Good Governance and Human Development in Vietnam: Spatial Empirical Evidence

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ABSTRACT

The paper explores the impact of good governance's disaggregated components on human development in Vietnam by building a system of spatial equations and using a unique cross-province dataset. It finds that institutions prove to be a spatial phenomenon in Vietnam. It also finds that the spatial impact of good governance components differentiates across components of human development. That means good governance can be considered as the policy variables through which we can obtain a combination that sustains human development of the country as a whole and targets at spatial difficult areas. Several spill-over effects are found to exist that can guide policies in the future. The paper also finds that governance mostly affects aspects of human development such as political freedoms, and political participatory, while less on traditional components of human development such as income, health and education. This suggests that the government should consider these additional aspects in the process of handling governance to sustain human development.

Keywords: Human Development, Good Governance, System of Spatial Equations
JEL Classifications: O15, O53, C31

1. INTRODUCTION

Vietnam has continued to see improvements in the human development in terms of human development index (HDI), and ranked 113 out of 193 countries on the HDI globally in 2010. Over the past decade, progress in the HDI has come mostly from income growth (rather than either life expectancy and/or education progress) as a result of impressive economic growth (UNDP, 2011). UNDP (2002) has pointed out that strong governance institutions and effective public administration are critical elements of success for not only economic growth, but also human development. There is no doubt that the current governance regime has been contributing positively to the success of Vietnam's human development (UNDP, 2002).

According to UNDP (2011), although life expectancy has continued to rise in Vietnam, its rate of progress slowed in the 1999-2008 period. With respect to the third dimension of human development, growth in Vietnam's education index also appears to have slowed over the past decade, in particular from 2004 to 2008. Also, economic growth rates have been slowed recently since 2007.

The degraded quality of development in Vietnam, from the one side, come from the growth model that tended to prioritize achieving higher rates of economic growth over broader human development outcomes (UNDP, 2011). From the other side, the difficult situation comes from the inadequacy and unsuitability of implementing public policies and internationally accepted public governance practices, although Vietnam has launched it public administration reform (PAR) that seeks the "rules by laws" within a centralized and centrally managed framework over last 10 years.

On top of slowing progresses in the three dimensions of the HDI at the national level, recent signs of a slow growth in Vietnam's HDI at subnational level have come to exist. We observe persistent spatial disparities in health and education indicators between provinces that are evident in the HDI and related indicators. In addition, not only are these disparities persistent, they are also spatial widening in related indicators in the HDI that are potential contributing factors to economic inequality and gender inequality. From a human development perspective, spatial economic inequality should not be tolerated or viewed as a normal side effect of rapid economic growth. In Viet Nam's case, where

spatially rising economic inequality is accompanied by spatial persistent disparities in key education and health indicators, spatial inequality is likely to exacerbate existing spatial disparities. This has the potential to slow progress towards higher levels of human development (UNDP, 2011). From this perspective, a spatial-suited approach is needed (for this issues, see, for example, Elbers et al., 2007; Minot and Baulch, 2005; and Minot, 2000).

Human development is a concept that tries to capture well-being of people. Traditional per capita gross domestic product (GDP) is just a pure economic indicator that cannot cover the wellbeing of people in its broad perspectives, such as economic, social and cultural (Despotis, 2005; Pradhan, 2007). Emphasis has shifted to multidimensionality of human development, which ensures an overall development of human beings and the society and plays a key role in the development process (Doyal and Gough, 1991; McGillivray, 1991; Daly, 1996; Dodds, 1997; Nussbaum, 2000; Stiglitz, 2002; WB, 2004; Clarke and Islam, 2004; Clark, 2005). Human development is usually captured by a composite index, called HDI (Figure 1 - the upper side). The index inspired by the capabilities approach to development, pioneered by Amartya Sen. Rather than concentrating on a commodity based measure of human welfare, the capabilities approach concentrates on functioning in terms of educational attainment and longevity, and views the main goal of development as the enhancement of the capability to live a long, healthy and active life (Anand and Ravallion, 1993; Sen, 1999; Haq, 2003; Komlos and Snowdon, 2005).

The success of HDI - itself only a partial measure of the economic and social dimensions of human development has contributed to this misperception because it leaves out so many aspects of human development. Fukuda-Parr (2002) stresses that the HDI has reinforced the narrow, oversimplified interpretation of the human development concept as being only about expanding education, health and decent living standards. This has obscured the broader, more complex concept of human development as the expansion of capabilities that widen people's choices to lead lives that they value. Despite careful efforts to explain that the concept is broader than the measure, human development continues to be identified with the HDI while political freedoms, and political participating in the life of one's community are often overlooked (Figure 1 - the lower side with dotted lines). They are valued by all people and without them, other choices are foreclosed (Diener and Biswas-Diener, 2000; Helliwell, 2002; Clark, 2005; Stroup, 2007). So far, they are not included in the HDI because they are difficult to measure appropriately, not because they are any less important to human development.

According to UNDP (2002. p. 52-53), both political freedom and participation are part of human development, both as development goals in their own right and as means for advancing human development. From the perspective of the means, UNDP (2002. p. 52-53), therefore, propose the concept of democratic governance that including both political freedom and participation. Participation promotes collective agency as well as individual agency to protect the environment, promoting gender equality, fostering human rights. In addition, political freedom empowers people to claim their economic and social rights, while education increases their ability to demand economic and social policies that respond to their priorities. In this paper, we use an extended concept of human development that includes several aspects such

Figure 1: The structure of human development index
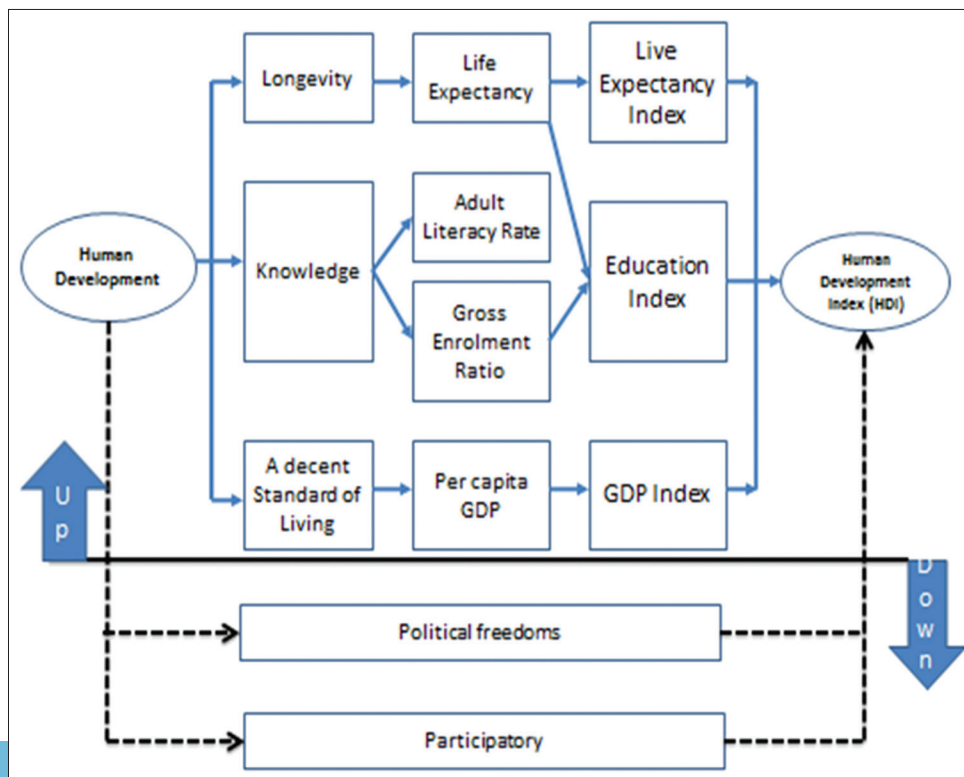
Source: Modified from (UNDP, 2002)

as: (1) Living standard, (2) knowledge, (3) longevity, (4) political freedom and (5) political participation.

An achievement of high human development depends upon a substantial set up in all the dimensions simultaneously. This is because they are very interrelated to each other. The lack of one leads to lack of others, resulting in overall degradation of human development. However, to maintain the balanced development of all the dimensions, government intervention or quality of government is very essential. The absence of the same leads to low human development in the economy. In the last decade of the 20th century, the need for good governance has been an impact and recurring theme in the literature dealing with human development. There is now a growing body of evidence, which shows that the quality of governance is related to differentials in growth and development (for example, Rudra and Sanyal, 2011). This is because government can efficiently deliver the resources to the public so as to improve the wellbeing of people.

UNDP (1997. p. 3) defined governance as "the exercise of economic, political and administrative authority to manage a country's affairs at all levels." It comprises the mechanisms, processes and institutions, through which citizens and groups articulate their interests, exercise their legal rights, meet their obligations and mediate their differences. This definition was endorsed by the Secretary-General's inter-agency sub-task force to promote integrated responses to United Nations conferences and summits. So far, the number of country level programmes on governance supported by the United Nations system has expanded considerably.

Recently, as an effort to bring the concept governance into operationalization, the World Band use good governance to entail sound public sector management (efficiency, effectiveness and economy), accountability, exchange and free flow of information (transparency), and a legal framework for development (justice, respect for human rights and liberties). Similarly, the Overseas Development Administration (ODA) of the United Kingdom of Great Britain and Northern Ireland (now the Department for International Development), defines good governance by focusing on four major components namely legitimacy (government should have the consent of the governed); accountability (ensuring transparency, being answerable for actions and media freedom); competence (effective policymaking, implementation and service delivery); and respect for law and protection of human rights (ODA, 1993). Lakshminarayanan and Sharma (2006) consider a concept of "good governance" that is characterized by features such as participatory, transparency, accountability, rule of law, responsiveness, equity and inclusiveness, and effectiveness and efficiency. Rachel (2012) in his comprehensive review of good governance states that although almost all major development institutions today say that promoting good governance is an important part of their agendas, "good governance" is an extremely elusive objective: It means different things to different organizations and to different actors within these organizations. Rachel (2012. p. 2) ends his paper with a definition of good governance that includes seven core components namely: Democracy and representation, human rights, the rule of law,

efficient and effective public management, transparency and accountability, developmentalist objectives, and a varying range of specific economic and political policies, programmes, and institutions.

