



ISSN: 2617-6548

URL: www.ijirss.com



Diverging perceptions, converging outcomes? The role of provincial governance in corporate innovation in Vietnam

Cao Chuong Nguyen

Hanoi Open University B101 Nguyen Hien Str., Hai Ba Trung Dist., Hanoi, Vietnam 11650.

(Email: chuongnc@hou.edu.vn)

Abstract

The objective of this study is to analyze the impacts of subnational governance on innovation at the corporate level in Vietnam using the Provincial Competitiveness Index (PCI) and the Provincial Governance and Public Administration Performance Index (PAPI) as principal indicators. The analysis uses panel data from the 63 provinces for the years 2011 to 2021. Regression analysis is conducted to evaluate the relationship between business R&D investment and PCI and PAPI. Both indices measure the same phenomenon but from different angles: the PCI is based on governance perceptions from the business community while PAPI is based on participatory citizen assessments. The findings suggest that both indicators of PCI and PAPI are significantly relevant for corporate R&D investment decisions but in different ways. While PCI clearly encourages higher R&D, PAPI does not seem to have substantial influence on empowerment. Additionally, the relationship between PCI and PAPI rankings is weak, showing that there is some disconnect between business and citizen views of the effectiveness of local governance. The results support that innovation at the firm-level is primarily driven by governance quality, as measured by PCI, while citizen governance measure, PAPI, is not as strongly linked to innovation-relevant corporate outcomes. Policymakers can enhance the local innovation ecosystem by prioritizing improvements in governance dimensions such as transparency, regulatory quality, and administrative support as measured by the PCI.

Keywords: PAPI, PCI, Provincial administration, R&D investment.

DOI: 10.53894/ijirss.v8i12.11016

Funding: This study was funded by project code B2023-MHN-04 from the Ministry of Education and Training of Viet Nam.

History: Received: 14 October 2025 / **Revised:** 12 November 2025 / **Accepted:** 17 November 2025 / **Published:** 5 December 2025

Copyright: © 2025 by the author. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).

Competing Interests: The author declares that there are no conflicts of interests regarding the publication of this paper.

Transparency: The author confirms that the manuscript is an honest, accurate, and transparent account of the study; that no vital features of the study have been omitted; and that any discrepancies from the study as planned have been explained. This study followed all ethical practices during writing.

Publisher: Innovative Research Publishing

1. Introduction

Vietnam's vertical governance structure has changed for the better since the early 1990s. There has been a shift from a unitary system to a more decentralized approach which has allowed provinces to gain more autonomy with business facilitation activities like licensing, inspections, land allocation, and even procurement, which are now handled by the provincial governments [1]. Coupled with the above changes, the provincial People's Committee Chairs (PCOMs) have

been given considerable administrative and budgetary control over the various provincial departments, leading to greater fiscal decentralization which ultimately places local governments in the driver's seat when it comes to determining a given firm's regulatory framework [2, 3]. As a result, in addition to other factors, the governance quality at the provincial level has become an increasingly important determinant of the innovation investment decisions made by firms [4].

To monitor and assess provincial governance, Vietnam has adopted two major indices: the Provincial Competitiveness Index (PCI) and the Provincial Governance and Public Administration Performance Index (PAPI). The PCI, for example, developed by the Vietnam Chamber of Commerce and Industry (VCCI) and USAID, is focused on the perception of economic governance and the transparency of administrative burdens, while PAPI, designed by UNDP in partnership with Vietnamese civil society organizations, captures citizens' perception of public service delivery, participation, accountability, and the control of corruption. Despite focusing on the same domain of governance, the indices differ in their primary survey participants, research design, and focus.

Initial findings indicate there may be a considerable split gap between the two indices. Take the correlation between PCI and PAPI scores across provinces, for instance. It remains scant, which rather brings to the fore how corporates and citizens might regard the same governance systems quite differently. This gap is notable not only in terms of interest, but also in terms of practice in assessing the credibility, range, and applicability of governance evaluation frameworks in a unitary context. The purpose of this study is to examine the gap in governance evaluation by focusing on PCI and PAPI indices for the years 2021 to 2023. We focus on the structure of the indices and ranking of the provinces to analyze the impact of the indices on innovation investment at the firm level in 2011-2021 through regression analysis.

