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Factors affecting corporate social responsibility of Vietnamese commercial banks

Abstract

Research background and purpose: In Vietnam, a developing country, enterprises, including commercial banks, are endeavoring to assimilate into the international business community by implementing corporate social responsibility (CSR). Although numerous studies have investigated the influence of CSR on corporate financial performance, the motivations that drive commercial banks to partake in social initiatives have not been comprehensively examined, particularly in the context of a developing country such as Vietnam. Consequently, this study seeks to evaluate the factors that influence the social responsibility of commercial banks in Vietnam.
Design/methodology/approach: A multi-method approach was employed to measure CSR using both quantitative and qualitative methods for 29 commercial banks from 2012 to 2021. Monetary data was specifically used to evaluate the extent of corporate social responsibility expenditure (CSRE). The content analysis method was utilized to create the corporate social responsibility disclosure (CSRD) index. This study examines the influence of factors such as profitability, bank size, bank age, financial leverage, and listing status on stock exchange. To examine the causal relationships among these factors, several statistical methods were utilized, including Pooled OLS, fixed effects model (FEM), random effects model (REM) and the Feasible Generalized Least Squares (FGLS).
Findings: The regression results revealed that profitability, bank size, and bank age positively influenced CSR. In contrast, the bank's financial leverage negatively affected CSRE, and there was no significant correlation between listing status and CSR.
Value added and limitations: The limitation of this study lies in its exclusive focus on fundamental factors impacting the social responsibility of banks, including profitability, size, financial leverage, bank age, and listing status. Numerous other factors have the potential to influence social responsibility and warrant further investigation, such as board of directors' characteristics, ownership structure, crises, and the bank's corporate vision.

Keywords: *corporate social responsibility; expenditure; disclosure; commercial banks; factors*

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1. Introduction

There is an expanding body of studies investigating various phenomena associated with CSR. Meeting the diverse needs of various stakeholders has become a vital aspect of business decision-making, which, when managed effectively, can provide companies with numerous advantages (Waddock, 2002). In a developing country like Vietnam, businesses are striving to integrate with the international business community, and one of the strategies they are employing is the implementation of CSR. Recently, a series of violations have significantly impacted the social benefits of businesses, raising alarms about CSR issues. A notable example is the discharge of industrial waste into the Thi Vai River by Vedan Company in 2008, which devastated local seafood populations and harmed the health of nearby residents. In 2020, La Nga Sugar Joint Stock Company in Dong Nai had to temporarily suspend operations due to CSR violations, including excessive dust and exhaust emissions and the discharge of wastewater into water sources. The violations by companies in the industrial cluster in Bac Ninh1 in 2021 serve as another example. These companies discharged wastewater exceeding environmental standards, operated without a certificate of completion for environmental protection measures, and failed to monitor waste properly and consistently.

Commercial banks, acting as financial intermediaries, are essential in supplying capital to the economy while also serving as a bridge between businesses and the market. The issue of banks' CSR is of even greater concern due to the potentially serious, long-term consequences that a lack of CSR can have on the economy and society, as well as on the sustainable development of the country (Scholtens, 2009). In Vietnam, amid global economic integration, the commercial banking system has also undergone significant transformation to keep pace with this integration process. One requirement of the innovation and restructuring of the banking system is to enhance transparency and accountability to society and the investment community, adhering to international standards. Notably, the social responsibility of banks has emerged as a new issue, garnering attention not only from banking leaders and policymakers but also from researchers.

1 Tien Manh Paper Production and Trading Company Limited, Thao My Paper Production and Trading Company Limited, and Viet Tien One Member Production and Trading Service Company Limited lacked an approved environmental impact report as required. Hoang Ngan Paper Joint Stock Company and Van Thanh Production and Trading Company released wastewater with environmental parameters exceeding the technical standards for normal waste. Thanh Ha Paper Production Company Limited and Long Khanh Joint Stock Cooperative failed to construct and install environmental protection works as mandated.

There has been significant discussion in the literature regarding how CSR influences a company's financial outcomes. However, there is less discourse about what motivates a company to engage in social initiatives (Dobbs & Staden, 2016). Fifka (2013) provides an extensive overview of the academic studies related to CSR reporting and the factors influencing it. Friars-Acetone et al. (2014) examined the factors that explain sustainability and integrated financial reporting. Furthermore, Pinier-Chou et al. (2019) discuss the influence of economic development on the implementation of reporting practice standards across various market categories, including developed, emerging, and frontier markets. However, concerns related to social responsibility are predominantly analyzed in developed countries. The practices of CSR differ between developed and emerging nations, highlighting a significant research gap regarding these practices in developing markets. This study examines the factors influencing the social responsibility of commercial banks in Vietnam, a developing region within the Asian market. Considering the institutional disparities between emerging and developed markets, it is essential to grasp the elements that affect CSR implementation and disclosure in emerging markets, especially in the context of the banking sector in Vietnam.