Governance therefore plays a key role in the area like health, education, infrastructure, capital market regulation, macroeconomic stability, safety net provision, the legal system, creation of a good business environment, and the environment protection, all of which are preconditions and basic features of the developed economy (Brautigam, 1991; Landell-Mills and Serageldin, 1991; Boeninger, 1992). Good governance is about how the state and other social organizations interact, how they relate to the citizens, how they take decisions, and how they render account Ijaiy (2006). In other words, it is a system or a framework within which the state and the other players operate. On top of that, good governance is a dynamic concept that its definition is still evolving over the time. In this paper, we consider good governance is a set of features such as: (1) Participation, (2) transparency, (3) accountability, (4) rule of law, and (5) decentralization.

In 2001, Vietnam introduced its Public Administration Reform Master Programme for the period from 2001 to 2010 (hereunder referred to as PAR MP 2001-2010). This PAR MP 2001-2010 has achieved impressive progress over the last 11 years. However, important shortcomings remain. One source of frustration relates to weak and unsystematic monitoring mechanisms to assess public administration performance, including the absence of instruments to gauge the quality of public administration and public services. Citizens' disappointments with the results of the PAR MP 2001-2010 especially in relation with policy and administrative institutions have also been referred to weak participation mechanisms. Citizen's participation in policy making, policy implementation and in holding the government accountable is still limited. There is an urgent need for feedback and transmission mechanisms from citizens on the quality of public services and their impact on their own development needs and as a diagnostic instrument to ensure effective implementation of government decision and improvement of service delivery (Acuña-Alfaro et al., 2010).

In recent years, several efforts have been made toward measuring the PARs in Vietnam. The Public Administration and Performance Index (PAPI), the largest and first ever survey of its kind in Viet Nam, measures the standards of governance and public administration drawn from citizens' experiences in their interactions with governmental authorities at different levels.

According to Acuña-Alfaro et al. (2010. p. 2) governance (and public administration) is driving forces that may enhance those human capabilities. Governance is the process by which authorities exercise power and enhance the framework for individuals to develop their potential, and public administration is the vehicle by which the state and citizens interact. The state provides not only public services but also the framework for the enhancement of individual and collective capabilities; and citizens are not only beneficiaries of public services, but also promoters and drivers of social changes. Also, strong governance institutions and effective

public administration are critical elements of success for not only economic growth, but also human development. Promoting human development is not just a social, economic and technological challenge, but also a governance and public administration challenge (UNDP, 2002).

So far, so rare studies on the relationship between governance on human development have been conducted in Vietnam, except for Ha and Hanh (2012). These authors try to test the hypothesis of whether the PAR and provincial competitiveness could be correlatively linked to the GDP welfare per capita in Vietnam. By adopting the natural logarithm linear regression, the author found out that there were correlations between those above-mentioned parameters. Namely, legal institutions were the main huddles for GDP per head, while PAR services and public services delivery exert positive correlations with GDP per capita. The study is the first try to examine the causality between PAR and welfare indicator. However, it relies on a week econometric model that can only produce a correlation between indicators. In addition, the study has not pointed out the mechanisms through which governance can affect human development. By human development, it means a multi-facet process and thus inevitably come to the crucial empirical question: What components of governance are important in fostering human development in terms of its components?

From the spatial perspectives of human development in Vietnam, a spatial-suited approach is in need to address all of the aforementioned issues. Spatial analysis, i.e., analysis at disaggregation level such as region, province or even district or commune, can be used to quantify small-area disparities in human development and governance and identify which areas are falling behind development. Spatial analysis also can facilitate the targeting programs with the purpose is to accelerate human development or good governance such as education, health, employment and public administration. Spatial analysis, last but not least, can point out the spill-over effects of concerned issues such as human development and good governance among small areas (Elbers et al., 2007; Minot and Baulch, 2005; Minot, 2000).

The key research question in this paper is: What are the disaggregated impacts of governance on human development at province level in Vietnam? Furthermore, we seek to determine whether the impact of good governance is similar among regions. The rest of the paper is organized as follows. Section 2 discusses theoretical framework and hypotheses. Section 3 presents the econometric model (including data discussion). Section 4 presents results of spatial econometric analysis and discussion. Section 5 concludes with policy implications thereof.

2. LITERATURE REVIEW AND EMPIRICAL EVIDENCES ON THE RELATIONSHIP BETWEEN GOVERNANCE AND HUMAN DEVELOPMENT

2.1. Literature Review

The relationship between governance and human development can be traced from development theories in which the new institutional theories play an important role. The new institutional economics mainly concern with those institutions that are of direct importance for the functioning of markets: Legislation and rules for entry to and exit from markets, supervision of market behavior and so on. In this sense, all possible institutions, including government institutions, can in fact be accounted for the reduction of transaction costs in the short- or long- term. This even applies to democracy and the protection of human rights. As North (1995. p. 25) states: "While economic growth can occur in the short run with autocratic regimes, long-run economic growth entails the development of the rule of law and the protection of civil and political freedoms." The argument here is that individuals and enterprises will only be prepared to invest if they have confidence in the future. Investments yielding a return in the future will only come about if the institutional environment in question provides guarantees. A state under the rule of law, the resultant protection of contractual and property rights and the absence of disruptive market factors contribute towards such confidence. Similarly, democracy, as a more consensual system of decision-making, promotes the climate of certainty and stability needed for investment. Rodrik (2000a), for example, argues that it is precisely on this account that democracies rather than autocracies generate more predictable long-term growth rates and generates greater stability in the short term, absorb negative shocks more effectively and result in a less skewed distribution of income.

While the new institutional theories are primarily concerned with analyzing the functional links between institutions and the market, modernization theories emphasize historical processes of transformation one country from "less developed" or "developing" status to "developed" one. Given that structural differentiation and specialization result in the fragmentation of interest groups each with their own distinctive base in society, according to modernization theories, citizens have many roles and form part of many interest groups. This is then translated into the promotion of interests at national level. In other vein, the process of modernization is an irresistible process of on-going differentiation and interdependence. Modernization processes affect the components of governance. They lead for example to a plurality of interests that becomes translated into democratization and necessitate a universality of legal rules, as reflected in the rule of law. To this extent the emphasis on these components of good governance is supported in the modernization theories. The attention to transformation processes does not however mean that these theories are much help in deciding which elements of governance should weigh more heavily in what situation. They provide insight into the historical co-variation of economic, social and political/administrative changes but do not provide any explanation about the possible independent contribution of governmental institutions to modernization processes.

Good governance in modern-day development policy appears to have been inspired in new institutions and modernization theories within political science and economics. These theories do not however specifically distinguish between the various meanings that are assigned to the concept of good governance; in principle, an economic rationale can be assigned to all the institutions that can be grouped together under the concept of good governance. Nor

do these theories provide clarity concerning the channels through which good governance can affect many faces of development.

2.2. Empirical Evidences

There exists a consensus that good governance sustains for economic growth and poor governance has substantial, adverse effect on economic growth; econometric studies show strong correlation between long-term economic performance and good governance. In other words, the quality of governance fundamentally determines long-run developmental outcomes (for example, Mauro, 2004; Hall and Jones, 1999; Barro, 1997; Knack and Philip, 1997; Rodrik, 2000b; Kaufmann and Kraay, 2002; Acemoglu et al., 2003; Dollar and Kraay, 2003; Baum and Lake, 2003; Resnick and Bimer, 2006; Vega-Gordillo and lvarez-Arce, 2003; Dawson, 2003).

Kaufmann and Kraay (2002), for example, using a set of worldwide governance indicators covering 175 countries for the period 2000-2001, proposed an empirical strategy that separates the correlation between per capita incomes and the quality of governance into: (1) A strong positive causal effect running from better governance to higher per capita incomes, and (2) a weak and even negative causal effect running in the opposite direction from per capita incomes to governance. Estimation result confirms existing evidence on the importance of good governance for economic development. The second result suggests the absence of "virtuous circles" in which higher incomes lead to further improvements in governance.

Baum and Lake (2003) argued that there are significant indirect effects of democracy on growth through public health and education and thus examined the relationship between democracy and human capital. The authors conducted statistical investigations into the direct and indirect effects of democracy on growth using a data set consisting of a 30-year panel of 128 countries and found find that democracy has no statistically significant direct effect on growth. Rather, the paper discovered that the effect of democracy is largely indirect through increased life expectancy in poor countries and increased secondary education in non-poor countries.

Resnick and Bimer (2006) tried to answer the question to which extent and how good governance contributes to pro-poor growth. The authors develop a conceptual framework that specifies the linkages between different aspects of governance and pro-poor growth. Using this framework, they review a range of quantitative cross-country studies that include measures of governance as independent variables and focuses on the dependent variable in at least two of the three dimensions of pro-poor growth: Poverty, inequality, and growth. The review shows that governance indicators that capture a sound decision-making environment for investment and policy implementation, such as political stability and rule of law, are associated with growth but provide mixed results in regard to poverty reduction. On the other hand, governance indicators that refer to transparent political systems, such as civil liberties and political freedom, tend to be conducive for poverty reduction, but the evidence is rather mixed, and the relationship of these variables with growth remains unclear.