In so doing, this research adds value to the existing corpus of literature in two dimensions. First, the literature gap which deals with contrasting evaluations of public governance from citizens' and corporates' angles in a decentralized developing economy, is addressed. Second, there is a contribution in the methodology by merging citizen and corporate governance indices into a single framework and estimating the influence of those indices on the level of innovation in the firm. These two indices provide a better understanding of provincial governance in all its complexity as well as its economic impact.

The structure of this paper is as follows: Section 2 reviews the relevant literature; Section 3 summarizes PCI and PAPI performance from 2021 to 2023; Section 4 describes the data sources and variable construction; Section 5 presents the empirical results; and the final section provides conclusion.

2. Literature review

2.1. Corporate Innovation

So far, a lot of research has been published concerning the underlying reasons that drive a company towards developing innovations. Within corporate finance, several internal factors of a firm influence the innovation performance, such as the incentives given to a CEO [5, 6] firm's ownership structure [7, 8] and the experience of managers [9]. For instance, greater innovation is linked to having state and foreign institutional ownership, whereas innovation incentives are diminished due to insider ownership. Some market-based elements also matter, including stock liquidity which is associated with declining long-term innovation [10, 11].

Besides the firm-specific characteristics, the innovative approaches adopted by a firm are greatly determined by the external business environment influencing it. Research shows that the degree of financial development [12] legal protections available to managers [13] and the extent of local corruption [14] significantly shape firms' innovation policies.

The role of government along with the market system in supporting innovation and growth, particularly in new emerging markets is vitally important. This has been tackled in a number of scholarly articles in the field of development economics [15-17]. Many scholars operate under the broad premise of national governance or cross-country comparison, leaving the exploration of subnational, particularly provincial institutional heterogeneity's impact on firm innovation in a single developing economy's system in lack balance.

2.2. Public Governance

The impact of public governance is considerably strong for business outcomes, marketing strategies, sinking, and the highly competitive business ecosystem they live in including innovation. For example, effective governance has been shown to relieve financing constraints [18] decrease corporate cash reserves [19] and reduce fraud risk [20]. More powerful governance mechanisms reduce agency issues, and with fewer agency problems, firms will be able to allocate resources to radical innovation on a long-term basis [21].

In the Vietnamese context, provincial governance plays an undeniable role due to the country's decentralization strategies. There is strong evidence about unequal access to land, entry barriers, and bribery at provincial level and the economic performance of that geographic region and the quality of Governance as suggested by Nguyen and van Dijk [22]. Even with the existence of governance metrics like the PCI for businesses and PAPI index for citizens, very few studies focus on how these tools capture differing stakeholder perspectives or their relationship with organizational behavior.

In sum, this systemic gap was verified through literature review, and it became evident that while governance was considered an important driver of innovation, little was known about the impact of subnational governance, particularly from the 'both firm and citizen's angle, in the context of a developing economy. This gap is covered in this paper as we analyze the PCI and PAPI indices in relation to their impact on corporate innovation, hence broadening the understanding of the effectiveness of governance at the provincial level.

3. Status of Public Administration Performance Assessment by PCI And PAPI from 2021 To 2023

3.1. Differences in the Content of PCI and PAPI

The PCI report is an annual affair that attracts considerable attention and has a constructive impact on the governance at all provincial and municipal tiers in Vietnam. PCI denotes an important source of information for the domestic business community and investment decision making not only for foreign but also for domestic investors. Surveys conducted by PCI provide a valuable feedback mechanism for many local leaders enabling them to reasonably evaluate the effects of shifts in policies aimed at enhancing the business environment and provincial competitiveness.

