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SOCIAL CAPITAL AND FIRM RESILIENCE DURING COVID-19: EVIDENCE FROM LISTED FIRMS IN VIETNAM

Abstract

The issue of firm resilience to systemic shocks is gaining importance in emerging markets, where weak institutions force companies to rely on social capital as a proxy for legitimacy and resources. Yet it remains to be seen whether social capital functions as a uniform shield or as a more selective, context-dependent anchor under extreme stress. The study examines whether four components of firm social capital: CSR disclosure, CEO networks, political connections, and bank connections, are associated with firm performance in the crisis and recovery phases of the COVID-19 pandemic in Vietnam. The study estimates pooled OLS models with sector and year fixed effects and one-year lagged social capital measures using an unbalanced panel of 338 firms listed on the Ho Chi Minh City Stock Exchange from 2019 to 2024, with the post-crisis recovery period (2022–2024) as the reference category. During the recovery period, the composite social capital index is positively related to both operating performance and market valuation. Our results show that CEO networks are positively related to operating performance during the crisis, whereas bank connections are significantly and negatively related to market valuation. Political connections are not significantly related to performance during the crisis, but are strongly related to higher market valuation during the recovery. These results suggest that the value of social capital is not monolithic but depends on the particular relational channel and the phase of the crisis, with practical implications for managers, investors and policymakers in emerging markets.

Keywords

social capital, COVID-19, CEO network, CSR disclosure, political connection, bank connection, emerging markets, Vietnam

JEL Classification

G32, G01, O16, M14

INTRODUCTION

The resilience of firms to macroeconomic shocks has become a growing concern for managers and policymakers, particularly in emerging markets where formal institutions are generally weak. In such contexts, relational networks, broadly termed firm social capital, may serve as substitutes for weak institutions by providing access to informational and legitimizing resources (Nahapiet & Ghoshal, 1998; Peng & Luo, 2000). The COVID-19 pandemic gave a rare opportunity to examine how these relational ties perform under extreme stress.

In the literature, this question has received conflicting answers. The fundamental evidence, especially Lins et al. (2017), defines social capital as a “reservoir of goodwill” that protects firm value in crises by maintaining stakeholder loyalty and access to credit. Evidence more recently from the COVID-19 pandemic complicates this view. Studies like those of Bae et al. (2021) and Al-Dah et al. (2018) reveal that broad relational investments did not consistently protect firm value, and in some cases, markets discounted social capital rather than rewarding it. This contradiction highlights an open scientific issue: it is not yet clear whether social capital is a context-independent shield that per-

forms a similar protective function regardless of circumstance, or whether its value is conditional on the specific relational mechanism involved and on the institutional capacity of the parties it relies on, a distinction that becomes critical precisely when those institutions are under stress. The problem is complicated further by the way social capital has usually been measured. Much of the previous literature has conceptualized it as a relatively homogeneous construct proxied by a single indicator such as CSR disclosure or board interlock (Gannon & Roberts, 2020; Jha & Cox, 2015; Parrish, 2023). By design, this technique cannot distinguish between relational channels that might behave differently under stress. Previous studies have not systematically distinguished how these channels work through the different stages of a crisis, namely the initial shock versus the subsequent recovery, leaving open whether social capital plays a single role throughout a crisis or whether its function changes as conditions evolve (Bae et al., 2021; Lins et al., 2017).

Vietnam offers a particularly informative setting in which to examine this problem. Its bank-based financial system, substantial state ownership and heavy reliance on informal business networks mean that several forms of social capital, namely reputational, managerial, political and financial, coexist and can be empirically separated. In addition, the COVID-19 pandemic provided a severe, exogenous test of whether and how each of these forms holds up when the institutions underpinning them are themselves constrained.

1. LITERATURE REVIEW

1.1. Firm social capital: Concept and dimensions

Social capital at the firm level originates from the foundational work of Bourdieu (1988) and Coleman (1988), who emphasized the benefits derived from relational resources embedded in a firm's network of relationships (Nahapiet & Ghoshal, 1998). Firms leverage these networks to reduce information asymmetry, secure access to scarce resources, and enhance organizational legitimacy (da Silva et al., 2024; Nahapiet & Ghoshal, 1998; Putnam, 1993; Su et al., 2024). However, social capital also carries potential downsides. Excessive reliance on tight networks can lead to insularity, groupthink, and the perpetuation of inefficient practices (Fang et al., 2012). Executive use of extensive networks for personal career protection and power is often accompanied by practicing real earnings management at the cost of firm value in the long run (Griffin et al., 2021). These contrasting effects suggest that the influence of social capital is highly contingent on context, especially during periods of systemic stress.

