

BOARD GENDER DIVERSITY, YOUNG DIRECTORS, AND FIRM PERFORMANCE: EMPIRICAL EVIDENCE FROM VIETNAM'S STOCK MARKET

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ABSTRACT

This study examines the impact of board gender diversity, young directors (under 45), and their interaction on the performance (measured by ROA, Tobin's Q, LnEPS) of 50 listed retail firms in Vietnam from 2015 to 2024. Employing a Fixed Effects Model (FEM) with robust standard errors and one-year lagged variables to strictly address endogeneity, the empirical results reveal that these board demographic characteristics have no statistically significant impact on financial performance. This finding corroborates Tokenism theory, implying that current board diversity primarily serves a representational purpose rather than holding core strategic decision-making power. Conversely, asset size and financial leverage exhibit a strong negative impact, distinctly highlighting the risks associated with diseconomies of scale. Consequently, the study suggests that shareholders must grant substantive structural authority to diverse boards and critically cautions management against aggressive, debt-fueled chain expansion strategies.

Keywords: Gender diversity, young directors, firm performance, panel data, tokenism, retail industry.

1. INTRODUCTION

In the context of global economic integration and the rise of Environmental, Social, and Governance (ESG) standards, corporate governance has become a vital pillar determining the sustainable development of enterprises. At the core of this governance system is the Board of Directors (BOD). According to the Upper Echelons Theory [1], the demographic characteristics of top executives directly reflect the strategic mindset and financial decisions of the organization. Consequently, board diversification, particularly regarding Gender Diversity and Young Directors, is becoming a subject of profound interest among both academia and policymakers worldwide.

The essential retail sector in Vietnam serves as a prime example of a highly dynamic yet fiercely competitive market. With the rapid shift towards e-commerce and continuous changes in consumer behavior, retail enterprises require a BOD that embodies two elements: prudence and sophistication in risk management (often associated with female directors), and technological agility and innovation (typically expected from young directors). However, most previous empirical studies in Vietnam [2], [3] have only examined the isolated impacts of gender or age on firm performance. Very few studies have delved into the interaction between gender and age to verify whether this synergy creates a critical mass

sufficient to alter financial outcomes, or if it merely stops at superficial compliance (Tokenism) as posited by Kanter's theory [4].

Furthermore, a major methodological gap in current governance research is the omission of endogeneity. Traditional studies frequently assume that board structure dictates profitability, yet rarely address the issue of reverse causality: it is often the highly profitable firms that possess adequate resources to recruit female directors to polish their governance image. The failure to control for endogeneity alongside panel data defects (such as heteroskedasticity and autocorrelation) has led to numerous empirical conclusions lacking robustness.

To bridge these gaps, this study is conducted with the objective of comprehensively evaluating the impact of gender diversity, the proportion of young directors, and their interaction on firm performance. The research focuses on 50 listed companies within the essential retail sector on the Vietnamese stock market over a 10-year period (2015-2024). To ensure the utmost reliability of the findings, the study pioneers the application of a rigorous econometric methodology system: ranging from the Fixed Effects Model with Cluster-Robust standard errors (FEM Cluster-Robust) to the Two-step System GMM model to thoroughly isolate endogeneity.

The contributions of this study are multidimensional. Academically, the paper provides robust empirical evidence supporting Tokenism Theory in an emerging market, while simultaneously elucidating the true causal relationship of debt based on Financial Distress Theory. Practically, the research findings serve as a wake-up call, assisting shareholders, executive management, and the State Securities Commission in adopting a more substantive perspective when structuring board personnel and managing capital structure, thereby avoiding the trap of excessive expansion (Diseconomies of Scale).

Unlike previous studies that treat age and gender in isolation, the primary novelty of this paper lies in its investigation of their intersectionality (GenYoung). By examining this synergistic effect, the study shifts the focus from superficial board diversity to the realistic boundaries of strategic authority within emerging markets.

The structure of the research paper is divided into five sections. Following Section 1 (Introduction), Section 2 presents the theoretical background and literature review. Section 3 describes the research data and methodology. Section 4 discusses the empirical regression results. Finally, Section 5 summarizes the core conclusions and proposes policy implications.

2. THEORETICAL BACKGROUND AND LITERATURE REVIEW

2.1 Literature review

In their study, [5] discussed The Cadbury Report, which addressed the financial aspects of corporate governance. When first published, this report paved the way for future changes, national corporate governance codes, and the need for greater corporate accountability and transparency. The study addressed three key themes to which the Cadbury Report significantly contributed to corporate governance practice: the definition of corporate governance, the voluntary adoption of the code, and the “comply or interpret” approach. An important part of corporate governance is prioritizing shareholder value and strongly protecting shareholder rights in both the UK and US economies, disregarding the significant differences between the two economies and relying on Agency theory [6].

Updating economic literature on boards of directors emphasizes that the composition and size of the board of directors are correlated with the board's decision regarding the replacement of the Chief Executive Officer (CEO). Ultimately, the board of directors appears to evolve over time depending on the bargaining power of management over the existing board

members. Company performance, CEO changes, and changes in ownership structure are important factors influencing board changes [7].

An in-depth review by [8], board composition is an important factor affecting the board's ability to influence company performance. Much of the research focuses on size and independence, with increasing literature on the demographic composition, human capital, and social capital of board members. Simultaneously, the author has highlighted the theoretical and methodological approaches used.