Simultaneously, the PAPI is a monitoring and evaluating policy implementation tool within the governance and public administration sphere assessing the implementation efficiency in Vietnam. There is a process of empirical evaluation where PAPI's indices are derived from surveys which capture citizens' interactions and participation with governmental institutions and public services as well as public governance.

Table 1.

The following outlines the key differences in assessment between PCI and PAPI.

	PCI	PAPI
	Provincial Competitiveness Index	Provincial Governance and Public Administration Performance Index
Objective	Both PAPI and PCI aim to assess the effectiveness of provincial governance and administration, thereby promoting the competitiveness of provinces.	
Participants	Approximately 10,000 corporates annually	Approximately 14,000 citizens annually
Survey Method	Mail and phone surveys	On-site surveys, direct citizen interviews
Survey Scope	63 provinces/cities, annually since 2006	63 provinces/cities, annually since 2011
Implementing Agencies	Vietnam Chamber of Commerce and Industry (VCCI) U.S. Agency for International Development (USAID)	Centre for Community Development and Support (CECODES) Vietnam Fatherland Front (VFF) United Nations Development Programme (UNDP) Research Consulting & Technology Development Firm (RTA)
Composite Index Construction	The comprehensive methodology for building provincial-level indices like PAPI and PCI is crucial for facilitating comparisons and identifying priorities in public governance based on the experiences of citizens and businesses. There are three steps in index construction: Data Collection, Index Construction, and Adjustment.	
	Combines survey data with "hard" data (statistical data)	Uses only survey data
	10 component indices, 128 specific indicators	8 content components 22 sub-content components 90 specific indicators
Content Axes	1. Entry Costs 2. Land Access and Security of Tenure 3. Transparency and Access to Information 4. Time Costs for State Regulations 5. Informal Charges 6. Fair Competition 7. Proactivity and Pioneering Leadership of Provincial Authorities 8. Business Support Services 9. Labor Training 10. Legal Institutions and Security and Order	1. Citizen Participation at Local Level 2. Transparency in Local Decision-Making 3. Accountability to Citizens 4. Control of Corruption in the Public Sector 5. Public Administrative Procedures 6. Public Service Delivery 7. Environmental Governance 8. E-Governance

3.2. Trends in PCI and PAPI Indices from 2021 to 2023

Building on the PCI data's strengths, this subsection offers insights on local economic governance over the past three years post its 2021 methodological revision. The most notable aspects of provincial-level economic administration are captured through shifts in the CSTP sub-indices of PCI P shown in Figure 1, with seven notable focal points:

- Corporate support efforts are showing significant positive improvements.
- Informal costs continue to decline.
- Market entry procedures have become easier.
- Administrative procedure reforms have yielded numerous positive outcomes.
- Obstacles in land access tend to increase.
- Small and medium-sized corporates (SMEs) desire a more equitable business environment.

- There is a need to foster dynamism and pioneering spirit among local government officials.

