THE IMPACT OF PUBLIC GOVERNANCE ON ECONOMIC GROWTH IN THE CENTRAL PROVINCES IN VIETNAM

TÁC ĐỘNG CỦA QUẢN TRỊ CÔNG ĐẾN TĂNG TRƯỞNG KINH TẾ CÁC TỈNH MIỀN TRUNG VIỆT NAM

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Abstract - Public governance is increasingly recognized as a key determinant of economic growth quality, particularly in developing countries and regions. This study examines the impact of public governance on economic growth in the central provinces of Vietnam during the period 2011-2023. Panel data are collected from official statistical sources and estimated using Pooled OLS, Fixed Effects Model (FEM), Random Effects Model (REM), and Feasible Generalized Least Squares (FGLS). The results indicate that public governance factors exert a positive and statistically significant impact on local economic growth, with institutional quality, government effectiveness, and the business environment playing a prominent role. Based on these findings, the study proposes policy implications aimed at improving public governance quality to foster sustainable economic growth in Vietnam's Central region.

Key words - Public governance; economic growth; panel data; Central Vietnam.

Tóm tắt - Quản trị công là nhân tố then chốt quyết định chất lượng tăng trưởng kinh tế, đặc biệt tại các quốc gia và địa phương đang phát triển. Nghiên cứu này phân tích tác động của quản trị công đến tăng trưởng kinh tế tại các tỉnh miền Trung Việt Nam trong giai đoạn 2011-2023. Dữ liệu bảng được thu thập từ các nguồn thống kê chính thức và được ước lượng bằng các mô hình hồi quy dữ liệu bảng gồm Pooled OLS, mô hình hiệu ứng cố định (FEM), mô hình hiệu ứng ngẫu nhiên (REM) và bình phương tối thiểu tổng quát khả thi (FGLS). Kết quả cho thấy, các yếu tố quản trị công có ảnh hưởng tích cực và có ý nghĩa thống kê đến tăng trưởng kinh tế của các địa phương miền Trung, trong đó chất lượng thể chế, hiệu quả quản lý nhà nước và môi trường điều hành kinh tế đóng vai trò nổi bật. Trên cơ sở đó, nghiên cứu đề xuất một số hàm ý chính sách nhằm nâng cao chất lượng quản trị công, góp phần thúc đẩy tăng trưởng kinh tế bền vững tại khu vực miền Trung.

Từ khóa - Quản trị công; tăng trưởng kinh tế; dữ liệu bảng; miền Trung; Việt Nam.

1. Introduction

In the current global context, countries are confronting a range of complex challenges, including population ageing, macroeconomic fluctuations, technological transformation, climate change, and the need to sustain long-term economic growth. In response to these challenges, building and operating an effective public governance system is regarded as a foundational condition for enhancing the government's administrative capacity and ensuring long-term development effectiveness. Institutional economics theories emphasize that the quality of public governance and institutions plays a decisive role in reducing transaction costs, securing property rights, and establishing a stable institutional environment for economic activity [1], [2].

From the perspective of new institutional economics, good public governance helps establish credible state commitments to policy stability and the protection of property rights, thereby strengthening the confidence of the private sector and investors. Many international empirical studies show that countries with high-quality public governance tend to achieve more sustainable economic growth and reduce poverty and inequality more effectively by improving the the efficiency of public resource allocation and utilization [1], [2], [3]. Conversely, in developing countries where public governance quality

remains limited, the impact of public governance on economic growth is often heterogeneous and strongly dependent on specific institutional contexts [4].

In Vietnam, the relationship between public governance and economic growth has been examined in numerous studies through provincial-level indices of governance quality, such as the Provincial Competitiveness Index (PCI) and the Provincial Governance and Public Administration Performance Index (PAPI). Research findings indicate that transparency, informal costs, the effectiveness of public service delivery, and the quality of local economic administration have significant effects on attracting investment, expanding production and business activities, and GRDP growth [5], [6]. However, most of these studies focus on the national scope or economically advanced regions, while territorial analyses that account for regional specificities in development conditions and comparative advantages have not received sufficient attention.

