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Level of Corporate Social Responsibility Disclosure and Financial Performance: A Case Study in Ho Chi Minh City, Vietnam

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Abstract

Research aims: This study examines the influence of firm size, firm age, current ratio, and type of audit company on the corporate social responsibility disclosure level and its impact on the financial performance of listed enterprises in Vietnam.

Design/Methodology/Approach: Financial data were collected from the annual reports of 109 enterprises listed on the Ho Chi Minh City Stock Exchange, Vietnam, from 2016 to 2020. This research employed the Random Effects Model (REM), Fixed Effects Model (FEM), and Feasible Generalized Least Squares (FGLS) to deal with the drawbacks of the regression models, as mentioned.

Research findings: The findings support the positive influence of firm size, firm age, and the type of auditing firm on the level of CSR information disclosure of listed manufacturing enterprises. Also, the extent of CSR disclosure positively affected financial performance, confirming the positive relationship between CSR disclosure level and financial performance.

Theoretical contribution/Originality: This study contributes to governance theory by expanding and combining stakeholder and legitimacy theories with criteria for measuring the level of CSR disclosure in the Vietnamese context. Therefore, the study results are a valuable reference for theorists who tirelessly pursue the CSR topic.

Practitioner/Policy implication: This study proposes recommendations for practitioners who should focus on enhancing the level of CSR disclosure to generate more benefits and result in better financial performance. Also, policy implications should be raising the senior managers' awareness of the level of CSR disclosure, firm size, firm age, and type of audit and establishing a stable legal framework for the level of CSR disclosure in line with international standards and practices.

Research limitation/Implication: The sample data were only collected from manufacturing companies listed on Ho Chi Minh Stock Exchange, and the analyzed content and measurement of the level of CSR disclosure primarily relied on the enterprises' annual reports.

Keywords: Financial performance (FP); Ho Chi Minh City Stock Exchange (HOSE); level of corporate social responsibility disclosure (level of CSR disclosure)



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Introduction

Corporate social responsibility (CSR) is an extensive concept that involves community, environment, information transparency, accountability,

business ethics, and sustainability (Argenti, 2016; Gond et al., 2010; Minh et al., 2022). CSR is also an integral part of the strategy to achieve the organization's goals (Omran and Ramdhony, 2015). Subsequently, the issues of CSR attract the concerns of not only the researchers but also the enterprises' senior executives. Specifically, there is a total number of studies related to CSR, CSR disclosure, and the level of CSR disclosure worldwide. Besides, under the stakeholders' pressure, more and more enterprises have implemented CSR and disclosed information about their social responsibility.

However, the level of information disclosure is still low in practice. For example, the study of Alshannag and Basah (2016) stated that the level of social responsibility disclosure of listed enterprises in Jordan was only 34.1%. Many empirical studies have also been carried out to identify what affects the level of CSR disclosure. For instance, Bayoud et al. (2012) and Masoud and Vij (2021) in the context of Libya, Lu et al. (2017) for forestry companies in China, Issa (2017) in the United Arab Emirates, and Salehi et al. (2019) in Iranian. Regardless of differences in methods and data samples, they found that an enterprise's characteristics, such as size, years of operation, current ratio, and auditing firm, positively influenced the level of CSR disclosure. Also, previous studies, such as Kumar and Kumar (2018), Platonova et al. (2016), and Yeganeh and Barzegar (2014), also revealed a positive relationship between enterprises' level of CSR disclosure and firm performance (FP).

In Vietnam, enterprises' social responsibility activities, disclosure, and disclosure levels have received academic and practical attention in recent years. For example, several studies have indicated that CSR disclosure levels remain very low (Vu and Pratoomsuwan, 2019; Thuy, 2019; Huong et al., 2019). Hang et al. (2020) and Quyen et al. (2021) also uncovered that firm size, age, and type of auditing firm positively affected the level of CSR disclosure. However, few studies focus on the influence of CSR on FP. To the best of our knowledge, there is only one related research by Nguyen et al. (2021b). They collected information from the annual reports of enterprises listed on the Vietnamese stock market in 2019. They examined the relationship between CSR and some financial performance indicators (such as ROA and ROE) and concluded that CSR disclosure level affected both ROA and ROE. However, the drawback of this research is that they only used cross-sectional data for their sample. To provide more credible evidence of this correlation, the current researchers employed panel data extracted from the annual reports of enterprises listed on the Ho Chi Minh Stock Exchange (HOSE) from 2016 to 2020.