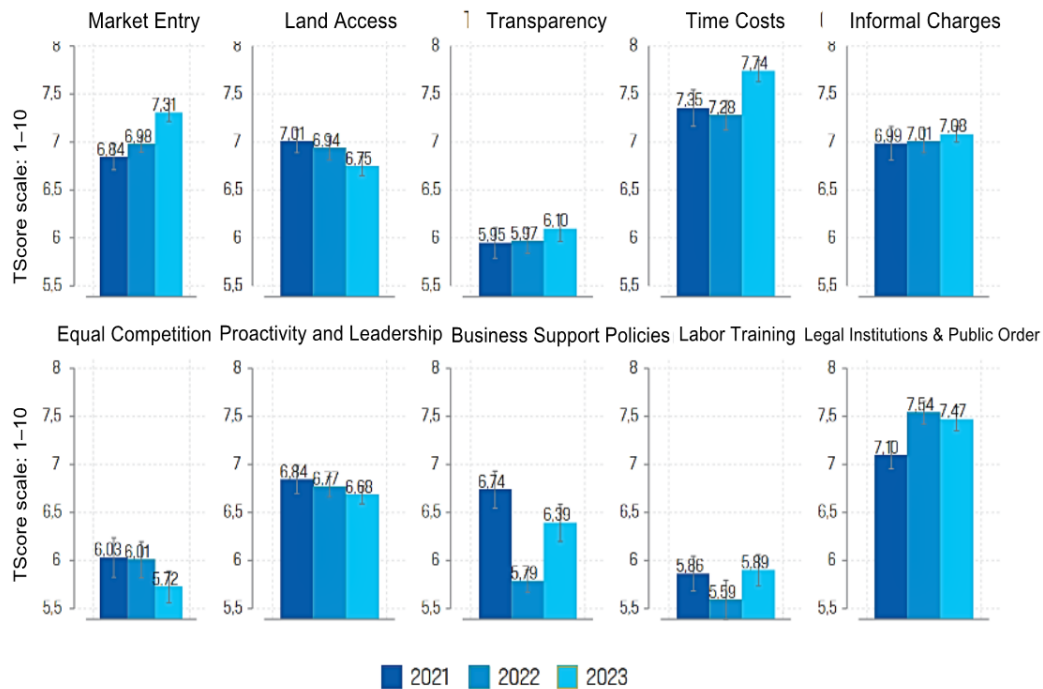


Figure 1.
Scores of the 10 PCI Component Sub-Indices from 2021 to 2023.
Source: Vietnam Chamber of Commerce and Industry (VCCI) [23].

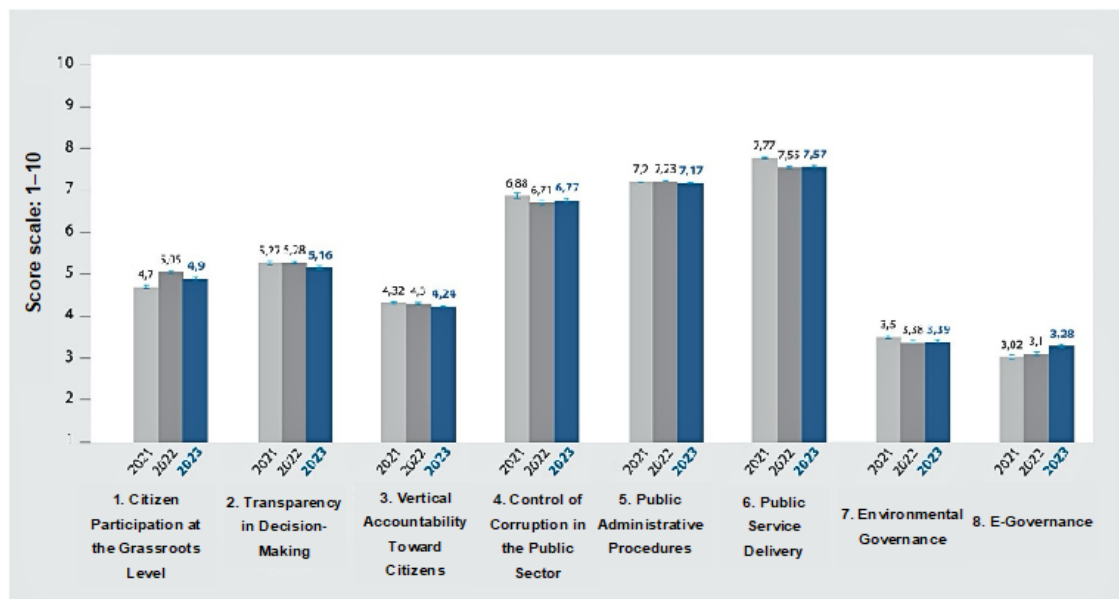


Figure 2.
Scores of the 8 PAPI Component Dimensions from 2021 to 2023.
Source: Centre for Community Support and Development Studies (CECODES) [24].