Because social capital is an abstract and multidimensional concept, it cannot be adequately measured by a single proxy (Gannon & Roberts, 2020). In the Vietnamese context, this study conceptual-

izes firm social capital (FSC) as a formative construct comprising four distinct components, each tapping into a different relational mechanism. Because the four components are conceptually heterogeneous, reflecting distinct relational and resource mechanisms rather than a single underlying trait, the composite index is treated as a formative rather than a reflective construct, consistent with the distinction outlined by Coltman et al. (2008). The first is corporate social responsibility disclosure (CSR D), which reflects the trust and civic engagement dimensions (Jha & Cox, 2015). Grounded in signaling and stakeholder theories, CSR activities help firms build reputational capital that can mitigate information asymmetry and foster stakeholder support during difficult times (Attig et al., 2022; Butt et al., 2022; Servaes & Tamayo, 2017). Such investments create a "reservoir of goodwill" that may enhance firm performance, particularly in stressed environments (Degli Antoni & Sacconi, 2011; Lins et al., 2017). The second is the Chief Executive Officer's network. Following Upper Echelons Theory (Hambrick & Mason, 1984), the CEO's network emerges as an important proxy, reflecting resources accessible through professional and personal networks, including connections with other corporate leaders, board members, industry executives, government officials, and stakeholders that provide access to valuable resources, information, and legitimacy (Chen et al., 2024; Su et al., 2024). The third com-

ponent is political connection, which can facilitate preferential access to credit and some privileges (Ha & Frömmel, 2020; Sheng et al., 2011), albeit at the risk of agency costs and political mandate fulfilment (Ho et al., 2021; Phung & Mishra, 2016; Tihanyi et al., 2019). The fourth is bank connection, which in Vietnam's bank-based financial system can reduce adverse selection and lower the cost of capital (Dong et al., 2023), while also exposing firms to soft budget constraints and informational hold-up risks (Chen et al., 2016; Thanh & Ha, 2013).

1.2. Social capital and crisis resilience: Anchor versus shield

Crisis resilience encompasses both the capacity to withstand immediate shocks (resistance) and the ability to restore or exceed pre-crisis performance (recovery) (Huang et al., 2020; Ruan & Zhu, 2025). The COVID-19 pandemic provides a quasi-natural experiment to observe how different dimensions of social capital operate under extreme conditions (Glavas & Visentin, 2025). Lins et al. (2017) introduced the concept of social capital as a "reservoir of goodwill" that helps firms maintain stakeholder loyalty and secure critical resources when market trust collapses. However, subsequent studies have produced mixed findings regarding whether this reservoir functions as an absolute shield or a more selective anchor. Al-Dah et al. (2018) and Bae et al. (2021) find that broad relational investments were significantly discounted by investors during the crisis, as markets reappraised these ties as potential misallocations of scarce resources rather than reliable safety nets. This divergence from the 2008 evidence is theoretically meaningful and points to a critical distinction at the component level. Trust- and information-based ties might operate through channels that remain active precisely when formal markets fail: stakeholder goodwill, reputational signaling, and informal information flows. These channels are largely independent of the institutional capacity of external counterparties and can therefore function as genuine anchors even during systemic stress. In contrast, the value of resource-dependent ties is strictly bounded by the capacity of the institutions on which they rely. When a systemic shock constrains government fiscal capacity, political privileges can quickly transform from an asset into a liability (Tihanyi et al., 2019). In

Vietnam, the COVID-19 pandemic placed significant pressure on both state finances and the banking system (Anh & Gan, 2021), raising questions about the reliability of resource-dependent ties. At the same time, the post-crisis recovery phase may allow social capital to shift from a defensive role to one that supports strategic adaptation (Ruan & Zhu, 2025). Together, the literature does not provide a consensus on whether firm social capital acts as a uniform shield or as a more selective, conditional anchor in systemic crises. The discrepancy between the 2008 and COVID-19 research implies that this inconsistency is due to interpreting social capital as a single construct rather than disaggregating it into channels with different institutional dependencies. This gap encourages a component analysis of the sequential stages of a crisis. Building on these theoretical strands, this study aims to determine whether the four components of firm social capital, namely corporate social responsibility disclosure, CEO networks, political connections, and bank connections, function as a uniform shield or as context-dependent anchors across the pre-crisis, crisis, and recovery phases of the COVID-19 pandemic in Vietnam.

1.3. Hypothesis development

The theoretical mechanisms discussed above suggest that the value of firm social capital is not a fixed constant but varies systematically across macroeconomic regimes. During stable periods, all four components are theorized to function primarily by reducing transaction costs, expanding resource access, and generating sustainable competitive advantages. This perspective is supported by evidence from transition economies, where aggregate social capital has been shown to enhance operational efficiency (Peng & Luo, 2000; Su et al., 2024; N. M. Tran & M. H. Tran, 2022) and provide tangible financial benefits through optimal bank dependence (Dong et al., 2023). Systemic shocks like the COVID-19 pandemic alter this baseline, and components behave differently depending on the relational channel. In times of significant market stress, trust- and information-based channels like CSR disclosure and CEO networks buffer due to a "reservoir of goodwill" acquired before the shock (Anh & Gan, 2021; Huang et al., 2020; Lins et al., 2017). The institutional capacity of external partners limits resource-dependent channels such

as political and banking connections. When state and banking resources are limited, as in Vietnam during the pandemic (Anh & Gan, 2021), these advantages can become liabilities (Tihanyi et al., 2019). Finally, relational capital shifts from loss mitigation to strategic adaptation in the post-crisis recovery stage because reputational and network assets are crucial to investor confidence and resource reallocation.

The study aims to determine whether these four components of firm social capital function as a uniform shield or as context-dependent anchors across the crisis and recovery phases of the COVID-19 pandemic in Vietnam. Following the aforementioned logic, we derive the following hypotheses.

