THE ROLE OF INSTITUTIONS IN ECONOMIC DEVELOPMENT AMONG DIFFERENT DEVELOPMENTAL LEVELS IN VIETNAM

Han Nu Ngoc Ton

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Fulfillment of the Requirements for the Degree of
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Han Nu Ngoc Ton
School of Public Administration

..... Major Advisor
(Associate Professor Prapon Sahapattana, Ph.D.)

The Examining Committee Approved This Dissertation Submitted in Partial Fulfillment of the Requirements for the Degree of Doctor of Philosophy (Development Administration).

..... Committee Chairperson
(Professor Voradej Chandarasorn, Ph.D.)

..... Committee
(Associate Professor Prapon Sahapattana, Ph.D.)

..... Committee
(Associate Professor Kasemsarn Chotchakornpant, Ph.D.)

..... Dean
(Associate Professor Boon-Anan Phinaitrup, Ed.D.)

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ABSTRACT

Title of Dissertation	THE ROLE OF INSTITUTIONS IN ECONOMIC DEVELOPMENT AMONG DIFFERENT DEVELOPMENTAL LEVELS IN VIETNAM
Author	Han Nu Ngoc Ton
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The world has witnessed remarkable development in Vietnam after the Vietnam War since the implementation of the Doi Moi Policy in 1986. The dissertation used a mixed method approach to explore the development in Vietnam. Initially, a developmental taxonomy was built to identify different developmental levels in Vietnamese provinces. Subsequently, panel regression was used to prove the causal relationship between institutional factors and economic development. In this stage, the study contributed a new argument for New Institutional Economics asserting that different developmental levels can intervene in this causal relationship. Eventually, a case study was conducted in a certain Vietnamese province to cultivate greater understanding of the local development. This qualitative study looked for positive factors leading to the local development as well as negative issues impeding the local development and send recommendation to pursuit development and further sustainable development in the local context.

Four clusters and developmental transition are identified with their main characteristics and implication for the State, the province and policy makers. Some institutions creating conditions for human development, social capital development and business development positively contribute to economic development. Meanwhile, it appears “payoff” mindset to gain economic priority in Vietnam governance; such as low degree of participation, informal charges in public transactions, low access to land and security. From the case study of Ben Tre province, the author would emphasize on the factor driven stage of development in Cluster 2, putting major investments on institutions, infrastructure, primary health care and good education.

The study contributes significant evidence of Vietnam to support New

Institutional Economics and New Public Management. Enabling government-oriented managerialism provides incentives and responsiveness, improves public service delivery, create favorable environment for citizen satisfaction and business development. Good governance would enhance economic development by lowering transaction cost, lowering transformation cost and increase labor specialization/human development. Different levels of development would intervene in the causal relationship between Institutions and Economic Development.

The study also sent comprehensive recommendations for policy framework to the government in designing developmental polices in Vietnam. Provinces in Cluster 1 would be in the efficiency-driven stage, by investing roughly half of capital in efficiency enhancers with higher education and training, goods and labour market efficiency, financial market development, technological readiness and market size. The cluster would then invest 40% in basic requirements for institutions, infrastructure, macroeconomic environment, health and primary education. The remaining 10% would be invested in business sophistication and innovation. Provinces in the other three clusters would be in the factor-driven stage, requiring a substantial 60% capital investment in basic requirements, a moderate investment of 35% in efficiency enhancers and only 5% in innovation and business sophistication.

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Han Nu Ngoc Ton

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LIST OF ABBREVIATIONS

Abbreviations	**Equivalence**
ANOVA	Analysis of Variance
ASEAN	The Association of South East Asian Nations
CFA	Confirmatory Factor Analysis
EFA	Explanatory Factor Analysis
FDI	Foreign Direct Investment
GDP	Gross Domestic Product
GDPPC	Gross Domestic Product Per Capita
KMO	Kaiser - Meyer - Olkin
PAPI	Provincial Governance and Public Administration Performance Index
PCA	Principal Component Analysis
PCI	Provincial Competitiveness Index
RMSEA	Root Mean Squared Error of Approximation
SDGs	Sustainable Development Goals

CHAPTER 1

INTRODUCTION

1.1 Background of the Study

Vietnam acquired and adapted the theory of development across history to address starvation and illiteracy since 1945, create a new generation of new technology and a non-traditional economy during 1950s, implement the Doi Moi Policy for socialist-oriented market economy in 1986, generate further development potential from domestic and international efforts and aid during and after the Vietnam War, successfully achieve the Millennium Development Goals within the first decade of the 21st Century while pursuing sustainable development (Ministry of Planning and Development, 2015; Vietnam Televisions, 2018; VnExpress, 2016). At present, the world knows Vietnam as a developing country in the ASEAN region experiencing rapid economic growth and a stable political system; the development of the country's two metropolises (Ho Chi Minh and the capital of Ha Noi) is especially remarkable. Development has also been permeating other cities and provinces with a wave of economic transition, human development concentration, pursuing enabled government, and climate change issues. Furthermore, the government has dealt with wide gaps amongst provinces and cities in various stages of development to assist unfavourable and vulnerable provinces and groups while generating sustainable national development.

1.2 Significance of the Study

The world has witnessed remarkable development in Vietnam after the Vietnam War since the implementation of the Doi Moi Policy in 1986. Chand et al. (2001) asserts that "Vietnam has provided an excellent example of how getting the institutions right can deliver rapid rises in productivity". Indeed, Chand et al. (2001) provide proof for the proposition in the context of agricultural sector in Vietnam: "Institutional reforms can deliver significant gains in productivity and output" (Chand, Duncan, & Quang, 2001). Subsequently, Vietnam has changed vigorously from being agriculturally dominant to industrially dominant from 1986 to the first decade of the 21st century. Until now, Vietnam has pursued sustainable development on par with the rest of the world. Hence, the author wonders, "Do institutional reforms also play an essential role in economic development in Vietnam in the new era of industrial economy with sustainable development?".

With the significance of the study, the author will conduct a dissertation with a mixed method approach to explore the development in Vietnam. Initially, a developmental taxonomy will be built to identify different developmental levels in Vietnamese provinces. Subsequently, panel regression will be used to prove the causal relationship between institutional factors and economic development. In this stage, the study would contribute a new argument for New Institutional Economics asserting that different developmental levels can intervene in this causal relationship. Eventually, a case study will be conducted in a certain Vietnamese province to cultivate greater understanding of the local development. This qualitative study will look for positive factors leading to the local development as well as negative issues impeding the local development and send recommendation to pursuit development and further sustainable development in the local context.

1.3 Objectives of the Study

The study has four objectives:

1. To identify different developmental levels in Vietnamese provinces;
2. To identify the role of institutions in economic development Vietnamese provinces;
3. To explore the local development in Vietnam;
4. To send policy recommendations to the government to design developmental policies among developmental clusters for the pursuit of harmonious development with the rest of the world.

1.4 Research Questions

The study has four research questions:

1. What is the multidimensional developmental taxonomy across Vietnam's 63 provinces during 2012-2015? How many developmental clusters exist in Vietnam? What are the main characteristics of each developmental cluster? Which Vietnamese provinces are in developmental transition?
2. Which are the institutional sub-indices leading to economic development across Vietnam's 63 provinces during 2012-2015? How different developmental levels can intervene in the causal relationships between institutional factors and economic development?
3. Ben Tre is the chosen province for the case study of the local development. What are the factors leading to the development in Ben Tre province? What issues can impede the development in Ben Tre province? What are some recommendations that the province can pursue to succeed in sustainable development?
4. Which Vietnamese policy frameworks provide harmonious development with the rest of the world?

1.5 Scope and Limitations

The study was implemented in Vietnamese provinces with the database covers the period 2011-2017 in both quantitative and qualitative researches.

1.6 Benefits of the Study

Potential contributions of the study:

1. Apply Development Theory to identify main characteristics of development in Vietnam, and explore the real meaning of development in the context of Vietnam. (i.e., Ben Tre province);
2. Apply the New Institutional Economics to prove the role of institutions in economic development;
3. Support the government in designing developmental polices in Vietnam. Those provinces in the homogenous groups enable to adapt their experiences in development. On the other hand, those provinces in the heterogenous groups enable to scrutiny the appropriate developmental orientation in the forthcoming future.

1.7 Theoretical Contribution

The study may contribute comprehensive findings on Development Theory, New Institutional Economics, and New Public Management. Furthermore, the study may prove a new hypothesis that how different developmental levels can intervene the causal relationships between institutional factors and economic development in the context of Vietnam.

1.8 Types of Data and the Unit of Analysis

Generally, the author used the secondary data covering 63 Vietnamese provinces and the period 2012-2015 to answer all research questions in the quantitative approach. Besides, the case study collecting narrative data covering the period 2011-2017 was used to answer all research questions in the qualitative approach.

1.9 Organization of the Study

The study has six chapters and each chapter embraces a particular content of the study. In **Chapter 1 (INTRODUCTION)**, the author introduces the background and the gap in the study on the basis of the priori. **Chapter 2 (LITERATURE REVIEW)** reviews the grounded theories to build up the conceptual frameworks in the quantitative approach and observe the phenomenon of development in a Vietnamese province in the qualitative approach. **Chapter 3 (METHODOLOGY)** indicates the concrete process of data collection and data manipulation to support the quantitative and qualitative researches. **Chapter 4 (RESULTS AND DISCUSSION)** conducts data analysis and theoretical comparison in quantitative and qualitative researches. **Chapter 5 (RECOMMENDATIONS FOR POLICY FRAMEWORKS)** provides both qualitative and qualitative policy frameworks. **Chapter 6 (CONCLUSIONS)** provides a general summary of this dissertation, suggests a new avenue for further researches, and points out the theoretical contribution of this dissertation.

CHAPTER 2

LITERATURE REVIEW AND CONCEPTUAL FRAMEWORKS

The author reviews the concept of development within the history of Vietnam; while exploring issues of economic growth, structural transformation, human development, good governance and environmental protection across time. Moreover, the author mentions the links between development and competitiveness in different developmental stages to generate further developmental policies. Subsequently, the author introduces the paradigm of New Institutional Economics with causal impacts between Institutions and Economic Development. Finally, the author introduces the paradigm of New Public Management with their strong linkages to Development and New Institutional Economics.

This literature review is the foundation upon which to build up two conceptual frameworks in the quantitative approach and observe the phenomenon of development in Vietnam province in the qualitative approach.

2.1 The Concept of Development

2.1.1 History of Economic Growth Theory

Economists have consistently questioned economic disparity between countries across history. Early studies (A. Smith, 1937; Solow, 1956) approached economic growth by simply explaining physical capital, labour productivity, natural resources and technology progress in classical and neo-classical growth theories. Subsequent studies (Becker, 1964; Galor & Moav, 2004; Mankiw, Romer, & Weil, 1992; Romer, 1990) stated the importance of human capital accumulation and development during the development process. However, those factors (A. Smith,

1937; Solow, 1956) (Becker, 1964; Galor & Moav, 2004; Mankiw et al., 1992; Romer, 1990) are not causes of growth. North and Thomas (1973) had emphasised the radical explanation of comparative growth resulting from differences in institutions. Indeed, in New Institutional Economics, good institutions help to generate national incomes and institutions play an essential role in sustaining the long-term economic growth. The underlying mechanisms explaining such causal relationships summarized in Table 2.1: transaction and transformation costs along security and risk assurance in economic activities (Karimi & Daiari, 2018).

Table 2.1 History of Economic Growth.