Generally, foreign and domestic studies have shown that CSR is vital for enterprises in the modern economy; it is of great interest to the enterprise and its stakeholders (Hang et al., 2020). Disclosure of CSR information has also become one of the crucial contents in corporate annual reports. However, the research findings on the level of CSR disclosure and its influence on FP are inconsistent because of different contexts, approaches, and data samples. Therefore, the objectives of this study are to (1) identify the determinants of the level of CSR disclosure and FP of enterprises listed on HOSE; (2) measure the influence of these determinants on the level of CSR disclosure; (3) measure the influence of level of CSR disclosure on FP of enterprises listed on HOSE; (4) propose some recommendations to strengthen CSR. Further, the research results provide empirical evidence on the determinants of the level of CSR disclosure and its impact on FP in the

case of an emerging country. Thus, this study enriches the theory of CSR and gives valuable recommendations to administrators in the decision-making process to improve CSR in general and the level of CSR disclosure in particular, especially in developing countries.

Literature Review and Hypotheses Development

Theory

The World Business Council on Sustainable Development states, “Corporate Social Responsibility is a continuous commitment that contributes to economic development while improving the quality of life of employees and their families, as well as of the community and society.” (Aras and Crowther, 2009). According to Moravcikova et al. (2015), a CSR report is an internal and external document that enterprises use to show their CSR efforts and influence on the environment and the community. In addition, an enterprise’s CSR efforts can fall into four categories: environmental, ethical, charitable, and economic practices. CSR reports are typically presented in a digital format for easy distribution, but they can also be printed and presented directly to stakeholders. The layout of a CSR report can also range from a simple text document to a designed, visually stimulating package.

Disclosure of social responsibility information through CSR reports is a way for enterprises to communicate to stakeholders about their CSR implementation. However, the measurement of CSR implementation and CSR disclosure can be done in various ways, such as through Reputation Indexes (Cravens et al., 2003), corporate rankings, content analysis, and surveys. Specifically, the content analysis method collects information from the corporate annual reports published in different media. This method encodes content regarding selected criteria to quantify CSR disclosure, commonly used in studies on the level of CSR disclosure or sustainable development.

Two different perspectives exist on financial results. Some scholars refer to corporate financial performance as the efficiency of mobilizing, managing, and using capital in the business process. The others consider financial performance as the efficiency of capital mobilization. Meanwhile, capital usage and management efficiency are sorted as business efficiency. The financial performance also reflects the relationship between the costs incurred by the business and its acquired economic benefits. According to financial theories, financial performance is a subjective measure of how well a company can use assets from its primary business mode and generate revenue. Moreover, accounting-based indicators often evaluate corporate financial performance, e.g., return on total assets (ROA), return on equity (ROE), and return on sales (ROS), which is essential for all people who use the information to make decisions (Tseng et al., 2020; Khuong et al., 2019; Nguyen et al., 2019; Khuong et al., 2019).

Furthermore, this research is based on stakeholder and legitimacy theories. Stakeholder theory is a theory of organizational governance and business ethics related to

organizational principles and values (Freeman and Dmytriyev, 2017; Phillips et al., 2019). According to this theory, stakeholders are groups of people interested in the enterprise's operation, and this theory also helps the researchers to identify the enterprises' potential stakeholders and their responsibilities towards these stakeholders. Meanwhile, legitimacy theory, first mentioned in the study of the German sociologist Max Weber in 1922, holds that an enterprise's activities must conform to the values or social norms in which it operates (Weber, 1922). If the enterprise does not comply with these social standards, it may lose the community's support for its activities; more seriously, it may be discontinued. Therefore, this study used the legitimacy theory to clarify the enterprises' responsibility to related parties identified according to the stakeholder theory.

The determinants of the level of CSR information disclosure

According to the legitimacy theory, large enterprises must take care of their social responsibilities and comply with their commitments (Reverte, 2008). The larger the enterprise, the more it attracts the stakeholders' interest, which puts pressure on enterprises to fulfill their information needs (Hillman et al., 2001; Hillman and Keim, 2001). Over the past decade, many studies have examined the relationship between firm size and the level of social responsibility disclosure; for example, Salehi et al. (2019), Bayoud et al. (2012), Hang et al. (2020), Masoud and Vij (2021), Issa (2017), and Lu et al. (2017). Most of these studies concluded that firm size was positively correlated with CSR disclosure. Thus, this study posited the first hypothesis:

H₁: Firm size positively affects the level of corporate social responsibility disclosure.