2. Theoretical background and development of research hypotheses

2.1. Theoretical Background

CSR is a vital aspect of an enterprise's information disclosure, demonstrating its dedication to stakeholders regarding initiatives for sustainable development. Generally, businesses get involved in this practice, with details shared in annual reports or specialized publications, like sustainability reports. Various theories have been utilized to explain the motivations behind companies' voluntary investment in and reporting CSR information.

Stakeholder theory addresses the interests of diverse audiences in CSR, extending beyond the conventional users of accounting data, including investors and lenders (Moneva & Llena, 2000). These audiences need information regarding the impact of company activities on the ecosystem and community. When a company recognizes the legitimate interests of its stakeholders, it will willingly disclose further environmental and social insights upon their request (Monteiro & Aibar-Guzmán, 2010). Sharing information about social responsibility enhances and strengthens the image of a socially responsible company while aligning with stakeholder interests. Some companies believe that nurturing strong relationships with stakeholders will enhance their financial outcomes by developing significant intangible resources, including capabilities and expertise (Branco & Rodrigues, 2008). Stakeholder theory furthermore indicates that firm attributes (scale, external ownership, age, sector membership) influence CSRD. Due to stakeholder pressure, larger businesses are generally more cognizant of the significance of CSRD compared to smaller firms. Therefore, larger firms typically disclose more CSR information than their smaller counterparts (Branco & Rodrigues, 2008; Moore, 2001). Stakeholders in established companies acknowledge the role of CSR initiatives in enhancing profitability. Many prior studies have shown that older companies offer more CSR information than younger ones. Delaney and Huselid (1996) discovered that a company's age significantly impacts the level of CSRD. Thus, it is evident that company size and age influence the extent of social responsibility revelation under stakeholder pressure.

Legitimacy theory offers a wider lens on CSRD by recognizing that social agreements hold firms accountable. Businesses focus on engaging in various socially beneficial actions to reach their objectives, thereby guaranteeing their lasting sustainability (Guthrie & Parker, 1989; Brown & Deegan, 1998; Deegan, 2002). Gray et al. (1995) observe that the majority of understandings regarding CSRD stem from this theoretical framework. Publicly disclosing environmental and societal data acts as a way to legitimize a firm's existence or ongoing operations within society (Gray et al., 1995). Established firms typically disclose more CSR information than their younger counterparts. In contrast, Cho and Patten (2007) argue that, according to the theory of legitimacy, corporate disclosures concerning ecological issues mirror the pressures from political and societal influences that businesses encounter regarding their performance in this area. They argue that these pressures may originate from the business environment, including cultural, legal, and political contexts.

2.2. Development of Research Hypotheses

2.2.1. Profitability and Corporate Social Responsibility

Profitability acts as a measure to assess an organization's ability to produce income. The greater the corporate income, the more it indicates that the company can effectively conduct its operations, allowing management the flexibility to enhance the quality and accountability of the company to the public and shareholders through CSR disclosure and expenditures. According to the Legitimacy theory, profit is viewed as a predictor variable that influences CSR spending and disclosure both negatively and positively, depending on whether the company is incurring a loss or generating profit (Deegan & Brown, 1998). Agency theory posits that higher income encourages the company to disclose social information more broadly (Jensen & Meckling, 1976), and it also enables the company to allocate more resources to CSR initiatives. Furthermore, Stakeholder theory indicates that companies with higher profitability will possess the managerial leeway to execute and communicate their initiatives related to social responsibility.

According to Akhtaruddin et al. (2009), the greater the business profit, the more managers favor information transparency, including CSR information. Belkaoui and Karpik (1989) contend that when managers possess sufficient knowledge and capability to generate profits, they will undoubtedly be more aware of implementing and disclosing CSR. Luethge and Han (2012) also assert that when profits are strong, companies will have more resources to implement and disclose CSR. Conversely, when business profits decline or become unprofitable, companies will cut back on CSR spending and reduce information transparency to conceal shortcomings (García-Meca et al., 2005), focusing solely on measures to boost income while paying less attention to other social issues (Roberts, 1992). These observations align well with the research context for Vietnamese commercial banks. Therefore, hypothesis H1 is proposed:

H1: The profitability of commercial banks has a positive effect on spending and disclosure of CSR information.

2.2.2. Size and Corporate Social Responsibility

Business size is a measure of a company's scale. Larger companies are often highlighted by the community when disclosing CSR, allowing them to demonstrate their responsibility to the community. As companies expand, Stakeholder theory posits that the necessity for stakeholders to gain from their existence also increases (Yuliawati & Sukirman, 2015). Within the framework of Legitimacy theory, big firms encounter demands to disclose information about their adherence to government regulations, which enhances their access to social resources (Cowen et al., 1987; Patten, 2002). As a result, they are also under scrutiny and monitoring from stakeholders concerning adherence to labor practices, resource management, community engagement, and societal standards. Leaders in bigger organizations will experience an increased need for social information. As a result, these firms must gather and disseminate additional information on social responsibility. This study aligns with the findings of Yuliawati and Sukirman (2015), Oktavianawati and Wahyuningrum (2019), and Sadou et al. (2017) indicating that the variable of enterprise size influences the spending and disclosure of CSR information and has a positive relationship. Thus, hypothesis H2 is proposed:

H2: Enterprise size has a positive effect on spending and disclosure of CSR information.

