum values, which indicates that some establishments had large losses while others operated at an average level of profitability. This difference may be due to the efficiency of operations, governance structure, management skills, and financial practices between firms in the financial industry within Malaysia. The governance composition variables show that women are still under-represented on corporate boards compared to men. The mean values for female commissioners and female directors are 1.0819 and 1.1191, respectively, while the mean values for male commissioners and male directors are quite high at 4.6258 and 2.9466, respectively. The figures show that governance models within Malaysian financial institutions remain largely male-dominated, but there is a slight shift towards more diversity and inclusiveness on the boards with the presence of women board members. The relative under-representation of women on boards also exemplifies the overall institutional and corporate governance norms that are prevalent in emerging economies, and which are still in a state of gradual and

continuous development over time. The mean score for the asset growth indicator is negative, with a value of -0.1904 , indicating, on average, some reduction in total assets by companies during the period under consideration. However, with a maximum of 4.4311 , it is clear that there are some firms that had significant asset growth, suggesting that growth is not uniform across institutions. Such disparities could be a result of differences in investment practices, market positioning, financial strength, or industry-specific dynamics influencing the growth of organisations. The mean debt-equity ratio is found to be relatively high (3.5677) with a high standard deviation, suggesting that there are significant variations in capital structure and financial leverage decisions among firms. This variation suggests that some institutions were very highly leveraged, exposing them to greater financial risk, while others were relatively less leveraged. There are also significant trends in macroeconomic indicators across the sample period. During the period of study, the mean value of gross domestic product is consistently high, indicating macroeconomic expansion and the overall economic growth situation in Malaysia. The interest rates, however, exhibit a slightly negative mean value, indicating comparatively loose monetary conditions and lower borrowing costs in a number of periods of the sample horizon. These macroeconomic conditions could have affected firm profitability, financing, and investment decisions in the financial sector.

Table 2: Descriptive Statistics

Variables	Minimum	Maximum	Mean	Standard deviation
ROE	-2.1418	0.7166	0.1853	-0.2608
Fem_Com	-0.2226	3.701	1.0819	1.3748
Male_Com	0.1422	7.7013	4.6258	2.5539
Fem_Dir	0.2355	10.5013	1.1191	1.9291
Male_Dir	0.2198	10.7934	2.9466	1.7059
AssetGrowth (%)	-0.8465	4.4311	-0.1904	0.665
DER	-2.2086	18.3284	3.5677	2.1623
GDP (Trillion IDR)	13866.03	14230.66	19132.04	2435.304
INT.Rate	0.1681	-0.3505	-0.0236	0.3732

The results of the correlation analysis, as shown in Table 3, show the correlation between firm performance indicators, governance composition variables, firm-level characteristics, and macroeconomic indicators. The correlation coefficient for female commissioners and female directors with Return on equity is 0.6011 and 0.4852 , respectively, showing a positive relationship. The positive associations suggest that higher quotas for women in governance could have a positive impact on financial performance. This observed correlation could be due to better monitoring practices, more comprehensive board perspectives, more effective board deliberation practices, and more effective governance that comes with a gender-diverse board. ROE, however, has a negative correlation with male commissioners, indicating that an increase in male representatives does not necessarily lead to better profitability results in the sample institutions. There is a particularly strong positive correlation between commissioners and directors: male commissioners and male directors have a coefficient of 0.9975 .

Table 3: Correlation Matrix

Variables	ROE	Fem_Com	Male_Com	Fem_Dir	Male_Dir	Asset_Growth	DER	GDP	INT_Rate
ROE	1								
Fem_Com	0.6011	1							
Male_Com	-0.1452	-0.3428	1						
Fem_Dir	0.4852	0.6524	0.1127	1					
Male_Dir	0.129	-0.0581	0.9975	0.6475	1				
Asset_Growth	0.2751	0.1899	-0.2175	0.408	-0.3322	1			
DER	0.248	0.3526	0.6065	0.7917	0.754	0.4665	1		
GDP	-0.1284	0.3597	0.4739	0.3098	-0.4643	0.1278	-0.35	1	
INT_Rate	-0.2205	0.0157	0.3369	0.1135	-0.0776	0.1982	0.0593	0.9539	1

The extremely high association indicates possible multicollinearity concerns within the governance variables and suggests that the governance structures could be highly polarized based on gender. This concentration can lead to decreased independent variation between these governance indicators in the regression estimation process, and so it needs to be interpreted in the context of the empirical analysis. Results further indicated that the composition of governance in Malaysian financial institutions is relatively homogeneous, although the proportion of women in financial institutions' boards is growing. The debt-to-equity ratio shows positive relationships with both female and male directors, suggesting that firms with higher debt-to-equity ratios also have comparatively larger and/or more structured boards. This connection could be a function of the level of debt associated with these firms, as greater governance is needed to control the financial exposure and keep creditor confidence. Growth of assets, on the other hand, shows a moderate positive relationship with

female directors, indicating that larger firms might be more receptive to implementing relatively inclusive governance practices during their overall development and strategic restructuring efforts. Gross domestic product has mixed relationships with the variables: the relationship with return on equity is negative, and that with interest rates is extremely positive (0.9539). The pattern suggests that during the period of study, the macroeconomic growth conditions are closely related to the monetary policy dynamics in the Malaysian economy. The relationship between interest rates and return on equity suggests that a rise in interest rates might have a negative effect on firm profitability due to higher financing costs and reduced investment activity.

Table 4 provides detailed evidence of the relationship between the gender composition of the board, firm-specific characteristics, macroeconomic factors, and firm performance, measured as return on equity. For the first three models, the results show that female commissioners have a positive and statistically significant coefficient, pointing to a positive impact of having more female commissioners in the supervisory board. The result supports the theory that gender diversity in governance potentially increases the quality of monitoring, enriches governance discussions at the board level, and promotes a more inclusive, balanced governance perspective when making decisions and engaging in strategic governance. This positive outcome is similar to that of the resource dependence and stakeholder oriented views that view diversity as a governance tool which can improve organizational efficiency and augment organizational outcomes (Carter et al., 2003; Adams & Ferreira, 2009; Terjesen et al., 2009; Campbell & Mínguez-Vera, 2008; Bear et al., 2010; Hillman et al., 2000; Post & Byron, 2015; Nielsen & Huse, 2010; Farras et al., 2025; Rafique et al., 2025).