The firm age refers to the length of time that an enterprise has been in business. As such, the legitimacy of an enterprise increases when it complies with standards and achieves expected values (Suchman, 1995). According to the stakeholder theory, enterprises are expected to establish relationships with broader stakeholders as they grow. Subsequently, social responsibility disclosure is exploited to publicize the firm's reputation by increasing stakeholder engagement to gain more benefits (Parsa and Kouhy, 2007; Donaldson and Preston, 1995). Previous studies, such as Bayoud et al. (2012), Hang et al. (2020), Masoud and Vij (2021), and Nguyen et al. (2021b), demonstrated a positive relationship between the number of operation years and level of CSR disclosure. Thus, this study set the second hypothesis:

H₂: Firm age positively affects the level of corporate social responsibility disclosure.

Enterprises with higher liquidity tend to disclose more CSR information and obtain better financial performance since liquidity can increase the chance of accessing new business opportunities requiring more social disclosure (Waddock and Graves, 1997). According to Nguyen et al. (2021b), higher liquidity leads to a higher voluntary level of CSR disclosure. Ezat and El-Masry (2008) also demonstrated a positive relationship between liquidity and

online reporting. Here, the current ratio usually measures liquidity. Subsequently, this study proposed the third hypothesis:

H₃: The current ratio positively affects the level of corporate social responsibility disclosure.

The function of independent auditors is to examine and express their opinions on the truthfulness and fairness of the disclosed information. Auditors in large auditing firms are generally more cautious than smaller firms and often refuse enterprises with poor financial performance (Salehi et al., 2018). Similarly, large enterprises are more active in disclosing their social responsibility behaviors to attract more attention from external investors and financial managers (Salehi et al., 2018; Salehi et al., 2019) and are often audited by large auditing firms. Currently, four large auditing firms are commonly known as the Big 4. Empirical studies have shown that firms certified by the Big 4 were more likely to disclose CSR information (Wuttichindanon, 2017). Some studies, e.g., Uwuigbe and Olusanmi (2011) and Uwuigbe and Egbide (2012), also concluded a positive association between auditing firms' size and CSR disclosure level. In Vietnam, the research by Vu and Buranatrakul (2018), Ngoc (2018), and Mai Tran and Ha Tran (2022) showed a positive impact of large auditing firms on CSR disclosure. Thus, the current researchers expect that the enterprises audited by the Big 4 would disclose more CSR information. Therefore,

H₄: The auditing firm's type positively affects the corporate social responsibility disclosure level.

Level of CSR disclosure and financial performance

Previous studies based on stakeholder theory have investigated the association between CSR disclosure level and financial performance in different countries, e.g., Uwuigbe and Egbide (2012), Malik (2014), Salehi et al. (2019), and Minh et al. (2022) in Nigeria, Indonesia, Iran, Malaysia, and Vietnam. Their findings revealed a positive influence of the CSR disclosure levels on financial performance measured by accounting-based indicators, such as ROA and ROE. Contrastingly, from the perspective of legitimacy theory, the studies of Preston and O'bannon (1997) and Andrian and Murwaningsari (2021) showed the extent to which an enterprise's CSR disclosure had a negative impact on FP. In Vietnam, Nguyen et al. (2021a) found that level of CSR disclosure positively impacted ROA and ROE, while Strouhal et al. (2015) results did not show any direct linkage with financial performance. Accordingly, the researchers expect the following hypothesis:

H₅: The level of corporate social responsibility disclosure positively affects financial performance.

The relationship between the factors affecting the level of CSR disclosure and the impact of the level of CSR disclosure on FP demonstrated in previous literature can be generalized as in Figure 1.