According to the Government's orientation for socio-economic development zoning, the Central region is identified as one of the new growth poles in the national development strategy for 2021–2030, with a vision to 2050. Although economic growth in the Central region has been relatively positive, its economic scale remains smaller than that of the two major growth poles in the North and

the South. At the same time, it faces multiple structural challenges, including incomplete and asynchronous socio-economic infrastructure, uneven capacity for development administration across localities, environmental pressures, and the increasingly severe impacts of climate change.

In this context, the quality of public governance is considered a key factor determining the ability to effectively mobilize resources and sustain economic growth in the Central region. Nevertheless, empirical studies that systematically analyze the impact of public governance on economic growth at the provincial level in the Central region remain relatively limited and have not fully captured the region's institutional specificities, natural conditions, and level of development [3], [6]. This research gap creates an urgent need for in-depth studies based on provincial panel data to clarify the role of public governance in economic growth in Central Vietnam.

Motivated by this need, this study is conducted to provide empirical evidence on the impact of public governance on economic growth in the central provinces during 2011–2023, thereby contributing to the scientific basis for policymaking and proposing appropriate solutions toward effective and sustainable socio-economic development of the region in the coming period.

2. Literature review

2.1. Theoretical foundations

Within the framework of new institutional economics, institutions are understood as a system of formal and informal rules that govern the behavior of agents, thereby determining the efficiency of economic functioning. North (1990) emphasizes that institutions reduce uncertainty in transactions by lowering transaction costs, securing property rights, and enhancing contract enforcement capacity [1]. On this basis, public governance is viewed as a mechanism that ensures the stable operation of the "rules of the game", thereby creating a favorable environment for investment and production expansion.

The causal mechanism of institutions is further supported by transaction cost theory. Coase argues that transactions inevitably entail costs of information search, bargaining, monitoring and enforcement; therefore, the better the quality of institutions and governance, the lower the transaction costs and the more efficiently markets function [7]. Williamson further develops this argument by emphasizing the role of institutional design and monitoring mechanisms in constraining opportunistic behavior, thereby improving coordination efficiency and resource allocation [8].

In parallel, modern growth theories and endogenous growth theory highlight the role of the state in enabling long-run growth through infrastructure investment, human capital development, and the promotion of innovation. In endogenous growth models, technological progress and knowledge accumulation are central drivers of long-run growth [5]; the effectiveness of transforming these resources depends largely on the public sector's capacity for policy formulation, implementation, and oversight. From a growth perspective, Barro and Sala-i-Martin also emphasize capital

accumulation, productivity, and institutional conditions as important factors explaining growth differentials across economies [3]. Accordingly, good public governance can be expected to increase the efficiency of resource use and raise the rate of economic growth.

Conceptually, governance is commonly understood as the manner in which power is exercised in managing socio-economic resources to serve development. The World Bank emphasizes that governance is associated with the exercise of state authority and power in managing resources for development objectives [9]. This approach is also consistent with widely used governance measurement frameworks such as the Worldwide Governance Indicators (WGI), which highlight core components including accountability, government effectiveness, the rule of law, and control of corruption [10].

At the local level, local public governance is closely related to decentralization, self-governance, and the capacity to deliver public services. Aijaz argues that local governance is a component of public governance that focuses on addressing socio-economic issues within a defined territory through assigned responsibilities and linkage mechanisms between government and citizens [11]. Faguet also points out that decentralization can improve service delivery efficiency and accountability if accompanied by appropriate monitoring mechanisms [12]. Therefore, in the context of Vietnam's efforts to promote decentralization, assessing the impact of local public governance on growth has clear practical relevance.

2.2. Empirical studies

International empirical studies generally indicate a positive relationship between governance and institutional quality and economic growth, particularly in developing countries. Acemoglu and co-authors emphasize that institutions are a fundamental cause of long-run growth by securing property rights, reducing uncertainty, and promoting investment [2]. Many studies also show that good governance enhances the efficiency of public spending and improves the investment environment, thereby supporting sustainable growth [13].

At the local level, panel-data studies suggest that differences in governance across provinces/cities can substantially explain growth disparities through channels such as investment attraction, reductions in informal costs, and improved efficiency of resource allocation. Empirical evidence from China indicates that provincial-level governance quality has a significant effect on local economic growth [14]. In Vietnam, numerous studies use provincial-level governance/administration indices to quantify impacts on GRDP growth, emphasizing the role of institutional quality in growth performance [4], [6].