There is, however, a difference in the fourth specification. In the fourth specification, the coefficient on the variable for the female commissioners becomes negative, and the magnitude is relatively large with the addition of the macroeconomic interaction terms. This trend appears to indicate that the positive governance effect of the female commissioners seems to be dependent on the general economic situation. Interactions have been included to indicate that the direct relationship between governance diversity and performance of firms might change or be weaker due to external economic factors, in particular, during the change of monetary or macroeconomic conditions. The findings indicate that in the institutions examined, the estimated models found no statistically significant impact of male commissioners on the return on equity, suggesting that the number of male commissioners does not significantly impact return on equity. This discovery suggests that in non-traditional governance arrangements, the similarities of governance perspectives and decision-making approaches may diminish the governance benefits of diversity. The coefficients for female directors are positive, although not statistically significant, suggesting that female directors' presence may have a positive direct effect on the quality of governance, but that this effect on profitability remains relatively small within the estimated specifications.

Male directors, however, exhibited positive and statistically significant influences in the later regression models, indicating that the influence of a male director at the executive level of the board on the performance of the firm is more direct through operational management, strategic planning, and allocation of resources of the firm. This distinction reflected the separation of duties between the commissioners and directors, and emphasized the importance of distinguishing the supervisory from the executive powers of the board when analyzing the financial consequences of board composition.

Table 4: Regression Outcomes

Variable	Model1	Model2	Model3	Model4
fem_com	0.029**	0.025*	0.022*	-2.891
male_com		-0.001	0.000	0.197
fem_dir	0.009	0.009	0.011	0.794
male_dir		0.010**	0.014**	0.053
Assetgrowth			0.059**	0.064**
Der			-0.010**	-0.010*
Gdp			-0.019	0.002
gdpfem_com				0.079
gdpmale_com				-0.004
gdpfem_dir				-0.022
gdpmale_dir				-0.002
int_rate			0.348	-2.391*
intfem_com				-0.989
intmale_com				-0.677
intfem_dir				1.029*
intmale_dir				1.072*
C	-0.065	-0.079	0.584	-0.053

The findings indicate that asset growth is positively and statistically related to return on equity; this means that the companies with high asset growth tend to have high ROE. The outcome shows how important growth opportunities, economies of scale, improved market positioning, and improved resource efficiencies are to boosting profits. The coefficient of the debt-to-equity ratio, on the other hand, is negative and statistically significant, indicating that an increase in the debt-to-equity ratio corresponds with a decrease in the performance of the firm due to the fact that it exposes the owners to more financial risk and leads to an increase in interest payments. The findings are in line with those of the

capital structure theories focused on the balance between positive and negative aspects of using debt financing (Jensen & Meckling, 1976; Myers, 1977; Harris & Raviv, 1991; Stulz, 1990; Berger & Bonaccorsi di Patti, 2006; Margaritis & Psillaki, 2010; Abor, 2005; Rajan & Zingales, 1995). The results are not statistically significant when overall economic growth (gross domestic product) is included in the specifications, and thus a reduction in overall economic growth does not directly affect the profit of the firm in the sampled financial institutions. However, the interaction effects between the level of gross domestic product and the measures of good governance indicate that the effect of board composition is not consistent in all economic scenarios and across different levels of macroeconomic performance. The interest rates are shown to be negatively and statistically significantly related to the profitability of firms from the final specification, as higher interest rates would lead to higher financing costs and lower investment activity. The interaction terms for the interest rates with female and male directors are apparently 'positive' and statistically significant, suggesting that the negative effects of tightening monetary policy could be partially mitigated by the presence of female and male directors on the board. The findings indicate that an adequate governance structure can facilitate the development of financial control and organisational agility during the increasing cost of financing and economic constraints.

The regression estimates contained in Table 5 give detailed evidence of the effect of governance structure and macro-financial conditions upon firm performance in a highly regulated financial environment. In the first three models, female presence in the supervisory board has a positive and statistically significant coefficient, suggesting that more females in the supervisory board is good for the performance of banking. The finding indicates that a banking institution's gender diversity boosts the quality of its oversight, its monitoring, the effectiveness of its risk management, and its strategic decision-making when compliance and regulatory oversight are still critical to the institution. The contribution of women commissioners is positive, consistent with the views of governance on diversity as a means to strengthen the effectiveness of the board and reduce agency inefficiencies (Adams & Ferreira, 2009; Carter et al., 2003; Campbell & Mínguez-Vera, 2008; Terjesen et al., 2009; Post & Byron, 2015; Bear et al., 2010; Nielsen & Huse, 2010; Hillman et al., 2000).

In the final model, however, the coefficient for female commissioners turns negative and non-statistically significant with the inclusion of macroeconomic variables and interaction terms in the specification. The positive governance contribution attributed to female commissioners could be contingent on broader macroeconomic performance. The varying sign indicates that the effects of governance diversity in banking institutions might be tempered by larger economic conditions, especially when monetary policy is tightened or macroeconomic conditions are uncertain. From the first three specifications, the results show that the entry of female directors has a positive and statistically significant impact, which means that the role of the female director in an executive or decision-making role has a direct impact on financial performance in banking institutions. The outcome reinforces the value of inclusive leadership structures across organizations to boost efficiency, management effectiveness, and innovation capability in service-based sectors like banking. The evidence also suggests that women executives play a significant role in strategic planning and in adaptability in complex financial settings. The same applies to the male directors, who also show positive and statistically significant results in the intermediate specifications, indicating that there is still an important influence of executive board participation, irrespective of gender, on profitability from operational and strategic management decisions. By contrast, male commissioners are not statistically significant across the estimated models and do not significantly affect firm performance outcomes. This could be a result of the comparatively smaller governance gain from a more traditional supervisory board composition of people with little diversity.