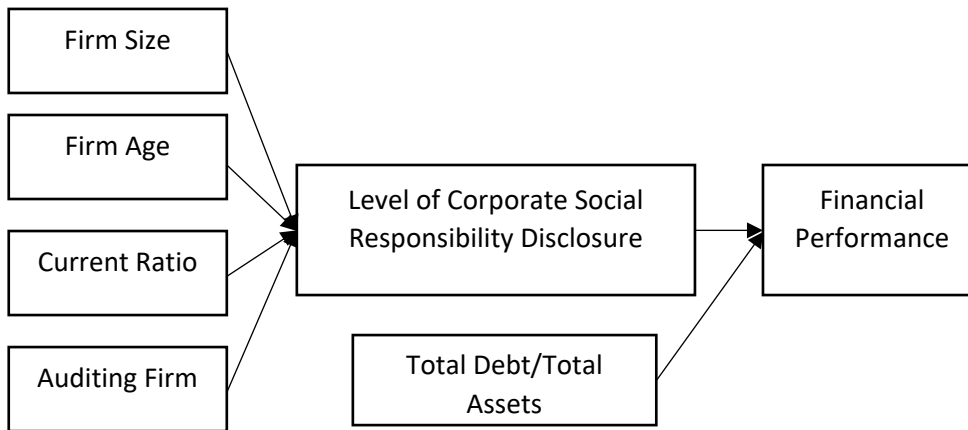


Figure 1 Research model

Research Method

Data and analysis process

The panel data were established by collecting information from the annual reports of 109 manufacturing enterprises listed on the Ho Chi Minh Stock Exchange between 2016 and 2020. The study employed regression analyses to evaluate the impact of determinants on the level of CSR disclosure and the impact of the level of CSR disclosure on the FP of manufacturing enterprises listed on HSX. Depending on the assumption of the unobserved firm-specific factors, u_{it} , the researchers could run two different linear regressions with the panel data. In addition, under the assumption that u_{it} varies across time, the researchers run a Random Effects model (REM); otherwise, the researchers run a Fixed Effects model (FEM) (Baltagi, 2008). As a result, no correlations between independent variables and error terms were found to exclude endogeneity. The researchers also run the Ordinary Least Squares (OLS) regression, considering the specific time effect, because OLS does not distinguish a firm's characteristics and its time trend. Moreover, in case model violations need to be remedied, the researchers employed the GLS estimator to fix the drawbacks of the regression, as mentioned earlier.

Research models

$$LCSR_{D_{it}} = \beta_0 + \beta_1 SIZE_{it} + \beta_2 AGE_{it} + \beta_3 CR_{it} + \beta_4 AC_{it} + u_{it} \quad (1)$$

$$ROA_{it} = \beta_0 + \beta_1 LCSR_{D_{it}} + \beta_2 DR_{it} + u_{it} \quad (2)$$

$$ROE_{it} = \beta_0 + \beta_1 LCSR_{D_{it}} + \beta_2 DR_{it} + u_{it} \quad (3)$$

LCRSD presents the level of corporate social responsibility disclosure; SIZE, AGE, CR, and DR are firm-specific factors: size, age, current ratio, and debt ratio, respectively; ROA and ROE are indicators of the firm's financial performance; u_{it} is the error terms.

In this study, firm size (*SIZE*) was measured by the natural logarithm of total assets, as suggested by previous studies, such as Salehi et al. (2019), Bayoud et al. (2012), and Hang et al. (2020). Then, firm age (*AGE*) was calculated by the number of operation years from the date of the first transaction on a stock market until the last date of 2020. The researchers chose this measurement because current regulations on the compulsory disclosure of CSR activities and sustainable development are only applied to listed firms in Vietnam (Nguyen et al., 2020; Nguyen, 2018a). In addition, the current ratio (*CR*) represents the firm's liquidity, calculated by the ratio of current assets to current liabilities on the balance sheet, as suggested by Hussainey et al. (2011) and Hang et al. (2020). Besides, this study used the dummy variable *AC* to classify the size of auditing firms. The value was set to 1 if the auditing firm was the Big 4 and 0 if otherwise, as Nguyen (2018b) and Ha and Tran-Dang (2020) suggested. Moreover, the debt ratio (*DR*) reflects the firm's capital structure, determined by dividing total debt by average total assets (Nguyen and Wong, 2021).

Then, the researchers used the CSR disclosure score index to measure the level of CSR disclosure. This study also did not distinguish the importance of environmental, employee, and social indicators from prior studies. The indicators measuring the level of CSR disclosure were extracted from the provisions in Section 6, Part II, appendix No. 4 of the Annual Report (Issued with Circular No. 155/2015/TT-BTC dated October 6, 2015, of the Ministry of Finance, guiding information disclosure on the stock market). This set of indicators includes:

1. The total amount of raw materials used for the manufacturing and packaging of products and services of the organization during the year
2. The percentage of materials recycled to produce products and services of the organization
3. Energy consumption - directly and indirectly
4. Energy savings through initiatives to efficiently use energy
5. The report on energy-saving initiatives (providing products and services to save energy or use renewable energy); report on the results of these initiatives
6. Water supply and amount of water used
7. Percentage and total volume of water recycled and reused
8. The number of times the company is fined for failing to comply with environmental laws and regulations.
9. The total amount to be fined for failing to comply with laws and regulations on the environment
10. Number of employees and average wages of workers
11. Labor policies to ensure the health, safety, and welfare of workers
12. Training employees; the average number of training hours per year, according to the staff and classified staff; the skills development and continuous learning program to support worker's employment and career development

13. Report on responsibility for the local community, community investments, and other community development activities, including financial assistance to community service
14. Green capital market activities under the SSC guidance

The score of each item was set to 1 if the enterprise disclosed any information and 0 if otherwise. The firm's level of CSR disclosure was then gauged by the ratio of the disclosure score to the maximum score of the scale. The disclosure index was also expressed as a percentage. Therefore, the level of CSR disclosure was calculated as follows:

$$LCSR D = \text{CSR} D_i / M$$

LCSR D is the CSR information disclosure index of the i^{th} enterprise; $\text{CSR} D_i$ is the total score for information disclosure of the i^{th} enterprise; M is the maximum score of 14 items.

In this study, the researchers used accounting-based indicators, including return on assets (ROA) and return on equity (ROE), to measure financial performance, as suggested by Salehi et al. (2019). ROA was calculated by dividing net profit (profits after tax) by average total assets. Meanwhile, ROE was gauged by dividing net profit by average total equity (Nguyen et al., 2019).

Results and Discussion

Descriptive statistics

In this research sample, the average level of social responsibility disclosure was 41.53%, with the lowest value at 0% and the highest at 92.85%. In addition, the average value of financial performance was 8.55% of ROA and 15.40% of ROE. Other information can be found in Table 1.

Table 1 Descriptive statistics

Variables	Obs	Mean	Std.Dev.	Min	Max
LCSR D	545	0.4154	0.5807	0	9.285
SIZE	545	28.176	1.3027	25.5687	32.3901
AGE	545	9.6165	5.2864	0	23
CR	545	2.1868	2.6198	0.4510	40.7360
AC	545	0.4679	0.4994	0	1
ROA	545	0.0856	0.0651	0.0002	0.3309
ROE	545	0.1540	0.1083	0.0003	0.5878
DR	545	0.4357	0.1742	0.0041	0.8170

Correlation analysis

Correlation analysis examines the relationship between the regression models' dependent and independent variables. The results in Table 2 show that all correlation values were non-zero, falling between -1 and +1. Thus, all variables were correlated with

each other. According to Hair et al. (2010), all variables were eligible for analysis in the following steps.

Table 2 Correlation Analysis

Obs	LCSR	InSIZE	AGE	CR	AC	ROA	ROE	DR
LCSR	1.0000							
SIZE	0.1947	1.0000						
AGE	0.1099	0.0829	1.0000					
CR	0.0106	-0.2029	0.0335	1.0000				
AC	0.2258	0.4056	0.0827	-0.0378	1.0000			
ROA	0.1317	0.0600	-0.0176	0.1282	0.2479	1.0000		
ROE	0.0858	0.1514	-0.0599	-0.0506	0.2462	0.8709	1.0000	
DR	-0.0774	0.2518	-0.0906	-0.4928	-0.0269	-0.3208	0.0744	1.0000

Regression results

Model 1: Dependent variable: LCSR; Independent variables: SIZE, AGE, CR, and AC

The regression results in Table 3 reveal that: (1) For the Pooled OLS estimator, Prob > F = 0.0000 shows a linear relationship between the level of CSR disclosure and at least one of the variables SIZE, AGE, CR, and AC. The R² of this OLS model was 6.58%, meaning that the independent variables only explained 6.58% of the variation in LCSR. The low R² indicates that many other variables affected the level of CSR disclosure not included in the model. In the independent variables of the analytical model, only the variables SIZE, AGE, and AC had P > |t| < 0.05, which is statistically significant, with regression coefficients of 0.057, 0.009, and 0.195, respectively. Thus, the enterprise's size (SIZE), the firm age on the stock market (AGE), and the type of auditing firm (AC) positively influenced the level of CSR disclosure. However, the OLS estimator ignored the individual effects of each firm in the panel data regression analysis.

Therefore, this paper used the fixed-effects model (FEM) estimation to consider the individual effects over time and cross-section. (2) According to the FEM estimation, Prob > F = 0.0000, F (108, 433) = 4.31 denotes that the FEM had predictive value. In this model, only the AGE variable had P > |t| < 0.05, which is statistically significant; SIZE, CR, and AC variables were not statistically significant. Thus, the FEM estimation model was also suitable; AGE explained 0.6% of the variation in LCSR.