Another study examined the positive and non-linear relationship between demographic diversity and performance, adjusted for board oversight effort. The impact of oversight was found to depend on the tendency of controlling shareholders to appropriate assets, measured by the difference between control and cash flow rights. Thus, demographic diversity enhances firm performance by mitigating the negative impact of distance on board oversight [9].

In a study investigating how the nationality and gender of board members interact with the degree of director independence, the number of other director positions, and demographic characteristics [10], the results showed that foreign directors tended to be more independent, female directors were more likely to be linked to company management through family relationships, and foreign directors held significantly fewer director positions on other Swiss boards. Female directors and foreign directors also differed in educational level, educational rank, age, and length of tenure on the board. Furthermore, this study also used resource dependency theory to demonstrate how business performance can be affected by the external environment regarding the ability to maintain and manage resources. [11], [12] argues that diversity on the board of directors helps share ideas and experiences and increases the potential for development from the surrounding environment.

2.2 Theoretical background

2.2.1 Agency theory

[13] provided an overview of the major literature developed in the field of agency theory and corporate governance over the 25 years since [6] groundbreaking paper proposing the theory of the firm. This study discusses why such problems arise in the “contractual relationships” that Jensen and Meckling described as characteristic of modern businesses and how managers and shareholders can act to control these costs in order to maximize firm value. [14] showed that board management and control are crucial for resolving conflicts of interest among stakeholders. Therefore, the effects of gender diversity can help improve the effectiveness of oversight and operational efficiency of the firm. A study by [15] surveyed female directors to examine possible explanations for persistent homogeneity on top UK boards. Common explanations included women's lack of ambition, experience, and commitment. These have been refuted by research, but underlying theories of social exclusion may offer insight into this persistent phenomenon. [16] demonstrated that the share prices of companies with gender-diverse boards reflect more specific information about the company after controlling for factors such as corporate governance, earnings quality, institutional ownership, and mergers and acquisitions. Gender-diverse boards may serve as an alternative mechanism to poor corporate governance. This result remains robust when using different methods to assess information levels and gender diversity, as well as when performing controlled sensitivity tests on company characteristics that do not change over time and different measures of stock price information.

2.2.2 Resource Dependence Theory

[17] developed Resource dependence theory (RDT) and argued that almost all businesses operate dependently on resources from the external environment and social legitimacy. The main assumptions of resource dependence theory are the environment, the limited and valuable

resources that the organization needs, as well as the uncertainty about the accessibility of these resources [18]. Very few organizations are autonomous in an environment full of uncertainty. For this reason, organizations contact other businesses to manage environmental uncertainty and meet internal resource needs, thus forming relationships. In the study of [19], the governance function of the board of directors was explained based on RDT. At the same time, RDT offers another explanation that emphasizes the role of the board of directors in gathering resources from external sources. As a result, the composition of the external board of directors, including its number, salaries, and gender, impacts performance. Gender diversity on the board refers to the proportion of women participating in senior management positions. Gender diversity not only demonstrates gender equality but also creates more distinct and unique values and perspectives for the business process.

2.2.3 Financial Distress Theory

Financial Distress Theory explains the trade-off between the benefits of debt financing (tax shields) and the costs incurred when a firm faces financial difficulties. According to [20], when a firm employs excessive financial leverage, it faces substantial interest payment obligations. During periods of economic volatility or market downturns, insufficient operating cash flows to cover financial expenses can push the firm toward financial distress. Furthermore, the costs of financial distress encompass not only direct costs (such as bankruptcy and legal fees) but also significant indirect costs, including the loss of market share and diminished trust from suppliers and customers [21]. In the essential retail sector, which is typically characterized by thin profit margins and a reliance on rapid inventory turnover, the overutilization of debt can rapidly erode core profitability. Therefore, this theory provides the basis for the expectation that financial leverage (LEV) has a negative impact on firm performance and shareholder value (EPS).

2.2.4 Economies of Scale

Economies of scale is a fundamental concept in microeconomics and strategic management, referring to the reduction in average cost per unit as a firm's scale of production or operations increases [22]. In the retail industry, as total assets and network scale expand, firms acquire greater bargaining power with suppliers, thereby optimizing logistics and fixed management costs. Furthermore, [23], in the theory of the growth of the firm, emphasizes that a larger scale facilitates easier access to financial resources at a lower cost of capital. This explains why firm size (SIZE) is generally expected to have a positive impact on accounting profitability (ROA) and Earnings Per Share (EPS). However, if a firm expands beyond a critical threshold, it may encounter "Diseconomies of Scale" due to a cumbersome management structure, bureaucracy, and sluggish market responsiveness, ultimately resulting in a discounted valuation by the stock market (Tobin's Q) [24].

2.2.5 Tokenism Theory

Tokenism Theory, developed by sociologist [4], explains the underlying motives and consequences of including minority groups within organizations. According to [4], "tokenism" occurs when an organization appoints only a marginal proportion (typically under 15%) of minority representatives such as women or younger individuals to senior leadership positions. The primary objective of this action is not to share substantive power or leverage their professional expertise, but rather to create a symbolic "facade" of fairness and equality to appease public pressure, media scrutiny, or corporate governance compliance requirements.

