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Intellectual Capital and Firm Performance in Vietnam: The Moderating Role of Corporate Social Responsibility

Ngoc Phu Tran , Co Thi Huyen Dinh, Hien Thi Thu Hoang and Duc Hong Vo *

The CBER—Research Center in Business, Economics and Resources, Ho Chi Minh City Open University, Ho Chi Minh City 700000, Vietnam

* Correspondence: duc.vhong@ou.edu.vn

Abstract: The effects of intellectual capital on firm performance have been extensively investigated. However, the important role of corporate social responsibility in moderating this intellectual capital-performance nexus has largely been neglected in the existing literature. This study uses a sample of 60 listed firms on the Ho Chi Minh Stock Exchange from 2011 to 2020 to examine the independent and joint effects of intellectual capital and corporate social responsibility on firm performance in Vietnam. The generalized method of moments is used. We find that both independent and joint effects exist. Furthermore, our results suggest that structural capital efficiency and capital employed efficiency are the two critical components of intellectual capital affecting firm performance. Interestingly, the joint effects of intellectual capital and CSR on firm performance are also confirmed in our analysis. These findings shed light on important policy implications concerning managerial policies targeting both intellectual capital and corporate social activities to improve firm performance in Vietnam.

Keywords: intellectual capital; corporate social responsibility; joint effects; GMM; Vietnam



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1. Introduction

Information and knowledge provide a tremendous competitive advantage for firms operating in the knowledge-based economy [1,2]. Intellectual capital is generally considered a key source of competitive advantage for firms [3,4]. This type of capital is also a popular metric for evaluating a firm's efficient use of intangible assets [5]. Regarding a separate and essential aspect of firm performance, corporate social responsibility (CSR) is considered an effective mechanism to demonstrate the firm's responsibilities to the community, thus improving firm performance. CSR is viewed as an exceptional business strategy rather than an obligation or regulation [6,7]. Based on the resource-based view and the stakeholder theory, ref. [2] considers that a link does exist between corporate decisions regarding intellectual capital accumulation and CSR. This view is also supported by previous studies [8,9]. Ref. [10] points out that strategies related to society and the environment can improve a company's competitive advantage. Ref. [11] argue that intellectual capital accumulation is driven by the environmental and social aspects and CSR.

CSR is closely related to each component of intellectual capital (including human capital, structural capital, and relational capital). The employer–employee relationships are strengthened through CSR practices [12,13]. Intellectual capital accumulation and management in the business coincide with social responsibility activities. Intellectual capital and CSR are complementary. Employees can build a corporate culture associated with the firm's sustainable values. Ref. [14] consider that human capital is improved through CSR strategies. Ref. [15] states that structural capital, another sub-component of intellectual capital, is also enhanced by CSR activities. Sustainable structural capital, supported by sustainability principles, helps firms achieve higher performance [16]. Ref. [17] argue that CSR activities are related to environmental and social issues following stakeholders' expectations. These activities contribute to improving relational capital. Corporate image and

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culture have increased due to environmental and social aspects [18], leading to improved employees' knowledge and skills [19]. CSR and intellectual capital improve production efficiency and positively affect firm performance.

Vietnam has achieved a significant economic and social transformation from 2000 to the present [2], with the world's leading GDP per capita growth rate [20]. However, environmental and social problems have also emerged along with economic growth and development. Rapid urbanization, high population density, traffic congestion, and environmental pollution have become alarming issues for the authorities and firms in Vietnam [21].

Ref. [22] consider that CSR is a significant concern in the global business environment. Furthermore, ref. [10] emphasizes that intangible corporate problems can be solved through strategies related to environmental and social issues. Previous studies have widely discussed whether CSR can lead to positive changes in corporate performance [23,24]. In particular, ref. [25] argue that CSR can be considered an asset that can turn intellectual capital into a more valuable resource compared to a firm with less involvement in active CSR.