- H1: CSR disclosure and CEO networks are positively associated with firm performance during the COVID-19 pandemic.*
- H2: Political connections and bank connections are negatively associated with firm performance during the COVID-19 pandemic.*
- H3: In the post-crisis recovery phase, firm social capital is associated with higher firm performance relative to the crisis period.*

2. METHOD

2.1. Sample and data sources

The data set is an unbalanced panel of 338 non-financial firms listed on the Ho Chi Minh City Stock Exchange (HOSE) with data available from 2019 to 2024, resulting in 2,013 firm-year observations. Financial institutions are excluded since their capital structures differ due to divergent regulatory frameworks; samples missing key variables are excluded by listwise deletion. The sample period 2019–2024 is divided into three macroeconomic periods: pre-pandemic period, 2019; shock period, 2020–2021; recovery period, 2022–2024, based on the promulgation of Resolution 11/NQ-CP (January 2022) (Government of Vietnam, 2022), and also the 7.72 percent GDP growth in Q2/2022 (GSO, 2022). Financial data and CEO profile are obtained from Thomson Refinitiv and Vietstock,

respectively. To mitigate the influence of outliers, all continuous variables are winsorized from the 1st to the 99th percentile year-wise. Because the empirical models use one-year lagged social capital measures, the 2019 observations serve only as the source of lagged explanatory values for 2020 and are not directly estimated as an independent period; consequently, the regression sample effectively begins in 2020, and the pre-pandemic year 2019 does not appear as a distinct data point in the estimation.

2.2. Variable measurement

Table 1 summarizes all variables, their definitions, and sources of measurement in detail. The two dependent variables are ROA and Tobin's Q, which are measures of the firm's operating performance and market value based on future market expectations (Dong et al., 2023; Lins et al., 2017; Phung & Mishra, 2016; N. M. Tran & M. H. Tran, 2022).

Regarding independent variables, Firm Social Capital (FSC) is constructed as a formative composite index (Coltman et al., 2008) aggregated from four annually standardized proxy variables, each reflecting a distinct relational mechanism. The four components are combined using equal weights, following the approach used to construct composite indices in prior finance research, such as the corporate governance index of Gompers et al. (2003) and the county-level social capital index of Rupasingha et al. (2006) that underlies the social capital measure used by Jha and Cox (2015), where equal weighting is applied in the absence of a strong theoretical basis for differential weighting. This assumption is not separately tested in the present study, and future research could examine whether alternative weighting schemes, such as those derived from principal component analysis, yield materially different results.

First, SC1_CSRD applies a three-point ordinal scale: 0 (no disclosure or purely rhetorical statement), 1 (qualitative disclosure with substantive content), and 2 (quantitative disclosure with specific figures and measurement units) across 31 criteria aligned with the Global Reporting Initiative (GRI) standards (GRI, 2020). Scoring is based on a localized CSR keyword dictionary developed from manually coding 1,360 firm-year reports,

Table 1. Summary of variables

Variable	Symbol	Definition & Measurement	Source
Dependent variables			
Operating performance	ROA	EBIT / average total assets	Thomson Refinitiv
Market valuation	Tobin's Q	(Market cap + book value of debt) / Book value of total assets	Thomson Refinitiv
Main independent variables			
CSR disclosure	SC1_CSRD	Scoring based on customized framework	Annual reports (content analysis)
CEO network	SC2_CEO	Composite of 10 binary biographical dimensions (locus approach); $\ln(1 + \text{raw score})$	Annual reports. Vietstock data of managers' profiles
Political connection	SC3_POLCON	Percentage of equity held by state entities	Thomson Refinitiv
Bank connection	SC4_BANKCON	Standardized number of banks with which the firm maintains a credit relationship	Constructed from Notes to the financial statements
Composite index	FSC	Equal-weighted average of four annually standardized components	Constructed
Control variables			
Firm size	F_SIZE	Natural log of total assets	Thomson Refinitiv
Firm age	F_AGE	Natural log of years since incorporation	Thomson Refinitiv
Revenue growth	F_GROW	The percentage growth in sales for the firm in year t compared to year $(t - 1)$	Thomson Refinitiv
CEO ownership	CEO_OWN	Proportion of shares held by CEO	Thomson Refinitiv
Board independence	B_INDEP	Proportion of independent directors on the board	Thomson Refinitiv
Board size	B_SIZE	Natural log of number of board members	Thomson Refinitiv
Competition	COMPETE	Inverted Herfindahl-Hirschman Index ($1 - \text{HHI}$)	Constructed from Thomson Refinitiv
Leverage	LEV	Total liabilities divided by total assets	Thomson Refinitiv

which was then used to build an automated content analysis pipeline applying rule-based scoring across the full sample. The pipeline's reliability was confirmed against the manual benchmark: ICC = 0.842, Pearson $r = 0.844$, Spearman $r = 0.930$, and MAE = 0.036 (Koo & Li, 2016). Second, following the locus approach widely adopted in emerging market research (Y. Chen et al., 2024; Su et al., 2024), CEO's social capital (SC2_CEO) is measured by coding ten binary biographical dimensions per CEO-year: firm tenure, leadership tenure, financial connections, management education, multi-firm executive experience, international experience, academic network, industry association membership, legal background, and political network. The raw composite score is log-transformed as $\ln(1 + \text{score})$. Some of these dimensions (e.g., education and tenure) are more direct proxies for managerial human capital than for social ties per se, but are included because, according to the locus approach, human-capital attributes and access to social networks are jointly acquired through a CEO's career path and are difficult to disentangle empirically. However, this composite operationalization means that SC2 captures a broader construct of CEO-level resources rather than social capital in a narrow relational