[4] argues that these individuals (referred to as "tokens") frequently encounter substantial barriers: heightened visibility, which induces pressure and risk aversion; polarization, which isolates them from the dominant group's informal power alliances; and assimilation, which restricts them to superficial tasks rather than core strategic responsibilities.

Consequently, their voices are marginalized. In order for minority groups to effect genuine changes in corporate culture and business performance, they must attain a critical mass to transcend this token status. In the context of corporate governance, Tokenism Theory offers a critical perspective: if board diversity initiatives are merely superficial compliance measures, female or younger directors will lack the substantive authority required to influence core financial decisions. Therefore, this theory serves as a foundational framework to explain why demographic diversity often fails to translate into enhanced accounting profitability (ROA) or market valuation (Tobin's Q, EPS).

2.3 Empirical research

[25] proposed a theoretical framework to study the relationship between board diversity, considering the gender and age diversity of members, and company performance measured by return on assets and Tobin's Q ratio at publicly traded companies listed on the Amman Stock Exchange. Additionally, many previous studies have focused on the importance of board diversity in enhancing and improving company performance by supporting the board with younger members to create balance with older members. Regarding gender diversity, many studies have argued that the presence of women on the board can influence company performance. Furthermore, female directors can bring new skills, new ideas, and improve company performance.

The study by [26] also examined gender diversity on boards of directors and company performance in Ghana's capital market during the period 2010 to 2014. According to the survey results, there was little representation of women on boards of directors, with the trade, pharmaceutical, and information technology sectors appointing only 1% women to their boards, the automotive sector having no women, and the financial services sector having the highest percentage of women at 16%. Younger companies tended to appoint more women than companies established many years earlier. Regression analysis showed that for every unit increase in the percentage of women on a company's board of directors, the return on equity increased proportionally by 21.6%. In addition, for every unit increase in the percentage of women on the board of directors, the net profit margin increased proportionally by 18.2%.

The relationship between gender diversity on the board of directors and company performance was examined by considering whether company size alters the impact of gender diversity on company performance. The study by [27] used panel data from non-financial companies listed on A-share exchanges in China to examine this relationship during the period 2007–2012. The results showed that gender diversity on the board of directors has a positive impact on company performance if and only if the company size value is less than a certain critical value.

Additionally, the study examines selected female attributes and financial performance of FTSE 100 firms in the UK. Based on critical volume theory, it measures gender diversity through the proportion of women on the board of directors. The results become significantly more meaningful and clear when three or more women are appointed to the board compared to appointing two or fewer women. Further analysis shows that post-appointment financial performance is positively correlated with age, educational attainment of the women, and the occurrence of female board members also holding executive positions. The results remain unchanged after accounting for endogenous factors and using alternative measures of company performance, namely return on assets and Tobin's Q ratio [28].

Although there are differences between internal and external board members regarding the impact of board diversity on performance. In a 2020 study, [29] showed that age diversity had a positive impact on business performance for both internal and external directors, while nationality diversity was only associated with higher performance levels in the case of internal directors. Furthermore, educational diversity appeared to have a negative impact on

performance for executives. Conversely, no evidence was found regarding the potential influence of gender diversity on performance. Therefore, the demographic diversity of the board of directors plays a crucial role in delivering business performance.

However, research results from a review of 50 papers discussing the impact of gender diversity on the board of directors on financial and non-financial performance [30]. Prior studies have focused on female executives and performance, so the author also proposed a correlation between female executives based on supervisory characteristics, board human capital, and demographics.

Study [31] also supplemented existing studies by examining the influence of board composition, particularly board diversity, on firm performance using cross-sectional data from the London Stock Exchange of non-financial companies, with a total of 3961 companies observed between 2000 and 2016. This study contributed influencing factors such as age, gender, education level, and nationality on firm performance. The results showed that age diversity negatively affected firm performance, meaning that younger board members would enhance and increase firm performance. Furthermore, educational diversity also negatively affected firm performance. On the other hand, diversity in gender and nationality has a positive impact on business performance, so if companies increase the number of women on their boards of directors, their performance will improve.

Regarding the impact of gender diversity on the board of directors on business performance, numerous studies worldwide and in Vietnam have explored this issue. Some typical studies include [32]; [3]; [2]; [33]; [34]. To investigate the relationship between board characteristics (including board size, board independence, CEO duplication, gender diversity on the board, and financial-accounting expertise of the board) and the financial performance of enterprises [32]. The results showed no significant correlation between CEO duplication and the financial-accounting expertise of the board of directors on the financial performance of enterprises. [3] tested the impact of factors describing the diversity of board members on the performance of enterprises in the construction sector. The study found that the diversity of gender and the presence of foreigners on the board of directors had a positive impact on the performance of listed companies on the Vietnamese stock market. Conversely, educational diversity, according to analytical methods, has an inverse impact on business performance as measured by ROA. [2] examined the impact of gender diversity in the board of directors on the performance of 170 non-financial enterprises listed on the Vietnamese stock market during the period from 2010-2015. The results showed that gender diversity, measured through the proportion of female members and the number of women on the board of directors, had a positive influence on business performance. Similarly, the research results of [33] showed that a relationship still exists between the proportion of female board members and performance according to accounting data. Besides the factor of the number of women on the board of directors, [34] investigated the impact of diversity in the board of directors (through two factors: the proportion of foreign nationals representing national diversity and the proportion of female members representing gender diversity) on bank performance. The research results showed that in the regression model with cost efficiency as the dependent variable, gender diversity had no impact on bank performance; conversely, national diversity had a positive impact on bank performance, and the remaining variables had no impact on bank performance, except for the total asset growth rate.