2.2.3. Financial Leverage and Corporate Social Responsibility

Not all firms finance their assets through equity; many rely on creditors for their operations. Leverage indicates how much a firm relies on creditors to finance its assets (Wulandari &

Sudana, 2018). Agency theory posits that a firm's leverage ratio is inversely related to CSR disclosure. Firms with high leverage frequently restrict their CSR disclosures to evade attracting creditors' scrutiny. According to Stakeholder theory, these highly leveraged firms prioritize using their earnings and assets to meet creditor obligations over financing their CSR initiatives. Huafang and Jianguo (2007) argue that when a company takes on debt, credit providers will monitor the company more closely to ensure its ability to repay the loan, and this monitoring incurs costs. Consequently, companies will proactively disclose more information, including CSR data, to stakeholders, particularly creditors, to ease supervision and reduce expenses. Tan et al. (2020) contends that as debt increases, the level of CSR information transparency also rises. Conversely, some argue that a firm's debt level does not affect its CSR transparency (Razak, 2015). Maskun (2013) even posits that higher debt levels lead to decreased information transparency, including CSR data, as companies may seek to conceal their weaknesses; this perspective aligns with the psychology of businesses in Vietnam.

H3: Financial leverage negatively impacts the level of spending and CSR information disclosure among Vietnamese commercial banks.

2.2.4. Firm Age and Corporate Social Responsibility

Legitimacy theory posits that older firms tend to possess a higher reputation and credibility compared to newer firms, as they are generally more stable and sustainable, with greater resources, experience, and a stronger sense of responsibility in cultivating their image and reputation through various measures, including CSR implementation and transparency (Suchman, 1995). The age of a company has been identified in various prior analyses as a key factor influencing CSR expenditures and transparency (Akhtaruddin, 2005; Delaney & Huselid, 1996; Hamid, 2004; Liu & Anbumozhi, 2009). Delaney and Huselid (1996) found that older companies tend to demonstrate elevated degrees of corporate social responsibility disclosure. Comparable results were presented in a study by Kansal et al. (2014), which examined 80 companies in India to assess the extent of CSR disclosure. In contrast, several investigations have indicated an inverse relationship between CSRD and the duration of a firm's operation. For example, Rettab et al. (2009) found a negative correlation between CSR and the age of the organization. Similarly, Liu and Anbumozhi (2009) noted a detrimental correlation between environmental disclosure and a company's longevity. Consequently, based on these insights, we propose the fourth hypothesis as follows:

H4: The age of commercial banks has a positive effect on the level of CSR spending and disclosure.

2.2.5. Listing Status and Corporate Social Responsibility

The listing status of banks on the stock market is considered a crucial determinant capable of influencing the degree of information disclosure in the bank's reports. Research by Hamid (2004) and Firth (1979) indicates that banks listed on the stock market generally offer more detailed information in their financial statements than unlisted institutions. According to Hamid (2004), listed banks are required to adhere to stringent reporting and information disclosure standards, and transparency in information is a key element that fosters trust and attracts investment from stakeholders. Furthermore, in accordance with regulatory requirements, specifically, Circular 155/2015/TT-BTC issued by the Ministry of Finance, which took effect on January 1, 2016, publicly traded companies are required to disclose information regarding sustainable development, including elements related to employees, the community, and the environment. Therefore, hypothesis H5 is proposed:

H5: Listing status has a positive impact on spending and disclosure of CSR information by commercial banks.

3. Methods

This research employs two methods to create distinct measures of CSR, both quantitative and qualitative, facilitating a comprehensive analysis of the CSR practices of Vietnamese commercial banks:

Financial Approach: This involves the monetary data of banks (in millions of VND) concerning three dimensions of CSR: expenditures on employees, contributions to the community, and corporate income tax paid during the year. The choice of these three dimensions is guided by stakeholder theory. As Freeman (1984) noted, for a business to prosper, it must meet the needs of its stakeholders, who can significantly impact its profitability. Employees, communities, and governments are essential stakeholders vital to the company's survival and growth. Furthermore, there is limited data available from the annual reports and financial statements of commercial banks. Once data is collected for each CSR component, the total CSR expenditure of the bank is calculated by summing the amounts allocated across all three dimensions. Ultimately, CSRE is derived by applying the logarithm to the total CSR expenditure.