The impact of intellectual capital and CSR on firm performance is still controversial in the literature [8,23,26], especially in emerging countries such as Vietnam. The contributions of this paper to the existing literature are threefold. *First*, to the best of our knowledge, this is one of the first papers to examine the independent and joint effects of intellectual and CSR on firm performance in Vietnam—an emerging market. CSR may moderate the effects of intellectual capital on firm performance. These effects may be increased or decreased depending on the CSR level. *Second*, we use the generalized method of moments (GMM) to ensure the robustness of the empirical findings. *Third*, findings from this study offer practical implications for scholars, managers, and policymakers in emerging countries, such as Vietnam, concerning the important role of intellectual capital and CSR activities in improving firm performance.

Following this introduction, the remainder of this study is structured as follows. The definition and measurement of intellectual capital and CSR are discussed in Section 2. Section 3 presents the methodology and data. Empirical findings and discussions are presented in Section 4, followed by the conclusions and policy implications in Section 5 of the paper.

2. Literature Review

2.1. Theoretical Framework

The resource-based view considers that firms operate inconsistently in resource utilization [27]. This view explains the differences in firm performance in the same industry [2]. Ref. [27] argues that the difference in firm performance occurs when firms own and exploit competitive advantage differently. The resource-based view considers that firms need to connect internal resources with opportunities from outside markets to enhance their wealth [28]. A firm's resources are classified into intangible and tangible assets [29]. In a fiercely competitive environment, an effective resources management strategy and systems have become critical to maintaining and improving the competitive advantages of firms [28]. Firms can enhance wealth by efficiently accumulating and exploiting intangible resources [29]. Intellectual capital is an essential resource that creates competitive advantages for enterprises [3,4].

Ref. [30] developed the stakeholder theory, which considers that organizations focusing on a large group of stakeholders such as employees, suppliers, customers, and communities will operate more efficiently and create a significant firm value. This value can be used to grow the firm and benefit stakeholders. This theory promotes reliability and transparency using a comprehensive approach for their stakeholders. A firm's reputation is prominent when it furnishes more resources to satisfy the needs of legitimate stakeholders [31]. The organization seeks to identify and understand how it impacts the welfare of its stakeholders. In addition, these organizations also seek to demonstrate to stakeholders that they respect how their welfare is affected. As a result, firms provide disclosures of

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knowledge assets that interest stakeholders. Ref. [32] state that resource-based and stakeholder theories can be used in an integrated framework to explain managerial incentives that affect CSR. Consistency is found between the resource-based view and stakeholder theory [33]. Both theories can be considered interrelated to explain the determinants of the relationship between intellectual capital and CSR.

2.2. Intellectual Capital and Firm Performance

Previous studies [27,34,35] define intellectual capital as intangible assets, valuable knowledge, and capabilities. These assets can be used to enhance corporate competitive advantage. Intellectual capital can be divided into human capital, structural capital, and relational capital [36]. Human capital contributes to improving corporate performance through developing competitive advantages based on skills, knowledge, and behavior [4]. Structured capital is defined as the non-human assets of a company, such as software, organizational culture, databases, technologies, and patents [4]. Relational capital refers to relationships established with partners, customers, and suppliers [2].

Various studies have examined the impact of intellectual capital on firm performance (e.g., [37] in Italia; [38] in Gulf countries; [39] in China; [40] in Indonesia; [41] in Malaysia). Different models are used to measure intellectual capital, such as the VAIC model [42] and the MVAIC model [2,38]. Moreover, various econometric techniques are also used, such as ordinary least squares (OLS) [38]; data envelope analysis [42]; the fixed-effects and random-effects techniques [43]; and GMM estimation [4,44]. Previous studies confirm a mixed role of intellectual capital on firm performance, including positive relationships [2], negative relationships [45], or U-shaped relationships [44].