Vega-Gordillo and lvarez-Arce (2003) tried to discern the causal relationships existing among economic freedom, democracy, and growth. They estimation results from the dynamic relationships strongly suggest that economic freedom causes economic growth. The authors came to a conclusion that freedom is a key component in any attempt to improve economic and social well-being. There are no economic grounds for postponing democratization to give priority to market reforms. Less developed countries should take advantage of broad institutional reform to promote economic growth and consolidate both political and economic freedom.

Dawson (2003), using data from 1970 to 2000 for all countries in the world, examines the issue of causality in the relationship between various types of institutions namely, political and economic freedom and long-run economic growth. Granger causality tests of freedom versus growth in the paper show that (1) the overall level of economic freedom, as measured by Gwartney and Lawson's index of economic freedom, causes growth; (2) levels of several of the underlying components of freedom are found to be causally related to growth, but the direction of causation varies across components. Components measuring "use of markets" and "property rights" are found to cause growth, while "size of government" is found to be caused by growth and (3) an endogenous relationship between changes in freedom and growth does exist.

Approaching the issues from another side, several studies try to explore the impact of human development on governance (for example, Muller, 1995; Richard and Talbott, 2003) and some other look at the two-way linkages between good governance and human development (for example, Helliwell, 1994; Acuña-Alfaro, 2012).

Muller (1995) tested the hypothesis that income inequality affects democracy, and this effect often counteracts the positive influence of economic development. Cross-national data from a sample of 58 countries supported the hypothesis of a negative effect of income inequality on change in level of democracy from 1965 to 1980. This effect is robust when noneconomic determinants of democracy are taken into account and when sample size is increased.

Similarly, Richard and Talbott (2003) estimate that governmental institutions and policies explain most of the variation across nations in terms of economic development and secure property rights, business transparency, political rights, civil liberties, and stable rule of law are significant factors accounting for developmental success.

Helliwell (1994), using cross-sectional and pooled data for up to 125 countries over the period from 1960 to 1985, evaluates the two-way linkages between democracy and economic growth. The effects of income on democracy are found to be robust and positive. The effects of several measures of democracy on growth are assessed in a comparative growth framework in which growth of per capita GDP depends negatively on initial income levels, as implied by the convergence hypothesis, and positively on rates of investment in physical and human capital. Adjusting for the simultaneous determination of income and democracy makes the

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estimated direct effect of democracy on subsequent economic growth negative but insignificant. Allowing for the possible positive indirect effect of democracy on income, flowing through the positive effect of democracy on education and investment, tends to offset the negative direct effect of democracy on economic growth. From the general result of the growth analysis, the author concluded that it would still not possible to identify any systematic net effects of democracy on subsequent economic growth.

Acuña-Alfaro (2012) provides a parsimonious empirical test of the relationship between democracy and HD, using time-series cross-sectional data on 164 countries from 1972 to 2002. The paper specifies a similar partial model to those found in the global comparative literature on democracy and development in an effort to replicate earlier findings and advance the proposition that there are strong reciprocal connections between HD and democratization that form two chains which reinforce one another cumulatively over time. Cross-country partial regressions show a significant relationship in both directions. The paper also concluded that where a choice is necessary, democracy should be given sequencing priority over human development and economic growth.

3. THEORETICAL FRAMEWORK AND HYPOTHESES

3.1. Theoretical Framework
Developing a better understanding of the disaggregated relationship between governance and human development at disaggregate level such as province level will assist policy makers and development practitioners in their efforts to enable Vietnam improve their governance and human development as well.

The key research question in this paper is: What are the disaggregated impacts of governance on human development at province level in Vietnam? Furthermore, we seek to determine whether the impact of good governance is similar among regions. While the focus of this study is on the impact of good governance on human development, we also take into consideration the traditional physical sources of development in general such as investment in physical and human capital, openness to trade, foreign investment, and official development assistance. To answer these questions, we use a spatial regression analysis to examine the causal relationship after controlling for spatial factors.

We modified the approach of Stewart et al. (2000) in which we view HD as the ultimate objective of human activity and economic growth as a centrally crucial instrument for advancing it. At the same time, governance is considered as the environment by and through which economic growth is progressed, resulting in level of human development. On the other hand, achievements in HD themselves can make a critical contribution to the status of governance through economic growth. Figure 2 that is modified from Rachel (2012), presents six of the simplest causal possibilities between good governance and human development. The first three are the most obvious: First, good governance may "promote" or "cause" development (Path A); second, development may cause good governance (B); and third, another factor may cause both (C). Thinking in the disaggregated components, it is also possible that some component of good governance may cause development (D); development may cause some component of good governance (E); or a third factor may cause both (F).

The framework creates thus distinct causal chains to be examined: One runs from good governance to human development through economic growth, as good governance and the sources of growth

Figure 2: A core conceptual framework for the impact of good governance on human development
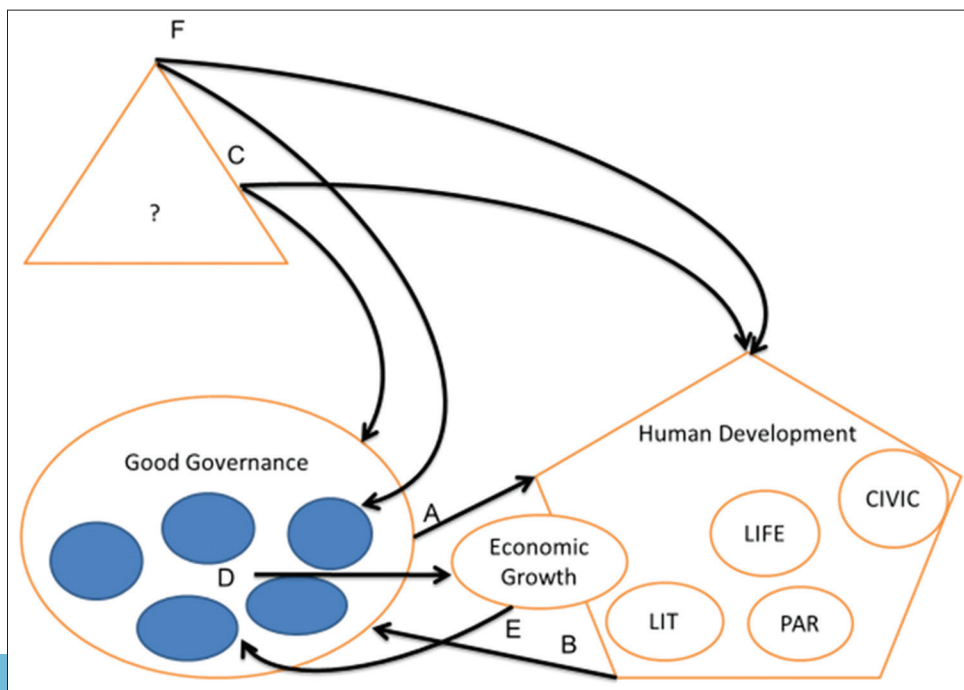
Source: Modified from Rachel (2012, p. 19). LIT: Literacy, LIFE: Life expectancy, PAR: Political participatory, CIVIC: Political freedom

cause national income which is then allocated to activities contributing to human development; the other runs from human development to good governance through economic growth, indicating how, in addition to being an end in itself, human development helps increase national income which then spurs to activities contributing to good governance.

The first chain assumes the causality of the relationship that follows on the new institutional theories. Good governance contributes towards human development not only through the generation of nation income, but also through other aspects of human development. Five equations to be estimated include:

$$income_i = F(d_i, gg_i) \tag{1.1}$$

$$literacy_i = F(d_i, gg_i) \tag{1.2}$$

$$expectancy_i = F(d_i, gg_i) \tag{1.3}$$

$$pfreedom_i = F(d_i, gg_i) \tag{1.4}$$

$$pparticipation_i = F(d_i, gg_i) \tag{1.5}$$

When dependent variables are the alternatively province-level attributes of human development, namely (1) living standard (income), (2) knowledge (literacy), (3) longevity (life expectancy at birth), (4) political freedom and (5) political participation; ggi is a vectors of good governance measures in terms of disaggregated attributes; di is a vector of determinants of each dependent variable basing on theories and empirical studies.

Table 1 presents a summary of research on the impact of quality of government/governance on human development.

The second chain assumes the causality of the relationship that follows on the modernization theory mentioned in Section 2. Five equations will be estimated, including:

$$participation_i = F(d_i, hd_i) \tag{2.1}$$

$$transparency_i = F(d_i, hd_i) \tag{2.2}$$

$$accountability_i = F(d_i, hd_i) \tag{2.3}$$

$$rule_i = F(d_i, hd_i) \tag{2.4}$$

$$decentralization_i = F(d_i, hd_i) \tag{2.5}$$

When dependent variables are the alternatively province-level attributes of good governance, namely (1) participation, (2) transparency, (3) accountability, (4) rule of law, and (5) decentralization; $hd_{i}(t)$ is a vectors of human development measures in terms of disaggregated attributes; d_i is a vector of determinants of each dependent variable basing on theories and empirical studies.

Table 2 presents a summary of research on the impact of human development and its components on good governance.

3.2. Hypotheses
As mentioned, this paper aims at identifying the causal relationship between the attributes of governance and the components of human development at province level. In addition, the paper considers the issues in the spatial context. The following hypotheses are to be tested:

H_1: The attributes of governance have positive impact on the components of human development at disaggregate level.

H_2: The components of human development, in return, have positive impact on the attributes of governance at disaggregate level.

H_3: Both the attributes of governance and the components of human development have their own spill-over effects across provinces.

4. DATA AND ECONOMETRIC MODELS

4.1. Data
The first source of data comes from PAPI which measures several aspects of governance and public administration in Vietnam.