Several studies in Vietnam find that the effects of public governance on growth are not fully uniform across dimensions. For example, Dao Quyet Thang and co-authors, using provincial-level data, find that certain governance pillars (such as corruption control, public administrative procedures, and public service provision) have positive effects on growth, whereas factors such as transparency or accountability may yield different results depending on the

period and context [15]. In addition, studies also document that good governance can increase the effectiveness of public spending and private investment, thereby generating spillover effects on growth [16].

Nevertheless, the impacts of public governance may involve lags and institutional adjustment costs, meaning that short-run effects may not fully reflect long-run benefits. For the Central region - where development conditions are uneven and natural and infrastructure constraints are substantial - the relationship between public governance and growth may be context-specific; therefore, it requires testing using provincial panel data over a sufficiently long period. This constitutes the empirical gap that the present study seeks to address.

3. Model and research methods

3.1. Research data

This study employs panel data for 19 provinces/cities in Vietnam's Central region over the period 2011–2023, enabling the simultaneous exploitation of spatial variation (across provinces) and temporal variation (over years). The panel data approach has been widely used in studies on public governance and economic growth at the local level, as it helps more effectively identify institutional effects in the presence of inter-provincial heterogeneity [17], [18]. Data were collected from official secondary sources, including provincial Statistical Yearbooks, the Vietnam Statistical Yearbook, and provincial-level indices reflecting public governance quality (PAPI and PCI).

Variables in the model are selected based on data availability, reliability, and relevance to the research context. After collection, the data are processed, verified, and standardized to mitigate bias arising from missing observations or differences in measurement units across localities.

3.2. Research model

Based on the theoretical foundations of new institutional economics and endogenous growth models, together with domestic and international empirical evidence, this study develops a model to analyze the impact of public governance on local economic growth in the central provinces of Vietnam. Under this framework, public governance quality is treated as a key institutional factor that shapes the efficiency of resource allocation, improves the investment environment, and creates incentives for provincial-level economic growth [17], [18].

Building on extended growth models, local economic growth is explained as the combined outcome of traditional inputs (capital and labor), local fiscal policy, and an institutional factor represented by public governance quality. Incorporating public governance into the production function allows the institutional role in transforming resources into economic growth to be quantified more directly [3], [13].

The dependent variable is local economic growth, measured by GRDP at constant prices, expressed in natural logarithms, reflecting the scale and performance of provincial economic activity over time.

The main independent variables represent the quality of local public governance, measured through PAPI sub-indices and the composite PCI index. These indicators capture core dimensions of local administration and governance, including citizen participation, transparency, accountability, corruption control, public administrative procedures, public service delivery, and the overall institutional–business environment [19], [20].

In addition, the model includes several socio-economic control variables to reflect resource factors and structural conditions that directly affect economic growth, including investment capital, labor force, and local budget expenditures. Including these variables helps reduce omitted-variable bias and clarifies the distinct effect of public governance on local economic growth [5], [13].

The general form of the research model is specified as:

$$GRDP_{it} = \beta_0 + \beta_1 GOV_{it} + \beta_2 X_{it} + \varepsilon_{it}$$

where, $GRDP_{it}$ denotes the economic growth of province i at time t; GOV_{it} represents variables reflecting public governance quality; X_{it} is the set of control variables; and ε_{it} is the random error term. This model enables an assessment of the magnitude and direction of the impact of public governance on local economic growth while controlling for other socio-economic factors.

Table 1. Summary of variables in the research model

Variable Name	Symbol	Description/ Measurement	Expected Sign	References
Dependent variable	ln_GDP	Logarit GDP		[3], [4], [6]
Public governance	TG	Participation at local levels	+	[10], [15], [19]
	CK	Transparency in local decision-making	+	[9], [10], [15], [19]
	TN	Vertical accountability	+	[9], [10], [19]
	KS	Control of corruption	+	[8], [10], [15], [19]
	TTHC	Public administrative procedures	+	[12], [15], [19]
	CU	Public service delivery	+	[10], [14], [19]
	PCISum	Composite PCI	±	[4], [16], [20]
Control variable	ln_VDT	Logarit Total Investment	+	[3], [17], [18]
	ln_LD	Logarit Labor Force	+	[3], [14], [15]
	ln_chitieu	Logarit Local Expenditure	+	[3], [18], [16]