sense. Details of CSRD and CEO network measurement are in the Supplementary Materials. Third, Political connection (SC3_POLCON) is measured as the percentage of equity held by state entities, the most institutionally relevant proxy for political ties in Vietnam's transitional economy (Ha & Frömmel, 2020). Fourth, bank connection (SC4_BANKCON) is measured by the number of banks with which the firm maintains a credit relationship, capturing the breadth of its banking network. Unlike a bank debt ratio, which conflates relational breadth with the intensity of financial leverage, the number of banking relationships isolates the social-connection dimension of bank ties from the firm's overall debt burden. This count-based measure is winsorized at the 1st and 99th percentiles and standardized into a z-score.

2.3. Estimation strategy

To test the hypotheses, the study employs pooled OLS with sector and year fixed effects with one-year lagged SC values so as to establish temporal precedence and mitigate reverse causality. The standard errors are clustered at the firm level. The POST period (2022–2024) serves as the omitted baseline:

$$Y_{i,t} = \alpha + \beta_1 SC_{i,t-1} + \beta_2 (SC_{i,t-1} \cdot CRISIS_t) + \gamma X_{i,t} + \delta_s + \lambda_t + \varepsilon_{i,t}, \quad (1)$$

where $Y_{i,t}$ denotes the performance metric of firm i in year t ; $SC_{i,t-1}$ is the one-year lagged social capital variable; $CRISIS_t$ is a binary variable taking the value of 1 for 2020–2021; β_1 captures the association during the recovery period (the omitted POST baseline), while β_2 captures the differential effect in the crisis period; $X_{i,t}$ is a vector of firm-level controls; δ_s and λ_t denote sector and year fixed effects; and $\varepsilon_{i,t}$ is the idiosyncratic error term.

In this specification, the coefficient on the lagged social capital measure captures the association between social capital and performance during the recovery period, and the interaction with the crisis dummy captures the differential effect during the 2020–2021 shock relative to that baseline. The total effect in the crisis period is reconstructed as the linear combination of the main and interaction coefficients, and its statistical significance is directly tested. This total crisis effect is used to test hypotheses *H1* and *H2* for the relevant components, and hypothesis *H3* is tested by comparing the total crisis effect with the association during the recovery period.

2.4. Robustness checks

To ensure the reliability of the findings, two robustness checks are conducted. First, the Correlated

Random Effects estimator developed by Mundlak (1978) augments the baseline model with firm-level time averages to control for time-invariant unobserved heterogeneity while keeping between-firm variation. Second, sector fixed effects are replaced with firm fixed effects, yielding a two-way fixed effects estimator (TWFE) that serves as a strict lower-bound test.

3. RESULTS

3.1. Descriptive statistics

Table 2 presents descriptive statistics for the estimation sample of 338 HOSE-listed non-financial firms over 2019–2024. ROA averages 8.9% with a standard deviation of 7.9%, reflecting substantial operational dispersion across firms. Tobin's Q is right-skewed (median 1.04, mean 1.23), driven by a subset of highly valued firms. On average, sample firms maintain credit relationships with roughly five banks, and the mean leverage ratio is 0.46, indicating that liabilities finance close to half of total assets.

The bank connection measure (SC4) and leverage are only moderately correlated ($r = 0.43$), indicating that the number of banking relationships captures a relational dimension distinct from the firm's overall debt burden. The correlation between ROA and Tobin's Q is positive and significant ($r = 0.551$, $p < 0.01$), confirming that the two measures capture performance in the same direction without perfect

Table 2. Descriptive statistics

Variable	N	Mean	Std. Dev.	Min	Median	Max
ROA	2,012	0.0888	0.0786	−0.1130	0.0744	0.5625
Tobin's Q	2,010	1.2252	0.6278	0.2410	1.0434	4.6420
SC1 (CSRDI)	2,013	0.3283	0.1598	0.0000	0.3226	0.8710
SC2 (CEO_SC)	2,013	1.4580	0.3714	0.0000	1.6094	2.1972
SC3 (POLCON)	2,013	0.1704	0.2557	0.0000	0.0000	0.9919
SC4 (BANKCON)	2,013	5.2406	5.4103	0.0000	4.0000	31.5500
FSC_EW	1,983	−0.0076	0.5067	−1.3555	−0.0560	1.7864
F_SIZE	2,013	28.5453	1.4895	25.2745	28.3081	34.3604
F_AGE	2,013	2.9335	0.3904	0.6931	2.9444	4.1589
F_GROW	2,011	0.1056	0.5074	−0.8334	0.0391	2.9532
CEO_OWN	2,008	0.0318	0.0776	0.0000	0.0015	0.6116
B_INDEP	2,007	0.2528	0.1431	0.0000	0.2500	1.0000
B_SIZE	2,007	1.7255	0.2384	1.0986	1.6094	2.5649
COMPETE	2,013	0.7999	0.1241	0.3630	0.8048	0.9382
LEVERAGE	2,013	28.5453	1.4895	25.2745	28.3081	34.3604

Note: SC1–SC4 are reported on their natural scale for interpretability; all four components are standardized (z-score) before entering the regression models. The composite FSC index is the equal-weighted average of the four standardized components.

overlap. Among the social capital components, SC2 (CEO network) exhibits the strongest positive correlation with ROA ($r = 0.302$, $p < 0.01$), whereas SC4 (bank connection) is negatively correlated with ROA ($r = -0.160$, $p < 0.01$). Multicollinearity is negligible, with all control variable correlations below 0.5 and a maximum VIF of 1.26.