Content Analysis: the bank's corporate social responsibility disclosure index is made up of three component CSR indices, namely Environmental Responsibility, Employee Responsibility, and Community Responsibility. Each aspect has an information index number of 10, 14, and 8, respectively. The rationale for choosing these three components stems from the requirement for commercial banks to produce and distribute sustainability reports in line with the provisions outlined in Circular 155/2015/TT-BTC. The information that enterprises must report relates to three primary themes: environmental management (which includes oversight of raw materials and energy use, compliance with legal standards for environmental protection), workforce, and community engagement. Therefore, this study's measurement criteria for corporate social responsibility disclosure should also be closely related to these contents. The CSR component is determined by averaging the scores of all indicators within that category. As a result, the CSR disclosure index for each bank will be based on the mean score of the three CSR indicators.

The study employs quantitative research methods, specifically panel data regression techniques, utilizing data from 29 Vietnamese Joint Stock Commercial Banks over a span of 10 years, from 2012 to 2021. The research findings are estimated using three models: Pooled OLS, FEM, and REM. To determine which regression method is most appropriate among the three, the authors apply the Likelihood Ratio test, the Lagrangian Multiplier test, and the Hausman test. Subsequently, necessary tests are conducted on the model, including multicollinearity, autocorrelation, and variance tests. In cases of autocorrelation or variance issues that may distort the results, the study will proceed with the FGLS method to yield more accurate regression outcomes.

To test the research hypothesis, the following formulas were uesed:

$$CSRE_{it} = \alpha + \beta_1 xROA_{it} + \beta_2 xSIZE_{it} + \beta_3 x\,CAP_{it} + \beta_4 xAGE_{it} + \beta_5 xDLB_{it} + \varepsilon \text{ (Model 1)}$$

$$CSRD_{it} = \alpha + \delta_1 xROA_{it} + \delta_2 xSIZE_{it} + \delta_3 x\,CAP_{it} + \delta_4 xAGE_{it} + \delta_5 xDLB_{it} + \varepsilon \text{ (Model 2)}$$

The variables incorporated in the model are outlined in detail and linked to their corresponding formulas, as shown in Table 1.

Table 1. **Description of variables and symbols used in the regression models**

Variable code	Variable name	Formula	Data source
Dependent variables:			
$CSRD_{it}$	The CSR information disclosure index of bank i at time t	$CSRD = \frac{\sum_{i=1}^{3} \text{The component CSR index}_{ij}}{3}$	Author
$CSRE_{it}$	CSR expenses of bank i at time t	CSRE = Logarit (CSR expenses)	Author
Independent variables:			
ROA_{it}	Return on total assets of bank i at time t	$ROA = \frac{\text{Profit after tax}}{\text{Average total assets}}$	CB[a]

$SIZE_{it}$	The size of bank i at time t	SIZE = Logarit (Total assets)	CB
CAP_{it}	The equity-to-asset ratio of bank i at time t	$CAP = \frac{\text{Equity}}{\text{Total assets}}$	CB
AGE_{it}	Age of bank i in year t	The age of the bank is determined by the duration, expressed in years, from its establishment to the year of analysis.	CB
DLB_{it}	Listing status of bank i in year t	Dummy variable, 1 if listed bank; 0 if unlisted bank	CB

[a] Commercial Bank

Source: author's suggestion

4. Results

Table 2 presents statistical data based on a sample of 29 commercial banks, with the study period spanning from 2012 to 2021. The average corporate social responsibility expenditure of Vietnamese commercial banks is 6.1085 (nearly 108 million USD). The lowest CSRD was recorded at 5.08658 (over 5 million USD) by Baovietbank in 2012. In contrast, the bank with the highest social responsibility expenditure was Agribank in 2018, exceeding 16 trillion VND. This bank also incurs the largest staff costs due to having the biggest workforce in the Vietnamese commercial banking system, totaling around 36,000 employees (in 2018). The average CSRD index among commercial banks in Vietnam is 55%, which is merely average and aligns with the findings of Anh (2018), who analyzed listed companies from 2012 to 2016. The lowest CSRD score recorded is 0, indicating that one bank did not disclose any information among the 32 indicators related to employees, the community, and the environment. Conversely, the highest CSRD score of 0.96667 belongs to the Vietnam Joint Stock Commercial Bank for Industry and Trade, which reported 31 of 32 indicators.