Table 1: Research findings of the impact of quality of government on human development

Outcome variable	Rule of law	Government effectiveness	Corruption perceptions index (low corruption)	Effect of quality of government	Voice and Accountability	Political stability	Regulatory quality	Participation
Life expectancy GDP per capita/ economic growth	Positive[1a] Positive[1a] Positive[2b]	Positive[1a] Positive[1a] Positive[2b] Positive[5a] Positive[12a]	Positive[1a] Positive[1a] Positive[2b]	Positive[1a] Positive[1a] Positive[2b]	Positive[2b]	Positive[2b] Positive[11]	Positive[2b]	Positive[13b] Positive[14b] Positive[15a] Positive[3a] Negavtie[4a]
HDI	Positive[1a]	Positive[1a] Positive[7a] Positive[8a] Positive[9a]	Positive[1a] Positive[9a]	Positive[1a]	Positive[9a]			Positive[6a] Positive[10a]

[1]Holmberg et al. (2008), [2]Kaufmann and Kraay (2002), [3]Khan (2009), [4]Muller (1995), [5]Dawson (2003), [6]Vega-Gordillo and lvarez-Arce (2003), [7]Dawson (2003), [8]Earle and Scott (2010), [9]Popovych (2008), [10]Baum and Lake (2003), [11]Resnick and Bimer (2006), [12]Khan (2009), [13]Dawson (2003a), [14]Vega-Gordillo and Alvarez-Arce (2003), [15]Helliwell (1994), [16]Acuña-Alfaro (2012). [a]Correlation effect, [b]Causal effect. Source: Authors' compilation. HDI: Human development index, GDP: Gross domestic product

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Table 2: Research findings of the impact human development on quality of government

Outcome variable	Income/ economic growth	Political freedom	Income inequality	HDI
Participation	Positive[4a]		Negative[1a]	Positive[5a]
Democracy	Positive[7a]			Positive[8b]
Good governance	Negative[6b]	Positive[2] Positive[3a]		

[1]Sebudubudu (2010), [2]Earle and Scott (2010), [3]Popovych (2008), [4]Baum and Lake (2003), [5]Vega-Gordillo and lvarez-Arce (2003), [6]Kaufmann and Kraay (2002), [7]Helliwell (1994), [8]Acuña-Alfaro (2012). [a]Correlation effect, [b]Causal effect. Source: Authors' compilation. HDI: Human development index

With respect to participation, the Ordinance No. 34/2007/PL-UBTVQH11 on Implementation of Grassroots Democracy dated 20 April 2007 of the Standing Committee of the National Assembly of Vietnam (hereinafter abbreviated as GDO) is used as the framework in PAPI to assess the degree of participation of citizens in public administration in its broadest sense. According to Acuña-Alfaro et al. (2010. p. 5), GDO describes the mechanisms by which citizens can take part in policy and decision-making processes at the local level. It defines areas where people can make decisions themselves (such as their contribution to public infrastructure projects), areas where they can express their opinions in the form of voting (such as election and dismissal of village head and people's inspection boards (PIBs) to monitor public investment projects), and areas where authorities should seek comments from citizens and associations or community based-groups before making decisions.

In Vietnam, with regards of transparency, the GDO gives great importance to the "right to know" of the people. Using this framework, PAPI assesses how people are informed about socio-economic development plans of their community, especially regarding land use, land clearance and compensation policies which have been and are one of the largest sources of corruption (Acuña-Alfaro et al., 2010). Beyond the "right to know" defined in the GDO, this dimension in PAPI also looks at the extent to which information about basic pro-poor state policies are disseminated to the people. These include financial and livelihood support for families with war veterans, poor families, and old people. Lack of transparency leads to corruption and subsequently impacts people's life, especially in rural areas where poverty is concentrated (Acuña-Alfaro et al., 2010).

In PAPI, accountability looks at the frequency of interaction between various levels of government and the citizens, and at the establishment and quality of the People Inspection Boards, the body tasked by the Ordinance of Implementation of Grassroots Democracy with the function of monitoring government's actions (Acuña-Alfaro et al., 2010).

In Vietnam, one of the major steps in fighting corruption from the government was the issuance of the Law on Prevention and Combating of Corruption (No. 55/2005/QH11 issued in November, 2005) and the more recent National Strategy for Preventing and Combating Corruption Towards 2020 (Resolution No. 21/2009/NQ-CP dated 12 May 2009). Similarly, to the GDO, PAPI looks at the actual implementation of the Law as a degree of political will and seriousness of local governments in corruption prevention. Furthermore, PAPI assesses people's experiences in public services where corruption is most common (health care, land management, social welfare, among others). This dimension also looks at the extent of citizen's motivation in denouncing corruption and their fear of discrimination when doing so, as an indicator of the political climate of their locality (Acuña-Alfaro et al., 2010). The concept of control-of-corruption used in PAPI includes three sub-dimensions such as (1) petty corruption by public servants; (2) petty corruption in public service delivery; (3) nepotism in public sector employment, and (4) the willingness to fight corruption of provincial authorities.

According to Acuña-Alfaro et al. (2010. p. 7-8): Regarding administrative procedures PAPI looks the implementation and performance of One Stop Shops (OSS). The OSS mechanism is designed to embed two major functions; firstly, it aims to serve as the key contact point for the handling of the administrative procedures of an administrative agency. The unit is obliged to post detailed information on procedural requirements, including the type of documents the applicant has to submit, the processing duration, and service fees. It is generally expected that this mechanism will help enhance transparency, reduces the abuse of power, and increases the sense of responsibility among public officials. Secondly, the concept of the inter-sector/inter-agency OSS is designed to forge the simplification of administrative procedures requiring the deliberation of several administrative levels and/or sectors at the commune and the district level. On top of that, PAPI considers the public service delivery as the ultimate objective of PAR is to provide better quantity and quality public services to the citizens. In that regards, it looks at various aspects such as government support for the poor to obtain medical insurance, health care at the commune and district level, primary education, road conditions, electricity, garbage collecting service, sources of drinking water and social security. This dimension is straight-forward and has the character of a citizen report exercise.

The second source of data is collected and calculated from Department of Statistic Office of 63 provinces, including: GDP per capita (PPP, USD), life expectancy, literacy rate, total investment to GDP ratio, labour growth rate, exchange rate index of USD/VND, inflation index.

The third source of data is calculated from Vietnam Household Living Standards Survey in 2010, including Gini coefficient of expenditure.

4.2. Econometric Models
Equation (1.1), then, is elaborated following Barro (1997. p. 517-520), Doucouliagos and Ulubasoglu (2006), and takes the specific form as below:

$gdppc_i = f(gdppc_{0i}, exr_i, labourg_i, invgdp_i, inf_i, literacy_i, expectancy_i, pfreedom_i \ pparticipation_i, participation_i, transparency_i, accountability_i, rule_i, decentralization_i)$

(1.1a)

In the equation (1.1a), dependent variable is in the form of per capita GDP (PPP) ($gdppc_i$), the determinants are income level at the initial year ($gdppc_{0i}$) in 1999, a measure of international openness in terms of exchange rates ($exri$), the labour growth rate ($labourg_i$), the ratio of real gross domestic investment to real GDP ($invgdp_i$), the inflation rate (inf_i), the rate of literacy ($literacy_i$), the rate of life expectancy at birth ($expectancy_i$), the political freedom ($pfreedom_i$) and the political participation ($pparticipation_i$). Five attributes of good governance, namely (1) participation, (2) transparency, (3) accountability, (4) rule of law, and (5) decentralization, are used in the equation (1.1a).

We use two PAPI indices as proxies for participation (including voting and empowerment, respectively) namely: Quality of village election (D1.3) and voluntary contributions (D1.4). The former looks specifically at the quality of elections for village heads, which represents an important element of the GDO. The latter represents the monitoring and management of voluntary contributions. We expect that the signs of two indicators are positive. The D1.3 is composed of several indicators derived from questionnaires such as: (1) More than 1 candidate (%), (2) invited to participate (%), (3) paper ballot was used (%), (4) votes were counted publicly (%), (5) candidate was suggested (%), and (6) voted for winner. The D1.4 is consisted of indicators from questionnaires such as: (1) Voluntary contribution to project (%), (2) community monitoring board monitors contribution (%), (3) voluntary contribution recorded (%), (4) participated in decision making to start project (%), and (5) provided input to project design (%).

We use transparency index (D2) from PAPI as a proxy for transparency. The concept of transparency used in PAPI includes three sub-dimensions such as (1) the publication of poor household lists; (2) the annual communal budgets; and (3) communal land use plans. We expect that the sign of transparency index is positive.

We use vertical accountability index (D3) from PAPI as a proxy for accountability. The concept of vertical accountability used in PAPI includes three sub-dimensions such as (1) citizen's interactions with local authorities, (2) PIBs and (3) Community Investment Supervision Boards. We expect that the sign of transparency index is positive.

The concept of control-of-corruption used in PAPI includes three sub-dimensions such as: (1) Petty corruption by public servants; (2) petty corruption in public service delivery; (3) nepotism in public sector employment, and (4) the willingness to fight corruption of provincial authorities. We expect that the sign of rule of law index is positive.

We use two PAPI indices as proxies for decentralization, namely: Public administrative procedures (D5) (the dimension includes [1] certification services, [2] application procedures for construction permits, [3] application procedures for land use

rights certificates, and [4] application procedures for personal documents), and Public service delivery (D6) (The dimension consists of [1] public health care, [2] public primary education, [3] basic infrastructure, and [4] residential law and order). We expect that the signs of two indicators are positive.