Note: *The variables TG, CK, TN, KS, TTHC, and CU are measured based on the PAPI Index by UNDP Vietnam [19]. The PCISum variable is obtained from the PCI Index published by VCCI and USAID [20]. Control variables are selected based on the extended Cobb–Douglas production function and empirical studies on provincial economic growth [3], [17], [18].*

Source: Author's compilation

3.3. Estimation methods

To estimate the research model, the study sequentially applies panel-data regression methods including Pooled OLS, the Fixed Effects Model (FEM), and the Random Effects Model (REM). Using these methods in parallel allows comparison of estimation results and selection of the model that best fits the characteristics of the dataset [2].

The Hausman test is employed to assess whether there

is a systematic difference between FEM and REM, thereby identifying the optimal estimation model. If the selected model exhibits heteroskedasticity or serial correlation over time - common violations in provincial panel data - the study applies Feasible Generalized Least Squares (FGLS). This method helps address violations of classical regression assumptions, thereby improving the efficiency and statistical reliability of the resulting estimates [3].

4. Results and discussion

4.1. Descriptive statistics

The study uses panel data for 19 provinces/cities in Vietnam's Central region over the period 2011–2023, comprising 247 observations. Table 2 reports descriptive statistics for the variables used in the regression model after natural logarithmic transformation, together with the public governance indices.

The results indicate a certain degree of differentiation in socio-economic variables across localities, reflecting differences in development scale and resources. The logarithmic variables exhibit moderate standard deviations, suggesting that the log transformation reduces dispersion and limits the influence of outliers, which is appropriate for panel regression analysis.

For the public governance variables, the mean values of the component indices range from 5.15 to 7.16, indicating a relatively good level of public governance. In particular, public administrative procedures (TTHC) display low dispersion, suggesting stability across localities, whereas accountability (TN) has a larger standard deviation, implying substantial differences in implementation quality among provinces. The composite PCI index shows a relatively wide range, reflecting pronounced disparities in the business environment within the study area.

Table 2. Descriptive statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
ln_GDP	247	10.43	0.61	8..84	11.88
ln_VDT	247	9.66	0.80	3.50	12.00
ln_LD	247	13.34	0.75	6.45	14.65
ln_chitieu	247	9.85	0.90	7.00	17.73
TG	247	5.16	0.51	3.96	6.81
CK	247	5.49	0.54	4.31	7.29
TN	247	5.15	0.71	3.86	7.64
KS	247	6.30	0.62	4.49	7.81
TTHC	247	7.09	0.30	5.90	7.79
CU	247	7.16	0.47	5.68	8.46
PCISum	247	61.61	4.41	48.96	70.42

Source: Data processing results from Stata

Overall, the study variables exhibit reasonable distributions with no severe abnormal values, ensuring the reliability of the dataset and its suitability for subsequent regression analyses.

Multicollinearity tests among the independent variables show that the Variance Inflation Factor (VIF) ranges from 1.43 to 3.29, with an average VIF of 2.11. Under common thresholds (VIF < 10, or more strictly VIF < 5), the independent variables do not exhibit serious multicollinearity.

Table 3. Multicollinearity Test (VIF)

Variable	VIF	1/VIF
CK	3.29	0.303909
TN	2.57	0.389784
PCISum	2.46	0.407145
CU	2.26	0.442236
KS	2.04	0.490521
TG	1.97	0.508362
ln_chitieu	1.88	0.532119
ln_VDT	1.76	0.566785
TTHC	1.48	0.673456
ln_LD	1.43	0.697385
Mean VIF	**2.11**	-

4.2. Regression results and discussion

The model is estimated using Pooled OLS, the FEM, and the REM to assess the impact of public governance on local economic growth. The Hausman test yields $\chi^2(10) = 7.42$ with p-value = 0.6849, therefore, the null hypothesis H_0 is not rejected, implying that REM is more appropriate than FEM for the study data.