2.3. Corporate Social Responsibility and Firm Performance

CSR is described as the firm's contribution to the welfare of its employees and customers or its positive participation in environmental and community concerns [46]. Ref. [23] define CSR as actions to create numerous benefits for various corporate stakeholders. Ref. [47] refer to CSR as the manner in which firms promote operational growth by improving economic, cultural, social, and environmental aspects. The definitions of CSR mainly refer to business strategies based on the accompaniment of environmental protection and community development [4]. Various studies have investigated the impact of CSR on corporate performance [23,26]. Ref. [30] argues that CSR enhances the relationships with stakeholders, improves operational efficiency, and increases company competitive advantage. Ref. [48] argues that there is no standard definition of CSR. CSR is considered the foundation for developing business strategies in specific corporate contexts. The impact of CSR on firm performance is mainly based on the firm's ability to leverage sustainable actions related to investments [49]. If a firm performs iconic CSR and is often viewed negatively for actions against individuals or the environment, CSR will not enhance the firm's reputation [50]. Ref. [51] also consider that the higher the firm's performance, the higher the budget for social responsibility activities. Ref. [25] suggest that firms carry out CSR activities to increase their competitive advantage and operational efficiency in the long run.

CSR would raise operational costs in the short run, negatively impacting the firm's operation [52]. Thus, the nexus between CSR and firm performance should be considered in the long term due to an increase in the firm's competitive advantages [53].

2.4. Intellectual Capital, Corporate Social Responsibility and Firm Performance

Ref. [9] state that the improvement or increase in some components of intellectual capital will exploit the potential benefits of CSR strategy. Various studies have examined the link between intellectual capital and CSR. Ref. [54] argue that the impact of CSR depends greatly on intangible assets and two interactive concepts to influence corporate value. Employee-oriented CSR activities, including employee welfare and business ethics, aim to support employee performance, thus supporting human resource management, a key

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component of intellectual capital [55]. Ref. [56] argue that CSR initiatives can improve human capital, thereby gaining a competitive advantage. Ref. [57] consider that CSR is also closely related to capital structure. CSR provides the foundation for building a sustainable corporate culture and promotes innovation and creativity of employees, resulting in better performance. Ref. [58] suggest that firms build a positive working environment and contribute to overall efficiency through internal CSR activities. Ref. [17] also consider that CSR activities are related to environmental and social issues in response to stakeholders' expectations, thereby contributing to improving relational capital. Corporate image and culture have increased due to environmental and social aspects [18], enhancing employees' skills and knowledge [19]. CSR and intellectual capital can improve production efficiency and positively impact firm performance.

Our literature review indicates that the contributions of intellectual capital and CSR, particularly their joint effects, to firm performance have largely been ignored in Vietnam. This observation warrants our analysis to examine the independent and joint effects of intellectual capital and CSR on firm performance in Vietnam.

3. Research Methodology and Data

3.1. Measurement of Intellectual Capital

This study uses the modified value-added intellectual coefficient (MVAIC) model to estimate intellectual capital, consistent with previous studies [2,59]:

$$MVAIC_i = HCE_i + SCE_i + CEE_i + RCE_i$$

where:

- HCE_i (human capital efficiency) denotes the contribution of human capital to value-added.
- *SCE*_i (structural capital efficiency) represents the marginal contribution of each unit of structural capital in creating value.
- *CEE_i* (capital employed efficiency) is the contribution of physical and financial capital to value-added.
- RCE_i (relational capital efficiency) represents the marginal contribution of each unit of relational capital in creating value.

Each of these four components of the MVAIC mode is estimated as below:

$$HCE_i = rac{VA_i}{HC_i}$$
 $SCE_i = rac{SC_i}{VA_i} = rac{VA_i - HC_i}{VA_i}$ $CEE_i = rac{VA_i}{CE_i}$ $RCE_i = rac{RC_i}{VA_i}$

where VA_i is defined as the ratio between the total profit before taxes and employee expenditures [2]. HC, SC, CE, and RC describe the four components of intellectual capital, including human capital, structural capital, capital employed and relational capital, respectively. HC signifies employee expenditures. SC is the difference between value-added and human capital. CE is calculated as the difference between total assets and intangible assets. RC is estimated by selling, marketing, and advertising expenses.