(3) According to the random effects estimation model (REM), Prob > Chi 2 = 0.0000, Wald chi 2(4) = 27.3 signifies that the model was valid. In this model, the variables SIZE, AGE, and AC all had P > |z| < 0.05, which is statistically significant. In other words, the CR variable had no statistical significance; SIZE, AGE, and AC explained 6.64% of the variation in LCSR. All three estimation models revealed a positive relationship between the independent and dependent variables.

Table 3 Regression Results of Model 1

LCSRDR	Pooled OLS		FEM		REM		
	Coef.	P > t	Coef.	P > t	Coef.	P > z	
SIZE	0.0571	0.006	-0.0580	0.558	0.0649	0.038	
AGE	0.0092	0.045	0.0869	0.000	0.0202	0.003	
CR	0.0091	0.334	-0.0033	0.784	0.0060	0.560	
AC	0.1955	0.000	0	-	0.1774	0.034	
Cons	-1.3834	0.017	1.3093	0.629	-1.6837	0.051	
Prob > F	0.0000		0.0000		Pro > Chi2 = 0.0000		
R ²	0.0726						
Adj. R ²	0.0658		Overall=0.0060		Overall= 0.0664		
Model selection test							
F-test						Pro > F = 0.0000	
LM test						Prob > chibar2 = 0.0000	
Hausman test						Prob > Chi2 = 0.0001	

The study employed the F-test, LM, and Hausman tests to choose the best estimator. The results showed Prob > F=0.0000, Prob > chibar2=0.0000, and Prob > chi2=0.0001. Therefore, the FEM estimation was regarded as the best option. To ensure the FEM model's reliability, the study continued examining variable variance, autocorrelation, and multicollinearity phenomena. The Modified Wald test results uncovered that Prob > chi2 = 0.0000, showing that the FEM estimation had an error term's variance. In addition, Wooldridge test results revealed Prob > F=0.0000. It demonstrates that there was autocorrelation in the estimated model.

Meanwhile, multicollinearity test results exposed that all variables had VIF < 10, so no multicollinearity phenomenon occurred; if present, multicollinearity was not serious (Myers, 1990). Thus, the selected estimator violated the assumption of autocorrelation and variable variance. Both violations needed to be remedied.

Model 2: Dependent variable: ROA; Independent variable: LCSRDR; Control variable: DR

The regression results in Table 4 present that: (1) For the Pooled OLS estimator, Prob > F = 0.0000 showed a linear relationship between ROA and at least one of the LCSRDR and DR variables. The R² of this OLS model was 11.12%, meaning that the independent variables explained only 11.12% of the variation in ROA. A low R² indicates that many other variables affected ROA. In the independent variables of the analytical model, both LCSRDR and DR variables had P > |t| < 0.05, which is statistically significant, with regression coefficients of 0.0121 and - 0.1168, respectively. Thus, the LCSRDR and the debt-to-asset ratio both significantly influenced ROA. However, in the panel data regression analysis, the OLS estimator ignored the individual effects of each firm.

(2) According to the FEM estimation, Prob > F = 0.0000 revealed that the FEM had a predictive value. In this model, only the variable DR had P > |t| < 0.05, which is statistically significant; the LCSRDR variable was not statistically significant. Thus, the FEM estimation was also suitable; DR explained 9.41% of the variation in ROA. (3) According to the REM estimator, Prob > Chi 2 = 0.0000 suggests that the model was valid. In this model, only the

DR variable had $P > |z| \leq 0.05$, which is statistically significant; the LCSR variable was not statistically significant; DR explained 9.83% of the variation in ROA.

In summary, all three estimation models showed a significant relationship between the dependent variable and the independent or control variable.