Table 4. Model selection and diagnostic test results

Test	Statistics	P-value	Conclusion
Hausman	$\chi^2(10)$	7.42 (p=0.6849)	Select REM
White	$\chi^2(54)$	232.54 (p=0.0000)	Heteroskedasticity exists
Wooldridge	F(1,12)	9.306 (p=0.0101)	Autocorrelation exists
Final Estimation	-	-	Apply FGLS

Source: Data processing results from Stata

Table 5. FGLS regression results (Dependent variable: ln_GDP)

Variable	Coefficient	Std. err.	z	P>|z|
TG	-0.0355334	0.0430798	-0.82	0.409
CK	0.0668802	0.0523343	1.28	0.001
TN	-0.0115220	0.0357472	-0.32	0.747
KS	0.0219285	0.0369751	0.59	0.053
TTHC	-0.0207676	0.0654763	-0.32	0.751
CU	-0.0741486	0.0515430	-1.44	0.050
PCISum	0.0379675	0.0059692	6.36	0.000
ln_VDT	0.2872961	0.0328215	8.75	0.000
ln_LD	0.3119181	0.0360545	8.65	0.000
ln_chitieu	0.1501392	0.0302216	4.97	0.000
_cons	0.0882530	0.6266730	0.14	0.888

Note: Model FGLS by panels(heteroskedastic), corr(ar1).

Source: Data processing results from Stata

However, further diagnostic tests indicate that the REM specification suffers from heteroskedasticity (White: $\chi^2(54) = 232.54$; p = 0.0000) and first-order serial correlation over time (Wooldridge: F(1.12) = 9.306; p = 0.0101). These are common issues in provincial panel data and can bias standard errors and statistical inference. Accordingly, the study applies FGLS, assuming panel-specific heteroskedasticity and an AR(1) autocorrelation structure, consistent with recommendations in empirical studies on growth and institutions using panel data [13], [17].

4.2.1. The Role of resource factors

The FGLS estimates indicate that traditional resource factors play a dominant role in local economic growth. Specifically, investment capital (ln_VDT) and the labor force (ln_LD) both have positive effects with very high statistical significance ($p < 0.01$), reflecting the central roles of capital accumulation and human resources in the growth process. This finding is consistent with neoclassical growth and endogenous growth models, which emphasize the roles of capital, labor, and productivity in explaining growth differences across economies and localities [3], [5].

In addition, local budget expenditure (ln_chitieu) also has a positive and statistically significant effect ($p < 0.01$), indicating that public spending continues to support growth when allocated relatively effectively. This result aligns with the arguments of Barro and Sala-i-Martin [3] as well as empirical studies emphasizing the relationship between government expenditure, governance, and economic growth [18].

4.2.2. The impact of public governance on economic growth

Regarding the public governance variables, the Provincial Competitiveness Index (PCISum) exhibits a strong positive effect with very high statistical significance ($\beta = 0.0380$; $p = 0,000$). This result confirms the pivotal role of the business environment and local economic administration capacity for growth, consistent with studies using PCI at the provincial level in Vietnam [4], [16]. This implies that improving institutional quality in a business-friendly direction, reducing transaction costs, and enhancing policy predictability can generate direct and measurable impacts on GRDP growth.

Among the public governance components measured by PAPI, the transparency variable (CK) has a positive coefficient and is statistically significant, indicating that improving transparency in governance strengthens the confidence of firms and citizens, thereby enhancing the efficiency of resource allocation. This finding is consistent with Kaufmann et al.'s arguments on the role of transparency and accountability in improving governance effectiveness and growth [10], as well as empirical studies in Vietnam using PAPI [15].

Control of corruption (KS) shows a positive effect and is significant at a marginal level ($p \approx 0.053$), suggesting that anti-corruption efforts can support growth by reducing informal costs and improving investment efficiency, although the magnitude of the effect is not uniform across localities. This finding is consistent with empirical evidence indicating that the relationship between corruption and growth depends strongly on institutional context and enforcement capacity [8], [13].

By contrast, public service delivery (CU) yields a negative coefficient and is significant at the 5% level, suggesting that in the short run, improvements in public services may be accompanied by institutional adjustment costs, administrative restructuring, or policy lags, which reduce immediate growth effects and may generate positive effects in the long run. This finding is comparable to cautious evidence in the international literature, which argues that the effectiveness of public services depends not only on the level of provision but also on implementation quality and the composition of public expenditure [18].