Table 5: Regression Outcomes of Banking Sector

Variable	Model1	Model2	Model3	Model4
fem_com	0.031*	0.025*	0.024*	-0.695
male_com		-0.004	-0.005	2.516
fem_dir	0.015**	0.019**	0.020**	-0.990
male_dir		0.012**	0.014***	-0.816
Assetgrowth			0.027	0.025
Der			-0.003	-0.002
Gdp			-0.026	0.122
int_rate			2.731**	0.486

There is a positive but statistically non-significant relationship between asset growth and firm performance; this indicates that bank performance does not always increase with asset growth. This outcome could be attributable to the difficulty of banking operations, which can be complicated by increased asset growth, and credit risk, liquidity risk, or falling asset quality. The debt-to-equity ratio also shows an adverse, statistically insignificant relationship, suggesting that leverage is not a major factor in profitability in banking companies. This is an expected outcome as banking institutions have by their very nature high leverage and traditional capital structure effects are less pronounced than in non-financial corporations (Berger & Bonaccorsi di Patti, 2006; Demirgüç-Kunt & Huizinga, 2010; Athanasoglou et al., 2008; Goddard et al., 2004; Staikouras & Wood, 2004; Dietrich & Wanzenried, 2011; Flamini et al., 2009; Trujillo-Ponce, 2013).

The gross domestic product is not statistically significant in the period covered by its specifications, meaning that the overall macroeconomic growth does not directly affect the profitability of banks in the sample period. This could be interpreted as a sign of the relative stability of banking institutions to broader economic shocks, or the effect of prudent

banking regulation and supervision on stability. In the third case, however, the relationship between banking profitability and interest rates is positive and statistically significant, indicating that a higher rate of interest would benefit banking profitability. Such a relationship may well be the result of an increase in net interest margins, as banks can enjoy wider spreads between their interest rates for borrowing and lending during periods of an increasing rate of interest. The finding is in line with the theory of banking profitability, which stresses the sensitivity of banking profits to monetary policy conditions and interest rate dynamics (Claessens et al., 2018; Demirgüç-Kunt & Huizinga, 1999; Borio et al., 2017; English et al., 2018; Alessandri & Nelson, 2015; Busch & Memmel, 2017; Drechsler et al., 2018; Bikker & Vervliet, 2018).

The regression estimates reported in Table 6 yield significant evidence on governance diversity, firm-level characteristics, and macroeconomic conditions and how they affect firm performance in the non-banking sector. The baseline specification shows a positive and statistically significant female participation coefficient across female commissioners, suggesting that higher levels of female participation on the supervisory board have a positive impact on firm performance outcomes. This finding strengthens the case for gender diversity in contributing to good governance because of its role in enhancing monitoring capacity, its broader strategic viewpoints, and its ability to mobilise support in the interests of stakeholders. Female commissioners seem to be more effective at delivering better oversight and quality of decision-making in non-financial companies. These results are in line with the findings of other studies on governance perspectives that view diversity as a means to enhancing the efficiency of the board and organizational legitimacy (Adams & Ferreira, 2009; Carter et al., 2003; Campbell & Mínguez-Vera, 2008; Terjesen et al., 2009; Post & Byron, 2015; Bear et al., 2010; Nielsen & Huse, 2010; Hillman et al., 2000). Nevertheless, in all of the following specifications, the statistical significance of the female commissioners' effect is diminished and becomes negative when the interactions with the macroeconomic variables and other control variables listed above are added in the full specification. This transition indicates that the direct governance contribution of female commissioners may be highly contingent on specific conditions in the firm and/or broader economic context. The pattern of changes in the coefficient suggests that governance diversity does not necessarily provide robust profitability unless accompanied by good organizational structure and macroeconomic stability.

The female directors indicate a generally positive relationship, although none of the estimated models is statistically significant. This result suggests that women in top-level decision-making roles have a positive impact on governance quality and managerial decisions, albeit one that is relatively small for the non-banking industry. The weak statistical significance could also indicate that the advantages of executive diversity take longer to manifest themselves in accounting-based performance measures. In contrast, male directors have consistently positive and statistically significant effects within the intermediate specifications, suggesting that male directors are important for improving firm performance and making operational decisions and strategic choices. The positive association of male directors with profitability outcomes emphasizes the role of managerial proficiency and control over operations in determining profitability, particularly in non-financial firms in which production efficiency, market expansion, and coordination of operations are all of critical importance.

The presence of male commissioners, however, is statistically negligible across all estimated models, indicating that the quality of these outcomes of firm performance is not meaningfully affected by the presence of male commissioners in the sampled non-banking firms. This discovery bolsters the larger narrative that governance models that are homogeneous in composition may offer little in the way of governance improvements in the absence of benefits of diversity. The positive and statistically significant relationship between asset growth and firm performance suggests that greater asset growth is associated with better profitability performance. This relationship shows how key growth opportunities are to productive efficiency, market share, and operational capability improvements. The economies of scale, better resource utilization, and greater competitive benefits that expanding firms enjoy tend to contribute to higher returns. The results are consistent with the firm growth theory and empirical studies that focus on performance gains in expansion and strategic opportunities (Delmar et al., 2003; Coad, 2009; Evans, 1987; Fama & French, 1998; McConnell & Servaes, 1995; Lang et al., 1991; Chung & Pruitt, 1994).

There is a negative but not statistically significant coefficient in the debt-to-equity ratio, which suggests that in the non-banking sector during the period under consideration, leverage does not have a significant influence on firms' performance. This result can be a sign of relatively balanced ranges of capital structure within which the negative impact of leverage is mitigated by growth opportunities, governance systems, and the ability of the firms to raise internal finance. The same is true of gross domestic product; its correlation with firm performance is not always positive or statistically significant, indicating that overall macroeconomic growth does not necessarily lead to greater profitability for non-financial firms. This could be due to the fact that the sectors in the non-banking industry may have different characteristics from each other, with operational efficiency, market positioning, and management decisions exerting a relatively stronger influence than the overall economic climate.