Table 4 Results of Regression Model 2

ROA	Pooled OLS		FEM		REM		
	Coef.	P > t	Coef.	P > t	Coef.	P > z	
LCSR	0.0121	0.008	-0.0055	0.132	-0.0027	0.438	
DR	-0.1168	0.000	-0.1630	0.000	-0.1438	0.000	
Cons	0.1314	0.000	0.1589	0.000	0.1494	0.000	
Prob > F	0.0000		0.0000		Prob > chi2=0.0000		
R ²	0.1144		-		-		
Adj. R ²	0.1112		Overall = 0.0941		Overall = 0.0983		
Model selection test							
F-test						Prob > F=0.000	
LM test						Prob > chibar2 = 0.0000	
Hausman test						Prob > chi 2=0.0057	

The study also utilized the F-test, LM, and Hausman tests to choose the best estimator. The results showed Prob > F=0.0000, Prob > chibar2=0.0000, and Prob > chi2=0.0057. Therefore, the FEM estimation was regarded as the best option. To ensure FEM reliability, the study continued examining variable variance, autocorrelation, and multicollinearity phenomena. The Modified Wald test results exposed Prob > chi 2 = 0.0000, showing that the FEM estimation had heteroskedasticity. Besides, the Wooldridge test resulted in Prob > F=0.0001. It indicates that there was autocorrelation in the estimated model.

On the other hand, multicollinearity test results uncovered that all variables had VIF < 10, signifying no multicollinearity phenomenon; if present, multicollinearity was not serious (Baltagi, 2008). Thus, the selected FEM estimation violated the assumption of autocorrelation and variable variance. Both violations needed to be remedied.

Model 3: Dependent variable: ROE; Independent variable: LCSR; Control variable: DR

The regression results in Table 5 display that: (1) The Pooled OLS estimator had Prob > F = 0.0221. Therefore, only this model was valid. This model had only the LCSR statistically significant variable because $P > |t| = 0.032$. Therefore, there was a linear relationship between ROE and the level of CSR disclosure; the level of CSR disclosure explained 1% of the variation in ROE. (2) FEM and REM estimators had large Prob > F, so there was a possible no linear relationship between the dependent variable of ROE and the independent and control variables of LCSR and DR. Thus, there was only one OLS estimator with a meaningful relationship between the variables. Therefore, the OLS model was chosen.

Table 5 Regression Results of Model 3

ROE	Pooled OLS		FEM		REM	
	Coef.	P > t	Coef.	P > t	Coef.	P > z
LCSRDR	0.0172	0.032	-0.0104		-0.0047	0.490
DR	0.0507	0.057	-0.0499		0.0009	0.981
Cons	0.1248	0.000	0.1801		0.1556	0.000
Prob > F	0.0221		0.2099		0.7871	
R ²	0.0140					
Adj. R ²	0.0103					

The study continued to examine the phenomena of variable variance, autocorrelation, and multicollinearity. The Breusch-Pagan/Cook-Weisberg test results showed that Prob > chi2 = 0.0421, indicating that the OLS estimation model had a variable variance. Wooldridge test also resulted in Prob > F=0.0000. In other words, there was autocorrelation in the estimated model. Multicollinearity test results revealed that all variables had VIF < 10, demonstrating no multicollinearity phenomenon; if present, multicollinearity was not severe (Myers, 1990). Thus, the selected estimator violated the assumption of autocorrelation and variable variance. Both violations needed to be remedied.

Fix model

To overcome the drawbacks of the regression models above, this study utilized the GLS method. Specific results are presented below.

Table 6 Results of Overcoming Model 1

LCSRDR	Coef.	Std. Err	z	P > z	[95% Conf. Interval]		
SIZE	0.0571	0.0206	2.77	0.006	0.0166	0.0975	
AGE	0.0092	0.0046	2.02	0.043	0.0003	0.0182	
CR	0.0091	0.0094	0.97	0.332	-0.0093	0.0275	
AC	0.1959	0.0526	3.72	0.000	0.0928	0.2991	
Cons	-1.3834	0.5757	-2.40	0.016	-2.5119	-0.2549	
Prob > chi2						0.0000	

Table 6 shows that SIZE, AGE, and AC had $[P > |z|] < 0.05$, which is statistically significant. Thus, the firm size, firm age of being listed, and auditing firm positively influenced the level of CSR information disclosure. Regarding the positive influence of SIZE on LCSRDR, it is consistent with the research results of Bayoud et al. (2012), Issa (2017), Lu et al. (2017), and Hang et al. (2020). Besides, the positive effect of AGE on LCSRDR aligns with the studies of Bayoud et al. (2012), Issa (2017), Hang et al. (2020), and Masoud and Vij (2021) but is inconsistent with the findings of Salehi et al. (2019). It suggests that large and long-standing enterprises often had a higher level of CSR disclosure related to the perception of its influence on the market and investors. Moreover, the quality of auditing firms also played an essential role in firms' CSR disclosure level in this study, agreeing with the study of Salehi et al. (2019) on the positive relation between AC and LCSRDR. Nevertheless, Table 6 also presents that the CR variable was not statistically significant. Therefore, there was no evidence to suggest how CR affected LCSRDR. Subsequently, hypotheses 1, 2, and 4 were

accepted, but hypothesis 3 was rejected.