In addition, Figure 2 illustrates the shifts in scores for the eight content components of PAPI from 2021 to 2023. As in the previous two years, 2023 also exhibited results with mixed improvements and declines with effectiveness depending on the specific content area, most notably. Compared to 2022:

- Control of Corruption in the Public Sector (Component 4) and E-Governance (Component 8) both demonstrated improvement.
- The two content components Public Service Delivery (Component 6) and Environmental Governance (Component 7) showed almost no change.
- However, the remaining four content components experienced a decline.

4. The Relationship Between PAPI/PCI and Corporate R&D Investment

To assess the divergence between PAPI and PCI, we investigate the impact of these two indices on corporates by employing statistical techniques such as regression analysis. Specifically, we examine the relationship between a province's PCI/PAPI score and the level of Research and Development (R&D) investment by corporates within that province, controlling for other factors that might influence investment in innovation, as well as specific corporate characteristics.

4.1. Research Data

The dataset used in this study is compiled of three primary data sources:

(i) PCI reports covering all 63 provinces and cities of Vietnam from 2011 to 2021; (ii) The PAPI for all 63 provinces and cities from 2011 to 2021; (iii) Secondary data from audited financial statements available on FiinPro, provided by FiinGroup Joint Stock Company (Vietnam). FiinPro is Vietnam's first comprehensive and in-depth financial database system, co-developed by FiinGroup and QUICK Corp (part of Japan's Nikkei group). FiinPro encompasses extensive data on over 3,000 public companies, whose total revenue accounts for nearly 70% of Vietnam's GDP. The combination of these two databases yields a final sample comprising 6,541 observations over the period from 2011 to 2021.

4.2. Methodology

4.2.1. Key variables

We measure the digital transformation capability of corporates based on the Research and Development (R&D) fund reported in their financial statements. The R&D fund reflects the value of the unutilized R&D fund at the time of the report. Accordingly, this study calculates the RD index as 1 if the R&D fund balance is non-zero and 0 otherwise. An increase in this variable signifies an increase in the R&D investment fund, indicating greater corporate investment in innovation, and vice versa.

Regarding the effectiveness of provincial public administration, the study utilizes the PAPI and PCI indices to evaluate and rank Vietnam's provincial and municipal governments on the quality of economic governance and business environment development.

4.2.2. Control variables

(1) *Firm Size (SIZE)* is a crucial factor determining the capital structure of a corporate and is measured by the natural logarithm of total assets. Firm size also affects a company's profitability. Thong [25] indicated that small corporates face significant barriers in adopting information technology systems and are less likely to implement them compared to large corporates. Therefore, when an corporate intends to implement a digital transformation program, firm size will be a factor influencing the capital invested in science and technology.

(2) *Leverage Ratio (LEV)*: This variable helps corporates determine the total debt relative to their assets and allows for a comparison of leverage levels across corporates. It is defined by the following formula:

$$LEV = \frac{\text{Short-term Debt} + \text{Long-term Debt}}{\text{Total Assets}} \quad (1)$$

A higher ratio indicates a greater level of risk for the corporate. This ratio assesses the corporate's ability to meet its current debt obligations and investment debts. If an corporate has a high level of debt, it is less likely to have reserve capital for R&D investment; thus, LEV should be included in the regression model.

(3) *Cash Holdings Ratio (CASH)* is defined as the total cash and cash equivalents divided by total assets. Cash flow is utilized for conducting business operations, repaying loans, and distributing dividends to investors. If a corporation cannot maintain sufficient cash assets, it will directly impact on the company's business operations. Therefore, CASH is included as a control variable to examine whether PCI/PAPI influences R&D investment even after eliminating the effect of CASH.

$$\text{Cash Ratio} = \frac{\text{Cash}}{\text{Total Assets}} \quad (2)$$

(4) *ROA - Return on Total Assets*: This ratio measures the company's profitability per unit of assets. A higher ROA indicates better efficiency in the company's use of capital, implying that the company can allocate or effectively utilize its R&D capital.

$$ROA = \frac{\text{Net Income Available to Common Shareholders}}{\text{Total Assets}} \quad (3)$$

Table 2.
Data Description.