3.2. Social capital and firm performance: Composite index

Table 3 reports the baseline estimation using pooled OLS with sector and year fixed effects and one-year lagged social capital measures, with the post-crisis recovery period (2022–2024) as the omitted baseline. The F-test confirms the overall statistical significance of both models ($p < 0.001$).

Table 3. Social capital and firm performance (composite index)

Variable	(1) ROA	(2) Tobin's Q
FSC_lag (β_1 , recovery-period association)	0.0262*** (0.0069)	0.2408*** (0.0549)
FSC_lag $\times$ CRISIS (β_2)	-0.0123** (0.0060)	-0.1682*** (0.0516)
F_SIZE	0.0009 (0.0029)	0.0332 (0.0257)
F_AGE	-0.0017 (0.0078)	-0.1483 (0.0927)
F_GROW	0.0217*** (0.0045)	0.0338* (0.0192)
CEO_OWEN	-0.0692** (0.0296)	-0.5836** (0.2522)
B_INDEP	-0.0218 (0.0196)	-0.1975 (0.1726)
B_SIZE	0.0249** (0.0108)	0.3420*** (0.1023)
COMPETE	0.0609* (0.0358)	-0.0845 (0.3017)
LEVERAGE	-0.1322*** (0.0176)	-0.5457*** (0.1531)
CRISIS	0.0078 (0.0135)	0.1632 (0.1282)
Total crisis effect ($\beta_1 + \beta_2$)	0.0139** (0.0068)	0.0726 (0.0615)
Sector FE / Year FE	Yes / Yes	Yes / Yes
Observations	1,648	1,648
Firms	333	333
R ²	0.229	0.168

Note: Firm-clustered standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. The post-crisis recovery period (2022–2024) is the omitted baseline; β_1 captures the recovery-period association and $\beta_1 + \beta_2$ the total crisis-period effect, obtained as a linear combination of the two coefficients.

At the composite level, the lagged social capital index is positively and significantly associated with performance during the recovery period for both ROA ($\beta_1 = 0.026$, $p < 0.01$) and Tobin's Q ($\beta_1 = 0.241$, $p < 0.01$). The total crisis-period effect ($\beta_1 + \beta_2$) is positive and significant for ROA (0.014, $p < 0.05$) but statistically indistinguishable from zero for Tobin's Q, suggesting that aggregate social capital may have provided modest operating support without a corresponding market premium during the acute shock.

3.3. Social capital and firm performance: Component level

Table 4 disaggregates the composite index into its four components, reporting the recovery-period association (β_1), the crisis differential (β_2), and the total crisis-period effect ($\beta_1 + \beta_2$) obtained as a linear combination.

Table 4. Social capital and firm performance (component level)

Variable	(1) ROA	(2) Tobin's Q
SC1 (CSR disclosure)		
β_1 (recovery)	0.0039 (0.0033)	0.0482* (0.0263)
β_2 (crisis differential)	-0.0054 (0.0039)	-0.0082 (0.0290)
Total crisis effect ($\beta_1 + \beta_2$)	-0.0015 (0.0032)	0.0401 (0.0361)
SC2 (CEO network)		
β_1 (recovery)	0.0199*** (0.0032)	0.1025*** (0.0219)
β_2 (crisis differential)	-0.0041 (0.0036)	-0.0553* (0.0330)
Total crisis effect ($\beta_1 + \beta_2$)	0.0158*** (0.0033)	0.0472 (0.0332)
SC3 (Political connection)		
β_1 (recovery)	0.0037 (0.0039)	0.0884*** (0.0303)
β_2 (crisis differential)	-0.0033 (0.0027)	-0.0662*** (0.0200)
Total crisis effect ($\beta_1 + \beta_2$)	0.0005 (0.0035)	0.0221 (0.0328)
SC4 (Bank connection)		
β_1 (recovery)	-0.0066** (0.0032)	-0.0372 (0.0282)
β_2 (crisis differential)	0.0008 (0.0029)	-0.0368 (0.0228)
Total crisis effect ($\beta_1 + \beta_2$)	-0.0058* (0.0035)	-0.0739** (0.0305)
Controls / Sector FE / Year FE	Yes	Yes
Observations	1,648	1,648
R ²	0.269	0.188

Note: Firm-clustered standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. Full control coefficients are omitted for brevity and are consistent with Table 3.

The disaggregated results indicate where the composite pattern originates. During the recovery period, CEO networks (SC2) show the strongest association with performance, positive and significant for both ROA and Tobin's Q. Political connections (SC3) are strongly associated with market valuation during the recovery ($\beta_1 = 0.088$, $p < 0.01$) but not with operating performance, while bank connections (SC4) carry a negative recovery-period association with ROA ($\beta_1 = -0.007$, $p < 0.05$).