3.2. Measuring Corporate Social Responsibility

CSR is often measured using various methods. The first method comprises "nominal indices", including MSC 400 Social Index, Vigeo Index, Fortune Magazine Reputation Index, and Dow Jones Sustainability Index [60,61]. The second method is called "content analysis", which identifies variables of interest, searches for information about these variables, and

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encodes qualitative information to derive quantitative scales used in subsequent statistical analysis [62,63]. The third method is based on surveys [64], and the last is labelled the "one-dimensional measures" [65,66]. Our analysis uses the ratio of charitable contributions to total profit before tax to measure CSR. This method is also used in [67–69]. The definitions of variables and measurements are presented in Table 1.

Table 1	Definitions	of variables and	measurements.

Variables	Definition	Measurements
Dependent Variables		
ROA	Return on assets	Net Income/Total Assets
ROE	Return on equity	Net Income/Total Equity
Independent Variables	• •	1 ,
IC ,	Intellectual capital	HCE + SCE + CEE + RCE
HCE	Human capital efficiency	VA/HC
SCE	Structural capital efficiency	(VA-HC)/VA
CEE	Capital employed efficiency	VA/CE
RCE	Relational capital efficiency	RC/VA
CSR	Corporate social responsibility	Total of charitable contributions/Total profit before tax
Control Variable		•
SIZE	Total assets	Natural logarithm of the total assets
LEV	Liquidity	Total debt/Total assets

As shown in Table 2, two models examine the independent and joint effects of intellectual capital and CSR on firm performance.

Table 2. Regression models.

Model	Regression
1	$\begin{aligned} \text{ROA}_{it} &= \beta_0 + \beta_1 \text{ROA}_{it\text{-}1} + \beta_2 \text{CEE}_{it} + \beta_3 \text{HCE}_{it} + \beta_4 \text{SCE}_{it} + \beta_5 \text{RCE}_{it} + \beta_6 \text{IC} * \text{CSR}_{it} + \\ \beta_7 \text{SIZE}_{it} + \beta_8 \text{LEV}_{it} + \varepsilon_{it} \end{aligned}$
2	$\begin{aligned} \text{ROE}_{it} &= \beta_0 + \beta_1 \text{ROE}_{it-1} + \beta_2 \text{CEE}_{it} + \beta_3 \text{HCE}_{it} + \beta_4 \text{SCE}_{it} + \beta_5 \text{RCE}_{it} + \beta_6 \text{IC} * \text{CSR}_{it} + \\ \beta_7 \text{SIZE}_{it} + \beta_8 \text{LEV}_{it} + \varepsilon_{it} \end{aligned}$

Notes: **ROA** is the return on assets; **ROE** is the return on equity; **CSR** is corporate social responsibility; **IC** is intellectual capital. **HCE** is human capital efficiency; **SCE** is structural capital efficiency; **CEE** is capital employed efficiency; **RCE** is relational capital efficiency. Control variables: **SIZE** denotes the natural logarithm of the total assets, and **LEV** denotes the ratio between firms' total debt and total assets.

3.3. Data

This paper examines the impacts of intellectual capital and CSR on firm performance. Intellectual capital is essential for all types and sizes of firms [70,71]. Hence, we randomly selected firms listed on the Ho Chi Minh Stock Exchange. Data were hand-collected from the firms' annual reports for 2011–2020. Firms with less than five years of data or negative operating profits were removed from the sample. Finally, 60 firms were used in this study. The research process is explicitly described in Figure 1 below.

Each step in the entire process of conducting this study can be explained below.

- First, the study conducted a rigorous theoretical overview to identify (i) relevant theories of intellectual capital and CSR; and (ii) the research gaps in the existing literature.
- Second, the data set used to ensure the feasibility of the analysis was determined. Data were then collected from the firms' annual reports.
- Third, panel data was used to conduct the empirical analysis. We used econometric
 methods, which should be suitable for the data set to overcome potential problems
 such as the unit root and autocorrelation.
- Fourth, we present and discuss the empirical results from our analysis. Whenever relevant, these results are linked to the contexts of the research problem.