Table 2. **Statistics of variables used in the regression models**

Variable	Obs	Mean	Std. Dev	Min	Max
CSRE	290	6.1085	0.5711	5.0866	7.2442
CSRD	290	0.5508	0.2063	0	0.9667
ROA	290	0.0078	0.0064	0.00001	0.0324
SIZE	290	8.1391	0.5141	7.1233	9.2459
CAP	290	0.9125	0.0377	0.7616	0.9738

AGE	290	23.8448	11.2963	1	64
DLB	290	0.3793	0.4861	0	1

Source: own elaboration based on results from Stata software

The highest recorded Return on Assets (ROA) value is 0.0324, while the lowest is 0.00001, resulting in an average ROA of 0.0064. This data underscores a significant variance in profitability among the banks included in the sample. In 2021, the commercial bank with the largest total assets was BIDV, whereas Baovietbank had the smallest total assets in 2012. The financial leverage of Vietnamese commercial banks averages approximately 0.7616, with the lowest ratio recorded at nearly 0.038 and the highest at 0.9738. The average age of commercial banks in Vietnam is 23 years, with the oldest bank being 64 years and the youngest just 1 year old, specifically SCB bank, established in 2011, making its age 1 year by 2012. Regarding their listing status, of the 29 commercial banks included in the research sample, only one is state-owned (Agribank), while the others have undergone equitization. Among these, 17 banks are listed on the Ho Chi Minh City Stock Exchange (HOSE), 2 are listed on the Hanoi Stock Exchange (HNX), 2 operate as unlisted on the stock exchange (over-the-counter or OTC), and 7 are publicly traded yet not listed on either stock exchange (UPCOM). For coding purposes, the year a commercial bank is listed is designated as 1, while the years in which the banks remain unlisted, or those not officially listed on HOSE and HNX, are coded as 0.

Table 3. **Variable correlation matrix and results of multi-collinearity test using VIF**

Variables	CSRE	CSRD	ROA	SIZE	CAP	AGE	DLB	VIF
CSRE	1							
CSRD		1						
ROA	0.4431*	0.1597*	1					1.64
SIZE	0.9359*	0.6304*	0.2607*	1				3.23
CAP	-0.3919*	-0.3862*	0.2841*	-0.5889*	1			2.40
AGE	0.5365*	0.5087*	0.1534*	0.4988*	-0.1402*	1		1.47
DLB	0.5435*	0.4381*	0.3584*	0.5018*	-0.1074*	0.4065*	1	1.52
Mean VIF								2.05

*The pair of variables has a linear correlation at the 95% confidence level (corresponding to a significance level of 5% = 0.05)

Source: own elaboration based on results from Stata software

Table 3 illustrates the correlation coefficients utilized to ascertain the relationships among the observed variables within the models. The study then performs a regression analysis to assess both the direction and magnitude of the influence that the independent variables have on the dependent variable. This analysis utilizes the Pooled OLS, FEM, and REM methods, while also applying tests to identify the most appropriate regression method based on the following criteria:

- to determine the more appropriate model between Pooled OLS and FEM, the F-test associated with the FEM model is employed. If the probability value (Prob) surpasses the chi-squared statistic and is statistically significant at a threshold of less than 0.05, the FEM model is deemed more suitable than the Pooled OLS model. Conversely, if the probability value is statistically significant at a level greater than 0.05, the Pooled OLS model is preferred over the FEM model.
- the Breusch-Pagan Lagrangian test aids in choosing between the Pooled OLS and REM methods, which are suitable for regression analysis of the sample data, based on the null hypothesis (H0) of constant error variance, as variations in variance explain the differences between the Pooled OLS and REM approaches. If Prob > chibar2 shows statistical significance at > 0,05, then hypothesis H0 is rejected, indicating that the REM method is more suitable for estimating and explaining the relationship of factors in the model compared to the Pooled OLS method. Conversely, the Pooled OLS method is considered more appropriate if the H0 is not rejected.
- the Hausman test is conducted to determine the appropriate model for explaining the relationship of factors in the research model between the FEM and REM methods. This assertion is grounded in the null hypothesis (H0), which posits the absence of correlation between the explanatory variable and the random factor εi, as such a relationship accounts for the discrepancies observed between the FEM and the REM. The outcome indicates that if Prob > chi2 has a statistical significance greater than 0,05, the null hypothesis H0 is rejected, suggesting that the REM method is more suitable. Conversely, if the null hypothesis H0 is accepted, the FEM method is deemed more appropriate.

Table 4. **Results from various tests to select the appropriate regression model**

Inspection type	Model type	Result	Compared to the conditions	Suitable model	Conclusion on model fit
Model 1					
F-test	FEM và Pooled OLS	F(28, 256) = 9.93 Prob > F = 0.0000	< 0.05	FEM	FEM
Breusch–Pagan Lagrangian Test	REM và Pooled OLS	chibar2(01) = 209.59 Prob > chibar2 = 0.0000	< 0.05	Pooled OLS	
Hausman test	FEM và REM	chi2(5) = 18.56 Prob>chi2 = 0.0023	< 0.05	FEM	
Model 2					
F-test	FEM và Pooled OLS	F(28, 256) = 5.58 Prob > F = 0.0000	< 0.05	FEM	REM
Breusch–Pagan Lagrangian Test	REM và Pooled OLS	chibar2(01) = 109.03 Prob > chibar2 = 0.0000	< 0.05	REM	
Hausman test	FEM và REM	chi2(5) = 6.34 Prob>chi2 = 0.2745	> 0.05	REM	

Source: own elaboration based on results from Stata software

The findings presented in Table 4 indicate that: For the model analyzing factors influencing social responsibility expenditures of commercial banks (Model 1), the FEM method is the most appropriate. Meanwhile, for the model analyzing factors influencing social responsibility information disclosure of commercial banks (Model 2), the REM method is the most appropriate.