Theories	**Classical growth theory**	**Neo-classical growth theory**	**Endogenous growth theory**	**New Institutional Economics**
Explanation	Economic growth		Long-term economic growth	
Scholars	Adam Smith (1937) David Ricardo	Robert Solow (1965)	Garry Becker (1964) Paul Romer (1990) Gregory Mankiw and his colleagues (1992) Oded Galor and Omer Moav (2004)	Mancur Oslon Douglass North (1990)

Theories	Classical growth theory	Neo-classical growth theory	Endogenous growth theory	New Institutional Economics
Motives for growth	Physical capitals Labor productivity Natural resources Technology Competition in market economy A law of diminishing return (Solution: International trade)	Technology progress Physical capitals Labor productivity Savings and investment in physical capitals	Human capital accumulation/development: - School enrollment rate - Literacy rate - Public spending on education Spill – over effect Learning by doing effect	Good governance Strong institutions Democracy Maintain law and executive order, contracts and property rights Reduce transaction cost and investment risk Increase trust and corporation between citizens/enterprises and government Reduce conflict Increase political stability
Assumptions	Perfect information and unbounded rationality Transactions are costless and instantaneous			Incomplete information Limited mental capacity

Source: Created by the author.

2.1.2 Economic Growth and Structural Transformation for Development

Classical economists (Choi, 1983; Deane, 1978; A. Smith, 1937) explained the economic growth with crucial elements (e.g., production/natural resources, capital, labour/technology, and institutional setting of economic activity) and the essential role of the transformation process from agricultural to non-agricultural sectors. The classical model also indicates diminishing returns result from the corporate between capital and labour under limited natural resources. Most importantly, capital accumulation is the most dynamic factor crucially explaining classical economic growth (Choi, 1983; Deane, 1978; A. Smith, 1937).

The 1980s made understanding development's role regarding economic growth generation essential. In purely economic considerations, production efficiency should be maximised while making the use of labour and capital as efficient as possible. To ensure human well-being, educational and health investments should increase for capital accumulation. Most importantly, structural transformation was essential to reallocate economic activities from agriculture to non – agriculture sectors (e.g., manufacturing and services) (Goldin, 2016, p. 4).

2.1.3 Human Development for Development

Romer (1990) explored the relationship between human capital and economic growth through theory and evidence, reporting that basic literacy explained income growth and investment rates (Romer, 1990, p. 251, 273, 282).

Galor and Moav (2004) proved the transition from physical capital accumulation to human capital accumulation in the development process. During the early stages of the Industrial Revolution, "physical capital accumulation was the prime engine for growth" (Galor and Moav, 2004, p. 1001) as well as technological progress was based mainly on tangible and physical capital. The latter stages of Industrial Revolution, however, found technological progress based on intangible capital and human capital accumulation, replacing physical capital accumulation as "a prime engine of growth in the development process" (Galor and Moav, 2004, p. 1001).

Langelett (2002) introduced a comprehensive summary on human capital in the 20th Century, defining human capital as "the know-how of the work force to increase the productivity of each worker" (Langelett, 2002, p. 1). Similar to physical capital, investment in human capital yielded future returns and dividends, but also required substantially more time than physical capital (i.e., 18 years of formal education, additional formal education, on-the-job training, informal education, life experiences, learning by doing). Becker (1964) indicated the importance of human capital as an explanatory variable of economic development. Contrary to the classical growth model with the limitations of diminishing returns law, human capital investment led to the persistent economic growth, making economic growth the greatest proponent of national education (e.g., universal elementary education, desired secondary and tertiary education). Hence, educational spending would lead to prosperity, rather than simple economic growth. Becker (1964) stated that earnings of improvements over time in health and on-the-job training, alongside formal education, could explain total income growth. Becker (1964) also emphasised the focal role of human capital leading to remarkable economic growth in Japan and other Asian countries after the World War II. These countries were outside of the traditional Western trade alliance, however, their well-educated and intensive labour force proved their ability to sustain economic growth (Becker, 1964; Becker, Murphy, & Tamura, 1990).

Besides economic indicators of development (e.g., growth of GNP), Hicks and Streeten (1979) contributed composite indicators of social and human development (e.g., reduced poverty, improved quality of life, satisfied human basic needs) to measure the abstract concept of development. Indeed, social indicators were defined as "non-monetary measures of social progress" (Hicks and Streeten, 1979, p. 568) that attempted to measure "the development of health, nutrition, housing, and income distribution, as well as other aspects of cultural and social development" (Hicks and Streeten, 1979, p. 570). Hicks and Streeten (1979) distinguished between input indicators (e.g., hospital beds for 1,000 population, school enrolment rates) and output indicators (e.g., life expectancy, morbidity, literacy) in the domain of social and human development. The core indicators were chosen by Hicks and Streeten (1979) as the output measures (see Figure 2.1). Infant mortality was considered as an

especially good indicator of sanitation and water supply, whereas literacy was a good measure of educational progress.

Health:	– Life expectancy at birth;
Education:	– Literacy
	– Primary school enrolment (as per cent of population aged 5–14);
Food:	– Calorie supply per head or calorie supply as a per cent of requirements;
Water supply:	– Infant mortality (per thousand births)
	– Per cent of population with access to potable water;
Sanitation:	– Infant mortality (per thousand births)
	– Per cent of population with access to sanitation facilities; and
Housing:	– None.

Figure 2.1 Core Indicators of Social and Human Development.
Source: Hicks and Streeten (1979, p. 578)

2.1.4 Meaning of Development from Dudley Seers

Lewis (1955), The United Nations (1968) and Seers (1969) emphasise that development consists of much else besides economic growth. Seers (1969) defined development as improvement while highlighting some necessary human conditions, including possessing sufficient nutrition, poverty, income and employment. For instance, people should maintain minimum nutritional requirements to generate the bodily energy necessary for good health and living activities. Income should basic individual and familial needs (e.g., clothing, footwear, shelter). Various forms of employment would address current and future lives (e.g., working, studying for an active role in the future, working for a family farms or business, keeping house), rather than chronic unemployment or dependency (Seers, (1969), p. 1-4). Seers (1969) listed additional requirements for people participating economic activity, including

adequate educational levels, citizenship in an economically and politically independent country and freedom of speech (Seers, 1969, p. 5).

Seers (1969) affirmed the necessity of fiscal and governmental intervention to redistribute the income in the society transfer available income from the rich to the poor. Greater savings alongside a faster growth rate could then increase the possibility of redistribution. Eventually, genuine development foreshadowing would occur with capital investment driving economics and education by way of increased employment and more schools (Seers, 1969, p. 6).

Seers (1969) indicated that developmental potential might not appear immediately, but that it would be timely:

> A country may have little or no economic growth but be busy reshaping its political institutions so that, when growth comes, it can be turned into development; such country probably has a greater development potential than one with fast growth where political powers remains very firmly in the hands of a rich minority (Seers, 1969, p. 7).

According to Seers (1969), distinguished social scientists (e.g., Webbs and Keynes) gave strong attention to poverty, unemployment, and inequality during 50 first years of 20th Century; while economists (e.g., Pigou) were expected to reach greater social equality. Seers (1969) noted a negative association between economic growth and development (i.e., economic growth directly linked to increased unemployment and inequality). Hence, it was necessary to understand the causes of poverty, explain the emergence of unemployment and inequality for reaching genuine development plans (Seers, 1969, p. 7-9).

Table 2.2 indicates some of the alternate measurements for development provided by Seers (1969) as he explored the path towards accelerating economic growth while maintaining inclusiveness:

> To reduce unemployment is to remove one of the main causes of poverty and inequality…moreover, a reduction in inequality will of course reduce poverty, ceteris paribus…the reduction of unemployment means in part finding

> techniques which are labor intensive, with the least damage to the expansion of production…inequality is necessary to generate savings and incentives and thus to promote economic growth…countries relying on growing exports of manufactures, as many are, depend heavily on the emergence of businessmen with the drive to penetrate foreign markets (Seers, 1969, p. 16-17).

Table 2.2 Alternative Measures of Development Alongside with National Income.

Dimensions	**Measurements**
Human necessities	The proportion living in poverty
	The infant mortality rates
	The height and weight of school children
	Unemployment
	Inequality
Educational and political elements	Prisoners held for political/quasi-political issues
	The social and racial composition of parliaments, business boards, senior public administrative grades
	The proportion attainting secondary and university education
	Crime rates (i.e., petty theft)
	Rates of suicide and alcoholism
National independence	Democracy in elections
	The existence of foreign military bases and overflying rights
	Financial aids (i.e., the ratio of aid from the largest donor to total foreign exchange receipts)
	The proportion of assets owned by foreigners (i.e., subsoil assets)
	Dominance of certain trade pattern(s)
	Imports (i.e., the proportion of imported capital/immediate goods)

Source: Hansen (1969), Henderson (1968), Jolly (1969), Lydall (1968), Seers (1969)
Note: Created by the author.

Developmental strategy-making is the focal action of the Third World in the 21st Century, drawing upon the developmental pattern of rich nation, by avoiding historical errors. Seers (1969) emphasised the need for sustainable development in new era, in which a government should satisfy individual needs, create a safe life framework for its citizens, and cease deconstruction of the surrounding environment (Seers, 1969, p. 23).

2.1.5 Development as Freedom from Amartya Sen

Sen (1999) defined development as freedom, in which people enjoy various freedoms (e.g., politics, human development including basic education and health care), and governments work to remove social vulnerabilities (e.g., poverty, insecurity, oppression). Throughout world history, disadvantaged and vulnerable people have faced various crises, such as famines, malnutrition, morbidity, lacking basic education, health care and clean water. Sen (1999) asserted the focal roles of institutions, such as good governance, education arrangements, social media and public voice communication that supported developmental progress and the expanded pursuit of freedom (Sen, 1999, p. xi, 3-11, 8-9, 15-17, 38-40). Sen (1993) clarified that social values induced human developments and freedom, such as gender equality, childcare, family sizes, and fertility patterns (Nafziger, 2007, p. 52, 57).

Put simply, Sen (1999) indicated three types of freedoms and their correlating mechanisms:

> Political freedoms (in the form of free speech and elections) help to promote economic security…social opportunities (in the form of education and health facilities) facilitate economic participation…economic facilities (in the form of opportunities for participation in trade and production) can help to generate personal abundance as well as public resources for social facilities (Sen, 1999, p. 11).

2.1.6 Good Governance for Development

Quality of government, good governance and state capacity are three associated concepts that have received strong attention in social science since the 1990s. The importance of institutions explaining social and economic outcomes was illuminated by distinguished scholars (e.g., March and Olsen, 1989; North, 1990; Ostrom, 1990)

> Instead of focusing on how economic and sociological variables determined politics and outcomes of the political systems, the institutional approach turned the causal logic around by arguing that the character of a society's political institutions to a large extent determined its economic and social development (Rothstein and Teorell, 2012, p. 17).

> Promoting good governance in all its aspects, including by ensuring the rule of law, improving the efficiency and accountability of the public sector, and tackling corruption, are essential elements of a framework within which economies can prosper (United Nations).

The 2008 financial crises provides a strong example of how bad governance creates severe problems for developing, transitional and developed countries alike (Rothstein, 2011; Rothstein & Teorell, 2012).

The World Bank Research Institute introduced the following definition on good governance:

> The traditions and institutions by which authority in a country is exercised. This includes 1) the process by which governments are selected, monitored and replaced, 2) the capacity of the government to effectively formulate and implement sound policies, and 3) the respect of citizens and the state for the institutions that govern economic and social interactions among them (Kaufmann, Kraay, & Zoido-Lobaton, 1999, p. 1).

From such a definition, the World Bank declared Worldwide Governance Indicators with six essential measures, “voice and accountability, political instability and violence, government effectiveness, regulatory quality, rule of law, control of corruption” (Rothstein & Teorell, 2012, p. 15).

The establishment of different indices for measuring good governance began in 1996 with the Corruption Perception Index, launched by Transparency International and Worldwide Governance Indicators, created by the World Bank. These measures have opened new avenues to indicate relationships between good governance and various forms of development. Many studies showed that government institutions (e.g., free form of corruption and related practices) positively affect a large set of outcomes related to human well-being. The underlying mechanism explaining such a relationship is that quality governmental institutions enable policy implementation (e.g., control of corruption, the rule of law), generate economic growth while mitigating economic inequality. Other studies have observed the positive relationship between good governance and subjective well-being/life satisfaction/happiness (Rothstein & Teorell, 2012, p. 15).