Turning to the total crisis-period effect, which combines the recovery-period coefficient with the crisis differential, CEO networks (SC2) retain a positive and significant association with ROA (0.016, $p < 0.01$), and CSR disclosure (SC1) shows no evidence of a negative crisis effect on either measure. These patterns are broadly consistent with *H1*, suggesting that trust- and information-based social capital continued to be associated with firm performance during the pandemic rather than becoming a liability.

For resource-dependent channels, the evidence is more mixed. Bank connections (SC4) show a negative and significant total crisis effect on Tobin's Q (-0.074 , $p < 0.05$) and a marginally negative effect on ROA (-0.006 , $p < 0.10$), consistent with dense banking ties being associated with a market discount during the shock. Political connections (SC3), however, show a total crisis effect that is not statistically distinguishable from zero for either performance measure, providing no clear evidence that state ownership acted as a liability during the crisis period. Taken together, these results offer only partial support for *H2*: the negative crisis association appears concentrated in bank

connections, while political connections show no significant net crisis effect.

3.4. Recovery versus crisis performance

The hypothesis *H3* concerns whether social capital is associated with higher performance during the recovery phase than during the crisis. The recovery-period coefficient (β_1) exceeds the total crisis effect ($\beta_1 + \beta_2$) for the composite index in both ROA (0.026 versus 0.014) and Tobin's Q (0.241 versus 0.073), and the recovery coefficient is significant at the 1% level in both cases. This pattern appears to be driven primarily by CEO networks and political connections, whose associations with market valuation are strongest during the recovery period. These results are broadly consistent with *H3*, suggesting that the association between social capital and firm performance tends to be strongest once macroeconomic conditions stabilize.

3.5. Robustness checks

To assess the sensitivity of the composite-index results to model specification, two alternative estimators are applied. The Correlated Random Effects (CRE) specification (Mundlak, 1978) augments the baseline model with firm-level time averages of the time-varying regressors, while the two-way fixed-effects (TWFE) specification replaces sector fixed effects with firm fixed effects. Table 5 reports the results.

The main findings are broadly robust to these alternative specifications. Under the CRE model, the recovery-period association of the composite in-

Table 5. Robustness checks (composite index)

Variable	CRE ROA	CRE Tobin's Q	TWFE ROA	TWFE Tobin's Q
FSC_lag (β_1 , recovery)	0.0157** (0.0069)	0.1056*** (0.0379)	0.0148** (0.0068)	0.0935** (0.0374)
FSC_lag $\times$ CRISIS (β_2)	-0.0118** (0.0060)	-0.1502*** (0.0496)	-0.0125** (0.0052)	-0.1177*** (0.0421)
Total crisis effect ($\beta_1 + \beta_2$)	0.0039 (0.0068)	-0.0446 (0.0497)	0.0024 (0.0061)	-0.0241 (0.0426)
Observations	1,648	1,648	1,648	1,648
R ²	0.239	0.197	0.114	0.211

Note: Firm-clustered standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. CRE augments the baseline model with firm-level means of the time-varying regressors; TWFE replaces sector fixed effects with firm fixed effects.

dex remains positive and significant for both ROA ($\beta_1 = 0.016$, $p < 0.05$) and Tobin's Q ($\beta_1 = 0.106$, $p < 0.01$), and the negative crisis differential is preserved. The TWFE specification yields a similar pattern ($\beta_1 = 0.015$, $p < 0.05$ for ROA; $\beta_1 = 0.094$, $p < 0.05$ for Tobin's Q), suggesting that the recovery-period association is not driven by the choice of fixed-effects structure or by time-invariant firm characteristics.

4. DISCUSSION

The empirical evidence provides a complex view that appears to counterbalance a single understanding of social capital, suggesting that its value depends upon the type of relational channel used and the time frame of the business cycle when examined.

Over the two time frames analyzed, CEO networks (SC2) were the most consistent predictor of business performance. Executive networks were positively and significantly related to firms' performance during each time frame (the crisis and recovery), which is consistent with Upper Echelon theory (Hambrick & Mason, 1984) and suggests that executive networks could help firms receive valuable information, resources, and governance signals during uncertain markets. Lins et al. (2017) proposed the Reservoir-of-Goodwill Mechanism, which uses trust- and information-based ties to protect firms from extreme negative economic shocks. The findings extend this mechanism to the managerial network channel in an emerging market.

On the contrary, bank connections (SC4) suggest a different route. When separated from financial leverage, bank linkages negatively affected corporate performance. In particular, the crisis increased their relationship. Market discounts were also found for bank ties. Similar to Dong et al. (2023), these findings suggest that too many banking interactions in bank-based financial systems may be counterproductive. These mechanisms match Chen et al. (2016)'s "hold up" and "information asymmetry" mechanisms. A significant usage of bank credit during a severe systemic liquidity shock may indicate financial weakness. The observational data should warrant further exploration of this view.