The relationship between interest rates and firm profitability in the sector of non-banking financial institutions, on the other hand, is negative and statistically significant in the later specifications, suggesting that firm profitability is negatively affected at higher levels of interest rates in the non-banking sector. This is a key finding in support of the theoretical expectations of macroeconomics and corporate finance literature on the relationship between interest rates and financing costs, private investment and profitability, and the higher debt servicing demands induced by increasing interest rates. In the face of increasing interest rates, non-financial firms, unlike banking institutions, tend to suffer from reduced growth in their external financing requirements, and hence from adverse effects. Hence, the evidence is consistent with theoretical and empirical research that highlights the negative impacts of high levels of interest rates on investment behavior and

firm performance (Bernanke & Gertler, 1995, Jorgenson, 1963, Taylor, 1993, Romer, 2006, Mishkin, 2007, Arestis & Sawyer, 2004, King & Levine, 1993, Blanchard, 2017).

Table 6: Regression Outcomes of Non-Banking Sector

Variables	Model1	Model2	Model3	Model4
fem_com	0.030*	0.025	0.022	-5.695
male_com		-0.000	0.004	-2.307
fem_dir	-0.003	0.008	0.017	4.074
male_dir		0.028***	0.031**	0.724
Assetgrowth			0.132**	0.134***
Der			-0.018	-0.017
Gdp			0.023	-0.114
int_rate			-1.916*	-2.207

5. CONCLUSIONS

This research examined the impacts of gender diversity of the boards on financial firms in Malaysia, specifically the role of the board directors and the board commissioners (women) in banking and non-banking financial institutions. The analysis included governance's direct and indirect effects through random effects estimation of panel data spanning 2000-2024. The empirical results indicate that the effect of gender diversity is very differential and is highly influenced by the characteristics of governance jobs and sectoral characteristics. The importance of commissioners in improving the quality of monitoring, governance oversight, and institutional accountability as well, is particularly notable, and female commissioners are indeed found to have a positive and statistically significant impact on firm performance, especially in banking. In the banking sector, there is a positive and statistically significant correlation between the presence of female directors in executive and strategic decision-making and the ROE, showing that the presence of a higher number of female directors in executive and strategic decision-making has a positive impact on the operational efficiency and profitability of banking institutions, which are highly regulated and sensitive to risk. In the non-banking sector, though, the contribution of female directors and female commissioners is weak but mostly statistically insignificant, raising the question of whether there is a greater symbolic or legitimacy need for gender diversity in sectors with comparatively low governance pressures and regulatory oversight. Male directors continued to make positive and statistically significant contributions in non-banking firms, and in general, male directors' influence on the executive management process and operational decision-making processes is still in play. These idiosyncratic factors reinforce the governance-performance relationship in sectors. Growth of assets is always positively related to firms' performance, which indicates that the growth of assets by firms is able to indicate operational efficiency, market expansion opportunities, and utilization of resources. Leverage, on the other hand, is negative, as it implies that over-leveraging will diminish profitability and increase financial risk. The effects of the sectors are also differentiated in the case of macroeconomic variables. Overall economic growth is not accompanied by a similar rise in the profitability of the firms: gross domestic product is relatively unimportant in the estimated models. Interest rates have also different impacts on different sectors, with a positive impact on banking institutions due to improved interest margins, and a negative impact on non-banking firms due to higher costs of borrowing for investment and firms' operations, resulting in reduced expansion and growth. Theoretically, the outcomes are very strong for agency theory and resource dependence theory because it demonstrates the positive relationship between gender diversity and the effectiveness of monitoring, quality of governance, and strategic resource management, particularly in governance-intensive organizations, such as banks. There is also some support for contingency theory because the desirability of gender diversity may vary greatly depending on the institutional context and sectoral configuration. The separation between directors and commissioners adds to the governance literature by highlighting the functional roles of directors and the executive board in shaping firm performance. On policy direction, it could be argued that policymakers and regulators should take into account, when supporting board gender diversity, sector-specific approaches to governance. There's a need to make governance diversity more significant in the governance of banking institutions where there are clear performance benefits. Besides symbolic representation, firms must do more than that, ensuring that women on the board are engaged in strategic management and board supervision and decision-making processes in the firm.

REFERENCES

- Abdul Rahman, R., and Ali, F. H. (2006). Board, audit committee and earnings management. *Managerial Auditing Journal*, 21(7), 783–804.
- Abdullah, S. N., Ismail, K. N., and Nachum, L. (2016). Women on boards and firm performance. *Journal of Business Ethics*, 137(3), 597–613.
- Abor, J. (2005). The effect of capital structure on profitability: An empirical analysis of listed firms in Ghana. *The Journal of Risk Finance*, 6(5), 438–445.
- Adams, R. B., & Ferreira, D. (2009). Women in the boardroom and their impact on governance and performance. *Journal of Financial Economics*, 94(2), 291–309.