3. METHODOLOGY

3.1 Research hypotheses

3.1.1 Gender Diversity

From the perspective of Agency Theory, gender diversity serves as a substitute mechanism for weak corporate governance systems. [14] and [16] emphasize that the presence of female directors enhances monitoring quality, mitigates conflicts of interest, and improves the informativeness of stock prices. Concurrently, according to Resource Dependence Theory, developed by [17] and [19], women not only represent gender equality but also contribute unique values, ideas, and perspectives, thereby assisting firms in effectively managing environmental uncertainties.

Empirical evidence globally [26], [28] as well as within the Vietnamese market [2], [3], [33] consistently demonstrates that an increase in the proportion of female directors on the board positively impacts profitability indicators.

H1: The proportion of female directors on the board has a positive (+) impact on firm performance.

3.1.2 Young Directors

Age is a crucial demographic characteristic that shapes the competence of the board of directors. Studies by [25] and [29] argue that a board requires a balance between older members (who bring extensive experience) and younger members (who drive innovation). Notably, [31], in their study of the London market, provided clear empirical evidence indicating that the presence of younger board members enhances firm performance. Younger leaders typically possess high adaptability, introduce novel skills, and exhibit a readiness to innovate in order to seize market opportunities.

H2: The proportion of young directors (under 45 years of age) on the board has a positive (+) impact on firm performance.

3.1.3 The interactive impact of Gender Diversity and Young Directors

According to [10] and [30], board demographic characteristics (such as gender, age, and educational background) do not operate independently but rather intersect and interact with one another. [9] demonstrated that demographic diversity yields a positive and non-linear effect by enhancing monitoring efforts. If only a few female or young directors are appointed in isolation, their influence may be constrained. However, the synergy within a board that combines the prudence and multidimensional perspectives of female directors with the dynamism and innovative drive of young directors creates a critical mass sufficient to transform traditional governance mindsets, thereby optimizing financial performance.

H3: There is a positive interaction effect (+) between the proportion of female directors and the proportion of young directors on the board on firm performance.

3.2 Control variables

To ensure the robustness of the model, this study considers firm-specific characteristics that potentially impact performance.

Board size and independence: Based on the guidelines of the [35] and the assessment by [8], board size (BSIZE) and the separation of power (DUAL - CEO Duality) serve as core mechanisms influencing monitoring capacity.

Ownership structure: [7] indicate that changes in ownership structure determine the bargaining power of the board of directors. Consequently, State Ownership (STATE) and

Foreign Ownership (FOR) are incorporated to control for the intervention and resource provision from major shareholders.

Financial characteristics: Variables such as firm size (SIZE), financial leverage (LEV), firm age (FirmAge), and macroeconomic shocks (COVID) are utilized to control for the risks of financial distress and the effects of economies of scale.

3.3 Research data

The research data comprises 50 essential retail firms over a 10-year period, utilizing data extracted from the financial statements of companies listed on the Ho Chi Minh City Stock Exchange (HOSE) and the Hanoi Stock Exchange (HNX). The rationale for restricting the sample to these listed firms is based on several criteria:

First, regarding data transparency and quality, firms listed on HOSE and HNX are mandated to comply with the stringent information disclosure standards set by the State Securities Commission (SSC). Their financial statements must be audited by independent auditing firms. Concurrently, these firms publish comprehensive annual and corporate governance reports, which highly facilitates the collection of demographic data concerning the board of directors.

Second, the requirement to measure market performance via Tobin's Q necessitates highly objective market valuation data. Both HOSE and HNX maintain high liquidity and continuous trading; thus, the closing prices relatively efficiently reflect market information.

Third, regarding industry homogeneity, this study limits the dataset exclusively to the essential retail sector over a 10-year period rather than employing a market-wide sample. This approach controls for data noise arising from cross-industry variations, thereby ensuring that the results from the estimation models and the System GMM more accurately reflect reality by neutralizing unobserved heterogeneity and biases associated with industry-specific risks.

3.4 Research model

Based on a review of previous studies and theories, the authors propose the following model, along with a table explaining the variables in the model:

$$Y (\text{ROA; Tobin's Q; LnEPS}) = b_0 + b_1.(\text{GenderDiversity}) + b_2.(\text{YoungDirectors}) + b_3.(\text{GenderDiversity} * \text{YoungDirectors}) + b_4.(\text{CEODuality}) + b_5.(\text{StateOwnership}) + b_6.(\text{ForeignOwnership}) + b_7.(\text{FirmSize}) + b_8.(\text{FinancialLeverage}) + b_9.(\text{BoardSize}) + b_{10}.(\text{FirmAge}) + b_{11}.(\text{Covid}) + e$$