Equation (1.2), following Baum and Lake (2003. p. 339), Doucouliagos and Ulubasoglu (2006), is elaborated in the following form:

$litercy_i = f(gdppc_i, litercy_{0i} \ exr_i, labourg_i, invgdp_i, inf_i, Gini_i, expectancy_i, pfreedom_i, pparticipation_i, participation_i, transparency_i, accountability_i, rule_i, decentralization_i)$

(1.2a)

In the equation (1.2a), dependent variable is in the form of literacy rate ($literacy_i$), the determinant variables are per capita income level at the current year ($gdppc_i$), literacy rate at the initial year ($literacy_{0i}$) in 1999, a measure of international openness in terms of exchange rates (exr_i), the labour growth rate ($labourg_i$), the ratio of real gross domestic investment to real GDP ($invgdp_i$), the inflation rate (inf_i), Gini coefficient of income inequality ($Gini_i$), the rate of life expectancy at birth ($expectancy_i$), the political freedom ($pfreedom_i$) and the political participation ($pparticipation_i$). Five attributes of good governance, namely (1) participation, (2) transparency, (3) accountability, (4) rule of law, and (5) decentralization, are used in the equation (1.1a).

Equation (1.3), following Gupta and Mitra (2004), Doucouliagos and Ulubasoglu (2006), is elaborated as below:

$expectancy_i = f(gdppc_i, expectancy_{0i} \ exr_i, labourg_i, invgdp_i, inf_i, literacy_i, pfreedom_i, pparticipation_i, participation_i, transparency_i, accountability_i, rule_i, decentralization_i)$

(1.3a)

In the equation (1.3a), dependent variable is in the form of life expectancy ($expectancy_i$), the determinants are per capita income level at the current year ($gdppc_i$), life expectancy at the initial year (1999) ($expectancy_{0i}$), a measure of international openness in terms of exchange rates (exr_i), the labour growth rate ($labourg_i$), the ratio of real gross domestic investment to real GDP ($invgdp_i$), the inflation rate (inf_i), the rate of literacy ($literacy_i$), the political freedom ($pfreedom_i$) and the political participation ($pparticipation_i$). Five attributes of good governance, namely (1) participation, (2) transparency, (3) accountability, (4) rule of law, and (5) decentralization, are used in the equation (1.1a).

Equation (1.4), following Vega-Gordillo and Alvarez-Arce (2003. p. 207), Doucouliagos and Ulubasoglu (2006), is elaborated as below:

$pfreedom_i = f(gdppc_i, exr_i, labourg_i, invgdp_i, inf_i, Gini_i, literacy_i, expectancy_i, participation_i, transparency_i, accountability_i, rule_i, decentralization_i)$

(1.4a)

In the equation (1.4a), dependent variable is in the form of political freedom ($pfreedom_i$), the determinant variables are income

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level at the current year ($gdppc_i$), a measure of international openness in terms of exchange rates (exr_i), the labour growth rate ($labourg_i$), the ratio of real gross domestic investment to real GDP ($invgdp_i$), the inflation rate (inf_i), Gini coefficient of income inequality ($Gini_i$), the rate of literacy ($literacy_i$), the rate of life expectancy at birth ($expectancy_i$), and the political participation ($pparticipation_i$). Five attributes of good governance, namely (1) participation, (2) transparency, (3) accountability, (4) rule of law, and (5) decentralization, are used in the equation (1.1a).

Equation (1.5), following Vega-Gordillo and Alvarez-Arce (2003. p. 207), Doucouliagos and Ulubasoglu (2006), is elaborated as below:

$$pparticipation_i = f(gdppc_i,\ exr_i,\ labourg_i,\ invgdp_i,\ inf_i,\ Gini_i,\ literacy_i,\ expectancy_i,\ pfreedom_i,\ participation_i,\ transparency_i,\ accountability_i,\ rule_i,\ decentralization_i)$$
(1.5a)

In the equation (1.5a), dependent variable is in the form of political participation ($pparticipation_i$), the determinant variables are income level at the current year ($gdppc_i$), a measure of international openness in terms of exchange rates (exr_i), the labour growth rate ($labourg_i$), the ratio of real gross domestic investment to real GDP ($invgdp_i$), the inflation rate (inf_i), Gini coefficient of income inequality ($Gini_i$), the rate of literacy ($literacy_i$), the rate of life expectancy at birth ($expectancy_i$), and the political freedom ($pfreedom_i$). Five attributes of good governance, namely (1) participation, (2) transparency, (3) accountability, (4) rule of law, and (5) decentralization, are used in the equation (1.1a).

Equation (2.1), following Vega-Gordillo and Alvarez-Arce (2003. p. 207), Doucouliagos and Ulubasoglu (2006), is elaborated as below:

$$participation_i = F(gdppc_i,\ exr_i,\ labourg_i,\ invgdp_i,\ inf_i,\ Gini_i,\ literacy_i,\ expectancy_i,\ pfreedom_i,\ pparticipation_i)$$
(2.1a)

In the equation (2.1a), dependent variable is in the form of participation ($pparticipation_i$), the determinant variables are income level at the current year ($gdppc_i$), a measure of international openness in terms of exchange rates (exr_i), the labour growth rate ($labourg_i$), the ratio of real gross domestic investment to real GDP ($invgdp_i$), Gini coefficient of income inequality ($Gini_i$), the inflation rate (inf_i), the rate of literacy ($literacy_i$), the rate of life expectancy at birth ($expectancy_i$), political freedom ($pfreedom_i$), and political participation ($pparticipation_i$).

Equation (2.2), following Vega-Gordillo and Alvarez-Arce (2003. p. 207), Doucouliagos and Ulubasoglu (2006), is elaborated as below:

$$transparency_i = f(gdppc_i,\ exr_i,\ labourg_i,\ invgdp_i,\ inf_i,\ Gini_i,\ literacy_i,\ expectancy_i,\ pfreedom_i,\ pparticipation_i)$$
(2.2a)

In the equation (2.2a), dependent variable is in the form of transparency ($transparency_i$), the determinant variables

are income level at the current year ($gdppc_i$), a measure of international openness in terms of exchange rates (exr_i), the labour growth rate ($labourg_i$), the ratio of real gross domestic investment to real GDP ($invgdp_i$), Gini coefficient of income inequality ($Gini_i$), the inflation rate (inf_i), the rate of literacy ($literacy_i$), the rate of life expectancy at birth ($expectancy_i$), political freedom ($pfreedom_i$), and political participation ($pparticipation_i$).

Equation (2.3), following Vega-Gordillo and Alvarez-Arce (2003. p. 207), Doucouliagos and Ulubasoglu (2006), is elaborated as below:

$$accountability_i = f(gdppc_i,\ exr_i,\ labourg_i,\ invgdp_i,\ inf_i,\ Gini_i,\ literacy_i,\ expectancy_i,\ pfreedom_i,\ pparticipation_i)$$
(2.3a)

In the equation (2.3a), dependent variable is in the form of accountability ($accountability_i$), the determinant variables are income level at the current year ($gdppc_i$), a measure of international openness in terms of exchange rates (exr_i), the labour growth rate ($labourg_i$), the ratio of real gross domestic investment to real GDP ($invgdp_i$), Gini coefficient of income inequality ($Gini_i$), the inflation rate (inf_i), the rate of literacy ($literacy_i$), the rate of life expectancy at birth ($expectancy_i$), political freedom ($pfreedom_i$), and political participation ($pparticipation_i$).

Equation (2.4), following Vega-Gordillo and Alvarez-Arce (2003. p. 207), Doucouliagos and Ulubasoglu (2006), is elaborated as below:

$$rule_i = f(gdppc_i,\ exr_i,\ labourg_i,\ invgdp_i,\ inf_i,\ Gini_i,\ literacy_i,\ expectancy_i,\ pfreedom_i,\ pparticipation_i)$$
(2.4a)

In the equation (2.4a), dependent variable is in the form of rule of law ($rule_i$), the determinant variables are income level at the current year ($gdppc_i$), a measure of international openness in terms of exchange rates (exr_i), the labour growth rate ($labourg_i$), the ratio of real gross domestic investment to real GDP ($invgdp_i$), Gini coefficient of income inequality ($Gini_i$), the inflation rate (inf_i), the rate of literacy ($literacy_i$), the rate of life expectancy at birth ($expectancy_i$), political freedom ($pfreedom_i$), and political participation ($pparticipation_i$).

Equation (2.5), following Vega-Gordillo and Alvarez-Arce (2003. p. 207), Doucouliagos and Ulubasoglu (2006), is elaborated as below:

$$decentralization_i = f(gdppc_i,\ exr_i,\ labourg_i,\ invgdp_i,\ inf_i,\ Gini_i,\ literacy_i,\ expectancy_i,\ pfreedom_i,\ pparticipation_i)$$
(2.5a)

In the equation (2.5a), dependent variable is in the form of decentralization ($decentralization_i$), the determinant variables are income level at the current year ($gdppc_i$), a measure of international openness in terms of exchange rates (exr_i), the labour growth rate ($labourg_i$), the ratio of real gross domestic investment to real GDP ($invgdp_i$), Gini coefficient of income inequality ($Gini_i$), the inflation rate (inf_i), the rate of literacy ($literacy_i$), the

rate of life expectancy at birth ($expectancy_i$), political freedom ($pfreedom_i$), and political participation ($pparticipation_i$).

5. REGRESSION RESULTS AND DISCUSSION

5.1. Statistic Description
Table 3 summarizes the variables used both as disaggregate components of good governance and human development in the models and presents an overall statistical description.

The correlation matrix for components of good governance and human development is reported in Table 4. It is a first observation that most of correlation coefficients between components of governance and human development indicators are significant at common levels. However, one should keep in mind is the correlation is not the same as the causality. The correlations only mean that the connections can work in either way suggested in Section 3: (1) From development to good governance (the modernization theory), and (2) from good governance to development (the institutional theories).

The five attributes of governance in Figure 3 show a similar pattern of spatial distribution of governance components.