- Adams, R. B., de Haan, J., Terjesen, S., and van Ees, H. (2015). Board diversity and governance. *Corporate Governance*, 23(2), 89–106.
- Adu, D. A., & Roni, N. N. (2024). Bank climate change initiatives, ownership structures, and corporate governance mechanisms: Evidence from emerging economies. *Business Strategy and the Environment*, 33(4), 3039-3077.
- Adusei, M. (2016). Board structure and bank performance. *Journal of Financial Stability*, 25, 142–156.
- Aguila, N., & Wullweber, J. (2024). Greener and cheaper: green monetary policy in the era of inflation and high interest rates. *Eurasian Economic Review*, 14(1), 39-60.
- Ahmad, K., Ali, A., & Yang, M. (2022). The effect of trade liberalization on expenditure structure of Pakistan. *Bulletin of Business and Economics (BBE)*, 11(1), 73-84.
- Ahmad, K., Ali, S., & Ali, A. (2018). Trade Revenue Implications of Trade Liberalization in Pakistan. *Pakistan Journal of Applied Economics*.
- Al Naim, A., & Alomair, A. (2025). The role of female representation in enhancing audit quality: Insights from Saudi Arabia's emerging market. *Humanities and Social Sciences Communications*, 12(1), 696.
- Alao, A. I., Adebisi, O. O., & Olaniyi, O. O. (2024). The interconnectedness of earnings management, corporate governance failures, and global economic stability: A critical examination of the impact of earnings manipulation on financial crises and investor trust in global markets. *Asian Journal of Economics, Business and Accounting*, 24(11), 47-73.
- Albertazzi, U., and Gambacorta, L. (2009). Bank profitability and the business cycle. *Journal of Financial Stability*, 5(4), 393–409.
- Alessandri, P., & Nelson, B. D. (2015). Simple banking: Profitability and the yield curve. *Journal of Money, Credit and Banking*, 47(1), 143–175.
- Ali, A., & Audi, M. (2023). Analyzing the impact of foreign capital inflows on the current account balance in developing economies: A panel data approach. *Journal of Applied Economic Sciences*, 18(2), 80.
- Ali, A., & Naeem, M. Z. (2017). Trade Liberalization and Fiscal Management of Pakistan: A Brief Overview. *Policy Brief-Department of Economics, PU, Lahore*, 1(1), 1-6.
- Ali, A., & Rehman, H. U. (2015). Macroeconomic instability and its impact on gross domestic product: an empirical analysis of Pakistan. *Pakistan Economic and Social Review*, 285-316.
- Ali, A., Jabeen, R., & Ahmad, K. (2025). Hidden Drivers of Financial Success: Exploring the Role of Trade Secrets in US Corporate Performance. *Competitive Research Journal Archive*, 3(02), 421-439.
- Arcand, J. L., Berkes, E., and Panizza, U. (2015). Too much finance? *Journal of Economic Growth*, 20(2), 105–148.
- Ardhaoui, R., Ben Amar, A., & Fakhfakh, I. (2025). Does corporate environmental disclosure affect earnings management? The moderating effect of female board representation. *EuroMed Journal of Business*, 20(4), 1199-1225.
- Arestis, P., & Sawyer, M. (2004). On the effectiveness of monetary policy and fiscal policy. *Review of Social Economy*, 62(4), 441–463.
- Arnaboldi, F., Casu, B., and Kalotychou, E. (2021). Board diversity and risk-taking. *Journal of Corporate Finance*, 68, 101928.
- Arshi, A., Ali, A., & Audi, M. (2025). Evaluating the Impact of Sustainability Reporting on Financial Performance: The Mediating Role of ESG Performance and the Moderating Role of Firm Size. *Bulletin of Business and Economics (BBE)*, 14(2), 42-54.
- Arun, T. G., Almahrog, Y. E., and Aribi, Z. A. (2015). Female directors and earnings management. *International Review of Financial Analysis*, 39, 137–146.
- Athanasoglou, P. P., Brissimis, S. N., & Delis, M. D. (2008). Bank-specific, industry-specific and macroeconomic determinants of bank profitability. *Journal of International Financial Markets, Institutions and Money*, 18(2), 121–136.
- Attia, E. F., Yassen, S., Chafai, A., & Qotb, A. (2024). The impact of board gender diversity on the accrual/real earnings management practice: evidence from an emerging market. *Future Business Journal*, 10(1), 24.
- Atuahene, S. A., & Xusheng, Q. (2024). A multidimensional analysis of corporate governance mechanisms and their impact on sustainable economic development: A case study of Ghana's financial sector. *Heliyon*, 10(3).
- Audi, M., & Al Masri, R. (2024). Examining the impacts of regulatory framework on risk in commercial banks in emerging economies. *Journal of Business and Economic Options*, 7(2), 10-19.
- Audi, M., & Ali, A. (2017). Gender gap and trade liberalization: an analysis of some selected SAARC countries. *Advances in Social Sciences Research Journal*.
- Audi, M., & Ali, A. (2022). Public policy and economic misery nexus: a comparative analysis of developed and developing world. *International Journal of Economics and Financial Issues*, 13(3), 56-73.
- Audi, M., Sadiq, A., & Ali, A. (2021). Performance Evaluation of Islamic and Non-Islamic Equity and Bonds Indices. Evidence from Selected Emerging and Developed Countries. *Journal of Applied Economic Sciences*, 16(3), 251.
- Awwad, B. S., Binsaddig, R., Kanan, M., & Al Shirawi, T. (2023). Women on boards: an empirical study on the effects on financial performance and corporate social responsibility. *Competitiveness Review: An International Business Journal*, 33(1), 147-160.
- Babiker, I., Bakhit, M., Bilal, A. O. A., Abubakr, A. A. M., & Abdelraheem, A. A. E. (2025). The effect of female representation on boards on environmental, social, and governance disclosure: Empirical evidence from Saudi highly polluting industries. *Sustainability*, 17(6), 2751.