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• Fifth, managerial implications are discussed to promote the efficiency of intellectual capital and CSR, contributing to increasing firm performance.

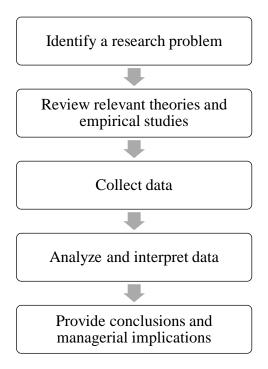


Figure 1. Research process.

4. Findings and Discussions

4.1. The Descriptive Statistics

Results of descriptive statistics are illustrated in Table 3. The mean values of ROA, ROE, and CSR are 0.0460, 0.1232 and 0.0271, respectively. The average intellectual capital coefficient is 5.2485, signifying that, for every VND 1.00 of intellectual capital used, listed firms on Ho Chi Minh Stock Exchange create VND 5.2485. Similarly, the standard deviation results reveal that ROA, ROE, MVAIC, and CSR deviate from the mean value by 0.0565, 0.1002, 4.8531, and 0.0419, respectively.

Table 3.	Descriptive	statistics of	the ful	l sample.
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Variables	Observations	Mean	Min.	Max.	Std. Dev.
ROA	584	0.0460	0.0004	0.9058	0.0565
ROE	584	0.1232	0.0005	1.1053	0.1002
IC	584	5.2485	1.0014	37.2154	4.8531
HCE	546	4.6936	1.0111	35.7534	4.7351
SCE	546	0.6261	0.0110	0.9814	0.2369
CEE	584	0.0883	0.0014	6.8728	0.3920
RCE	445	0.1903	0.0011	2.7937	0.2623
CSR	485	0.0271	0.000	0.3286	0.0419
IC * CSR	520	0.1002	0.000	1.3228	0.1173
SIZE	584	3.9441	2.0004	14.2320	1.3949
LEV	584	0.5453	0.0079	0.9478	0.1952

Notes: ROA is the return on assets; ROE is the return on equity; CSR is corporate social responsibility; IC is intellectual capital. HCE is human capital efficiency; SCE is structural capital efficiency; CEE is capital employed efficiency; RCE is relational capital efficiency. Control variables: SIZE denotes the natural logarithm of the total assets, and LEV denotes the ratio between firms' total debt and total assets.

4.2. The Correlation Analysis

This study examined the Pearson pairwise correlation, and Table 4 shows that the correlation does not exceed 0.75 in any specification—which implies the multicollinearity

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problem does not exist [70,72]. In addition, we also used the variance inflation factor (VIF) to explore multicollinearity. Our results denote that the highest value of VIF is 2.06, which again asserts that the multicollinearity problem does not occur in this study [44].

Table 4. The pairwise con	rrelation coefficients a	nd the variance in	nflation factor (VIF) among variables.
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Variables	ROA	ROE	HCE	SCE	CEE	RCE	IC*CSR	SIZE	LEV	VIF
ROA	1.000									-
ROE	0.738 ***	1.000								-
HCE	0.642 ***	0.452 ***	1.000							2.06
SCE	0.495 ***	0.489 ***	0.683 ***	1.000						2.06
CEE	0.180 ***	0.086 **	0.029	-0.109 **	1.000					1.16
RCE	-0.247***	-0.192***	-0.153***	-0.090*	-0.075	1.000				1.18
IC * CSR	0.172 ***	0.131 ***	0.054	0.148 ***	0.027	0.183 ***	1.000			1.07
SIZE	-0.236***	0.029	-0.129 ***	-0.037	0.034	0.259 ***	-0.001	1.000		1.15
LEV	-0.330***	0.111 ***	-0.290 ***	-0.201 ***	-0.193***	0.078 *	-0.118***	0.254 ***	1.000	1.19

Notes: *, ***, and *** significant at 10 per cent, 5 per cent, and 1 per cent, respectively. **ROA** is the return on assets; **ROE** is the return on equity; **CSR** is corporate social responsibility; **IC** is intellectual capital. **HCE** is human capital efficiency; **SCE** is structural capital efficiency; **CEE** is capital employed efficiency; **RCE** is relational capital efficiency. Control variables: **SIZE** denotes the natural logarithm of the total assets, and **LEV** denotes the ratio between firms' total debt and total assets.