However, the paper does not stop there; it continues to examine the defects of the selected models. To assess whether the model exhibits multicollinearity, the paper relies on the Variance Inflation Factor (VIF). When the VIF coefficient is between 2 and 10, there is a low likelihood of multicollinearity. If the VIF coefficient exceeds 10, multicollinearity is likely to occur. Based on the findings presented in Table 3, most of the VIF coefficients for the variables are below 2, except for the SIZE and CAP variables, which range from 2 to 3. As a result, the model is less likely to exhibit multicollinearity. To evaluate the presence of heteroscedasticity, the study utilizes the Modified Wald test to determine whether Model 1 shows heteroscedasticity. The results shown in Table 5 indicate that, at a 95% confidence level, the probability value (Prob > $chibar^2$) is 0.0000, which is below the 5% significance threshold. This outcome leads to the rejection of the null hypothesis (H0) and acceptance of the alternative hypothesis (H1), signifying the presence of heteroscedasticity within the model. For model 2, the REM method is deemed more appropriate. To assess heteroscedasticity for this model, the study utilizes the Breusch-Pagan test. The results in Table 8 reveal that, at a confidence level of 95%, we have Prob > chibar2 = 0.0000, which is less than 5% (the significance level), prompting us to reject H0 and accept H1, the heteroscedasticity detection model. To investigate the phenomenon of autocorrelation, the author employed the Wooldridge test to determine whether the model is autocorrelated. The results in Table 5 show that, at a confidence level of 95%, we have Prob > F = 0.0228 for model 1 and Prob > F = 0.0000 for model 2. Both values are below 5% (the significance level), leading us to reject H0 and accept models with first-order autocorrelation.

Table 5. **Results of model defect testing**

Test for heteroscedasticity			Test for autocorrelation
Model 1			
sigma(i)^2 = = 1514.63 Prob>chi2 = 0.0000			F(1, 28) = 5.803 Prob > F = 0.0228
Model 2			
	Var	sd = sqrt(Var)	F(1, 28) = 28,198 Prob > F = 0,0000
CSRD	0.0425717	0.2063292	
e	0.0159423	0.126263	
u	0.008478	0.0920761	
Test: Var (u) = 0 chibar2 (01) = 109.03 Prob > chibar2 = 0.0000			

Source: own elaboration based on results from Stata software

Given the limitations of models 1 and 2, the FGLS regression method is employed to assess the hypotheses presented in the study. The regression model concerning CSRE indicates that return on assets (ROA), size (SIZE), and financial leverage (CAP) are related to CSR expenditure (CSRE) at the 1% statistical significance level. Meanwhile, the regression model about CSRD reveals that size (SIZE) and bank age (AGE) positively influence the CSR disclosure of Vietnamese commercial banks (CSRD) at the 1% statistical significance level.

Table 6. **Estimation results of factors influencing social responsibility expenditures of commercial banks**

Variables	OLS	REM	FEM	FGLS
	CSRE	CSRE	CSRE	CSRE
ROA	13.38145***	10.01734***	9.45810***	12.83102***
	(7.55)	(5.29)	(4.58)	(8.50)
SIZE	1.04032***	0.95835***	0.98615***	0.98661***
	(33.40)	(18.96)	(9.74)	(30.38)
CAP	1.90846***	1.13983***	0.80534*	-1.41400***
	(5.22)	(3.09)	(1.97)	(-4.29)
AGE	0.00306***	0.00170	-0.00586	0.00157
	(3.20)	(0.84)	(-1.01)	(1.40)
DLB	0.01004	0.08624***	0.12438***	0.03480
	(0.44)	(3.11)	(4.04)	(1.55)
_cons	-2.70721***	-1.94295***	-1.96977***	-2.19089***
	(-10.41)	(-4.84)	(-2.71)	(-8.28)
N	290	290	290	290
R^2	0.931	Within = 0.8081	Within = 0.8110	
		Between = 0.9516	Between = 0.9159	
		Overall = 0.9255	Overall = 0.8970	
adj, R^2	0.930			

t statistics in parentheses * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$

Source: own elaboration based on results from Stata software

Table 7. **Results of estimation of factors influencing the disclosure of information on social responsibility by commercial banks**