“The Viet Nam Provincial Governance and Public Administration Performance Index (PAPI) is the country’s largest annual time-series, citizen-centric, nationwide policy monitoring tool” (Studies, Centre for Research and Training of the Vietnam Fatherland Front, & United Nations Development Program, 2018). PAPI has captured and reflected three mutually reinforcing processes, such as “policy making, policy implementation and the monitoring of public service delivery” (Studies et al., 2018). Each dimension in PAPI is specially tailored to the context of Vietnam at the local and national levels. In PAPI philosophy, the end-users of public administrative services (i.e., citizens) evaluate the competency of their localities in governance and public administration and point out the long-term improvement of their local performance. PAPI comprises six dimensions and 22 sub-dimensions (see Table 2.3). Since 2009, the PAPI survey has been deployed as a pilot project scaling from three to 30 provinces. PAPI was subsequently deployed nationally in Vietnam in 2011. Hence, PAPI can be used to reflect the institutional environment in Vietnam (Studies et al., 2018).

The Provincial Competitiveness Index (PCI) on Vietnam's business environment – firstly introduced in 2005 in Vietnam – has been known as "an annual business survey, assessment and ranking of the economic governance quality of provincial authorities in creating a favorable business environment for development of the private sector" (Vietnam Chamber of Commerce and Industry, 2017). PCI can be used to reflect the institutional environmental in Vietnam because of its 10 sub-indices reflecting 10 different issues of economic governance that impact on the development in the private sector, including:

> Low entry costs for business start-up…easy access to land and security of business premises…a transparent business environment and equitable business information…minimal informal charges…has limited time requirements for bureaucratic procedures and inspections…limit crowding out of private activity from policy biases toward state, foreign, or connected firms…proactive and creative provincial leadership in solving problems for enterprises…developed and high-quality business support services…sound labor training policies…fair and effective legal procedures for dispute resolution (Vietnam Chamber of Commerce and Industry, 2017).

Table 2.3 Six Dimensions and 22 Sub-Dimensions of PAPI.

6 Dimensions	**22 Sub-dimensions**
Participation at local levels	Civic knowledge
	Opportunities for participation
	Quality of elections
	Contributions
Transparency	Poverty lists
	Communal budgets
	Land-use plan/pricing
Vertical accountability	Interactions with local authorities
	People's inspection boards
	Community investment boards
Control of corruption	Limits on public sector corruption
	Limits on corruption in service delivery
	Equity in employment
	Willingness to fight corruption
Public administrative procedures	Certification procedures
	Construction permit
	Land procedures
	Personal procedures
Public service delivery	Health
	Education
	Infrastructure
	Law and order

Source: Centre for Community Support Development Studies, Centre for Research and Training of the Vietnam Fatherland Front, & United Nations Development Program (2018)

Note: Created by the author.

2.1.7 Environmental Protection for Development

The concept of development has changed with additional dimensions (e.g., economic growth, structural transformation, and human development) during the 20th Century. Since the 1970s, the world has conceived the relationship between the environment and development, especially the association between environmental degradation and economic growth (Goldin, 2016).

The Brundtland Report was mentioned in the World Commission on the Environment and Development in 1987 and introduced the concept of sustainable development with their significant recognition:

> While economic growth has contributed to improved living standards and life expectancy for many people around the world, it has adversely affected the environment by depleting (or irreversibly damaging) the natural resource base and that in the longer term this undermines future growth prospects and living standards (Goldin, 2016, p. 119).

2.1.8 Development and Competitiveness

The World Economic Forum has conducted analysis on the Global Competitiveness Index since 2005 "to measure the microeconomic and macroeconomic foundations of national competitiveness" (Schwab & Sala-i-Martin, 2014, p. 4) and cultivate knowledge on drivers of competitiveness. In The Global Competitiveness Report 2014-2015, the concept of competitiveness is defined as "the set of institutions, policies, and factors that determine the levels of productivity of a country" (Schwab & Sala-i-Martin, 2014, p. 4). There are 12 pillars of competitiveness: institutions, infrastructure, macroeconomic environment, health and primary education, higher education and training, goods market efficiency, labour market efficiency, financial market development, technological readiness, market size, business sophistication and innovation. These pillars are inherited from historical economic growth theory and grouped into three key economic drivers (see Figure 2.2 and Figure 2.3) (Schwab & Sala-i-Martin, 2014).

> …ranging from Adam Smith's focus on specialization and division of labor to neoclassical economists' emphasis on investment in physical capital and infrastructure, and, more recently, to interest in other mechanisms such as education and training, technological progress, macroeconomic stability, good governance, firm sophistication, and market efficiency… (Schwab & Sala-i-Martin, 2014, p. 4)

The Global Competitiveness Report 2014-2015 also introduced developmental stages with constant weights. For the first stage, a is considered factor-driven with unskilled labour and low productivity reflected by low wages. Such countries primarily engaged in excavation of natural resources, selling basic products/commodities/raw primary materials.

> Maintaining competitiveness at this development stage hinges primarily on well-functioning public and private institutions (pillar 1), a well-developed infrastructure (pillar 2), a stable economic environment (pillar 3), and a healthy workforce received at least a basic education (pillar 4) (Schwab & Sala-i-Martin, 2014, p. 10).

In the second stage, a nation becomes more competitive with higher productivity and wages while advancing development. A country then moves into the efficiency-driven stage, "when they must begin to develop more efficient production processes and increase product quality because wages have risen and they cannot increase prices" (Schwab & Sala-i-Martin, 2014, p. 10) and focuses on "higher education and training (pillar 5), efficient goods markets (pillar 6), well-functioning labour markets (pillar 7), developed financial markets (pillar 8), the ability to harness the benefits of existing technologies (pillar 9), and a large domestic or foreign market (pillar 10)" (Schwab & Sala-i-Martin, 2014, p. 10). In the final development stage (the third stage), a country "moves into the innovation – driven stage, wages will have risen by so much that they are able to sustain those higher wages and the associated standard of living only if their businesses are able to compete with new and unique

products" (Schwab & Sala-i-Martin, 2014, p. 10). Indeed, "companies must compete by producing new and different goods using the most sophisticated production processes (pillar 11) and by innovating new ones (pillar 12)" (Schwab & Sala-i-Martin, 2014, p. 10) (see Figure 2.2 and Figure 2.3).

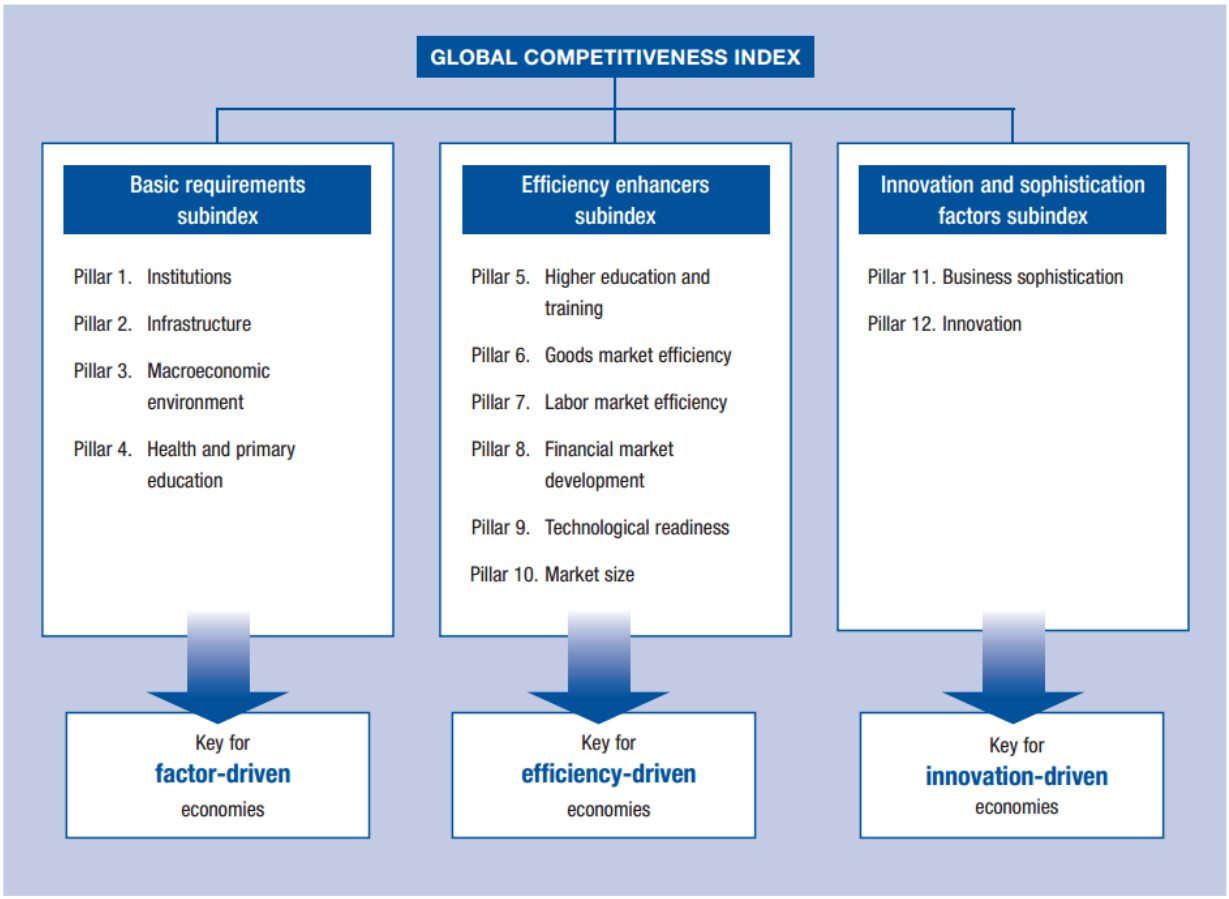

Figure 2.2 Grouping Pillars into Three Main Key Drivers for Economics.
Source: Schwab & Sala-i-Martin (2014, p. 9)

	STAGE OF DEVELOPMENT				
	Stage 1: Factor-driven	Transition from stage 1 to stage 2	Stage 2: Efficiency-driven	Transition from stage 2 to stage 3	Stage 3: Innovation-driven
GDP per capita (US$) thresholds*	<2,000	2,000–2,999	3,000–8,999	9,000–17,000	>17,000
Weight for basic requirements	60%	40–60%	40%	20–40%	20%
Weight for efficiency enhancers	35%	35–50%	50%	50%	50%
Weight for innovation and sophistication factors	5%	5–10%	10%	10–30%	30%

Figure 2.3 Different Stages of Development with Recommended Weights for Investment/Intervention.

Source: Schwab & Sala-i-Martin (2014, p. 10)

2.2 New Institutional Economics

2.2.1 Definition of Institutions

Redek and Susjan (2005) rewrote the definition of institutions based on North (1990): “Institutions are the rules of the game in a society, more formally, they are the limitations to free behavior imposed on the individual by the society, shaping the relationships among individuals”. Moreover, institutions can be represented as “collective action in control of individual action” with their political, social and economic connections in the society (D. North, 1990; Redek & Susjan, 2005).

Aron (2000) introduced institutional frameworks based on North’s definition with formal constraints (i.e., “constitutions and laws governing economics and politics”) and informal constraints (i.e., “unwritten taboos, customs, and traditions”). Formal institutions impede the development of unwanted “customs, laws, trust and normative rules” in the society. Informal institutions have been impacted by various behaviors that likewise influence the role of said behavior within the local culture. Economic development along with labor specialization and complex societies require “political, judicial and economic rules and contracts” facilitating political and/or economic exchanges. In reality, the States employ rules in the hierarchal form from constitutions “to state and common laws, to specific by-laws, to individual contracts” (Aron, 2000).

Shirley (2008) emphasizes an institutional framework taking place in a market economy with basic two basic mechanisms and two sets of institutions. For the first mechanisms, some institutions create favorable conditions for exchanges with low transaction costs and reliable trust. For the second mechanism, meanwhile, other institutions create interventions to the State and/or any powerful actors for property protection. The first set of institutions encompasses enforcement contract, norms and rules (i.e., in commerce), common habits and beliefs for shared values, and human development. The second set of institutions encompasses constitutions, rules and laws (i.e, in election, speech and education), common norms (i.e., “motivating people to abide by laws and cooperate in monitoring government”) (Shirley, 2008).