In the next step, we conduct a unit-root test because it indicates whether the time series has a systematic or unpredictable pattern. Hence, the Fisher-type tests [73] were conducted with the null hypothesis that all panels include unit roots. The results in Table 5 signify that all variables are stationary.

We also performed the Wooldridge and modified Wald tests to consider autocorrelation and group-wise heteroskedasticity in two models. The results in Table 6 confirm the presence of heteroskedasticity in both models. Previous studies [4,70] argue that the ordinary least squares and fixed effects estimations are unsuitable for autocorrelation and heteroskedasticity.

Table 5. Panel unit-root test results.

Variables	Inverse Chi-Squared	Inverse Normal	Inverse Logit	Modified Inv. Chi-Squared
ROA	269.486 ***	-3.914 ***	-6.184 ***	9.649 ***
ROE	290.281 ***	-3.994 ***	-6.566 ***	10.991 ***
IC	410.092 ***	-9.055 ***	-12.238 ***	18.725 ***
HCE	388.395 ***	-5.647 ***	-10.463 ***	17.324 ***
SCE	305.438 ***	-5.461 ***	-7.863 ***	11.970 ***
CEE	248.696 ***	-1.988 ***	-4.558 ***	8.307 ***
RCE	244.198 ***	-5.235 ***	-8.221 ***	11.773 ***
CSR	452.868 ***	-8.468 ***	-18.462 ***	25.754 ***
IC*CSR	377.261 ***	-3.420 ***	-10.026 ***	18.630 ***
SIZE	467.896 ***	-3.652 ***	-12.920 ***	22.456 ***
LEV	322.773 ***	-4.082 ***	-7.565 ***	13.089 ***

Notes: *** significant at 1 per cent. **ROA** is the return on assets; **ROE** is the return on equity; **CSR** is corporate social responsibility; **IC** is intellectual capital. **HCE** is human capital efficiency; **SCE** is structural capital efficiency; **CEE** is capital employed efficiency; **RCE** is relational capital efficiency. Control variables: **SIZE** denotes the natural logarithm of the total assets, and **LEV** denotes the ratio between firms' total debt and total assets.

Table 6. Wooldridge and modified Wald tests.

	Wooldridge Test				Modified Wald	l Test
	F-Test	<i>p</i> -Value	Presence of Autocorrelation	x ²	<i>p</i> -Value	Presence of Heteroskedasticity
Model 1 Model 2	1.063 1.416	0.308 0.240	× ×	3.1×10^{32} 1.4×10^{35}	0.000 0.000	$\sqrt{}$

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4.3. Empirical Findings Using the Generalized Method of Moments

This study used the generalized method of moments (GMM) estimator to examine the independent and joint effects of intellectual capital and CSR on firm performance. In general, dynamic panel models have an advantage over fixed and random effect models when endogeneity resulting from reverse causality and/or bias caused by omitted variables is a real concern [2]. The model's reverse causality is likely to exist since firm performance will determine the efficiencies such as human capital efficiency. Moreover, it is unlikely that all relevant firm-specific variables which determine firm performance are the only determinants of profitability since macro variables such as GDP growth are major determinants. Hence, the first difference with using the GMM estimator helps overcome the individual unobserved effects [74].

In addition, unlike the static, fixed, and random panel data models that require strict exogeneity, dynamic panel data models include lagged levels of the dependent variable as explanatory variables. Consequently, static models lead to biased estimators since the lagged dependents are correlated with the idiosyncratic error, which violates the strict exogeneity condition [75]. In this context, the dynamic panel models allow partial adjustment of the dependent variable. This approach is suitable for this study. Accordingly, it is appropriate to use a dynamic equation that includes the dependent variable with a lag among the explicative variables since the two-step GMM estimator eliminates unobservable individual effects through first-order differencing and includes lagged instrumental variables that control for correlation between dependent variable differences and the error term [76,77].