- Baltagi, B. H. (2005). *Econometric analysis of panel data*. John Wiley & Sons.
- Barro, R. J. (1991). Economic growth in a cross section of countries. *Quarterly Journal of Economics*, 106(2), 407–443.
- Bear, S., Rahman, N., & Post, C. (2010). The impact of board diversity and gender composition on corporate social responsibility. *Journal of Business Ethics*, 97(2), 207–221.
- Beck, T., Demirgüç-Kunt, A., and Levine, R. (2000). A new database on financial development. *World Bank Economic Review*, 14(3), 597–605.
- Ben-Amar, W., Chang, M., and McIlkenny, P. (2017). Board gender diversity and corporate response. *Journal of Business Ethics*, 142(2), 369–383.
- Berger, A. N., & Bonaccorsi di Patti, E. (2006). Capital structure and firm performance: A new approach. *Journal of Banking & Finance*, 30(4), 1065–1102.
- Berger, A. N., Kick, T., and Schaeck, K. (2014). Executive board composition and bank performance. *Journal of Corporate Finance*, 28, 48–65.
- Bernanke, B. S., & Gertler, M. (1995). Inside the black box: The credit channel of monetary policy transmission. *Journal of Economic Perspectives*, 9(4), 27–48.
- Bikker, J. A., & Vervliet, T. M. (2018). Bank profitability and risk-taking under low interest rates. *International Journal of Finance & Economics*, 23(1), 3–18.
- Blanchard, O. (2017). *Macroeconomics*. Pearson Education.
- Booth, L., Aivazian, V., Demirgüç-Kunt, A., and Maksimovic, V. (2001). Capital structures in developing countries. *Journal of Finance*, 56(1), 87–130.
- Borio, C., Gambacorta, L., & Hofmann, B. (2017). The influence of monetary policy on bank profitability. *International Finance*, 20(1), 48–63.
- Brahma, S., Nwafor, C., and Boateng, A. (2021). Board gender diversity and firm performance. *International Journal of Finance and Economics*, 26(4), 5704–5720.
- Brush, T. H., Bromiley, P., and Hendrickx, M. (2000). The free cash flow hypothesis. *Strategic Management Journal*, 21(4), 455–472.
- Busch, R., & Memmel, C. (2017). Banks' net interest margin and the level of interest rates. *Credit and Capital Markets*, 50(3), 363–392.
- Campbell, K., & Mínguez-Vera, A. (2008). Gender diversity in the boardroom and firm financial performance. *Journal of Business Ethics*, 83(3), 435–451.
- Carter, D. A., Simkins, B. J., & Simpson, W. G. (2003). Corporate governance, board diversity, and firm value. *Financial Review*, 38(1), 33–53.
- Cecchetti, S. G., and Kharroubi, E. (2012). Reassessing the impact of finance on growth. *BIS Working Papers*, 381, 1–28.
- Cersosimo, C., & Colasanti, N. (2025). Board Size and Financial Performance as a Driver for Social Innovation: Evidence from Italian Local State-Owned Enterprises. *Administrative Sciences*, 15(7), 247.
- Chapple, L., and Humphrey, J. E. (2014). Does board gender diversity have a financial impact? *Journal of Business Ethics*, 122(2), 273–286.
- Chung, K. H., & Pruitt, S. W. (1994). A simple approximation of Tobin's q. *Financial Management*, 23(3), 70–74.
- Claessens, S., Coleman, N., & Donnelly, M. (2018). Low-for-long interest rates and bank profitability. *Journal of Financial Intermediation*, 35, 1–16.
- Coad, A. (2009). The growth of firms. *Empirical Economics*, 38(2), 353–372.
- Conyon, M. J., and He, L. (2017). Firm performance and boardroom gender diversity. *Journal of Corporate Finance*, 42, 285–303.
- Cui, X., Sarkar, S., & Zhang, C. (2025). Interest rate uncertainty and the investment/financing decisions. *Journal of Corporate Finance*, 102912.
- Darmadi, S. (2011). Board diversity and firm performance. *Corporate Ownership and Control*, 8(2), 63–72.
- Delmar, F., Davidsson, P., & Gartner, W. B. (2003). Arriving at the high-growth firm. *Journal of Business Venturing*, 18(2), 189–216.
- Demirgüç-Kunt, A., & Huizinga, H. (1999). Determinants of commercial bank interest margins and profitability. *World Bank Economic Review*, 13(2), 379–408.
- Dietrich, A., & Wanzenried, G. (2011). Determinants of bank profitability. *Journal of International Financial Markets, Institutions and Money*, 21(3), 307–327.
- Donaldson, L. (2001). *The contingency theory of organizations*. Sage Publications.
- Drechsler, I., Savov, A., & Schnabl, P. (2018). The deposits channel of monetary policy. *Quarterly Journal of Economics*, 133(4), 1819–1876.
- English, W. B., Van den Heuvel, S. J., & Zakrajšek, E. (2018). Interest rate risk and bank equity valuations. *Journal of Monetary Economics*, 98, 80–97.
- Ermawati, N., & Dianawati, W. (2024). The impact of family ownership on the relationship between the existence of the women Board of Commissioners and firm performance. *Intangible Capital*, 20(1), 152–169.
- Evans, D. S. (1987). The relationship between firm growth, size, and age. *Journal of Industrial Economics*, 35(4), 567–581.
- Fama, E. F., & French, K. R. (1998). Taxes, financing decisions, and firm value. *Journal of Finance*, 53(3), 819–843.