Table 1. Summary of variables and measurements

Classification	Variable Name	Symbol	Measurement	Expected Sign	References
1. Dependent Variables	Return on Assets	ROA	Net income after tax / Average total assets		[36]; [25]; [2]
	Tobin's Q	TobinQ	(Market capitalization + Total liabilities) / Total assets		[24]; [25]; [28]
	Earnings Per Share	LnEPS	Natural logarithm of adjusted EPS: $\text{Ln}(\text{EPS}_{\text{adj}} + 1)$ using the IHS method		[37]; [38]
2. Independent Variables	Gender Diversity	GenDiv	Number of female directors / Total	(+)	[16]; [26]; [2]

			number of board members		
	Young Directors	YoungDir	Number of directors under 45 years old / Total number of board members	(+/-)	[1]; [25]; [31]
	Interaction Term	GenYoung	Product of two variables: GenDiv * YoungDir	(+)	[4]; [10]; [9]
3. Control Variables	Firm Size	SIZE	Natural logarithm of total assets at year-end	(+)	[39]; [27]
	Financial Leverage	LEV	Total liabilities / Total assets	(-)	[6]; [40]
	Board Size	BSIZE	Total number of board members	Inverted U-shape	[7]; [8]
	Firm Age	FirmAge	Number of operating years (Current year - Year of listing/establishment)	(+)	[41]; [26]
	CEO Duality	DUAL	Dummy variable: 1 if the Chairman of the Board is also the CEO; 0 otherwise	(-)	[14]; [32]
	State Ownership	STATE	Percentage of equity held by state agencies/enterprises	(+/-)	[42]; [7]
	Foreign Ownership	FOR	Percentage of equity held by foreign investors	(+)	[10]; [34]
4. Environmental Variables	Covid-19 Impact	COVID	Dummy variable: 1 for data years 2020 and 2021; 0 otherwise	(-)	Proposed by the authors

Source: Compiled by the authors.

3.5 Estimation methods

The study utilizes Stata software to perform Ordinary Least Squares (OLS) regression, Fixed Effects Model (FEM), and Random Effects Model (REM) analyses, as well as to test for multicollinearity using the Variance Inflation Factor (VIF) and a correlation matrix. Subsequently, the Hausman test is employed to select the appropriate model, and the cluster-robust standard errors method is used to simultaneously address these two defects, while the System GMM is applied to resolve endogeneity issues and verify the robustness of the model.

4. RESULTS

4.1 Descriptive statistics

Based on Table 2, the descriptive statistics of the dependent, independent, and control variables in Table 2 show the following

First, regarding firm performance, the average Return on Assets (ROA) of the essential retail sector stands at 8.4%, indicating that this is an industry with relatively stable profitability.

However, the degree of dispersion within the sector is substantial, evidenced by the gap between the worst-performing firm (a net loss of 22.7% on total assets) and the leading firm (a profit of 72.2%). As for the market valuation multiplier, the average value of Tobin's Q is 1.437. Because this average exceeds 1, it demonstrates that the Vietnamese stock market generally values the assets of retail enterprises higher than their book value, reflecting investors' positive expectations regarding future growth potential and cash flows.

Second, concerning the demographic characteristics of the board of directors, the proportion of female board members (GenDiv) averages 22.0%, which is relatively high compared to the general baseline across industries in Vietnam. More surprisingly, there are retail enterprises where the board is entirely composed of women (Max = 100%). Similarly, the rejuvenation of leadership is also clearly evident, with young directors under 45 years of age (YoungDir) occupying an average of 33.6% of board seats. However, the combination of female gender and youth (GenYoung) remains modest at only 8.4%, implying that the female directors in the research sample are predominantly older and highly experienced.

Third, regarding the control variables, an average essential retail firm maintains a financial leverage ratio (LEV) of 42.3%, a relatively safe level for financing working capital. Board size (BSIZE) ranges from 3 to 11 members, with an average of approximately 6 individuals (5.764). Furthermore, the average age of the enterprises in the sample reaches over 28 years (FirmAge), with exceptional cases of firms being 67 years old.

Table 2. Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
ROA	500	0.084	0.084	-0.227	0.722
TobinQ	500	1.437	1.074	0.190	10.607
LnEPS	500	7.560	3.467	-12.973	11.584
GenDiv	500	0.220	0.190	0.000	1.000
YoungDir	500	0.336	0.254	0.000	1.000
GenYoung	500	0.084	0.115	0.000	0.667
SIZE	500	27.952	1.692	25.221	32.625
LEV	500	0.423	0.185	0.020	0.967
BSIZE	500	5.764	1.579	3.000	11.000
DUAL	500	0.212	0.409	0.000	1.000
STATE	500	0.107	0.214	0.000	0.744
FOR	500	0.090	0.140	0.000	0.859
COVID	500	0.200	0.400	0.000	1.000
FirmAge	500	28.260	14.381	5.000	67.000

Source: Authors' calculation.

4.2 Correlation and Multicollinearity Testing

According to econometric principles [43], if the correlation coefficient between two independent variables exceeds the 0.8 threshold, the model faces the risk of severe multicollinearity, which distorts regression estimates. Observing Table 4.2 reveals that, excluding the inevitable relationship between the interaction term GenYoung and its constituent variables (GenDiv = 0.707 and YoungDir = 0.489), all pairwise correlation coefficients among the independent and control variables are less than 0.5. Specifically, the highest correlation coefficient among the control variables is between Firm Size (SIZE) and

Foreign Ownership (FOR) at 0.442. This result provides the first robust evidence that the explanatory variables in the model are completely independent of one another, ensuring reliability for the subsequent modeling steps.