5.2. Spatial Patterns of Components of Human Development in Vietnam
Mapping is a useful tool to identify the spatial patterns of human development in Vietnam. Figure 4 shows the spatial distribution of human development. In the map, the provinces with highest GDP per capital (PPP) are black, while the provinces with lowest ones are white. The map confirms that rich provinces are Ho Chi Minh City and the neighbours in the South, Hanoi Capital and the neighbours in the North, and Da Nang in the Central. Low GDP per capita (PPP) provinces are those located along the border with China, and with Lao PDR Unlike GDP per capita (PPP), poverty rate (P0) shows a contrast: Provinces with higher level of GDP per capita (PPP) are those with lower poverty rate and vice visa. Inequality coefficient (Gini) shows a complex picture with two features: (1) Provinces with higher level of poverty rates are associated with higher level of income inequality, (2) higher inequality is also associated with province with high level of GDP per capita (PPP) such as Ho Chi Minh City and some Southeast provinces, Da Nang, and Hanoi.

Two other aspects of human development relating to life expectancy and literacy in Figure 4 show a similar spatial pattern with that of income. This is not surprising since higher level of income is often associated with higher level of education and life expectancy. In overall, the provinces with highest life expectancy and literacy are dark blue, while the provinces with

Table 3: Descriptive statistics of variables in spatial regression analysis

| Variable	Obs	Mean±SD	Minimum	Maximum
GPP per capita (PPP)	63	3009±1505	1129	11007
Life expectancy at birth	63	72±3	63	77
Literacy rates (%)	63	91.9±6.6	62.5	97.9
Political freedom (civic knowledge)	63	1.50±0.15	1.22	1.85
Political participation (participatory opportunities)	63	0.81±0.15	0.42	1.16
Participation index	63	5.36±0.44	4.32	6.64
Transparency index	63	5.55±0.55	4.44	6.85
Accountability index	63	5.59±0.46	4.74	6.98
Rule of law (anti-corruption index)	63	6.20±0.43	4.94	7.27
Decentralization (administration procedures index)	63	6.87±0.29	6.35	7.47
Decentralization (public service delivery index)	63	6.65±0.36	5.68	7.43
Labour growth rate (%)	63	2.28±2.58	−3.04	8.68
Total Investment to GDP (%)	63	38.19±16.34	14.71	97.85
Inflation index	63	118.69±2.96	114.70	130.62
Exchange rate index	63	104.01±5.59	97.33	123.71

Source: Authors' calculation from datasets. SD: Standard deviation, GDP: Gross domestic product

Table 4: Correlation matrix for HD and good governance

Variable	GDPPC	LIFE	LIT	PAR	CIVIC	PAR	TRAN	ACC	ANTI	AD
Log GDPPC	1									
Life expectancy at birth (LIFE)	0.59***	1								
Literacy rates (%) (LIT)	0.52***	0.77***	1							
Political participation (participatory opportunities - PAR)	−0.22*	−0.20	0.08	1						
Political freedom (civic knowledge - CIVIC)	0.27**	0.35***	0.28**	0.11	1					
Participation (PAR)	0.04	−0.01	0.18	0.69***	0.55***	1				
Transparency (TRAN)	0.05	−0.03	0.19	0.49***	0.29**	0.70**	1			
Accountability (ACC)	−0.12	−0.09	0.23*	0.36***	0.29**	0.56**	0.59***	1		
Anti-corruption (ANTI)	0.29**	0.29**	0.23*	−0.01	0.37***	0.25*	0.37***	0.26**	1	
Admin. procedures (AD)	0.09	0.15	0.26**	0.11	0.27**	0.27**	0.39***	0.38***	0.27**	1
Public service delivery (PUB)	0.45***	0.35***	0.39***	0.02	0.27**	0.31**	0.18	0.19	0.29**	0.30**

Source: Authors' calculation from datasets. ***, ** and *Significant at 1%, 5% and 10% levels, PAR: Public administration reform, GDPPC: Gross domestic product per capita

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**Figure 3:** Map of components of governance, 2011
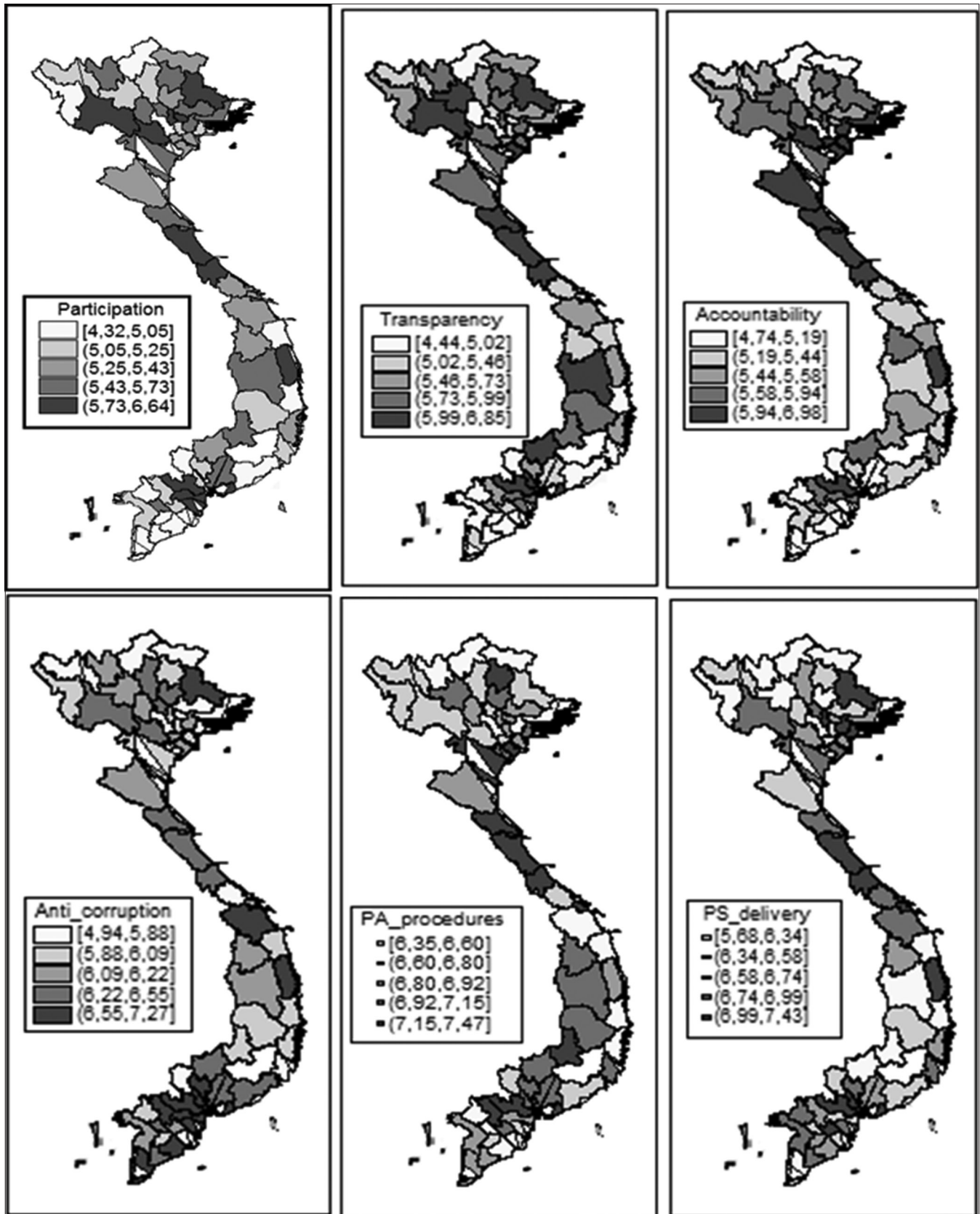
Source: Authors' mapping from PAPI dataset best, Thanh

lowest ones are white. The map indicates that provinces such as Ho Chi Minh City and the neighbours in the South, Hanoi Capital and the neighbours in the North, and Da Nang in the Central are those with high life expectancy and literacy. Provinces located