2.2.2 New Institutional Economics: The Causal Relationship between Institutions and Economic Development

Mennard and Shirley (2008) express, “New Institutional Economics focusses on how such institutions emerge, operate, and evolve, how they shape the different arrangements that support production and exchange, as well as how these arrangements act in turn to change the rules of the game”. In neoclassical economics, its assumption is that “individual have perfect information and unbounded rationality, and transactions are costless and instantaneous”. In contrast, New Institutional Economics assumes that “individuals have incomplete information and limited mental capacity”; thus, individuals get “uncertainty about unforeseen event and outcomes” as well as “incur transaction costs to acquire information”. Hence, human beings create both formal institutions and informal institutions to “reduce risk and transaction costs” (Mennard & Shirley, 2008).

Mennard and Shirley (2008) emphasize “neoclassical economics was not created to explain the process of economic change, much less political or social change”. In contrast, institutionalists would understand change by “understanding human incentives and intentions and the beliefs, norms and rules” that they create to pursue their goals (Mennard & Shirley, 2008).

Aron (2000) emphasizes the essential role of institutions in a national economic growth. Aron (2000) writes comprehensive literature review about measures of institutions and the relationship between “the quality of institutions and investment and growth”. Aron (2000) indicates five types of institutional measures, including quality of formal institutions, social capital, social characteristics, political institutions and political instability (Aron, 2000). North (1990) and Aron (2000) indicate the reason for the less development of Third World countries. Institutional framework with their formal and informal rules is defined as “the incentives and the wealth-maximizing opportunities of individuals and organizations”. The poor countries get stuck in the devious situation because different definitions of institutions between the Third World and the First World. Rather spurring productivity in the mindset of the rich, the Third World countries refer institutions to “a set of payoffs to political/economic activity”. These rules have impact on individuals as well as

organizations (i.e., political organizations, economic organizations, education bodies, and social organizations) (see Table 2.4) (Aron, 2000; D. North, 1990).

Table 2.4 List of Organizations Suffered from Rules in Institutional Framework.

Types of organizations	**Examples**
Political organizations	City councils, regulatory agencies, political parties, tribal councils
Economic organizations	Firms, trade unions, family farms, cooperatives, rotating credit groups
Educational bodies	Schools, universities, vocational training centers
Social organizations	Churches, clubs, civic association

Source: Aron (2000, p. 104)
Note: Created by the author.

Aron (2000) points out the underpinning causal mechanism explaining the relationship between institutional framework and economic growth. Transaction costs and transformation costs are measurable outcomes reflecting the economic growth within the institutional environment. Transaction cost increases when property rights and/or the rule of law are unreliable. In this situation, private firms prefer small scale operation, even in an underground economy with illegal form, perhaps rely on bribery and corruption to facilitate operations. Moreover, transformation costs increase essentially with unenforceable contracts. Private firms prefer using inexpensive technology or low level of specialization leading to the consequence of less efficiency, less competition, short-term horizon. Enterprises in weak institutional environments suffer from non-professional economic exchanges, such as being "restricted to interpersonal exchanges", low level of specialization, and an involvement of social network and kinship ties in signing contract. Indeed, in industrial economies with strong institutions, enterprise can engage in "complex, long-term, and multiple-contract exchanges with effective enforcement". Strong

property rights alongside with long-term contracting may create capital markets and spur economic growth (Aron, 2000). Agreeing with Aron (2000), Shirley (2008) describes how the low institutional environments curb the economic growth. The general economy is suffered from short-term growth in the low institutional environments. In the case of insecure property rights, and high transaction costs, the investors try to reap rapid returns/high returns by utilizing bribes/rent seeking rather than investing in production, innovation and human development (Shirley, 2008, p. 611).

Rodrik (2000) lists five main types of institutions, including "poverty rights, regulatory institutions, institutions for macroeconomic stabilization, institutions for social insurance, and institutions of conflict management". Rodrik (2000) explains how these institutions contribute to economic growth, or in other words, "allow markets to perform adequately", or avoid market failure. Indeed, property rights and regulatory institutions impede the worst business forms (i.e., "fraud, anti-competitive behavior, and moral hazard"). Stable macro-economic environments are necessary for growth with the crucial roles of central banks and the states. Social insurance and conflict management mitigate social cohesion with increasing economic performance. Furthermore, Rodrik (2000) elicited local knowledge and the strategy for institutional building. Local knowledge is processed and aggregated under participatory political systems. Democracy is a buffer, or in other words a meta-institution, to build good institution. Hence, participatory democracies deliver quality growth (i.e., long-term growth, better resilience after economic shocks, better social distribution) (Redek & Susjan, 2005; Rodrik, 2000).

Kaldaru and Parts (2008) indicate the significant causal relationship between social-institutional factors and economic development. This research was conducted in the macro level across 34 European countries. Kaldaru et al. (2008) used Principal Component Analysis to find three latent variables as independent factors (i.e., "Human and Social Capital, Income Equality, and Redistribution") collected from related secondary data. Quality of governance is one of determinants measured for social capital. They suggest Human and Social Capital has a positive impact on the GDP per capita and Human Development Index (Kaldaru & Parts, 2008).

Gwenhamo (2011) indicates the positive relationship between Property Rights and Foreign Direct Investment (FDI) in the empirical research conducted in Zimbabwe from 1964 to 2005. Other significant explanatory variables involved in the model are “GDP, capital intensity, ratio of external debt and GDP, political stability and educational levels” (Gwenhamo, 2011).

Osman et al. (2012) affirms the positive driven institutional factors on economic performance in 27 Sub-Saharan Africa (SSA) countries from 1984 to 2003. By improving institutional quality (i.e., “enhancing rule of law and regulatory quality, improving contract enforcement, security property rights, and reducing uncertainty”) SSA countries may gain long-term economic development and social prosperity (Osman, Alexiou, & Tsaliki, 2012).

Roy et al. (2014) conducted the empirical research in different Indian states from 2004 to 2011 to prove the essential role of institutions on economic performance. They (2014) used Principal Component Analysis to find three latent institutional factors (i.e., Legal Institutions, State Interventions and Political Institutions) collected from various indices. Firstly, they suggest State Intervention has a impact on State’s GDP Growth, especially fiscal governance as positive determinant whereas economic freedom as negative determinant. Subsequently, Legal Institutions have significant impacts on Industrial Development, especially legal efficiency as negative determinant whereas rule of law and property rights protection as positive determinants. Finally, Political Institution measured by political stability has positive impact on Industrial Development (Roy, Sarkar, Mandal, & Pandey, 2014).

Vitola and Senfelde (2015) assert institutions are driven factors of socio-economic development (i.e., GDP per capita and life satisfaction). This cross-national research used the World Bank Worldwide Governance Indicators covering both economic institutions (i.e., “regulatory quality, rule of law, control of corruptions”) and political institutions (i.e., “voice and accountability, government effectiveness, political stability, absence of violence”). Vitola’s study (2015) contribute to the critical roles of formal and in formal institutions in modern economies:

1. Formal institutions

   Well-established property rights and efficient markets are fundamental preconditions for socioeconomic development because they encourage investing in capital and human resources…corruption control increases the efficiency of markets, as well as decrease costs for economic agents, whereas voice and accountability increase the participation of economic agents in decision-making, thus shaping legislation that supports and encourages socioeconomic development…government effectiveness, post-materialism, collectivism, and initiative have a significant impact on socioeconomic performance at this stage of development"

2. Informal institutions

   Trust, initiative, voice and accountability" play essential roles in innovation-driven economies (Vitola & Senfelde, 2016, p. 277)

Yildirim and Gokalp (2016) analysed the causal relationship between institutions and macro-economic performance in 38 developing countries from 2000 to 2011. They state some institutional structure indicators have positive effects on GDP per capita (i.e., "the integrity of the law system, regulations on trade barriers, restriction of foreign investments, the share of private sector in the banking system, and employment-dismissal"). In contrary, other institutional structure indicators have negative effects on GDP per capita (i.e., "judiciary independence, government expenditures, transfers and subsidies, civil freedoms, the black market exchange rate, collective bargaining, and political stability") (Yildirim & Gokalp, 2016).

2.3 New Public Management

New Public Management is a new paradigm developed to displace Old Public Management. The emphasis in New Public Management is on incentives and

competition; in contrast, Old Public Management emphasizes on command and control, and on compliance with rules of law. Indeed, New Public Management removes the obsolete considerations in Old Public Management, such as pure policy, traditional bureaucracies, development and investment, and classic-and-control regulation. Alternatively, New Public Management looks toward measurable performance, "loosely coupled and quasi-autonomous units and competitively tendered services", effectiveness and cost-cutting, and self-regulation. Furthermore, New Public Management "allows public managers greater freedom to manage according to private sector corporate practice". New Public Management strikes to reduce the size of governments, shifts away "from the public bureaucracy in favor of para-government" with "subsidiarity principle in service delivery" and "reliance on the private for service delivery". New Public Management oriented managerialism not only reduces the size but also reshapes the role of central, allocates resources and wealth differently, and provides collective goods in a different fashion (Lynn, 2006, p. 1-18).

There are some common characteristics in New Public Management (Lynn, 2006, p. 107-108):

> A business-oriented approach to government…a quality and performance-oriented approach to public management…an emphasis on improved public service delivery and functional responsiveness…an institutional separation of public demand functions (councils, citizens' characters), public provision (public management boards) and public service production function (back offices, outsourcing, agencification, privatization)…a linkage of public demand, provision, and supply units by transactional devices (performance management, internal contract management, corporatization, intergovernmental covenanting and contracting, contracting out) and quality management…wherever possible, the retreat of (bureaucratic) government institutions in favor of an intelligent use of markets and commercial market enterprises (deregulation, privatization, commercialization, and marketization) or virtual markets (internal competition, benchmarking, competitive tendering).