Variable	Observation	Mean	Std. Dev.	p25	p50	p75
PAPI	6541	36.975	6.778	35.042	36.893	41.605
PCI	6541	61.998	4.264	59.000	61.429	65.189
RD1	6541	0.854	0.353	1.000	1.000	1.000
RD2	6541	19.795	8.425	20.981	22.921	24.196
LEV	6541	0.506	0.375	0.266	0.499	0.698
SIZE	6541	26.545	1.767	25.493	26.571	27.675
ROA	6541	0.044	0.081	0.009	0.038	0.080
CASH	6541	0.087	0.099	0.018	0.052	0.117

Table 2 presents the descriptive statistics of the control variables used in the study, including sample size, mean values, and related metrics. All continuous variables have been winsorized at the 1% and 99% levels to remove outliers. Specifically, the mean values for RD1 and RD2 are 0.854 and 19.795, respectively. The average PAPI and PCI indices for all provinces are 36.975 and 61.998, and the control variables are consistent with prior research.

4.2.3. PAPI/PCI Index and R&D Investment Fund

We test the relationship between the effectiveness of provincial public administration and corporate R&D funds by estimating the following regression model:

$$RD_{i,t} = \beta_0 + \beta_1 PCI_{i,t-1} + y_t + \varepsilon_{i,t} \quad (4)$$

where $RD_{i,t}$ denotes the science and technology development investment index, estimated in year t . "Index" represents either the PCI or PAPI score, evaluating the effectiveness of provincial public administration in year $t-1$ (using lagged values to account for potential causality and reduce endogeneity). X is a vector of control variables, as presented in section 3.2.2, calculated in year t . Year fixed effects (denoted as y_t) are included in our baseline model. The critical element here is the coefficient β_1 , which reflects the impact of provincial public administration performance on corporate R&D investment funds. We present the results of Equation 4 in Table 3.

Since RD1 is a binary variable, we employ a Logit model. For RD2, which exhibits numerous zero values, we utilize a Tobit model to conduct the regression analysis. The coefficients for RD1 and RD2 in these columns are consistently positive and statistically significant at the 1% level. In columns (1) and (2), the coefficient for PAPI is not statistically significant. Conversely, in columns (3) and (4), the PCI coefficients are both positive and statistically significant at the 1% level. This finding provides evidence that public administrative efficiencies, as assessed by PCI, exert an impact on corporate R&D investment. The control variables SIZE, ROA, and CASH exhibit positive and statistically significant coefficients, which aligns with findings from previous research [26, 27].

Table 3.
PAPI/PCI indices and Corporate R&D investment.

Variable	(1)	(2)	(3)	(4)
	RD1	RD2	RD1	RD2
PAPI	0.034	0.121		
	(1.49)	(1.59)		
PCI			0.052***	0.171***
			(4.12)	(4.36)
LEV	0.223**	0.475	0.220**	0.458
	(2.06)	(1.08)	(2.02)	(1.05)
SIZE	0.234***	1.378***	0.227***	1.354***
	(11.00)	(17.92)	(10.61)	(17.68)
ROA	1.324**	5.980***	1.350***	6.038***
	(2.53)	(2.80)	(2.58)	(2.84)
CASH	0.449	2.235	0.352	1.972
	(1.19)	(1.56)	(0.93)	(1.38)
Constant	-5.564***	-21.841***	-7.275***	-27.120***
	(-5.60)	(-6.40)	(-8.08)	(-8.88)
Observations	6,541	6,541	6,541	6,541
Year FE	C6	C6	C6	C6
Pseudo R ²	0.038	0.011	0.041	0.012

Thus, in correlation with the R&D investment fund of corporates within a province, the PCI index directly impacts corporate innovation investment, rather than the PAPI index. Therefore, provincial-level administrative bodies need to prioritize and enhance the PCI index to support and incentivize corporates to invest in innovation, thereby fostering local economic development.