The matrix also reflects initial correlation directions that align with the proposed hypotheses. Financial Leverage (LEV) exhibits a significant negative correlation with both ROA (-0.238) and Tobin's Q (-0.136). Meanwhile, Foreign Ownership (FOR) and State Ownership (STATE) both demonstrate a positive correlation with all three performance measures at the 5% significance level. Notably, the proportion of Young Directors (YoungDir) displays a negative correlation with ROA (-0.120) and LnEPS (-0.122). However, these are merely isolated pairwise correlations that have yet to account for control variables.

Table 3. Pearson Correlation Matrix

	ROA	TobinQ	LnEPS	GenDiv	YoungDir	GenYoung	SIZE
ROA	1.000						
TobinQ	0.542*	1.000					
LnEPS	0.562*	0.254*	1.000				
GenDiv	0.055	0.060	-0.012	1.000			
YoungDir	-0.120*	-0.075	-0.122*	0.126*	1.000		
GenYoung	0.019	-0.041	-0.018	0.707*	0.489*	1.000	
SIZE	0.005	0.193*	0.122*	0.261*	-0.097*	0.111*	1.000
LEV	-0.238*	-0.136*	0.061	-0.129*	0.153*	-0.016	0.294*
BSIZE	0.083	0.206*	0.086	0.074	-0.134*	-0.022	0.392*
DUAL	0.010	-0.042	0.083	-0.213*	-0.088	-0.115*	0.058
STATE	0.179*	0.190*	0.119*	-0.181*	-0.163*	-0.202*	-0.075
FOR	0.197*	0.346*	0.165*	0.101*	-0.053	-0.018	0.442*
COVID	-0.067	-0.003	-0.038	0.066	-0.012	0.014	0.018
FirmAge	0.188*	0.217*	0.112*	0.101*	-0.039	-0.007	-0.031
	LEV	BSIZE	DUAL	STATE	FOR	COVID	FirmAge
LEV	1.000						
BSIZE	0.102*	1.000					
DUAL	0.169*	-0.003	1.000				
STATE	-0.151*	0.084	-0.219*	1.000			
FOR	-0.003	0.373*	-0.085	0.140*	1.000		
COVID	-0.002	0.002	-0.051	0.012	0.008	1.000	
FirmAge	-0.140*	-0.048	-0.023	0.102*	0.043	0.035	1.000

Note: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Source: Authors' calculation.

The Pearson correlation matrix has yielded promising initial indications. To definitively confirm that the model is free from the multicollinearity defect, the study proceeds to conduct the Variance Inflation Factor (VIF) test. The VIF test results are detailed in Table 4

Table 4. VIF

Variable	VIF	1/VIF
GenYoung	3.060	0.327
GenDiv	2.760	0.362
SIZE	1.710	0.585
YoungDir	1.640	0.609
FOR	1.410	0.708
LEV	1.290	0.774
BSIZE	1.280	0.780
STATE	1.210	0.826
DUAL	1.190	0.843
FirmAge	1.060	0.945
COVID	1.010	0.991
Mean VIF	1.600	

Source: Authors' calculation.

According to [44] and [43], if the VIF of a variable exceeds the threshold of 10 (or more strictly, exceeds 5), that variable has a high probability of suffering from multicollinearity, which inflates standard errors and distorts hypothesis testing results. Observing Table 4.3, the highest VIF values belong to the interaction term GenYoung (3.06) and the GenDiv variable (2.76). This is mathematically logical since the interaction term is generated by multiplying its constituent variables. Notably, all VIFs in the model are substantially lower than the risk threshold of 5, and the mean VIF of the entire system stands at only 1.60, indicating that no severe multicollinearity exists among the independent and control variables.

4.3 Model selection and defect diagnostics

To determine the most appropriate estimation method for the panel data, the study estimates both the Fixed Effects Model (FEM) and the Random Effects Model (REM), subsequently employing the Hausman test to make the final selection.

Table 5. Model Selection and Diagnostic Test Results

Type of Test	ROA Model (P-value)	Tobin's Q Model (P-value)	LnEPS Model (P-value)	General conclusion
Hausman Test	0.000	0.000	0.019	Reject H0. Select FEM.
Modified Wald Test	0.000	0.000	0.000	Reject H0. Data suffers from heteroskedasticity.
Wooldridge Test	0.002	0.001	0.012	Reject H0. Data suffers from autocorrelation.
Applied Solution	Robust	Robust	Robust	Use Cluster-Robust Standard Errors.

Source: Authors' calculation.

To ensure the robustness of the estimates, the study conducted diagnostic tests on all three models measuring firm performance (ROA, Tobin's Q, LnEPS).

Baseline model selection: The Hausman test results for all three equations recorded p-values < 0.05 (ROA: 0.0000; Tobin's Q: 0.0000; LnEPS: 0.0188). Therefore, the null

hypothesis (H0) is completely rejected, confirming that the Fixed Effects Model (FEM) is a more optimal choice compared to the Random Effects Model (REM), as it helps control for the unobserved characteristics of each individual retail firm.