2.4 Conceptual frameworks

2.4.1 Multidimensional Taxonomy of Development

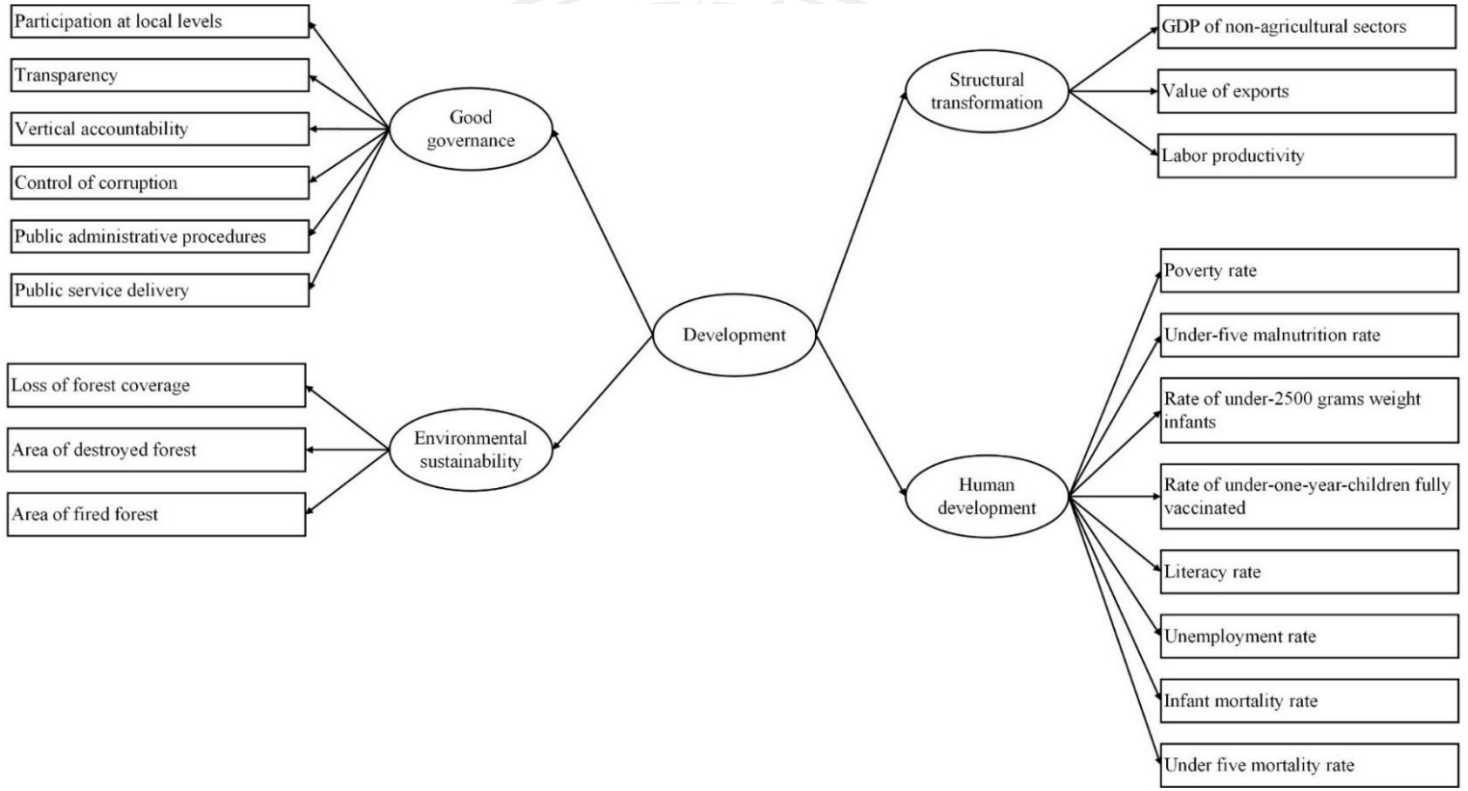

Figure 2.4 The Conceptual Framework to Build the Multidimensional Taxonomy of Development.

Source: Created by the author.

2.4.2 Causal Relationship between Institutional Factors and Economic Development

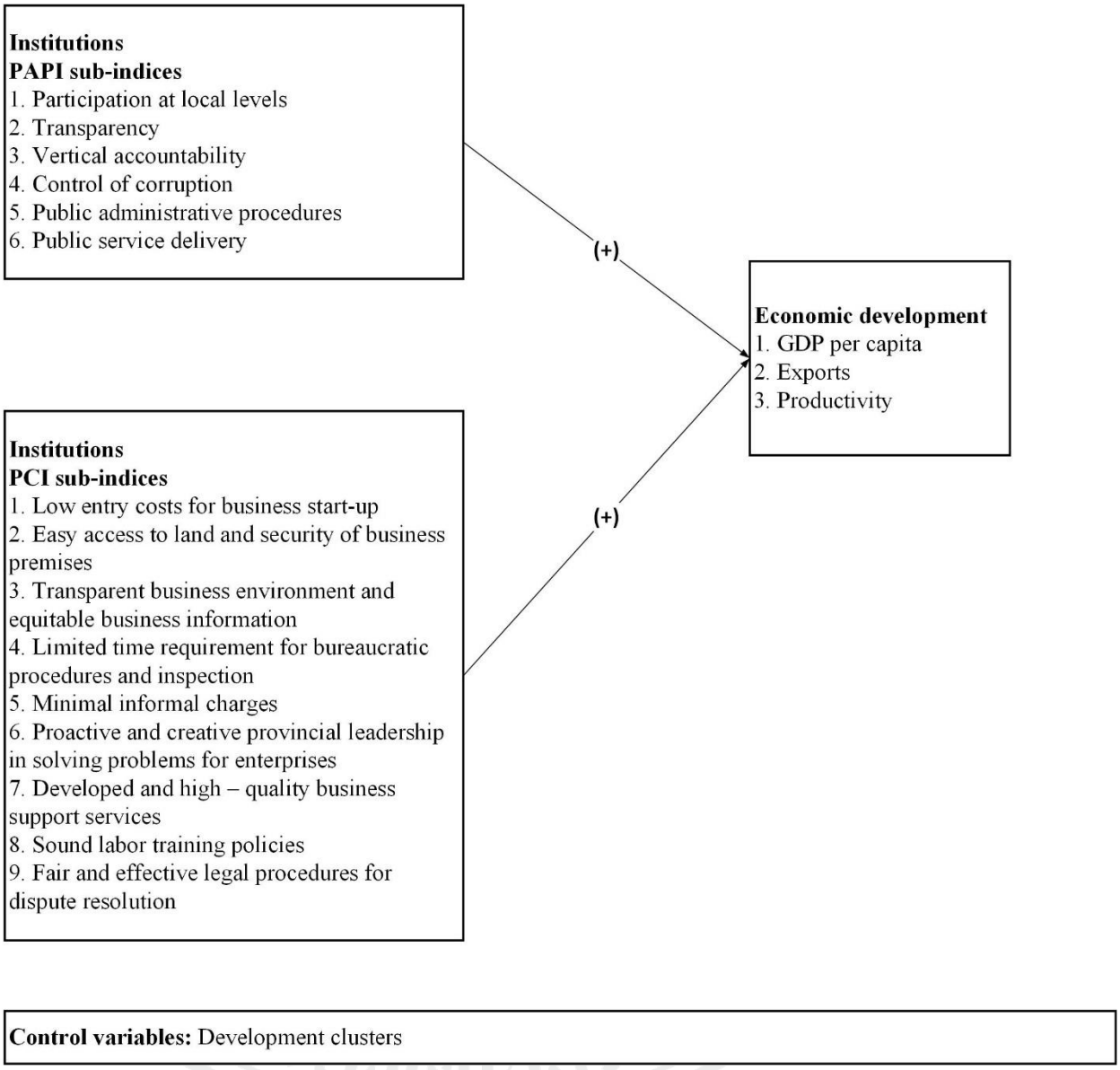

Figure 2.5 The Conceptual Framework to Identify the Causal Relationship between Institutions and Economic Development.

Source: Created by the author.

CHAPTER 3

METHODOLOGY

The study used mixed-method approach to answer all research questions, including two quantitative researches and one qualitative research. Initially, a cluster analysis is used to identify different developmental clusters by using the secondary data from 2012 to 2015. Subsequently, a panel regression is used to prove the causal relationships between Institutional factors and Economic Development by using the secondary data from 2012 to 2015. Eventually, the case study was used to explore the local development in Ben Tre province.

The author introduces the entire of process of data collection and data manipulation to support the quantitative and qualitative researches in this dissertation.

3.1 Data Collection for Quantitative Researches

The secondary data were used to measure all indicators and variables mentioned in the conceptual frameworks (see Figure 2.4 and Figure 2.5) in the form of panel data during 2012-2015 in 63 provinces across Vietnam.

The data measuring economic development, structural transformation, human development and environmental sustainability was collected from The General Statistic Office of Vietnam. The data measuring good governance and institutional environment was collected from annual PAPI reports (see Figure 2.4, Figure 2.5, Table 3.1, Appendix A, and Appendix B).

The unit of analysis in this research is a province in Vietnam. There are 63 provinces in Vietnam and the collected data covers 2012-2015. The provinces reflect the classification of developmental levels and the panel regression between institutional factors and economic development applied to the entire country. The time frame of 2012-2015 was selected to ensure data sufficiency for the study. The

database is in the form of panel data while all single cases are independent of each other during cluster analysis and are dependent of each other during panel regression. The author collected panel data from all 63 provinces to maximise the number of samples for cluster analysis and panel regression in the context of Vietnam.

3.2 Specification of Measurement

Table 3.1 Specification of Variables.

DIMENSION/ REFFERENCES	VARCODE	VAR DESCRIPTION	LEVEL OF MEASUREMENT
Demographics	PROVINCE	Name of province	String/Non-metric/Nominal
	YEAR	Year of data	String/Non-metric/Ordinal
	PRO_YEAR	Name of province + year of data	String/Non-metric/Ordinal
	REGION	Regional location of province	String/Non-metric/Nominal
	DEVELOPMENT_CLUSTER	Developmental cluster of province (after cluster analysis)	String/Non-metric/Ordinal
Economic Development/ Structural transformation	GDP_NONAGRI	GDP of non-agricultural sectors (%)	Metric
	EXPORTS	Value of exports (thousand USD)	Metric
	PRODUCTIVITY	Labor productivity (million VND/labor) GDP/worker	Metric
	GDPPC	GDP per capita (USD)	Metric

DIMENSION/ REFFERENCES	VARCODE	VAR DESCRIPTION	LEVEL OF MEASUREMENT
Human development	POVERTY	Poverty rate (%)	Metric
	MALNUTRITION	Under-five malnutrition rate (%)	Metric
	WEIGHT	Rate of under-2500 grams weight infants (%)	Metric
	VACCINATION	Rate of under-one-year-children fully vaccinated (%)	Metric
	LITERACY	Literacy rate (%) Percentage of literate population at 15 years of age and above	Metric
	UNEMPLOYMENT	Unemployment rate of labor force at working age (%)	Metric
	INFANTDEATH	Infant/Under one mortality rate (%)	Metric
	U5DEATH	Under five mortality rate (%)	Metric
Good governance	PAPI1PARTI	Participation at local levels	Metric
	PAPI2TRANS	Transparency	Metric
	PAPI3ACCOUNT	Vertical accountability	Metric

DIMENSION/ REFFERENCES	VARCODE	VAR DESCRIPTION	LEVEL OF MEASUREMENT
	PAPI4CORRUP	Control of corruption	Metric
	PAPI5PROCEDURE	Public administrative procedures	Metric
	PAPI6SERVICE	Public service delivery	Metric
	PCI1ENVIR	Low entry costs for business start-up	Metric
	PCI2LAND	Easy access to land and security of business premises	Metric
	PCI3TRANS	Transparent business environment and equitable business information	Metric
	PCI4TIME	Limited time requirement for bureaucratic procedures and inspection	Metric
	PCI5UNOF	Minimal informal charges	Metric
	PCI7ACTIVE	Proactive and creative provincial leadership in solving problems for enterprises	Metric
	PCI8BUSSUP	Developed and high – quality business support services	Metric

DIMENSION/ REFFERENCES	VARCODE	VAR DESCRIPTION	LEVEL OF MEASUREMENT
	PCI9LABOR	Sound labor training policies	Metric
	PCI10LAW	Fair and effective legal procedures for dispute resolution	Metric
Environmental sustainability	LFCOVER	Loss of forest coverage (%) is calculated by the differentiation of forest coverage at year (t) and one lagged year (t-1)	Metric
	DFOREST	Area of destroyed forest (hectare)	Metric
	FFOREST	Area of fired forest (hectare)	Metric

Source: Created by the author.

Note: Loss of forest coverage (%) = Forest coverage at year t – Forest coverage at year (t-1)

3.3 Quantitative Research Procedure

3.3.1 Examining the Data

The secondary data with different units among variables used in the study was examined by using different techniques. Firstly, the draw data was manipulated with box plot to detect outliers and skewness. The outliers and skewness were repaired by using algorithm transformation (i.e., cubic, square root, log and so forth). Subsequently, the transformed data was standardized with z-transformation. The examining process was conducted in the STATA version 14 to build the new standardized dataset (see Table 3.2).

3.3.2 Verifying the Concept of Development by Using Factor Analysis

Principal component analysis (PCA) was used to construct and validate the latent factors/dimensions among variables/indicators. The aim is to validate the conceptual framework of development (see Figure 2.4 and Figure 2.5). The factor analysis was conducted in SPSS version 20.

3.3.3 Classification of Development by Using Cluster Analysis

The cluster analysis was conducted in STATA version 14. Hierarchical cluster analysis used Ward method with squared Euclidean distances. The multicollinearity among variables was conducted to check the basic assumption of cluster analysis (i.e., avoid the significantly high correlation between two variables which value is more than 0.9). The making decision on the number of clusters was conducted according to the dendrogram and stopping rules[1].