- Fama, E. F., & Jensen, M. C. (1983). Separation of ownership and control. *Journal of Law and Economics*, 26(2), 301–325.
- Farag, H., and Mallin, C. (2017). Board diversity and financial stability. *International Review of Financial Analysis*, 49, 22–37.
- Farras, A., Ali, A., & Audi, M. (2025). Advancing audit practices through technology: a comprehensive review of continuous auditing. *Journal of Social Signs Review*, 3(2), 506–539.
- Flamini, V., McDonald, C., & Schumacher, L. (2009). The determinants of commercial bank profitability. *IMF Staff Papers*, 56(4), 720–746.
- García-Meca, E., García-Sánchez, I. M., and Martínez-Ferrero, J. (2015). Board diversity and bank performance. *Journal of Business Ethics*, 132(2), 331–345.
- Goddard, J., Molyneux, P., & Wilson, J. O. (2004). The profitability of European banks. *The Manchester School*, 72(3), 363–381.
- Green, C. P., and Homroy, S. (2018). Female directors and firm performance. *European Economic Review*, 102, 131–148.
- Greene, W. H. (2012). *Econometric analysis*. Pearson.
- Gul, F. A., Srinidhi, B., and Ng, A. C. (2011). Does board gender diversity improve informativeness? *Journal of Accounting and Economics*, 51(3), 314–338.
- Gulamhussen, M. A., and Santa, S. F. (2015). Female directors and bank performance. *Journal of Corporate Finance*, 31, 314–333.
- Haniffa, R., and Cooke, T. (2005). The impact of culture and governance. *Journal of Accounting and Public Policy*, 24(5), 391–430.
- Harris, M., & Raviv, A. (1991). The theory of capital structure. *Journal of Finance*, 46(1), 297–355.
- Hassan, R., and Marimuthu, M. (2018). Contextualizing board diversity. *International Journal of Emerging Markets*, 13(5), 1059–1079.
- Hillman, A. J., Cannella, A. A., & Paetzold, R. L. (2000). The resource dependence role of corporate directors: Strategic adaptation of board composition in response to environmental change. *Journal of Management*, 26(2), 235–256.
- Hsiao, C. (2014). *Analysis of panel data*. Cambridge University Press.
- Isa, M., and Lee, S. P. (2020). Female directors and firm performance. *Asian Journal of Business and Accounting*, 13(1), 1–28.
- Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs, and ownership structure. *Journal of Financial Economics*, 3(4), 305–360.
- Jorgenson, D. W. (1963). Capital theory and investment behavior. *American Economic Review*, 53(2), 247–259.
- Khalid, U., Ali, A., & Audi, M. (2025). Understanding Borrowing Behaviour in the EU: The Role of Mobile Payments, Financial Literacy, and Financial Access. *Annual Methodological Archive Research Review*, 3(5), 41–66.
- Khan, I., Saha, A. K., Kamal, Y., & Islam, M. S. (2025). Do ownership structure and board composition matter in firm performance? Regulatory influence in developing economy. *International journal of disclosure and governance*, 22(1), 263–283.
- Khan, M. S., Audi, M., & Ali, A. (2025). Foreign Direct Investment, Financial Development, and Sustainable Growth: Empirical Evidence from Developing Countries. *Journal of Social Signs Review*, 3(8), 189–211.
- King, R. G., & Levine, R. (1993). Finance and growth. *Quarterly Journal of Economics*, 108(3), 717–737.
- Lang, L., Stulz, R., & Walkling, R. (1991). A test of the free cash flow hypothesis. *Journal of Financial Economics*, 29(2), 315–335.
- Law, S. H., and Singh, N. (2014). Does too much finance harm growth? *Journal of Banking and Finance*, 41, 36–44.
- Lawrence, P. R., & Lorsch, J. W. (1967). *Organization and environment: Managing differentiation and integration*. Harvard Business School Press.
- Levine, R. (1997). Financial development and economic growth: Views and agenda. *Journal of Economic Literature*, 35(2), 688–726.
- Levine, R. (2005). Finance and growth. *Handbook of Economic Growth*, 1, 865–934.
- Liew, P. K., Lee, K. T., and Rowland, R. (2015). Corporate governance and firm performance. *Asian Academy of Management Journal*, 20(2), 1–25.
- Liu, Y., Wei, Z., and Xie, F. (2014). Do women directors improve firm performance? *Journal of Corporate Finance*, 28, 169–184.
- Longston, P., Ali, A., & Audi, A. (2025). Environmental, Social & Governance Disclosures and Corporate Financial Performance: Evidence from Selected Asian Economies. *Pakistan Journal of Social Science Review*, 4(1), 22–49.
- Loukil, N., and Yousfi, O. (2016). Does gender diversity on boards influence firm performance? *Journal of Business Ethics*, 132(1), 149–164.
- Low, D. C., Roberts, H., and Whiting, R. H. (2015). Board gender diversity and firm performance. *Pacific-Basin Finance Journal*, 32, 16–28.
- Marc, A, FA Sulehri, A Ali, & Al-Masri, R. (2022). An Event Based Analysis of Stock Return and Political Uncertainty in Pakistan: Revisited. *International Journal of Economics and Financial Issues*.
- Marc, A. (2024). The impact of exchange rate volatility on long-term economic growth: Insights from Lebanon. *Journal of Policy Options*, 7(2), 1–10.

- Marc, A., Ehsan, R., & Ali, A. (2022). Does Globalization Promote Financial Integration in South Asian Economies? Unveiling the Role of Monetary and Fiscal Performance in Internationalization. *Empirical Economics Letters*, 22(10), 237-248.
- Marc, A., Poulin, M., & Ali, A. (2023). Determinants of Human Wellbeing and its Prospect Under the Role of Financial Inclusion in South Asian Countries. *Journal of Applied Economic Sciences*, 18(4), 296.
- Marc, A., Poulin, M., Ahmad, K., & Ali, A. (2025). Modeling disaggregate globalization to carbon emissions in BRICS: A panel quantile regression analysis. *Sustainability*, 17(6), 2638.
- Margaritis, D., & Psillaki, M. (2010). Capital structure and firm efficiency. *Journal of Business Finance & Accounting*, 37(5-6), 621-644.
- Mateos de Cabo, R., Gimeno, R., and Nieto, M. J. (2012). Gender diversity and financial performance. *Journal of Business Ethics*, 110(2), 145-162.
- McConnell, J. J., and Servaes, H. (1995). Equity ownership and firm value. *Journal of Financial Economics*, 37(2), 131-157.
- Mishkin, F. S. (2007). The economics of money, banking, and financial markets. *Pearson Education*.
- Myers, S. C. (1977). Determinants of corporate borrowing. *Journal of Financial Economics*, 5(2), 147-175.
- Naeem, H. Ali, A., & Audi, M. (2025). The Impact of Financial Stability on Environmental Degradation: Mediating Role of Green Investment and Moderating Role of Environmental Awareness. *Policy Journal of Social Science Review*, 3(1), 448-469.
- Nave, E., Torres, P., Querido, A. R., Ferreira, J. J., & Fernandes, G. (2025). Entrepreneurial ecosystems governance: critical perspectives and steps forward. *The Journal of Technology Transfer*, 50(5), 2135-2230.
- Nguyen, H., Locke, S., and Reddy, K. (2020). Does boardroom gender diversity matter? *International Review of Financial Analysis*, 69, 101500.
- Nguyen, T., Nguyen, H., and Hoang, T. (2021). Board diversity and firm performance. *Corporate Governance*, 21(3), 486-504.
- Nielsen, S., & Huse, M. (2010). Women directors' contribution to board decision-making. *Corporate Governance: An International Review*, 18(2), 136-148.
- Ning, W., Saeed, U. F., & Kongkuah, M. (2025). Saving the environment in emerging markets: The synergistic roles of corporate ownership structure, financing strategy, and innovation capacity. *Business Strategy and the Environment*, 34(4), 5114-5138.
- Osei, A., Zhu, N., Borgi, H., & Cobbinah, J. (2025). Empowering sustainable production: Firm governance, finance strategies, and tech-innovation in advancing circular economy for SDG 12 in the US, China and Japan. *Sustainable Development*, 33(4), 5282-5307.
- Owen, A. L., and Temesvary, J. (2018). Board diversity and bank performance. *Economic Inquiry*, 56(4), 1952-1970.
- Palvia, A., Vähämaa, E., and Vähämaa, S. (2015). Female executives and firm performance. *Journal of Banking and Finance*, 60, 1-12.
- Pandey, A., & Chaturvedi Sharma, P. (2025). Boardroom dynamics in Indian private banks: How nonexecutive and women directors affect financial performance. *Corporate Governance: The International Journal of Business in Society*, 25(5), 1036-1054.
- Pathan, S., and Faff, R. (2013). Does board structure influence bank performance? *Journal of Banking and Finance*, 37(5), 1573-1589.
- Penrose, E. T. (1959). The theory of the growth of the firm. *Oxford Economic Papers*, 11(1), 34-52.
- Pfeffer, J., & Salancik, G. R. (1978). *The external control of organizations: A resource dependence perspective*. Harper & Row.
- Post, C., & Byron, K. (2015). Women on boards and firm financial performance. *Academy of Management Journal*, 58(5), 1546-1571.
- Pucheta-Martínez, M. C., Bel-Oms, I., and Olcina-Sempere, G. (2016). Corporate governance and firm performance. *Journal of Business Ethics*, 133(3), 447-466.
- Rafique, A., Ali, A., & Audi, M. (2025). Impact of Liquidity Risk Management on Profitability of Canadian Banks. *Annual Methodological Archive Research Review*, 3(1), 1-20.
- Rahman, R. A., and Saima, F. N. (2018). Board diversity and firm performance. *Journal of Accounting in Emerging Economies*, 8(2), 165-188.
- Rajan, R. G., & Zingales, L. (1995). What do we know about capital structure? *Journal of Finance*, 50(5), 1421-1460.
- Rajan, R. G., and Zingales, L. (1998). Financial dependence and growth. *American Economic Review*, 88(3), 559-586.
- Rioja, F., and Valev, N. (2004). Does one size fit all? *Journal of Development Economics*, 74(2), 429-447.
- Romer, D. (2006). *Advanced macroeconomics*. McGraw-Hill.
- Rose, C. (2007). Does female board representation influence firm performance? *Corporate Governance*, 15(2), 404-413.
- Roussel, Y., & Audi, M. (2024). Exploring the Nexus of Economic Expansion, Tourist Inflows, and Environmental Sustainability in Europe. *Journal of Energy and Environmental Policy Options*, 7(1), 28-36.
- Saeed, A., Belghitar, Y., and Clark, E. (2016). Do female directors affect firm performance? *International Review of Financial Analysis*, 47, 312-326.
- Saleh, M. W., Alshdaifat, S. M., Shubita, M. F., Mansour, M., & Lutfi, A. (2025). Gender diversity and environmental, social, and governance: unlocking solutions to corporate risk. *Business Strategy & Development*, 8(1), e70097.