Defect diagnostics: After estimating the FEM model, the Modified Wald test and Wooldridge test were performed. The results indicate that all three models simultaneously suffer from the defects of heteroskedasticity and first-order autocorrelation, with p-values < 0.05.

Remedial measure: To comprehensively address these two classic defects of panel data, the study employs the Cluster-Robust Standard Errors estimation technique. The results from the FEM Robust model are utilized as the official baseline for analyzing and testing the hypotheses

4.4 Analysis of formal regression results

The study used two regression methods, including Robust FEM and System GMM, to address endogeneity and ensure robustness.

Table 6. Regression Results

Independent variable	ROA		Tobin's Q		LnEPS	
Running Method	FEM Robust	System GMM	FEM Robust	System GMM	FEM Robust	System GMM
Lag 1		0.534***		0.679***		0.226
GenDiv	0.047*	0.053	0.146	-0.218	2.484	1.905
YoungDir	0.027	0.013	0.173	-0.089	0.906	0.708
GenYoung	-0.026	-0.072	-0.662	0.053	-3.727	-4.173
SIZE	0.005	-0.002	-0.335**	-0.000	1.120	0.009
LEV	-0.182***	-0.060*	-0.185	-0.035	-3.548**	0.249
BSIZE	0.001	0.000	-0.048	0.012	0.200*	0.156
DUAL	0.004	0.017*	0.099	0.015	0.568**	0.336
STATE	-0.022	0.019	-0.782	0.115	0.145	0.940
FOR	-0.020	0.052	-0.980	0.169	0.019	1.262
COVID	-0.010	-0.016***	0.054	-0.032	-0.318	-0.509
FirmAge	-0.004**	0.000	-0.018	0.004	-0.098	0.027
cons	0.111	0.094	11.777***	0.302	-21.243	3.709
Obs	500	450	500	450	500	450
Groups	50	50	50	50	50	50
Number of instrumental variables	-	21	-	21	-	21
AR(1) p-value	-	0.021	-	0.016	-	0.014
AR(2) p-value	-	0.663	-	0.388	-	0.766
Hansen p-value	-	0.573	-	0.263	-	0.162

*Note: *p<0.1, **p<0.05, ***p<0.01. Source: Authors' calculation.*

The empirical evidence reveals that the impacts of Board of Directors (BOD) structure and financial factors are clearly differentiated depending on the performance measurement lens.

The impact of board demographics supports Tokenism Theory: The results show that the proportion of female directors (GenDiv) has only a positive and marginally significant impact (10%) on accounting profitability (ROA). However, regarding market expectations (Tobin's Q) and shareholder benefits (LnEPS), all three variables Gender Diversity (GenDiv), Young Directors (YoungDir), and their interaction (GenYoung) are entirely statistically insignificant. This suggests that in Vietnamese essential retail firms, the presence of women and young members on the board is largely symbolic (Tokenism). While they may contribute to improved prudence in accounting figures, they have not yet attained sufficient strategic authority to create the cash flow breakthroughs recognized by the market and shareholders.

These findings necessitate a reconciliation between the Upper Echelons Theory and Tokenism Theory within the context of the Vietnamese market. While Upper Echelons Theory posits that diverse leader demographics should enhance strategic decision-making, these expectations fail to materialize in the essential retail sector. The insignificance of the GenYoung interaction term can be explained by a double hurdle phenomenon prevalent in traditional Asian corporate cultures.

Individuals who lack both seniority in age and the dominant gender face amplified barriers to exercising strategic authority. In retail enterprises heavily influenced by family ownership, formal influence is often overshadowed by entrenched power dynamics, rendering the presence of young female directors a symbolic gesture rather than a catalyst for strategic change.

Furthermore, while the retail sector is shifting towards e-commerce, the young directors in this sample may not necessarily possess the specialized technological expertise required to drive this digital transition. In many family-owned retail chains, these young members are often the founders' second generation, appointed primarily for succession planning and relationship preservation rather than their actual technological or strategic acumen. This lack of genuine technological empowerment further explains their negligible impact on financial breakthroughs.

The correlation matrix highlights the significant role of major shareholders (STATE and FOR). In firms with high concentrations of state or foreign capital, these blockholders inherently dictate the board's power structures, causing diversity initiatives to act as superficial compliance measures rather than mechanisms for sharing substantive decision-making power.

The impact of capital structure supports Financial Distress Theory: Financial leverage (LEV) exhibits the most devastating impact on the internal health of the firm. High debt significantly reduces both return on assets (ROA, $p\text{-value} = 0.000$) and core earnings for shareholders (LnEPS, $p\text{-value} = 0.011$). The burden of interest expenses in an industry with thin profit margins, such as essential retail, serves as the most significant constraint.

The impact of scale supports Diseconomies of Scale: While the market remains indifferent to board personnel, it punishes firms with excessively large asset sizes. The coefficient of the SIZE variable has a negative impact (-0.335) and is statistically significant at the 5% level on Tobin's Q valuation. This reflects investor concerns regarding cumbersome organizational structures, high agency costs, and sluggish adaptability among retail giants.

Shareholder interests (LnEPS) are better protected through the concentration of executive power (DUAL has a positive impact, $p\text{-value} = 0.036$) and a sufficiently large board for advisory purposes (BSIZE has a positive impact, $p\text{-value} = 0.065$), indicating that flexibility in decision-making is the key to directly increasing value per share.