[1] Variance ratio criterion (VRC) developed by Calinski and Harabasz (1974). Look at Calinski-Harabasz pseudo-F and Duda Hart Je(2)/Je(1) stopping rule indices in STATA

3.3.4 Selecting Good Indicators by Using ANOVA

Performing ANOVA analysis in STATA version 14 was conducted to check discriminating power of each variable and reflect some good indicators in cluster analysis.

3.3.5 Cluster Visualization

Atlas map drawing is used to visualize the distribution of different clusters of development across Vietnam.

3.3.6 Panel Regression between Institutions and Economic Development

Performing Panel Regression to identify the causal relationship between institutional factors and economic development in STATA version 14 (see Figure 2.5 and Table 3.3).

3.4 Qualitative Research Procedure

The case study was conducted using a qualitative approach with narrative data and descriptive data. Initially, the author reviewed the national and local documents related to the development from 2014 to 2017. Subsequently, various dimensions and aspects of development were recorded from these documents as the base for self-observation and further depth interview with the citizens and the provincial government in the summer of 2017 to verify the literature review focusing on development. In addition, the author collected the statistical data of Ben Tre province from 2011 to 2017 to systematically analyse the essential causes leading to the development in the province.

Table 3.2 Data Transformation for Developmental Taxonomy.

DIMENSION	VARCODE	TRANSFORMATION PROCESS	LEVEL OF MEASUREMENT
Demographics	PROVINCE	None	String/Non-metric/Nominal
	YEAR	None	String/Non-metric/Ordinal
	PRO_YEAR	None	String/Non-metric/Ordinal
	REGION	None	String/Non-metric/Nominal
	DEVELOPMENT_CLUSTER	None	String/Non-metric/Ordinal
Economic development/ Structural transformation	GDP_NONAGRI	z-transformation	Metric
	EXPORTS	Square root ($\sqrt{X}$), z-transformation	Metric
	PRODUCTIVITY	Negative reciprocal root (-1/$\sqrt{X}$), z-transformation	Metric
Human development	POVERTY	Square root ($\sqrt{X}$), z-transformation	Metric
	MALNUTRITION	z-transformation	Metric

DIMENSION	VARCODE	TRANSFORMATION PROCESS	LEVEL OF MEASUREMENT
	WEIGHT	Negative reciprocal root (-1/$\sqrt{X}$), z-transformation	Metric
	VACCINATION	Reverse, square root ($\sqrt{X}$), z-transformation	Metric
	LITERACY	Reverse, negative reciprocal root (-1/$\sqrt{X}$), z-transformation	Metric
	UNEMPLOYMENT	Reverse, z-transformation	Metric
	INFANTDEATH	Negative reciprocal root (-1/$\sqrt{X}$), z-transformation	Metric
	U5DEATH	Negative reciprocal root (-1/$\sqrt{X}$), z-transformation	Metric
Good governance/ Institutions	PAPI1PARTI	z-transformation	Metric
	PAPI2TRANS	z-transformation	Metric
	PAPI3ACCOUNT	z-transformation	Metric
	PAPI4CORRUP	z-transformation	Metric

DIMENSION	VARCODE	TRANSFORMATION PROCESS	LEVEL OF MEASUREMENT
	PAPI5PROCEDURE	z-transformation	Metric
	PAPI6SERVICE	z-transformation	Metric
Environmental sustainability	LFCOVER	z-transformation	Metric
	DFOREST	Square root ($\sqrt{X}$), z-transformation	Metric
	FFOREST	Square root ($\sqrt{X}$), z-transformation	Metric

Source: Created by the author.

Note: Only metric variables were transformed by power transformation and z-transformation.

Table 3.3 Data Transformation for Testing Causal Relationship between Good Governance and Economic Development.

DIMENSION	VARCODE	TRANSFORMATION PROCESS	LEVEL OF MEASUREMENT
Demographics	PROVINCE	None	String/Non-metric/Nominal
	YEAR	None	String/Non-metric/Ordinal
	PRO_YEAR	None	String/Non-metric/Ordinal
	DEVELOPMENT_CLUSTER	None	String/Non-metric/Ordinal
Economic development	GDPPC	Logarithm (logX)	Metric
	EXPORTS	Square root ($\sqrt{X}$)	Metric
	PRODUCTIVITY	Negative reciprocal root (-1/$\sqrt{X}$)	Metric
Good governance/ Institutions	PAPI1PARTI		Metric
	PAPI2TRANS		Metric
	PAPI3ACCOUNT		Metric
	PAPI4CORRUP		Metric

DIMENSION	VARCODE	TRANSFORMATION PROCESS	LEVEL OF MEASUREMENT
	PAPI5PROCEDURE		Metric
	PAPI6SERVICE		Metric
	PCI1ENVIR		Metric
	PCI2LAND		Metric
	PCI3TRANS		Metric
	PCI4TIME		Metric
	PCI5UNOF		Metric
	PCI7ACTIVE		Metric
	PCI8BUSSUP		Metric
	PCI9LABOR		Metric
	PCI10LAW		Metric

Source: Created by the author.

Note: Only metric variables were transformed by power transformation.

CHAPTER 4

RESULTS AND DISCUSSION

The study used a mixed-method approach to answer all research questions, including two quantitative research studies and one qualitative research study. Initially, a cluster analysis was used to identify different developmental clusters by using the secondary data from 2012 to 2015. Subsequently, a panel regression was used to prove the causal relationships between Institutional factors and Economic Development by using the secondary data from 2012 to 2015. Eventually, the case study was used to explore the local development in Ben Tre province.

The author conducts data analysis and makes theoretical comparison in the quantitative and qualitative researches.

4.1 Quantitative Research 1 – Developmental Taxonomy

4.1.1 Descriptive Data

Geographically, all provinces are located in six main regions in Vietnam (see Table 4.1 and Figure 4.1). The descriptive summary shows some background information about 63 provinces in Vietnam during 2012-2015 (see Table 4.2). Generally, Vietnam has transformed its traditional economy with 74.37% of GDP into non-agricultural sectors. In human development, Vietnam has achieved a remarkably high literacy rate of 92.78%, an unemployment rate of 2%, a poverty rate of 11.52%, and good healthcare for infants and children under the age of five, including rates of 95.65% for vaccination, 15.68% for malnutrition, 16.94% for infant mortality, 25.68% for child mortality. Using good governance, Vietnam has achieved its greatest points in corruption control, public administration procedures, and public service

delivery. In environmental sustainability, the country has reported forest coverage losses of just 0.24%. These summary statistics indicate that Vietnam has become a developing country with a dynamic economy making strong efforts in its pursuit of sustainable development to match the rest of the world.

Table 4.1 Main Regions in Vietnam.

REGIONS	**NUMBER OF PROVINCE**
North Central and Central coastal areas	14
Mekong River Delta	13
Red River Delta	11
South East	6
Northern midlands and mountain areas	14
Central Highlands	5
Total	63

Source: Created by the author.

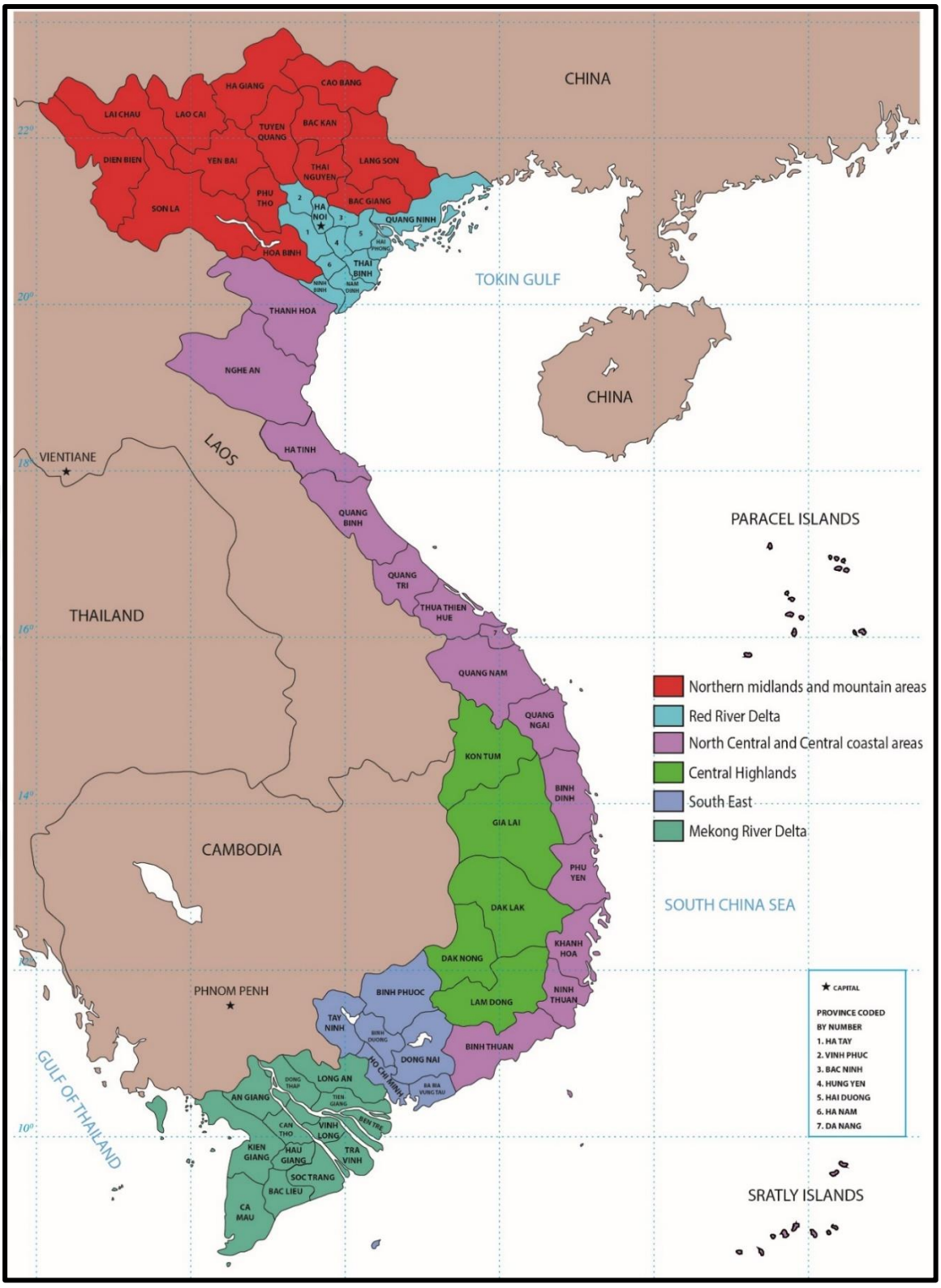

Figure 4.1 Six Main Regions in Vietnam.

Source: Created by the author.

Table 4.2 Descriptive Data.

Dimensions	Variables	Observations	Mean	Standard Deviation	Min	Max
Structural transformation	GDP of non-agricultural sectors (%)	252	74.37	13.26	44.98	99.16
	Value of exports (thousand USD)	252	2,287,345.00	5,161,055.00	147.00	29,200,000.00
	Labor productivity (million VND/labor)	252	74.48	88.07	21.57	769.01
Human development	Poverty rate (%)	252	11.52	8.51	0.00	42.80
	Rate of under-one-year-children fully vaccinated (%)	252	95.65	4.94	73.00	100.00
	Rate of under-2500 grams weight infants (%)	252	3.68	1.92	1.10	18.18
	Under-five malnutrition rate (%)	252	15.68	4.20	4.10	26.10
	Literacy rate (%)	252	92.78	6.95	59.20	98.70
	Unemployment rate (%)	252	2.00	1.02	0.14	4.92
	Infant/Under one mortality rate (%)	252	16.94	7.86	7.70	44.20
	Under five mortality rate (%)	252	25.68	12.36	11.60	69.90
Good Governance	Participation at local levels	252	5.08	0.48	3.75	6.48
	Transparency	252	5.72	0.53	4.49	7.24
	Vertical accountability	252	5.69	0.49	4.42	7.51
	Control of corruption	252	5.99	0.60	4.24	7.60
	Public administration procedures	252	6.91	0.31	5.90	7.79

Dimensions	Variables	Observations	Mean	Standard Deviation	Min	Max
	Public service delivery	252	6.90	0.36	5.92	7.86
Environmental sustainability	Area of destroyed forest (hectare)	252	22.86	56.17	0.00	435.10
	Area of fired forest (hectare)	252	22.83	60.20	0.00	613.70
	Loss of forest coverage (%)	252	0.24	2.11	-11.30	11.90

Source: Created by the author.