Variables	OLS	REM	FEM	FGLS
	CSRD	CSRD	CSRD	CSRD
ROA	0.59642	1.10066	1.36715	-0.50037
	(0.34)	(0.54)	(0.58)	(-0.30)
SIZE	0.13991***	0.15569***	-0.00220	0.16819***
	(4.47)	(3.13)	(-0.02)	(4.57)
CAP	-0.74024**	-0.41847	-0.36067	-0.49619
	(-2.01)	(-1.05)	(-0.77)	(-1.35)
AGE	0.00470***	0.00555***	0.01888***	0.00403***
	(4.90)	(2.97)	(2.85)	(3.53)
DLB	0.05832**	0.05459*	0.04945	0.02967
	(2.57)	(1.84)	(1.40)	(1.37)
_cons	-0.66191**	-0.84150**	0.12069	-0.88212***
	(-2.53)	(-2.10)	(0.15)	(-2.94)
N	290	290	290	290
R^2	0.466	Within = 0.2324	Within = 0.2449	
		Between = 0.6440	Between = 0.3994	
		Overall = 0.4615	Overall = 0.3018	
adj, R^2	0.457			

t statistics in parentheses * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$

Source: own elaboration based on results from Stata software

5. Discussion

The regression results in column 4 of Table 7 indicate that ROA positively influences CSR disclosure, although this effect is not statistically significant. Conversely, the regression results in column 4 of Table 6 illustrate the positive influence of ROA on CSR disclosure. Consequently, hypothesis 1 is accepted. This evidence suggests a positive relationship between profitability and CSR among Vietnamese commercial banks. Luethge and Han (2012) also argued that when profits are robust, companies have more resources to implement and enhance transparency regarding CSR.

In model 1, the coefficient for the relationship between SIZE and CSRE is positive and statistically significant ($\beta = 0.98661$, $p < 0.01$). Similarly, in model 2, the coefficient representing the connection from SIZE to CSRD is also positive and statistically significant ($\beta = 0.16819$, $p < 0.01$). In light of these findings, hypothesis H2 is confirmed, indicating that firm size significantly influences both CSR expenditures and disclosure practices. This finding suggests that larger commercial banks allocate more resources to CSR activities and provide more CSR information. This conclusion aligns with the research conducted by Brammer and Pavelin (2004) regarding firms listed in the United Kingdom, Branco and Rodrigues (2008) concerning companies listed in Portugal, and Reverte (2009) focusing on entities listed in Spain. This phenomenon may be ascribed to the probability that larger firms exhibit heightened awareness of stakeholders and societal concerns, resulting in an increased demand for CSR information, thereby generating pressure for CSRD compliance. Furthermore, large-scale banks in Vietnam, defined as those with total assets exceeding 1 million USD, possess significant financial resources and have the ability to employ a larger number of specialists in information disclosure practices. These institutions are likely to maintain dedicated departments responsible for the collection, processing, and dissemination of information related to social responsibility. As a result, the CSRD index for larger firms is typically higher than that of their smaller counterparts. Consequently, the transparency of CSR information is considerably greater in larger companies than in smaller enterprises. Moreover, larger companies tend to excel in social responsibility as they view CSR and information disclosure as strategies to enhance their reputation and corporate image.

The empirical findings indicate a lack of evidence supporting a statistically significant relationship, at any level of significance, between financial leverage as measured by CAP and the CSRD of banks. However, CAP does have a negative impact on CSRE at the 1% significance level. These findings are consistent with the research conducted by Yuliawati and Sukirman (2015), Rindawati & Asyik (2015), and Wulandari & Sudana (2018), which indicate that leverage negatively affects CSR.

The bank age variable AGE shows a positive relationship with the willingness to disclose information. At the 1% significance level, bank age is statistically significant with a regression coefficient of 0.00403. Therefore, we can confirm that the proposed research hypothesis is accepted. Numerous studies have identified a positive relationship between a company's age and its level of CSR transparency (Chakroun et al., 2017; Muttakin et al., 2018). Established businesses tend to be larger, more reputable, and hold a strong market position. To maintain their prestige and reputation, they often disclose information widely and voluntarily. Additionally, we did not find a statistically significant relationship between the variable Listing status and the bank's CSR. This finding is consistent with Thuy's (2021) conclusion regarding the factors influencing the degree of information transparency in the annual reports of banks, based on a research sample of 27 banks from 2015 to 2019.

6. Conclusions

In this study, a multi-method approach (quantitative and qualitative methods) was employed to assess the social responsibility of 29 commercial banks from 2012 to 2021. Specifically, monetary data was utilized to gauge the level of corporate social responsibility expenditure (CSRE). The content analysis method was applied to develop the corporate social responsibility disclosure index (CSRD). To test the hypotheses regarding the factors influencing the social responsibility of Vietnamese commercial banks, we constructed two research models. Model 1 investigates the factors affecting the social responsibility expenditure of banks, while Model 2 examines the factors influencing the social responsibility disclosure of banks. Pooled OLS, FEM, and REM regressions were used accordingly. However, the results of testing the models revealed issues of autocorrelation and heteroscedasticity. Therefore, we have chosen to discuss the research results based on the FGLS regression method.