Figure 4: Map of human development in Vietnam, 2010-2011
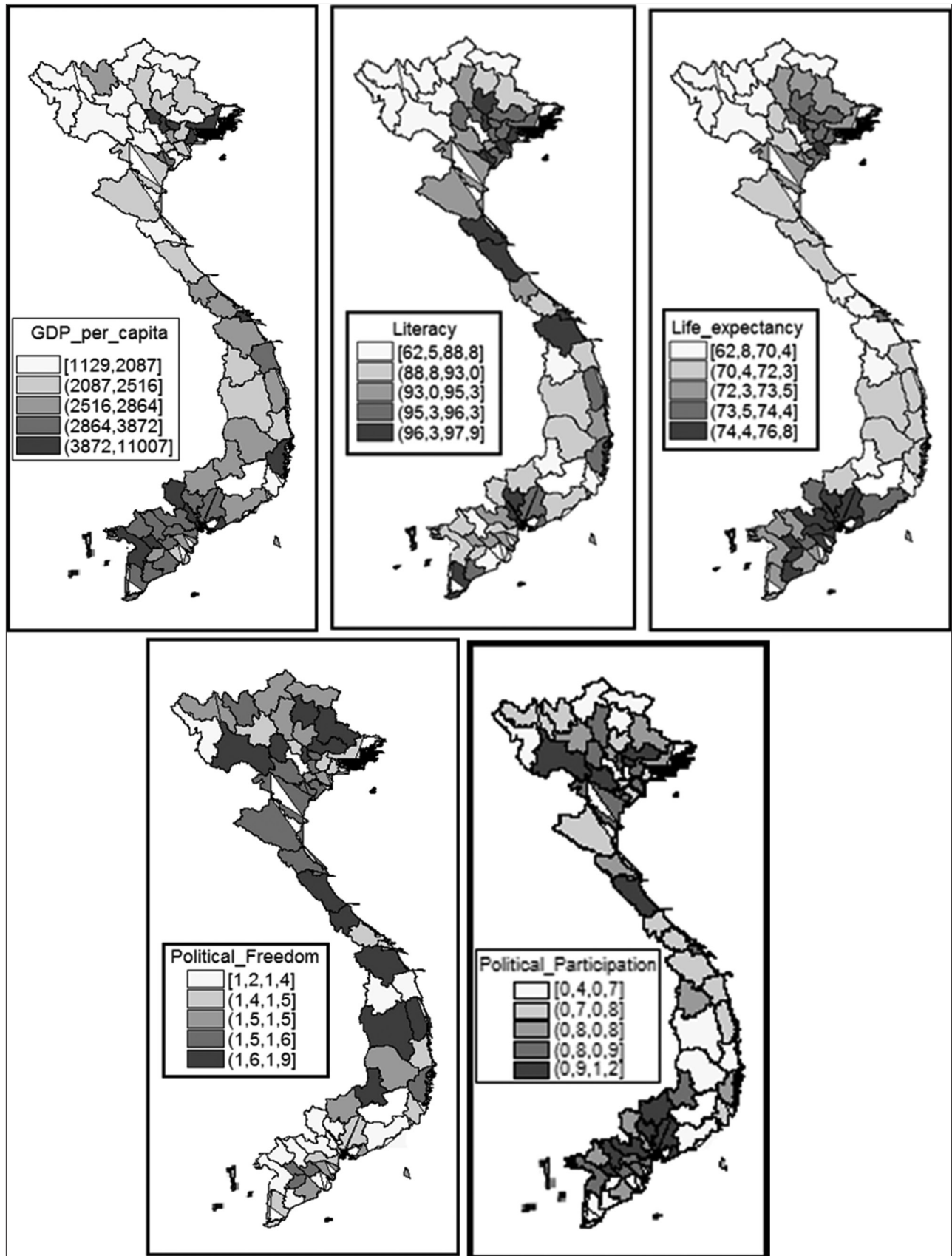
Source: Authors' estimation from PAPI (2011)

along the border with China, and with Lao PDR are with low life expectancy and literacy.

Participation opportunities seem to be a mixed picture of both poverty/inequality and GDP per capita (PPP) in some of their

parts. While there is not much difference among provinces in the Central, disparities prove to be clear among provinces in the Northern, Southwest, and Mekong Delta provinces.

5.3. Issues in Spatial Regression Analysis

We build a procedure that combine both contemporary and spatial econometrics estimate ten equations in Section 3.1 in which the Generalized Spatial Three Stage Least Squares (3SLS) procedure (package *gs3sls* in Stata) play a main role. The approach includes three steps as follows:

Step 1: We need to test of endogeneity for a number of variables that are the attribute of both human development and good governance. We use Hausman procedure to test for endogeneity. The procedure is as follows: We regress attribute variables, one by one, over other exogenous variables in equation (1.1), excluding income variable and without the intercept. Then, we get the residuals from that regression. We regress again the equation (1.1) with residuals as an extra independent variable and test the significance of the coefficient of the residuals and conclude about the endogeneity. The endogeneity Hausman test results as conducted show that only literacy variable proves to be endogenous, given our dataset. Basing on this result, we reduce the number of equations to estimate into a system of two equations that include (1) income equation and (2) literacy equation.

Step 2: We conduct 3SLS procedures on the system of two out of total ten equations derived from Step 1 in spatial econometric context. Since both income and literacy are endogeneity, we use two IVs for them, namely (1) the log of per capital GDP (PPP) in 2008 and (2) literacy rate in 2008.

We realize that the test results in Step 1 can be read in the context of contemporary econometrics and with the available data we use. As common in regression analysis at disaggregate levels such as province, district and communes in Vietnam, there may exist spatial autocorrelation in the data. In general, spatial autocorrelation means that variable in one area is affected by the value of that variable in neighbouring areas. Therefore, we suspect that there exists spatial autocorrelation among attributes of human development and good governance. There are two ways that autocorrelation can manifest itself. Spatial autocorrelation occurs if variables in one area are affected by the value of that same variable in a neighbouring area. For example, because income per capita in one location may in fact be influenced by income per capita in a neighbouring location, it is important to consider the nature of the spatial dependence inherent in the data. An alternative way in which the problem of spatial autocorrelation manifests itself is through the correlation of error terms. Error terms may be correlated spatially, as evidenced by observations from locations near each other having model residuals of a similar magnitude. Therefore, unless we correct for spatial autocorrelation, the assumptions of ordinary least squares (OLS) regression are violated, and the estimates derived from this method are likely to be biased.

Such a relationship in the first case is modeled as a spatial lag model and can be written as follows:

$$y_i = \beta X_j + \delta \sum_{j \neq 1} w_{ij} y_j + \varepsilon_i$$

Where y_i is the dependent variable for area i; δ is the spatial autoregressive coefficient; w_{ij} is the spatial weight reflecting the proximity of i and j; y_j is the dependent variable for area j; β is a vector of coefficients; X_j is a matrix of explanatory variables, and ε_j is the error term.

The spatial weights matrix, w, represents the degree of proximity between each pair of spatial observations. It is a binary variable if the two areas are contiguous, or else a continuous variable based on a function of the distance between the two areas or locations. Omitting this adjustment will result in the coefficients being biased and inconsistent.

A second type of spatial dependence can be modeled as a spatial error model:

$$y_i = \beta X_j + \lambda \sum_{j \neq 1} w_{ij} \varepsilon_j + \varepsilon_i$$

Where y_i is the dependent variable for area i; λ is the spatial autoregressive coefficient; w_{ij} is the spatial weight reflecting the proximity of i and j; y_j is the dependent variable for area j; β is a vector of coefficients; X_j is a matrix of explanatory variables, and ε_j is the error term.

Since this current package *gs3sls* in Stata only tailors to deal with a system of two equations, in this paper we follow a tentative estimation strategy for eight out of total ten equations as below:

Since income equation is the most important one in the system of equations, we apply the package *gs3sls* to estimate repeatedly a set of equations including income equation and each of other equations. As long as the estimations are conducted, we carry out suitable tests for spatial autocorrelation.

Spatial autocorrelation can be detected using standard global and local statistics that have been developed, including Moran's index, Geary's C, G statistics. However, in order to select which model to use, a Lagrange multiplier (LM) test is used to assess the statistical significance of the coefficients in each model, respectively. Where spatial autocorrelation is likely, usually the result of the test on each will be significant. The preferred model in such a case is the one with the highest LM test value (Anselin and Rey, 1991).

Step 3: We summary the estimation results from Step 2 and make some interpretation. The 3SLS procedures in Step 2 deal sufficiently with problem of contemporaneous correlation of the disturbances across income and literacy equations, thus these regression coefficients are unbiased and efficient. On top of that, our tentative procedures in Step 2 for eight equations can capture the spatial autocorrelation effects, although the inefficient magnitudes can hardly be measured.

Table 5: Diagnostic tests for spatial dependence

Equation/test	Value	Probability	Conclusion
Income equation			
Global Moran MI	0.29	0.00	Spatial lag
LM error (robust)	986,000	0.00	
LM lag (robust)	1,100,000	0.00	
Literacy equation			
Global Moran MI	−0.02	0.87	Spatial error
LM error (robust)	7.44	0.01	
LM lag (robust)	7.12	0.01	
Life expectancy equation			
Global Moran MI	−0.02	0.84	No spatial dependency
LM error (robust)	0.01	0.91	
LM lag (robust)	0.00	0.98	
Political freedom equation			
Global Moran MI	−0.00	0.43	Spatial error
LM error (robust)	29.87	0.00	
LM lag (robust)	29.52	0.00	
Political participation equation			
Global Moran MI	−0.01	0.52	Spatial error
LM error (robust)	6.29	0.01	
LM lag (robust)	6.01	0.01	
Participation equation			
Global Moran MI	−0.00	0.39	Spatial error
LM error (robust)	1.17	0.28	
LM lag (robust)	1.02	0.31	
Transparency equation			
Global Moran MI	−0.03	0.52	Spatial error
LM error (robust)	5.08	0.02	
LM lag (robust)	3.00	0.08	
Accountability equation			
Global Moran MI	−0.01	0.82	No spatial dependency
LM error (robust)	0.16	0.70	
LM lag (robust)	0.24	0.62	
Rule of law equation			
Global Moran MI	−0.02	0.77	No spatial dependency
LM error (Robust)	1.15	0.28	
LM lag (Robust)	1.23	0.27	
Decentralization equation			
Global Moran MI	−0.03	0.40	Spatial lag
LM error (Robust)	107.10	0.00	
LM lag (Robust)	107.19	0.00	

Source: Authors' estimation from datasets

5.4. Empirical Results and Discussion

Table 5 shows the tests which are conducted for spatial dependence when OLS models are estimated at province level. The Moran's I for income equation is 0.29 and significant at 1% level, indicating positive spatial autocorrelation. This implies that high (low) income level in one province suggest that surrounding provinces are likely to have high (low) levels. The LM test also proves that there exists spatial error in income equation. Therefore, we test the significance of spatial lag and spatial error dependencies with a LM test based on an OLS. The results indicate that both types of spatial dependency are statistically significant. However, the much larger LM in the spatial lag model suggests that lag dependency is likely to be stronger, and we proceed with the spatial lag model.

Similarly, lag dependency is also found in decentralization equation, indicating that the high (low) level of decentralization in one province suggest that surrounding provinces are likely to have high (low) levels.

The LM error test for literacy equation is 7.44 (slightly larger than that for LM lag test) and significant at 1% level, indicating positive spatial error. This can occur, for example, the quality of local education system affects literacy rate but is difficult to include in a regression model. Because the quality of local education system is likely to be spatially correlated (all provinces in the nation are affected by the quality of national education system), the error term in each area is likely to be correlated with those in nearby areas.