Our GMM results are presented in Tables 7 and 8. The AR (2) test results indicate that the second-order autocorrelation is not present in all two models. In addition, the Hansen test's results also indicate that the instrument variables are not endogenous in the two models, confirming the validity of the GMM estimation.

Table 7. Empirical results—the independent and joint effects of intellectual capital and corporate
social responsibility on firm performance using the GMM.

Variables	Model 1 (ROA)	Model 2 (ROE)
ROA _{t-1}	0.038 **	
ROE _{t-1}		0.011
HCE	0.004 ***	-0.001
SCE	0.058 ***	0.352 ***
CEE	0.014 ***	0.044 ***
RCE	0.031 ***	0.003
IC * CSR	0.020 ***	0.026 **
SIZE	-0.006 ***	-0.003 ***
LEV	-0.017	0.237 ***
Cons	0.011	-0.214 ***
AR (2) test	0.276	0.157
Sargan test	0.000	0.000
Hansen test	0.490	0.776

Notes: ** p < 0.05; *** p < 0.01. **ROA** is the return on assets; **ROE** is the return on equity; **CSR**: corporate social responsibility; **IC** is intellectual capital. **HCE** is human capital efficiency; **SCE** is structural capital efficiency; **CEE** is capital employed efficiency; **RCE** is relational capital efficiency. Control variables: **SIZE** denotes the natural logarithm of the total assets, and **LEV** denotes the ratio between firms' total debt and total assets.

Key findings from our analysis can be summarized as follows. First, our empirical results reveal that firm performance (ROA) in the current year is positively affected by performance in the previous year. This finding is in line with previous studies [28,40]. Second, we now focus on the independent effect of intellectual capital and CSR on firm performance. We find that the structural capital efficiency and the capital employed efficiency (two important components of intellectual capital) are associated with firm performance in both models when ROA and ROE are used as the proxies for firm performance. In addition,

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our results can also indicate that human capital efficiency and relational capital efficiency enhance firm performance when ROA is used as a proxy for firm performance. However, this effect disappears when ROE is used as a proxy for firm performance. These results indicate that a firm's wealth in Vietnam is mainly from capital-employed efficiency. In addition, our results also confirm that the interaction variable between intellectual capital and CSR boosts firm performance (both ROA and ROE). The results indicate that Vietnamese firms appear to increase their financial performance by concentrating on tangible and financial assets and investing in their structural capital. In addition, we note that the trend of automation requires firms in Vietnam to focus on the innovation of production technology. As a result, firms focus significantly on investing and utilizing their physical and financial assets, manufacturing technology, patents, and processes [21]. These results are similar to previous research [2,38].

Table 8. Empirical results—the independent and joint effects of intellectual capital and CSR on firm performance using the dynamic GMM.

Variables	Model 1 (D.ROA)	Model 2 (D. ROE)
D.ROA _{t-1}	0.073 ***	
D. ROE _{t-1}		0.110
D. HCE	0.001 ***	0.002
D. SCE	0.023 ***	0.162 ***
D. CEE	0.197 ***	0.579 ***
D. RCE	0.024 ***	0.047
D. IC * CSR	0.037 ***	0.050 **
D. SIZE	0.001 ***	-0.003 ***
D. LEV	-0.083 ***	0.097 ***
Cons	0.001 **	0.002
AR (2) test	0.167	0.114
Sargan test	0.000	0.000
Hansen test	0.958	0.428

Notes: ** p < 0.05; *** p < 0.01. **ROA** is the return on assets; **ROE** is the return on equity; **CSR** is corporate social responsibility; **IC** is intellectual capital. **HCE** is human capital efficiency; **SCE** is structural capital efficiency; **CEE** is capital employed efficiency; **RCE** is relational capital efficiency. Control variables: **SIZE** denotes the natural logarithm of the total assets, and **LEV** denotes the ratio between firms' total debt and total assets.