A remarkable finding is in relation to political connections (SC3). The overall effect of political connection during the crisis period is not statistically different from zero unlike the simple liability interpretation, but is positively and significantly related to market valuation in the recovery period. One interpretation consistent with this pattern is that two countervailing mechanisms may have offset each other during the shock: state-connected firms may have benefited from preferential access to public support, while at the same time being subject to political mandates such as maintaining employment or restraining prices (Ho et al., 2021; Phung & Mishra, 2016; Tihanyi et al., 2019). As the state subsequently deployed recovery-oriented stimulus measures, the benefit side may have come to dominate, coinciding with a valuation premium for politically connected firms. This tentative, phase-dependent reading suggests that the association between political ties and firm value may depend on the stage of the crisis rather than being uniformly positive or negative, though confirming this mechanism would require more direct evidence on the channels involved.

Besides, CSR disclosure (SC1) is associated with performance only weakly and inconsistently throughout the sample period, showing at most a marginal recovery-period association with Tobin's Q. This may reflect the relatively underdeveloped ESG-oriented institutional investor base and the generally low level of CSR disclosure observed among Vietnamese listed firms (Tran et al., 2025). In contrast to Lins et al. (2017), where CSR is a strong predictor of crisis-period performance in the United States, this finding is consistent with the view that the market relevance of CSR disclosure may depend considerably on the surrounding institutional context.

Taken together, the phase-dependent patterns suggest that social capital in Vietnam did not function as a uniform shield during the COVID-19 shock. Rather than protecting all firms equally, its components appear to have diverged: trust- and information-based ties are associated with continued performance benefits, bank ties with a market discount, and political ties with a shift from statistical neutrality during

the crisis to a valuation premium during the recovery. This phase-contingent pattern is broadly consistent with frameworks in which the role of social capital is understood to evolve across the stages of a crisis (Huang et al., 2020; Ruan & Zhu, 2025), and it extends that literature by pointing to which specific relational channels

may be associated with resilience and recovery in a bank-based emerging-market economy. Given the observational nature of the research design, these associations should be interpreted as suggestive patterns rather than causal effects, and the underlying mechanisms proposed here would benefit from further empirical validation.

CONCLUSION

This study investigates the role of firm social capital as a uniform shield or as context-dependent anchors in times of crisis during the COVID-19 pandemic in Vietnam. Evidence suggests the latter: although the aggregate social capital index is positively related to operating performance and market valuation during the recovery, this composite measure masks significant differences at the component level. The results suggest that CEO networks are associated with higher performance in both periods, while having a bank connection is associated with lower performance in both periods. Political connections do not seem to be significantly associated with performance in the crisis but are strongly positively associated with market valuation in the recovery. In general, the value of social capital appears to be contingent on the relational channel and the phase of the crisis rather than a single, uniform resource.

This paper presents three main contributions. First, it demonstrates the value of disaggregating social capital, showing how a composite index can conceal countervailing component-level effects. Second, it identifies institutional boundary conditions in which relational assets are associated with worse rather than better performance, thereby extending Lins et al.'s (2017) "reservoir of goodwill" framework to settings where counterparty capacity is itself constrained. Third, it offers a phase-dependent perspective, which corresponds to the evidence that the role of social capital varies at different phases of a crisis (Huang et al., 2020; Ruan & Zhu, 2025).

These results have practical implications, to be interpreted as associational rather than causal. CEO networks appear to be a relatively stable relational asset for managers during both the crisis and the recovery periods. Investors may want to put more scrutiny on bank-related firms during recessions, but see the risk of political connections as being phase-specific rather than always elevated. For policymakers, the negative association of bank connections in crisis periods is consistent with the strengthening of formal market institutions and governance to complement relationship-based bank financing (Dong et al., 2023; Phung & Mishra, 2016).

Several limitations suggest a path for future research. The CEO network measure measures network size, not depth of individual ties. The CSR disclosure measure captures the breadth, not the substance of reporting. State ownership points to political connection, as in other Vietnamese studies (Ha & Frömmel, 2020), but does not capture informal ties, such as personal ties with officials. Methodologically, the reported associations are benchmarked against the recovery period rather than a fully observed pre-crisis baseline because only one pre-pandemic year is available; ROA and Tobin's Q approximate firm performance rather than the broader theoretical construct of organizational resilience; and sector and year fixed effects are included separately rather than as interactions, so sector-specific variation in pandemic exposure is not fully captured. Finally, given that the evidence comes from Vietnam's bank-dominated transition economy, future research might explore whether these patterns are replicated in other emerging markets.

AUTHOR CONTRIBUTIONS

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APPENDIX A. CSRD and CEO network measurement details

Table A1 lists the 31 disclosure criteria used to construct the CSRD. Criteria are drawn from GRI Standards and adapted to reflect the structure of annual and sustainability reports published by Vietnamese listed companies, supplemented by disclosure requirements under Circular No. 96/2020/TT-BTC. Each criterion is scored 0 (no disclosure), 1 (qualitative disclosure), or 2 (quantitative disclosure with specific figures and measurement units). The maximum possible raw score is 62, and CSRD = raw score / 62.

Table A1. CSR disclosure scoring criteria

Source: GRI (2020); Ministry of Finance of Vietnam (2020).