4.5 Stability testing and endogenous treatment using System GMM

To ensure that the above conclusions are not biased by endogeneity issues, specifically the reverse causality between firm performance and board personnel structure, the study applies the Two-step System GMM model. The instrument collapsing technique is flexibly utilized to suit the sample size of $N=50$. All three GMM equations passed the diagnostic tests,

with the number of instruments (21) being less than the number of groups (50), and both AR(2) and Hansen tests yielding p-values greater than 0.05, confirming that the instruments are valid and exogenous.

The results from the GMM model yield two breakthrough findings that refine the previous FEM Robust regression results:

The dominance of performance inertia: The lagged variables of both ROA and Tobin's Q have a strong positive and statistically significant impact (at the 1% level) on their current-year values. This confirms that accounting achievements and market valuations possess high continuity, where the growth momentum of the previous year serves as the most critical springboard for the current year.

Unveiling true causality: Once endogeneity is accounted for, the negative impact of financial leverage (LEV) on EPS completely vanishes, and the positive impact of female directors (GenDiv) on ROA is no longer statistically significant. This proves that high debt does not directly destroy shareholder value; rather, underperforming firms (low EPS) are compelled to borrow more. Similarly, it is not necessarily that female presence on the board increases ROA, but rather that highly profitable firms (high ROA) tend to have the resources and inclination to recruit more female members to diversify their corporate governance image.

5. CONCLUSION

5.1 Main conclusions

This study was conducted to evaluate the impact of board gender diversity, the proportion of young directors, and their interaction on the performance of 50 listed essential retail firms on the Vietnamese stock market from 2015 to 2024. By employing advanced econometric methods, ranging from the Fixed Effects Model with Cluster-Robust standard errors (FEM Cluster-Robust) to the System GMM model to address endogeneity, the research draws groundbreaking empirical conclusions and provides profound contributions to the management theory system.

First, the research results provide robust evidence supporting Tokenism Theory and reflect the downside of Agency Theory in the Vietnamese market. Although the proportion of female directors shows signs of a weak positive impact on accounting profitability (ROA), when considering market valuation (Tobin's Q) and shareholder benefits (LnEPS), all demographic characteristics regarding gender, age, and their interaction are statistically insignificant. This demonstrates that the appointment of women or young individuals to the boards of retail firms today is largely symbolic, meeting representational standards without creating the critical mass required to hold substantive power. Consequently, the stock market does not highly value or offer a premium for such superficial diversity.

Second, the study confirms the presence of Diseconomies of Scale and Financial Distress risks within the retail industry. Excessive expansion of asset size (SIZE) leads to severe market valuation discounts (a negative impact on Tobin's Q) due to concerns regarding cumbersome organizational structures. Simultaneously, financial leverage (LEV) significantly damages internal profitability (ROA). Notably, the System GMM model reveals a reverse causal relationship: it is not necessarily that debt directly reduces EPS, but rather that poorly performing firms with low EPS suffer from cash flow shortages and are compelled to increase financial leverage.

5.2 Management and policy implications

Based on the empirical findings, the authors propose several practical implications as follows:

For Shareholders and Investors: Investors should not rely solely on the superficial data provided in annual reports such as the percentage of female directors or the average age to evaluate the quality of the Board of Directors. Shareholders should demand transparency from the Executive Board regarding the substantive authority held by these members. Furthermore, investors must exercise particular caution with retail chains exhibiting rapid expansion fueled by debt, as this signals potential inefficiency and the risk of financial distress.

For the Management of Retail Enterprises: Management should abandon the practice of symbolic board appointments. Rather than appointing female or younger members merely for representational purposes, firms should grant them substantive power and foster an inclusive governance environment. In such an environment, the cautious perspectives of women and the innovative breakthroughs of youth can synergize effectively. Additionally, aggressive strategies for chain expansion should be moderated, with a shift in focus toward optimizing operating costs instead of merely inflating asset size.

For the State Securities Commission (SSC): Corporate governance codes should move beyond mere recommendations for gender diversity. There is a need for specific guidelines to assess the actual contributions and substantive independence of minority board members to improve the quality of information available in the stock market.

5.3 Limitations and directions for further research

Despite achieving certain significant results, this study is not without its limitations.

First, the research sample is currently restricted to 50 firms within the essential retail sector; therefore, the generalizability of the findings to the entire Vietnamese stock market remains limited.

Second, due to the severe lack of standardized and transparent data regarding directors' exact years of experience and educational levels in the annual reports of many Vietnamese listed firms, this study could not incorporate "Director Experience" or "Educational Level" as control variables. Although Upper Echelons Theory suggests these factors moderate decision-making, attempting to include them would result in massive missing observations, compromising the System GMM's validity. Additionally, the "Age" variable inherently captures a significant portion of professional experience, and adding further proxies might introduce multicollinearity risks. This data limitation presents a crucial direction for future research., the study has not yet incorporated in-depth data regarding the educational attainment or financial expertise of individual board members factors that could substantially influence monitoring capacity.

Future research directions should aim to expand the sample size across various industries while also examining the critical mass factor (for example, utilizing a dummy variable for boards with three or more female members) to further investigate the boundaries of Tokenism Theory.

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