The findings of this study are consistent with the mainstream literature regarding intellectual capital and the CSR literature in many ways. First, intellectual capital components play an important role in improving firm performance. This finding reinforces the findings of previous studies [28,38,41]. Indeed, when firms are more interested in exploiting intangible assets, especially intellectual capital, they will invest more in applying information technology in building management processes and increasing investment in training to improve skills for workers. The above activities have improved the efficiency of intellectual capital components, thereby contributing to firm performance. Second, this study reveals that the interaction between intellectual capital and CSR also contributes to enhancing firm performance. This finding aligns with the findings of previous studies [8,55,78]. This finding is also consistent with the current market landscape, where environmental and social concerns are the main factors in a firm's strategic [79]. Environmental knowledge positively impacts the human resources of firms by increasing employee motivation and skills [80]. These results show that the interaction between CSR strategy and intellectual capital contributes to improving corporate performance. CSR can improve intellectual capital by developing a unique set of skills related to the environment and sustainability knowledge, thereby improving firm performance [8].

5. Conclusions and Policy Implications

The role of intangible assets such as intellectual capital or CSR has attracted attention because they are a strategic source that helps improve and facilitate organizational

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competitiveness and further market-leader capabilities [14]. In Vietnam, previous studies focus exclusively on the relationship between CSR and firm performance or the impact of intellectual capital on firm performance [2,21,81]. Previous studies have widely recognized the direct effects of intellectual capital and CSR on firm performance [8,9]. However, studies on these effects have been largely ignored in an emerging market such as Vietnam. As such, this study examined both the independent and joint effects of intellectual capital and CSR on firm performance in Vietnam. The sample used in this study includes 60 firms listed on the Ho Chi Minh Stock Exchange from 2011 to 2020. The MVAIC model was utilized to estimate intellectual capital. GMM estimation was used to enhance the robustness of the results.

Our empirical results show that intellectual capital components positively affect firm performance. This finding is consistent with previous studies [39,40]. Our findings confirm that all intellectual capital components (including structural capital efficiency, capital employed efficiency, human capital efficiency, and relational capital efficiency) positively contribute to firm performance in Vietnam when ROA is used as the proxy for firm performance. However, we only find a positive effect from structural capital efficiency and capital-employed efficiency when ROE is used as a proxy for firm performance. As such, the results of our analysis confirm both the independent effects of intellectual capital (via various components) and the joint effects of intellectual capital and CSR on firm performance in Vietnam. These results imply that intellectual capital and CSR decisions have contributed to firm performance. In addition, these results reconfirm the results from previous studies [8,55], which only focus on the independent effects.

Policy implications have emerged from the findings of our analysis. First, social and environmental concerns have become key factors in corporate strategic decisions [79]. Hence, intellectual capital and CSR can increase sustainable competitive advantage [15]. Second, firms should make a strategic plan regarding CSR to clearly define the goals to implement these activities following the active approach and the long-term focus. Third, managers should implement sustainable practice strategies to enhance intellectual capital and increase a firm's sustainable competitive advantage in the context of globalization. In particular, the training and development of employees' expertise concerning the environment and society can be an essential resource for a firm's competitive advantage. In addition, the COVID-19 pandemic has pushed firms to utilize intangible resources such as intellectual capital to achieve sustainable growth. Hence, firms can examine intellectual capital development and innovation aspects to enhance a firm's sustainable competitive advantages [8,82].

Our study has limitations. This study focuses only on the listed firms in Vietnam, and this approach may not satisfactorily capture fundamental aspects and features concerning CSR participation. In particular, our empirical analysis relies on the CSR index collected from the firm's annual reports. A larger number of firms from other industries or nations should be considered in further studies for comparisons. In addition, this study only uses one variable of interest to represent CSR; future studies may use different CSR measurements to improve the robustness of the findings. Future studies can also examine the effects of the interaction between intellectual capital, CSR, and corporate governance on firm value.

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