Then, Table 7 shows that level of CSR disclosure had $P > |z| = 0.008$; DR had $P > |z| = 0.000$. Thus, both LCSR and DR variables were statistically significant (p -value < 0.05). The regression coefficient of the level of CSR disclosure was 0.0121, indicating that LCSR positively affected ROA. However, the regression coefficient of the control variable DR was -0.1168, so DR had a negative impact on ROA. The positive effect of LCSR on ROA is consistent with the study of Kumar and Kumar (2018), Platonova et al. (2016), and Yeganeh and Barzegar (2014). In this case, the level of CSR disclosure is related to information transparency and deepening investor and market confidence through CSR activities toward sustainable development. As researched by Nguyen et al. (2021c), the decline in firm performance can be attributed to a lack of information transparency, especially in emerging economies characterized by weak corporate governance and high volatility. Therefore, it is recommended that enterprises increase their disclosure through periodic reports as an essential mechanism to improve their transparency, reduce the risk of stock price decline, and improve their valuation.

Table 7 Results of Overcoming Model 2

ROA	Coef.	Std. Err	z	P > z	[95% Conf. Interval]	
LCSR	0.0121	0.0045	2.66	0.008	0.0032	0.0209
DR	-0.1168	0.0151	-7.73	0.000	-0.1464	-0.0872
Cons	0.1314	0.0075	17.62	0.000	0.1168	0.1461
Prob > chi2						0.0000

Table 8 further displays that level of CSR disclosure had $P > |z| = 0.031$; DR had $P > |z| = 0.056$. Thus, only LCSR had statistical significance (p -value < 0.05). The control variable DR was not statistically significant (p -value > 0.05). The regression coefficient of LCSR was 0.0172, showing that the level of CSR disclosure positively affected ROE. This result corroborates with the study of Kumar and Kumar (2018), Platonova et al. (2016), and Yeganeh and Barzegar (2014).

In summary, the researchers concluded that CSR disclosure level positively affected FP. Thus, hypothesis 5 was accepted.

Table 8 Remedial Results of Model 3

ROE	Coef.	Std. Err	z	P > z	[95% Conf. Interval]	
LCSR	0.0172	0.0079	2.16	0.031	0.0016	0.0328
DR	0.0507	0.0265	1.91	0.056	-0.0013	0.1027
Cons	0.1248	0.0131	9.53	0.000	0.0991	0.1505
Prob > chi2						0.0000

Conclusion

This study investigated the influence of the determinants of the level of CSR disclosure and the impact of the level of CSR disclosure on the financial performance of enterprises listed on the Ho Chi Minh City Stock Exchange from 2016 to 2020. The research findings

support the positive influence of firm size, firm age, and the type of auditing firm on the level of CSR information disclosure of listed manufacturing enterprises. Also, the extent of CSR disclosure positively affected financial performance.

From the above research results, the researchers propose some recommendations to both the internal and external stakeholders of the enterprises. Firstly, the high level of CSR disclosure should effectively attract the stakeholders' interests since enterprises can show their capacity to fulfill social requirements, which may generate many business benefits and result in better financial performance. Thus, enterprises, especially listed ones, should raise the senior managers' awareness of CSR behaviors and disclosure. Secondly, because enterprises with large scale, long time of being listed, and audited by large auditing firms are more likely to enhance their intensity of CSR disclosure, investors thus should have better access to helpful information for their investment decisions. Thirdly, the criteria based on current regulations for assessing the level of CSR disclosure are still limited. Supposedly, authorities need to improve and complete regulations regarding the disclosure of CSR information in line with international standards and practices to establish a stable legal framework for business disclosure.

Despite many efforts, the study still has some limitations. Firstly, the sample data were only collected from manufacturing companies listed on Ho Chi Minh Stock Exchange. Hence, other studies should expand the range of observed enterprises to improve their credibility and generalization. Secondly, the analyzed content and measurement of the CSR disclosure level primarily relied on the enterprises' annual reports. Therefore, further studies should obtain information from various sources to avoid biases. Lastly, there remain potential determinants of the level of CSR information disclosure not considered in analysis models; thus, other studies may include them for more extensive investigation.

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