- Setó-Pamies, D. (2015). The relationship between women directors and corporate performance. *Corporate Social Responsibility and Environmental Management*, 22(6), 334–345.
- Shleifer, A., & Vishny, R. W. (1997). A survey of corporate governance. *Journal of Finance*, 52(2), 737–783.
- Siddiqi, M. W., Ali, A., & Chani, M. I. (2014). Import demand, economic development and trade liberalization in Pakistan: an empirical analysis. *Bulletin of Business and Economics (BBE)*, 3(2), 131-141.
- Staikouras, C. K., & Wood, G. E. (2004). The determinants of European bank profitability. *International Business & Economics Research Journal*, 3(6), 57–68.
- Stulz, R. M. (1990). Managerial discretion and optimal financing policies. *Journal of Financial Economics*, 26(1), 3–27.
- Taylor, J. B. (1993). Discretion versus policy rules in practice. *Carnegie-Rochester Conference Series on Public Policy*, 39, 195–214.
- Terjesen, S., Couto, E. B., and Francisco, P. M. (2016). Does the presence of independent and female directors impact firm performance? *Journal of Management and Governance*, 20(3), 447–483.
- Terjesen, S., Sealy, R., & Singh, V. (2009). Women directors on corporate boards. *Corporate Governance: An International Review*, 17(3), 320–337.
- Titman, S., Wei, K. C., and Xie, F. (2004). Capital investments and stock returns. *Journal of Financial and Quantitative Analysis*, 39(4), 677–700.
- Trujillo-Ponce, A. (2013). What determines the profitability of banks? *Accounting & Finance*, 53(2), 561–586.
- Umar, S. M., Ali, A., & Audi, M. (2025). Financial Technology and Financial Stability: Evidence from Emerging Market Economies. *Research Consortium Archive*, 3(1), 506-531.
- Wellalage, N. H., and Locke, S. (2013). Women on board and firm financial performance. *Journal of Business Ethics*, 115(2), 355–371.
- Wooldridge, J. M. (2010). *Econometric analysis of cross section and panel data*. MIT Press.
- Wu, W. Y., Chang, W. S., Liao, Y. K., Dang, G. V., Ngo, Q. H., Tran, D. S., ... & Thai, D. H. T. (2025). Empirical analysis of enterprise competitiveness in Vietnam: Key determinants and their interactions. *Asia Pacific Management Review*, 100392.
- Yahaya, O. A. (2025). The relationship between board power and corporate diversification in the Nigerian Capital Market. *Journal of Accounting, Auditing, and Assurance*, 20(4), 174-197.
- Yasser, Q. R., Al Mamun, A., and Rodriqs, M. (2017). Impact of board diversity. *Corporate Governance*, 17(2), 168–188.
- Zainal, D., Zulkifli, N., and Saleh, Z. (2013). Corporate governance and firm performance. *Asian Social Science*, 9(2), 53–60.

Disclaimer/Publisher's Note:

The statements, opinions and data contained in all publications are solely those of the individual author(s) and contributor(s) and not of RESDO and/or the editor(s). RESDO and/or the editor(s) disclaim responsibility for any injury to people or property resulting from any ideas, methods, instructions or products referred to in the content.

Funding:

The authors received no external funding for the publication of this article.

Data Availability Statement:

All data generated or analyzed during this study are not included in this submission but can be made available upon reasonable request. Additionally, the data are publicly available.

Conflicts of Interest:

The authors have no conflicts of interest related to this research.