5. Conclusion

This study shows that PCI has a positive and statistically relevant effect on corporate R&D investment; however, the models analyzed did not show meaningful effects for Provincial Governance and PAPI. The results with PCI coefficients are significantly different from zero at the 1% level. This reinforces the notion that public administrative effectiveness, as perceived by the business community, influences innovative activities of firms.

These results imply that provincial governments should shift their attention to PCI's dimensions focusing on transparency, regulatory quality, and support services to foster an ecosystem that encourages innovation at a corporate level. At the same time, the methodologies of both PCI and PAPI can be improved with better coverage of respondents, context-specific tailoring of questions, and managing expectation biases that distort perceived social realities. Achieving these objectives will enable more reliable and valid evaluations of governance across provinces.

To align more directly with innovation-related governance frameworks, the evaluation criteria, especially those concerning administrative burden, legal corroboration, and financing accessibility, need to be fine-tuned, including previously defined indicators. Increasing corporate participation in the evaluation process will enhance the perceived transparency and trust in governance reforms as policies developed foster greater accountability.

It was noted that PCI and PAPI, regardless of being constructed from distinct stakeholder inputs: businesses and citizens, provide differing yet holistic insights into provincial governance. However, only PCI associates directly with corporate R&D activities, proving its significance for economic policymaking. Strengthening governance as per PCI undertakings, improving the assessment mechanisms, and reinforcing the guiding structure should be primary focus areas for enhancing innovation and stimulating sustainable local advancement.