Note: Negative values indicate the increase of forest coverage. Positive values indicate the loss of forest coverage.

4.1.2 Factor Analysis

Factor analysis was conducted to check the reliability and validity of the conceptual framework (see Figure 2.4). The explanatory factor analysis (EFA) revealed the conceptual framework kept three dimensions (good governance, structural transformation and human development) and removed one dimension (environmental sustainability) with some benchmarks (e.g., Kaiser - Meyer - Olkin measure of sampling adequacy (KMO) greater than 0.5, extracted components with all factor loadings greater than 0.5, significant Bartlett's test of sphericity) as can be seen in Table 4.3 and Table 4.4. In the confirmatory factor analysis (CFA), most of the goodness-of-fit indices met acceptable levels based on Hair and his colleagues (2010)'s benchmark, excepting root mean squared error of approximation (RMSEA) and standardised regression weight of WEIGHT in the dimension of Human Development (see Table 4.5). The human development dimension also had reliability and convergent validity concerns (see Table 4.6). However, the extracted conceptual framework permitted cluster analysis.

The extracted conceptual framework possessed three dimensions of structural transformation, human development and good governance. Firstly, structural transformation was measured by three labeled indicators of GDP_NONAGRI, EXPORTS, and PRODUCTIVITY. Subsequently, human development was measured by using the three labeled indicators of WEIGHT, UNEMPLOYMENT, and INFANTDEATH. Lastly, good governance was measured using the four labeled indicators PAPI1PARTI, PAPI2TRANS, PAPI3ACCOUNT and PAPI5PROCEDURE.

Table 4.3 Pattern Matrix in Explanatory Factor Analysis (EFA).

Dimensions	Variables	Component		
		1	2	3
Good Governance	PAPI2TRANS	0.839		
	PAPI3ACCOUNT	0.813		
	PAPI1PARTI	0.809		
	PAPI5PROCEDURE	0.684		
Structural Transformation	EXPORTS		0.931	
	PRODUCTIVITY		0.839	
	GDP_NONAGRI		0.784	
Human Development	WEIGHT			0.836
	UNEMPLOYMENT			0.72
	INFANTDEATH			0.543

Source: Created by the author.

Note: Extraction Method: Principal Component Analysis

Rotation Method: Promax with Kaiser Normalization

Showing factor loadings which their absolute values are greater than 0.5

Kaiser - Meyer - Olkin Measure of Sampling Adequacy (KMO) = 0.7

Bartlett's Test of Sphericity: p-value = 0.00

Table 4.4 Reliability Test with the Cronbach's Alpha Indices.

Factors	**Cronbach's alpha value**	**Items remained**
Structural transformation	0.8133	GDP_NONAGRI, EXPORTS, PRODUCTIVITY
Human development	0.6428	WEIGHT, UNEMPLOYMENT, INFANTDEATH
Good governance	0.8027	PAPI1PARTI, PAPI2TRANS, PAPI3ACCOUNT, PAPI5PROCEDURE

Source: Created by the author.

Table 4.5 Confirmatory Factor Analysis (CFA) Results.

Fit index	**Score**	**Criterion**	**Reference**
CMIN/DF	3.707	< 5	(Hair, Black, Babin, & Anderson, 2010)
AGFI (Adjusted Goodness of Fit Index)	0.862	≥ 0.8	(Hair et al., 2010)
GFI (Goodness of Fit Index)	0.920	≥ 0.9	(Hair et al., 2010)
CFI (Comparative Fit Index)	0.904	≥ 0.9	(Hair et al., 2010)
RMSEA (root mean square error of approximation)	0.104	≤ 0.08	(Hair et al., 2010)
Standardized regression weight		> 0.5	(Hair et al., 2010)

Source: Created by the author.

Note: RMSEA does not satisfy the criterion

All standardized regression weights of variables satisfy the criterion, excepting the variable WEIGHT

Table 4.6 Assessment of Construct Validity.

Dimensions	**CR**	**AVE**	**MSV**	**ASV**	**Structural Transformation**	**Good Governance**	**Human Development**
Structural Transformation	0.814	0.599	0.407	0.204	0.774		
Good Governance	0.807	0.514	0.001	0.001	0.03	0.717	
Human Development	0.696	0.49	0.407	0.204	-0.638	-0.028	0.7

Source: Created by the author.

Note: Human Development gets concerns on reliability (CR < 0.7) and convergent validity (AVE < 0.5).

4.1.3 Cluster Analysis

The raw database was manipulated to curb outliers and converted into a standardised database with z-transformation (see Table 3.2). The study conducted a hierarchical cluster analysis using the Ward's method with the squared Euclidean distances. Vazquez and Sumner (2013) mentioned the Ward's method proposed "the fusion of two clusters is based on the size of an error sum-of-squares criterion" (Vazquez and Sumner, 2013, p.1734). Ward's method can "build clusters with similar sizes when no outliers are present" (Vazquez and Sumner, 2013, p.1735).

The multicollinearity was considered to detect the basic assumptions of cluster analysis. Table 4.8 shows there are some significant correlations among variables (i.e., less than 0.6). Thus, these input variables are acceptable for running a cluster analysis.

The number of clusters were determined by using two different tools: a dendrogram and stopping rules. Looking at the dendrogram (see Figure 4.2), the cluster solution should be two, four or six, based on dissimilarity measures (i.e., more than 800, more than 400 and more than 200, respectively). Looking at the Calinski stopping rule (see Table 4.7), the cluster solution should be two, three or four due to the large size of the pseudo-F value. Looking at the Duda stopping rule (see Table 4.7), the cluster solution should be four or six because the Je(2)/Je(1) value should be large while the pseudo T-squared value should be small. Hence, according to these making decision tools, the author determined that the optimum cluster solution was four.

A one-way ANOVA was conducted to verify significant differences between clusters, exploring the discriminating power of each variable. Consequently, EXPORTS, UNEMPLOYMENT and INFANTDEATH were considered good indicators with the greatest discriminating powers, while the indicators measuring for the good governance dimension insignificant with low discriminating powers (see Table 4.9).

Scholars and statistical experts (Mooi & Sarstedt, 2011; Vazquez & Sumner, 2013) have mentioned the robustness of cluster analysis alongside its stability and validity checks. There are four ways to check cluster solution stability: (i) using

different clustering procedures and distance measures; (ii) splitting a dataset into two halves, running cluster analyses independently and comparing their cluster centroids; (iii) changing the case order; and (iv) replacing any alternative clustering variables. There are also two ways to judge criterion validity: face and expert validity. The clustering variables should be collected according to theorical basis and priors.

The clustering variables of the study were chosen by theorical basis and collected through factor analysis for criterion validity. Checking the robustness of the developmental taxonomy revealed moderate variations and changing the case order did not affect the classification results. In addition, replacing IMOR by UFMOR affected only two provinces in their developmental trends.

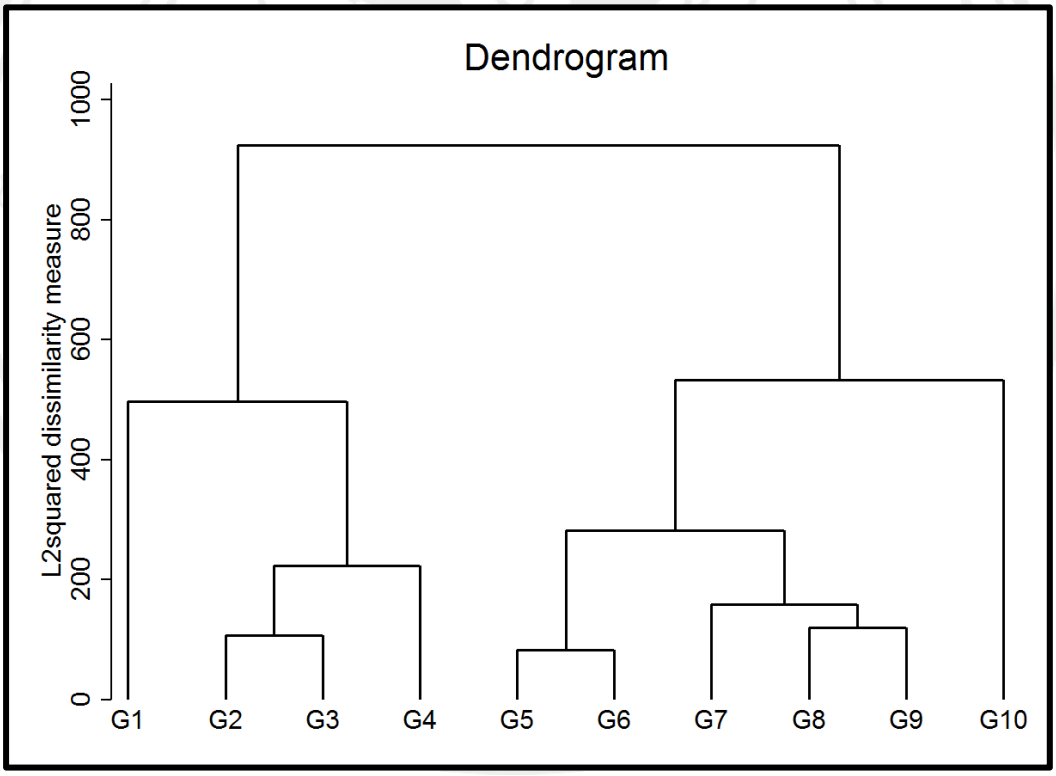

Figure 4.2 Dendrogram.

Source: Created by the author.

Table 4.7 Stopping Rules.

Number of clusters	Calinski/Harabasz pseudo-F	Duda/Hart Je (2)/Je(1)	Duda/Hart pseudo T-squared
1		0.8158	56.44
2	56.44	0.7618	37.21
3	50.96	0.732	47.24
4	52.75	0.802	23.21
5	49.67	0.7626	24.28
6	47.32	0.8149	15.44
7	44.59	0.7525	12.83
8	41.89	0.8121	13.19
9	39.81	0.7087	9.87
10	37.69	0.81	11.49

Source: Created by the author.

Table 4.8 Multicollinearity among Variables.

	GDP_NONAGRI	EXPORTS	PRODUCTIVITY	WEIGHT	UNEMPLOYMENT	INFANTDEATH	PAPI1PARTI	PAPI2TRANS	PAPI3ACCOUNT	PAPI5PROCEDURE
GDP_NONAGRI	1.0000									
EXPORTS	0.5608*	1.0000								
PRODUCTIVITY	0.5260*	0.6900*	1.0000							
WEIGHT	-0.1497*			1.0000						
UNEMPLOYMENT	-0.2365*	-0.2525*	-0.4013*	0.2568*	1.0000					
INFANTDEATH	-0.2844*	-0.5900*	-0.5667*	0.2802*	0.5879*	1.0000				
PAPI1PARTI	0.1409*			-0.1390*	0.1373*		1.0000			
PAPI2TRANS	0.2298*						0.5822*	1.0000		
PAPI3ACCOUNT				-0.1983*			0.5520*	0.5982*	1.0000	
PAPI5PROCEDURE				-0.1374*			0.4073*	0.4493*	0.4364*	1.0000

Source: Created by the author.

Note: * p-value < 0.5

Table 4.9 Discriminating Powers of Variables in Cluster Analysis.

VARIABLES	F-VALUE/ SIGNIFICANCE	DISCRIMINATING POWER
EXPORTS	387.62***	Greatest
UNEMPLOYMENT	100.35***	
INFANTDEATH	89.43***	
GDP_NONAGRI	81.38***	
PRODUCTIVITY	67.03***	
PAPI2TRANS	31.31***	
WEIGHT	27.37***	
PAPI1PARTI	25.20***	
PAPI5PROCEDURE	16.65***	
PAPI3ACCOUNT	12.89***	Lowest

Source: Created by the author.