Similarly, error dependency is also found in equations of political freedom, political participation, participation, transparency. This can occur, for example, the quality of civil cadres affects governance but is difficult to include in a regression model. Because the quality of civil cadres is likely to be spatially correlated (all provinces in the nation are, more or less, sharing the same level of civil cadres), the error term in each area is likely to be correlated with those in nearby areas.

Both the LM error and lag tests for life expectancy equation is small and insignificant at common level, indicating no spatial dependency. Similarity, no spatial dependency is also found in accountability and rule of law equations.

In sum, by using a LM test to choose the preferred model with the highest LM test value, results in Table 5 shows that spatial dependency does exist in 6 of 10 equations.

Table 6 presents the reduced results of the spatial dependency models by using procedures mentioned in Section 5.3. The table includes only significant variables with their magnitude.

5.4.1. Income equation
The regression result over the most important equation (income equation) shows a significantly negative spill-over effect of income among provinces in Vietnam. Income level of one province tends to be negatively correlated with the neighbouring ones, illustrating the so-called arguments about the isolated development of each province in Vietnam: Each province behaves as if it was a small country.

In addition, the spill-over effect of education over income across provinces has positive sign and significant at 1% level. Education in one province can have the impact over the income level of surrounding provinces. That is the case that is observed in many cities in Vietnam where people from the neighbouring provinces can come to obtain education and training to improve their working skills and education level.

Significantly negative impact of accountability over income is found, indicating a surprising result, unlike common expectation.

Table 6: Estimation results of spatial relationship between good governance and human development

Equation/variable	Coefficient	t
Income equation		
Weight matrix and income level (per capita GDP [PPP]) (interaction)	−0.08	−2.90***
Weight matrix and literacy rate (interaction)	0.01	2.89***
Accountability index	−0.23	−2.03**
Life expectancy equation		
Accountability index	−1.12	−2.23**
Political freedom equation		
Weight matrix and political freedom index (interaction)	0.04	3.85***
Weight matrix and income level (per capita GDP [PPP]) (interaction)	−0.01	−3.98***
Participation index	0.15	2.66***
Transparency index	0.12	3.93***
Accountability index	−0.04	−2.34**
Decentralization index	0.09	3.19***
Political participation equation		
Participation index	0.36	6.63***
Participation equation		
Weight matrix and participation index (interaction)	−0.01	−1.67*
Weight matrix and income level (per capita GDP [PPP]) (interaction)	0.01	1.68*
Political freedom index	1.89	8.64***
Political participation index	1.55	8.31***
Transparency equation		
Weight matrix and transparency index (interaction)	−0.14	−4.24***
Weight matrix and income level (per capita GDP [PPP]) (interaction)	0.10	4.21***
Literacy rate	0.03	2.01**
Political freedom index	1.45	3.91***
Political participation index	1.00	3.07***
Accountability equation		
Weight matrix and accountability index (interaction)	−0.03	−2.01**
Weight matrix and income level (per capita GDP [PPP]) (interaction)	0.02	2.02**
Literacy rate	0.05	3.70***
Political participation index	1.22	3.77***
Rule of law equation		
Weight matrix and anti-corruption index (interaction)	−0.05	−2.42**
Weight matrix and income level (per capita GDP [PPP]) (interaction)	0.03	2.35**
Income level (per capita GDP [PPP])	0.32	2.20**
Political participation index	0.92	3.07***
Decentralization equation		
Weight matrix and decentralization index (interaction)	−0.14	−4.89***
Weight matrix and income level (per capita GDP [PPP]) (interaction)	0.12	4.88***
Income level (per capita GDP [PPP])	0.28	3.02***
Political participation index	0.49	2.55**

Source: Authors' estimation from datasets. ***, **, and *Rejection of H_0 at 1%, 5% and 10% level of significance, respectively. GDP: Gross domestic product

A plausible explanation can say that accountability is a long road in the process of public administration in Vietnam. At the current time, governmental agencies still need time to work smoothly so that they can serve the public community such as individuals, enterprises and so on efficiently and effectively.

5.4.2. Life expectancy equation
Significantly negative impact of accountability over health status (life expectancy) is also found, unlike expectation. There is a fact that health sector currently suffers from a lot of pressures of public reform. Accountability by itself can only work supportively in the new context of public reform.

5.4.3. Political freedom equation
The regression result over the political freedom equation shows a significantly positive spill-over effect of political freedom among provinces in Vietnam. Political freedom level of one province tends to be positive correlated with the neighbouring ones. In comparison with the economic freedom as shown in the spill-over effect of income in the income equation, provinces prove to be less political freedom, given that they are all under the rule of the Party. Unlike political freedom, income has a significantly negative spill-over effect over political freedom among provinces. Political freedom level of one province tends to be negatively correlated with the neighbouring ones. The two above results suggest that political freedom and economic one do not go in the same rhythm in Vietnam. Political participation seemingly does not contribute into the increase of political freedom when looking at the significantly negative sign of political participation index in the political freedom equation. It can be the case, given the current political regime of Vietnam. However, participation in the context of public administration and reform can positively contribute to political freedom. We observe a significant positive sign of participation index in the political freedom equation. This is particularly true in Vietnam where the political participation that can lead to a hard conflict situation is not supportive from the viewpoint of both central and local authorities. Institutions prove to be a spatial phenomenon in Vietnam.

Transparency and decentralization, like participation, in the context of public administration and reform are said to support for political freedom and they are evidenced in the regression analysis. Accountability proves to be the hard filed that could lead the process of human development going in a smooth way when showing a significant negative impact on political freedom, in addition to income, and health status (life expectancy). If the political reform is pushed up, accountability can be back to its real role in spurring human development. Again, institutions prove to be a spatial phenomenon in Vietnam. This can be a breakthrough point for pushing up economic growth and improvement of human capital in the forthcoming years.

5.4.4. Political participation equation
Participation in the context of public administration and reform, as we observe in the political freedom equation, can positively contribute to political participation. We obtain a significant positive sign of participation index in the political participation equation, as expectation.

5.4.5. Participation equation and equations of transparency, accountability, rule of law and decentralization
Unlike common expectation, the regression result over the participation equation shows a significantly negative spill-over effect of participation among provinces in Vietnam. Participation level of one province tends to be negative correlated with the neighbouring ones. This can be plausibly explained by the hetegeneity level of public administration and reform among provinces, some go so far and some are left behind even they are neighbours. Unlike participation, income level in one province has a significantly positive spill-over effect over participation among provinces, indicating that economic achievement tends to support public administration and reform rather than political freedom although by nature these two fields share some core values.

While participation positively impacts political freedom in political freedom equation, political freedom and political participation in participation equation, in turns, also have positive impacts on participation. This is in line with the common expectation. The results indicate that political reform can strongly support PAR. Similar patterns of negative spill-over effect of transparency, accountability, rule of law and decentralization, positive spill-over effect of income and positive effect of political participation on transparency, accountability, rule of law and decentralization are also found in equations of transparency, accountability, rule of law and decentralization.

5.4.6. System of equations
Table 6 shows that governance in general mostly affect aspects of human development such as political freedoms, and political participatory, while less on traditional components of human development such as income, health and education. This suggests a consideration of these additional aspects of human development in the process of handling governance to sustain human development.

6. CONCLUSION AND POLICY IMPLICATIONS

In general, the estimation results support most of hypotheses of the paper. That are (1) the attributes of governance have positive impact on the components of human development at disaggregate level and (2) the components of human development, in return, have positive impact on the attributes of governance at disaggregate level. However, we find out some particular cases that can be understood in the context of political regime in Vietnam or let's say that institutions prove to be a spatial phenomenon in Vietnam. Firstly, accountability proves to have negative impact on human development, including such aspects as political freedom, in income, and health status (life expectancy). Secondly, political participation seemingly does not directly contribute into the increase of political freedom, rather negatively.

On top of that, we find out several spill-over effects from the attributes of governance and the components of human development that can attract some policy consideration. Those are: (1) The negative spill-over effect of income, (2) the positive spill-over effect of education over income, (3) the positive spill-over effect of political freedom, (4) the negative spill-over effect of income over political freedom, (5) the negative spill-over effect of participation, transparency, accountability, rule of law and decentralization, and (6) the positive spill-over effect of income over participation, transparency, accountability, rule of law and decentralization.

Last but not least, the empirical results also indicate that governance mostly affect aspects of human development such as political freedoms, and political participatory, while less on traditional components of human development such as income, health and education.

The dataset does not support for the endogeneity of a number of attributes of governance and the components of human development. We may ask for more number of observations by looking at the data in several years. While realizing the limitation that can arise from data shortage, the paper is the first attempt to examine the spatial relationship between attributes of good governance and extended components of human development that include not only income, education and health but also political freedom and political participation as ends of human development. The regression results quite well support the theoretical framework that is built in the paper.

These findings have two main policy implications:
1. First, policies of human development and governance should target at extended aspects of human development such as political freedoms, and political participatory. Although Vietnam has achieved good performance in human development in terms of HDI, the nature of human development does not limit itself to only three aspects such as income, education and longevity. As mentioned in the theories, political freedoms, and political participation in the life of one's community are valued by all people and are no less important to human development in comparison with income, education and longevity. Empirical results in this paper suggest that both political freedoms, and political participation are good for good governance and this, in its turn, are good for other aspects of human development.
2. Second, policies must account for several spill-over effects of good governance and human development across provinces

in the future. We need more balanced policies in the context of economic-cum-political reforms so as to minimize the negative impact of economic growth, the negative impact of economic growth on political freedom, and the negative spill-over effect of participation, transparency, accountability, rule of law and decentralization among provinces. In other words, PAR must go in line with political reform and institution reform.

7. ACKNOWLEDGMENT

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