Category	No.	Items	References
Environment	1	Materials used by weight or volume	GRI 301-1. Appendix IV of Circular No.96
	2	Recycled input materials used	GRI 301-2. Appendix IV of Circular No.96
	3	Energy consumption within the organization	GRI 302-1. Appendix IV of Circular No.96
	4	Reduction of energy consumption	GRI 302-4. Appendix IV of Circular No.96
	5	Water withdrawal	GRI 303-3. Appendix IV of Circular No.96
	6	Water discharge	GRI 303-4
	7	Water consumption	GRI 303-5. Appendix IV of Circular No.96
	8	Percentage and total amount of water recycled and reused	Appendix IV of Circular No.96
	9	Water and effluents management	GRI 303
	10	Reduction of water consumption	GRI 303
	11	Direct GHG emissions and energy indirect GHG emissions	GRI 305-1. GRI 305-2 Appendix IV of Circular No.96
	12	Reduction of GHG emissions	GRI 305-5. Appendix IV of Circular No.96
	13	Management of significant waste-related impacts	GRI 306-2
	14	Waste generated	GRI 306-3
	15	Waste directed to disposal	GRI 306-5
Community	16	Scholarships	GRI 413-1
	17	Charity programs and funds to support the poor are directly organized by the enterprise for the community	
	18	Healthcare activities such as blood donation, organizing medical examination and treatment for local people	
	19	Developing local facilities and infrastructure	
	20	Charitable donations through other organizations	
	21	Job creation and vocational training for local residents	
	22	Community & social responsibility award	
Employment	23	New employee hires and employee turnover	GRI 401-1
	24	Benefits provided to full-time employees that are not provided to temporary or part-time employees	GRI 401-2
	25	Worker participation, consultation, and communication on occupational health and safety	GRI 403-4
	26	Average hours of training per year per employee	GRI 404-1
	27	Programs for upgrading employee skills and transition assistance programs	GRI 404-2
	28	Diversity of governance bodies and employees	GRI 405-1
	29	Significant investment agreements and contracts that include human rights clauses or that underwent human rights screening	GRI 412-3
	30	Average wages of workers	Appendix IV of Circular No.96
	31	Ratio of basic salary and remuneration of women to men	GRI 405-2

Table A2. CSR keyword dictionary development process

Step	Step Name	Description
Step 1	Extracting seed keywords from GRI Standards	For each of the 31 criteria. Seed keywords were extracted from the reporting language of GRI Standards 2020 and disclosure requirements under Circular 96/2020/TT-BTC. These keywords ensure construct validity - each keyword accurately reflects the content that GRI requires to be disclosed
Step 2	Manual coding of 1,360 reports (2019–2022)	The research team manually scored all 1,360 observations using a three-point scale (0/1/2). During this process, actual linguistic variants found in Vietnamese corporate reports were systematically recorded, including industry-specific abbreviations. Compound terms and expressions absent from the original English GRI text
Step 3	Iterative dictionary refinement	After each coding round, the dictionary was updated by: removing keywords that did not appear in the actual corpus; adding newly identified linguistic variants; and cross-checking keyword overlap across criteria to ensure measurement independence
Step 4	Cross-validation	The final dictionary was validated on a held-out dataset by comparing automated scores against manual scores. Results of ICC = 0.842 and CCC = 0.842 confirm the validity of the dictionary across all 31 criteria

Table A3. Inter-method reliability test results by year

Year	N	ICC	CCC	Pearson r	MAE	Bias
2019	328	0.646	0.646	0.680	0.035	+0.017
2020	336	0.926	0.926	0.929	0.032	+0.007
2021	340	0.886	0.886	0.888	0.034	+0.003
2022	342	0.893	0.893	0.897	0.043	+0.006
Total	1,360	0.842	0.842	0.844	0.036	+0.010

Note: ICC = Intraclass Correlation Coefficient (two-way mixed, absolute agreement); CCC = Lin's Concordance Correlation Coefficient; MAE = Mean Absolute Error expressed as a proportion of the [0.1] index scale; Bias = pipeline score minus manual score (positive value indicates pipeline overestimates).

Table A4. CEO social capital scoring criteria across ten dimensions

Source: Biographical information was hand-collected from annual reports, company websites and the Vietstock database.

Dimension	Label	Coding rule
SC1	Firm tenure	= 1 if CEO has ≥5 years at the firm and/or held multiple internal positions; = 0 otherwise
SC2	Leadership tenure	= 1 if CEO has held Vice-Director or above for ≥5 years; = 0 otherwise
SC3	Financial capital	= 1 if the CEO has previously held a position at a financial institution (e.g., a commercial bank or investment firm); = 0 otherwise.
SC4	Managerial capital	= 1 if CEO holds an MBA or undergraduate degree in Business Administration; = 0 otherwise
SC5	Business capital	= 1 if CEO has served as Vice-Director or above, or board member at another firm; = 0 otherwise
SC6	International capital	= 1 if CEO has worked or studied abroad; = 0 otherwise
SC7	Academic network	= 1 if CEO has worked at a university or research institute; = 0 otherwise
SC8	Industry network	= 1 if CEO has held a position in an industry association or chamber of commerce; = 0 otherwise
SC9	Legal capital	= 1 if CEO has professional experience in law or compliance; = 0 otherwise
SC10	Political network	= 1 if CEO has held a government position (any level) or served as director at a state-owned enterprise; = 0 otherwise