The purpose of spending on and disclosing corporate social responsibility information is to enhance investor confidence by fostering positive relationships with society and acting responsibly according to high ethical standards, thereby increasing the firm's long-term profitability. Therefore, to assist Vietnamese commercial banks in improving their CSR practices, the research team has identified both positive and negative factors influencing CSR expenditure and disclosure, while providing recommendations to help bank managers develop management plans aimed at enhancing CSR within the context of the banking sector in Vietnam, a developing nation.

First, the estimated results indicate a positive relationship between profitability (measured by return on assets, ROA) and the social responsibility expenditures of banks. This suggests that when banks achieve higher profits, they have more resources to implement CSR initiatives. Therefore, seeking solutions to maximize profits is not only the top priority for bank managers to meet the expectations of shareholders and other stakeholders but also the foundation for commercial banks to engage in spending on and disclosing information regarding their social responsibility activities. To maximize profits, banks can implement several strategies: optimizing operational costs through automation and effective resource management; expanding services and products to attract more customers; enhancing service quality to increase customer satisfaction and loyalty; managing risks effectively to minimize losses; improving marketing and promotional activities to raise brand awareness; leveraging technology and innovation to enhance processes; establishing strategic partnerships for product development; and regularly analyzing business performance to make informed decisions. These strategies will help banks enhance operational efficiency and increase sustainable profitability.

Second, the study also demonstrated a positive correlation between bank size and both expenditure on and disclosure of corporate social responsibility information. In line with Stakeholder Theory and Legitimacy Theory, larger banks tend to allocate more resources and provide more information regarding CSR. Therefore, bank managers should consider expanding their operations not only to achieve financial growth but also to enhance their capacity to implement CSR programs. Adopting a larger scale will enable banks to undertake social initiatives with a more significant impact, thereby creating long-term value for the community and improving their brand image. Managers need to focus on developing CSR programs that align with their specific characteristics and leverage available resources to promote activities that support the community, protect the environment, and foster sustainable development. Furthermore, increasing transparency in CSR activities and providing regular reports on the impacts of these programs will not only strengthen trust among stakeholders but also facilitate the attraction of new investors and customers, contributing to the sustainable development of the bank.

Third, the study provides empirical evidence supporting Agency Theory, indicating that financial leverage negatively impacts CSR expenditure. Therefore, bank managers need to exercise caution in structuring debt and managing finances to avoid unintended effects on CSR activities. This can be achieved by optimizing the debt-to-equity ratio, ensuring that the bank maintains sufficient financial resources to invest in CSR programs without compromising its liquidity or overall financial health. Simultaneously, managers should consider developing flexible financial strategies to balance the short-term and long-term needs of the bank, thereby finding ways to integrate CSR initiatives into the overall strategic development plan. This approach ensures that these programs not only generate social benefits but also support sustainable growth and enhance the brand image in the eyes of customers and stakeholders.

Fourth, the empirical findings of this study support Legitimacy Theory, illustrating that the age of a banking institution has a positive impact on its corporate social responsibility disclosure (CSRD). Specifically, older commercial banks are associated with higher levels of social responsibility disclosures. In this context, bank managers are encouraged to leverage their institution's historical legacy and established reputation to enhance CSR initiatives. By effectively highlighting past achievements and contributions to the community, banks can cultivate stronger relationships with clients and stakeholders. Marketing strategies and public communications should emphasize the bank's enduring commitment to social responsibility, thereby demonstrating the positive impact achieved over time. This strategic approach not only reinforces customer loyalty but also attracts new clients who prioritize ethical practices and community engagement.

Finally, we did not find a statistically significant relationship between being listed on a stock exchange and CSR expenditure or CSR disclosures. From this finding, bank managers need to reconsider their strategies and approaches to implementing CSR programs. This suggests that listing status does not automatically confer benefits for CSR activities; therefore, managers should proactively develop and implement CSR initiatives independently of their listing status. Concurrently, they need to focus on developing a transparent and flexible reporting framework to effectively communicate information about social responsibility activities to stakeholders, thereby building trust and reinforcing the bank's image within the community. Instead of relying on their listing status to boost CSR expenditure, banks should emphasize the core essence of their initiatives and a genuine commitment to social benefits, thereby enhancing the positive impact of these activities on their brand and customer relationships.

This study, like any empirical investigation, is subject to certain limitations. It primarily focuses on fundamental factors influencing CSR, including profitability, size, financial leverage, bank age, and listing status. However, numerous other elements can impact banks' CSR expenditures and disclosures, such as board characteristics, crises, corporate vision, and more. Consequently, future studies could incorporate these additional factors.

Authors' contribution

H.T.T.B: article conception, theoretical content of the article, research methods applied, conducting the research, analysis and interpretation of results, draft manuscript preparation. **Y.T.H.N:** theoretical content of the article, data collection.

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