The remaining variables - citizen participation (TG), accountability (TN), and public administrative procedures (TTHC) - are not statistically significant after controlling for resource factors and PCI. This suggests that the effects of these dimensions on growth may be indirect, operating through improvements in the investment environment and governance effectiveness, or may require longer lags to be fully realized within the study period.

5. Conclusions and policy implications

Based on panel data for provinces in Vietnam's Central region during 2011–2023, this study analyzes the impact of public governance on local economic growth using panel-data regression models. The diagnostic tests indicate that the REM is appropriate, while the application of FGLS addresses heteroskedasticity and autocorrelation, thereby ensuring the reliability of the estimates.

The empirical results show that public governance has a significant influence on economic growth in the Central region, most clearly reflected through provincial competitiveness (PCI), transparency, and control of corruption. By contrast, public service delivery exhibits a negative short-run effect, reflecting institutional adjustment costs and policy lags. In addition, resource factors such as investment capital, labor, and local budget expenditure all have positive and statistically significant effects, consistent with the development characteristics of the Central region, which remains strongly dependent on public investment and the quality of local administration.

Overall, the findings confirm that the relationship between public governance and economic growth in the Central region is interactive and multidimensional, and is strongly shaped by the region's institutional context.

Based on the empirical evidence, the study proposes several policy implications to improve public governance quality, use resources more effectively, and promote sustainable economic growth in Vietnam's Central region in the coming period, as follows.

First, provincial governments in the Central region should strengthen transparency in public governance to reduce information asymmetry and institutional costs. Provinces should expand disclosure of budgets, public investment, spatial planning, and land management, while developing open-data portals and social feedback mechanisms. Transparency policies should be designed flexibly to reflect sub-regional characteristics: prioritizing the strengthening of social trust in the Central Highlands; linking transparency with public investment oversight in the North Central area; and directly supporting the investment climate and urbanization in the South Central area.

Second, local governments should intensify anti-corruption control and strengthen public-sector integrity. Anti-corruption efforts should shift from a punitive approach toward systematic prevention through process transparency, the digitalization of administrative procedures, and enhanced independent oversight. For key economic provinces in the Central region, building the image of an integrity-based and professional government not only improves the investment environment but also generates institutional reform spillovers for the entire region.

Third, provincial governments should improve the quality of public service delivery in a focused and efficiency-oriented manner. Given that public services have not generated a clearly positive short-run effect on growth, policy should prioritize quality and efficiency rather than expansion in scale. Localities should accelerate administrative reform, digital transformation, and the "one-stop-shop" model, while aligning public services with the needs of enterprises and the labor market. Differentiating policies across sub-regions will help public services generate clearer economic effects over the medium and long term.

Fourth, local governments should enhance provincial competitiveness and improve the business environment. The results indicate that PCI is the institutional factor with the strongest and most stable impact on economic growth. Accordingly, localities should shift from the goal of improving index scores toward substantively improving the investment and business environment by simplifying administrative procedures, reducing informal costs, and increasing policy predictability. Key economic provinces in the Central region should play a leading role in reforms, creating spillover momentum for the broader region.

Fifth, provincial governments in the Central region should strengthen the role of local budget expenditure as an instrument to stimulate growth. Public spending should be restructured toward a higher share of development investment, with priorities given to inter-provincial infrastructure, digital transformation, and human capital training. Adopting medium-term budgeting, results-based budgeting, and stronger social oversight will help improve spending efficiency and transform local budgets into a spillover driver of sustainable growth.

Sixth, local governments should develop investment and labor resources in a sustainable direction. Central provinces should diversify investment financing sources, improve the efficiency of public investment, and attract stronger participation from the private sector and FDI. At the same time, greater emphasis should be placed on human capital development aligned with market needs, vocational training, and skill upgrading. When capital and labor are used effectively within a framework of good public governance, regional economic growth can become more stable, inclusive, and sustainable.

6. Limitations and directions for future research

Several limitations of this study include the absence of an assessment of endogeneity and the potential bidirectional relationship between public governance and economic growth, as well as the omission of the effects of trade openness and policy lags on growth. These issues point to directions for future research.

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