References

- [1] J. Bai, S. Jayachandran, E. J. Malesky, and B. A. Olken, "Firm growth and corruption: Empirical evidence from Vietnam," *The Economic Journal*, vol. 129, no. 618, pp. 651–677, 2019. <https://doi.org/10.1111/ecoj.12560>
- [2] E. J. Malesky, "Straight ahead on red: how foreign direct investment empowers subnational leaders," *The Journal of Politics*, vol. 70, no. 1, pp. 97–119, 2008. <https://doi.org/10.1017/S0022381607080085>
- [3] K. E. Meyer and H. V. Nguyen, "Foreign investment strategies and sub-national institutions in emerging markets: Evidence from Vietnam," *Journal of management studies*, vol. 42, no. 1, pp. 63–93, 2005. <https://doi.org/10.1111/j.1467-6486.2005.00489.x>
- [4] E. Malesky, "Decentralization and economic development in Vietnam," *Routledge handbook of contemporary Vietnam*, pp. 203–219, 2022.
- [5] A. Galasso and T. S. Simcoe, "CEO overconfidence and innovation," *Management science*, vol. 57, no. 8, pp. 1469–1484, 2011. <https://doi.org/10.1287/mnsc.1110.1374>
- [6] H.-H. C. Shen and H. Zhang, "Tournament incentives and firm innovation," *Review of Finance*, vol. 22, no. 4, pp. 1515–1548, 2018. <https://doi.org/10.1093/rof/rfx037>
- [7] S. Choi, S. Lee, and C. Williams, "Ownership and innovation: Evidence from Korea," *Research Policy*, vol. 40, no. 3, pp. 494–507, 2011.
- [8] H. Luong, H. Vu, and T. Nguyen, "Foreign ownership and firm innovation: Evidence from Vietnam," *Emerging Markets Finance and Trade*, vol. 53, no. 3, pp. 552–568, 2017.
- [9] M. Ayyagari, A. Demirgüç-Kunt, and V. Maksimovic, "Firm innovation in emerging markets: The role of finance, governance, and competition," *Journal of Financial and Quantitative Analysis*, vol. 46, no. 6, pp. 1545–1580, 2011.
- [10] V. W. Fang, X. Tian, and S. Tice, "Does stock liquidity enhance or impede firm innovation?," *The Journal of Finance*, vol. 69, no. 5, pp. 2085–2125, 2014. <https://doi.org/10.1111/jofi.12187>
- [11] T. G. Nguyen and M. Nguyen, "Stock liquidity and firm innovation: The role of investor protection and external finance dependency," *Available at SSRN 4510260*, 2023.
- [12] P.-H. Hsu, X. Tian, and Y. Xu, "Financial development and innovation: Cross-country evidence," *Journal of financial economics*, vol. 112, no. 1, pp. 116–135, 2014. <https://doi.org/10.1016/j.jfineco.2013.12.002>
- [13] C. Lin, S. Liu, and G. Manso, "Shareholder litigation and corporate innovation," *Management Science*, vol. 67, no. 6, pp. 3346–3367, 2021. <https://doi.org/10.1287/mnsc.2020.3626>
- [14] J. Ellis, J. Smith, and R. White, "Corruption and corporate innovation," *Journal of Financial and Quantitative Analysis*, vol. 55, no. 7, pp. 2124–2149, 2020. <https://doi.org/10.1017/S0022109019000735>
- [15] M. R. Alam, E. Kiterage, and B. Bizuayehu, "Government effectiveness and economic growth," *Economic Bulletin*, vol. 37, no. 1, pp. 222–227, 2017.
- [16] S. Sabir, A. Rafique, and K. Abbas, "Institutions and FDI: Evidence from developed and developing countries," *Financial Innovation*, vol. 5, no. 1, pp. 1–20, 2019.
- [17] L. E. Misi Lopes, N. Packham, and U. Walther, "The effect of governance quality on future economic growth: an analysis and comparison of emerging market and developed economies," *SN Business & Economics*, vol. 3, no. 6, p. 108, 2023. <https://doi.org/10.1007/s43546-023-00488-3>
- [18] J. P. Fan, O. M. Rui, and M. Zhao, "Public governance and corporate finance: Evidence from corruption cases," *Journal of comparative Economics*, vol. 36, no. 3, pp. 343–364, 2008.
- [19] G. Chen, M. Firth, D. N. Gao, and O. M. Rui, "Ownership structure, corporate governance, and fraud: Evidence from China," *Journal of Corporate Finance*, vol. 15, no. 3, pp. 424–448, 2014.
- [20] X. Zhang, X. Zhou, M. Lin, and J. Sun, "Shufflenet: An extremely efficient convolutional neural network for mobile devices," in *Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition*, 2018, pp. 6848–6856.
- [21] M. Jia, J. Huang, and M. Zhang, "Public governance and innovation: The role of agency risk," *Asia Pacific Journal of Management*, vol. 36, no. 2, pp. 363–392, 2019.
- [22] T. T. Nguyen and M. A. van Dijk, "Corruption, growth, and governance: Private vs. state-owned firms in Vietnam," *Journal of Banking & Finance*, vol. 36, no. 11, pp. 2935–2948, 2012. <https://doi.org/10.1016/j.jbankfin.2012.06.010>
- [23] Vietnam Chamber of Commerce and Industry (VCCI), "2023 PCI & PGI report," PCIVietnam, 2024. <https://pcivietnam.vn/en/publications/2023-pgipci-full-report-ct227>
- [24] Centre for Community Support and Development Studies (CECODES), "2023 PAPI report: Provincial governance and public administration performance index," UNDP Vietnam, 2024. <https://www.undp.org/vietnam/publications/2023-provincial-governance-and-public-administration-performance-index-papi-report>
- [25] J. Y. Thong, "An integrated model of information systems adoption in small businesses," *Journal of Management Information Systems*, vol. 15, no. 4, pp. 187–214, 1999.
- [26] Y. Yan, X. Xu, and J. Lai, "Does Confucian culture influence corporate R&D investment? Evidence from Chinese private firms," *Finance Research Letters*, vol. 40, p. 101719, 2021. <https://doi.org/10.1016/j.frl.2020.101719>
- [27] H. Beladi, J. Deng, and M. Hu, "Cash flow uncertainty, financial constraints and R&D investment," *International Review of Financial Analysis*, vol. 76, p. 101785, 2021.