4.1.4 Developmental Clusters, Developmental Transition and National Average

The province with the specific cluster means these provinces fall into only one developmental cluster during 2012-2015.

Developmental transition means the province with developmental transition fall into different clusters. There are three types of developmental transitions: positive, negative and messy transitions. Positive transition means the province transfers from undeveloped to developed clusters. Negative transition means the province transfers from developed to undeveloped clusters. Messy transition means the province follows neither negative nor positive transition.

The national average is measured by taking average of all provinces in each variable.

4.1.5 Main Characteristics of Developmental Clusters

The classification produced four clusters: Cluster 1 with five provinces, Cluster 2 with 19 provinces, Cluster 3 with eight provinces and Cluster 4 with 13 provinces. The cluster order was ranked from richest to poorest and from developed to undeveloped level in terms of three examined developmental dimensions (see Figure 4.3 and Table 4.13).

There were also 18 provinces in developmental transition that included four provinces in a negative transition, eight provinces undergoing positive transition, and six provinces enduring a messy transition (see Figure 4.3 and Table 4.13).

The main characteristics of the obtained four clusters were interpreted by using the cluster centroids with the variables' average values of all provinces in a certain cluster (Vazquez & Sumner, 2013). This procedure can be used to make comparisons between the average characteristics among clusters and the national average (see Table 4.10).

The developmental clusters were scattered across Vietnam with some noteworthy distribution features. Cluster 1 was mainly located in the South East, excepting only one province in the Red River Delta. Cluster 2 was spread out from the

North into the Central and South. Cluster 3 was mainly located in the South with two provinces in the Central near the South. Cluster 4 was in the Northern midlands and mountain areas except for three provinces in the nearby Red River Delta) and in the Central highlands. The developmental transition was recorded in various parts across Vietnam; for typical instances, Ha Noi capital from Cluster 2 to Cluster 1 in the ranking of developed levels, and the remarkable development of Thai Nguyen from Cluster 4 to Cluster 1 in the wide development range and the transition from the agricultural to industrial economy (see Figure 4.3 and Table 4.13).

Cluster 1 comprised provinces with the largest industrial economies. These provinces had the highest level of structural transformation and economic growth (e.g., highest industrial sector GDP, highest export values and highest labour productivity) and the lowest level of infant death. However, this cluster was ranked the third in good governance (after Cluster 2 and Cluster 4).

Cluster 2 comprised provinces with traditional economies undergoing transfer to industrial economies pertaining to good governance. These provinces had the second highest level of structural transformation and economic growth, the lowest rate of under-2,500 grams weight infants, and the highest ranking of good governance.

Cluster 3 comprised provinces with the largest traditional economies possessing low institutional environment. Although these provinces had the highest proportion of GDP in the agricultural sector, the cluster ranked third in export value and labour productivity (after Cluster 1 and Cluster 2).

Cluster 4 comprised provinces with largely traditional economies, low human development and good governance. These provinces had the lowest levels of some indicators, such as export value, labour productivity and healthcare for infants. However, the cluster ranked second in good governance (after Cluster 2)

4.1.6 Finding Gaps among Different Clusters and the National Average

The magnitude of the gaps was explored by comparing the deviations of each cluster against the national average (see Table 4.12, Figure 4.4 and Figure 4.5).

In terms of structural transformation and economic growth, the biggest gaps were between Cluster 1 and all other clusters as well as the national average. Cluster 1

had a dominant export value and labour productivity compared to the national average and the other clusters by seven and approximately three times, respectively. Taking the national average as a baseline, only Cluster 1 was a purely industrial economy, while the other clusters were traditional economies driven by agriculture. The gap highlighted the structural transformation happening in Cluster 2, with the GDP in the industrial sector and the labour productivity gradually approaching the national average.

In terms of human development, Cluster 4 was below the national standard in infant healthcare, yet the remaining clusters had better healthcare than the national average. Unemployment was lowest in Cluster 4 due to a huge peasant force. The other clusters had a higher rate of unemployment than the national average due to the industrialisation and structural transformation at different levels among the provinces in these clusters.

In terms of good governance, there was low discrimination among clusters and the national average, indicating that the highest level of good governance was non-existent in the purely industrial economy of Cluster 1. However, a noteworthy effort to improve institutional environments appeared in Cluster 2 with their transition from an agricultural to an industrial economy. Cluster 1 and Cluster 4 had similar levels of good governance, nearly equaling the national average. Cluster 3 had the worst level of good governance, lowering than the national average.

After finding the gaps between clusters and the national average, two basic implications of the developmental taxonomy are visible:

1. Cluster 1, with only five provinces, carries the bulk of the national earnings and contributes enormously to national economic growth;
2. The emergence of good governance to improve the institutional environments is visible in Cluster 2 with new industrialization as opposed to Cluster 1 with its significant contribution to national earnings.

4.1.7 Comparison between Developmental Taxonomy and Alternative Indicators

The developmental taxonomy was generally consistent with the alternative development indicators, reflecting the main characteristics of development in each cluster (see Table 4.11). These clusters are ranked from 1 to 4 in descending order of developmental prominence. Higher levels of development provided greater economic growth and human development. However, it was revealed that proportional relationships did not exist in different governance indicators. For instances, Cluster 2 emerged as the role model in PAPI while the provincial competitive index (PCI) still follows a proportional mechanism for economic growth and human development.

Table 4.10 Cluster Centroids of Developmental Taxonomy.

Developmental Clusters	GDP_NONAGRI	EXPORTS	PRODUCTIVITY	WEIGHT	UNEMPLOYMENT	INFANTDEATH	PAPI1PARTI	PAPI2TRANS	PAPI3ACCOUNT	PAPI5PROCEDURE
Cluster 1	5.42	16,100,000.00	222.96	3.82	2.30	9.91	5.09	5.77	5.58	6.91
Cluster 2	20.79	1,134,878.00	71.11	2.67	2.62	13.66	5.25	5.91	5.88	7.02
Cluster 3	38.23	752,037.20	53.89	3.65	2.39	14.84	4.63	5.18	5.40	6.67
Cluster 4	29.72	324,995.70	45.26	4.85	0.91	24.43	5.16	5.82	5.67	6.93
National average	25.63	2,287,345.00	74.48	3.68	2.00	16.94	5.08	5.72	5.69	6.91

Source: Created by the author.

Table 4.11 Cluster Centroids of Alternative Development Indicators.

Developmental Clusters	POVERTY	VACCINATION	MALNUTRITION	LITERACY	U5DEATH	GDPPC_VND*	PCI**	PAPI***
Cluster 1	2.77	98.17	9.72	97.51	14.93	123,545.30	59.72	36.35
Cluster 2	7.69	95.49	14.17	96.05	20.51	36,677.86	58.98	37.22
Cluster 3	9.92	96.65	15.55	91.86	22.33	31,622.37	58.46	34.78
Cluster 4	19.87	94.42	19.43	87.98	37.38	26,340.17	55.35	36.12
National average	11.52	95.65	15.68	92.78	25.68	41,673.71	57.80	36.29

Source: Created by the author.

Note: *GDPPC_VND: GDP per capita in Vietnamese dongs

**PCI: the overall value of PCI

***PAPI: the overall value of PAPI

Table 4.12 Compare each Cluster with National Average.

Developmental Clusters	GDP _NONAGRI	EXPORTS	PRODUCTIVITY	WEIGHT	UNEMPLOYMENT	INFANTDEATH	PAPI1PARTI	PAPI2TRANS	PAPI3ACCOUNT	PAPI5PROCEDURE
Cluster 1	0.21	7.04	2.99	1.04	1.15	0.59	1.00	1.01	0.98	1.00
Cluster 2	0.81	0.50	0.95	0.73	1.31	0.81	1.03	1.03	1.03	1.02
Cluster 3	1.49	0.33	0.72	0.99	1.20	0.88	0.91	0.90	0.95	0.97
Cluster 4	1.16	0.14	0.61	1.32	0.45	1.44	1.02	1.02	1.00	1.00
National average	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Source: Created by the author.

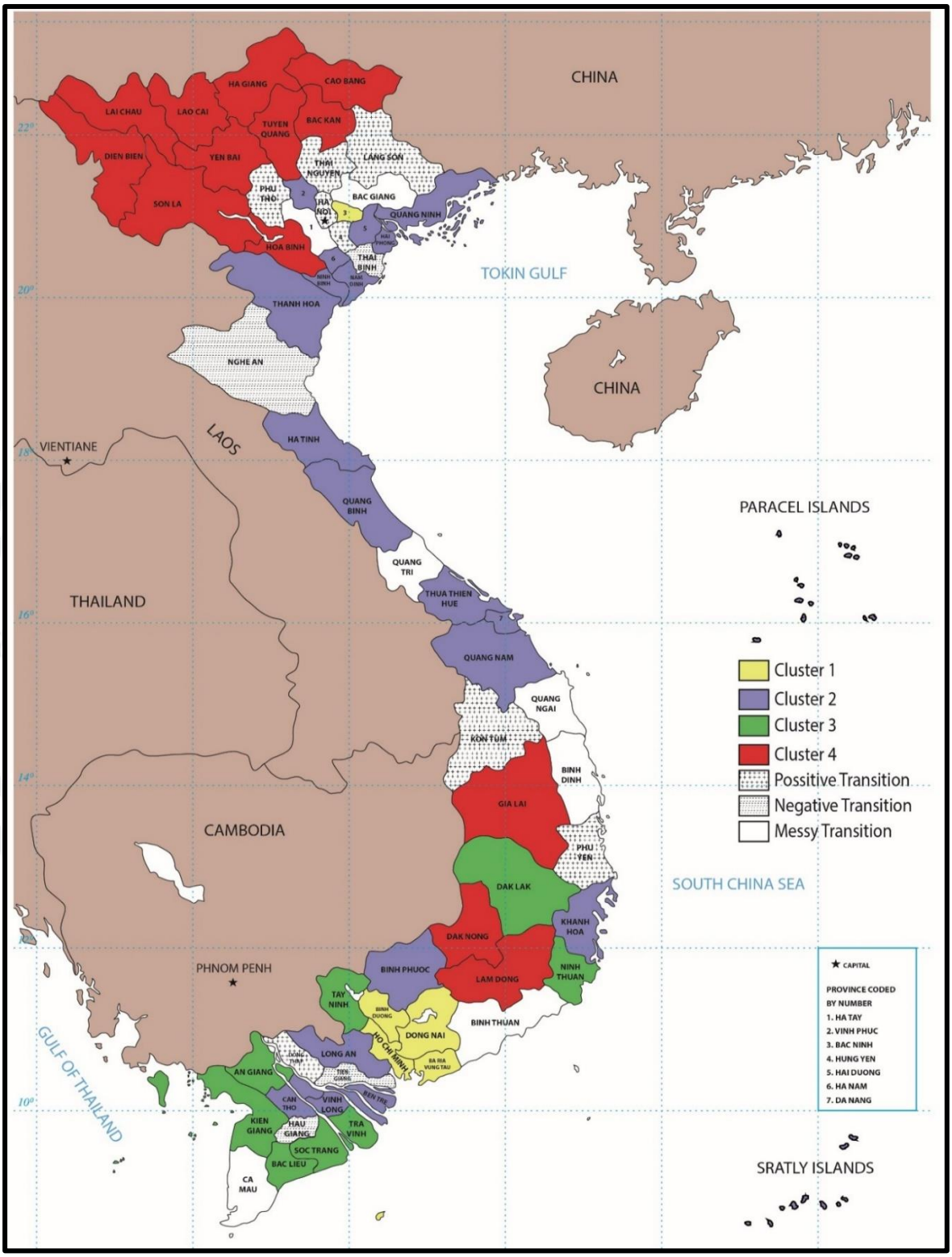

Figure 4.3 Taxonomy of Development in Vietnam.
Source: Created by the author.

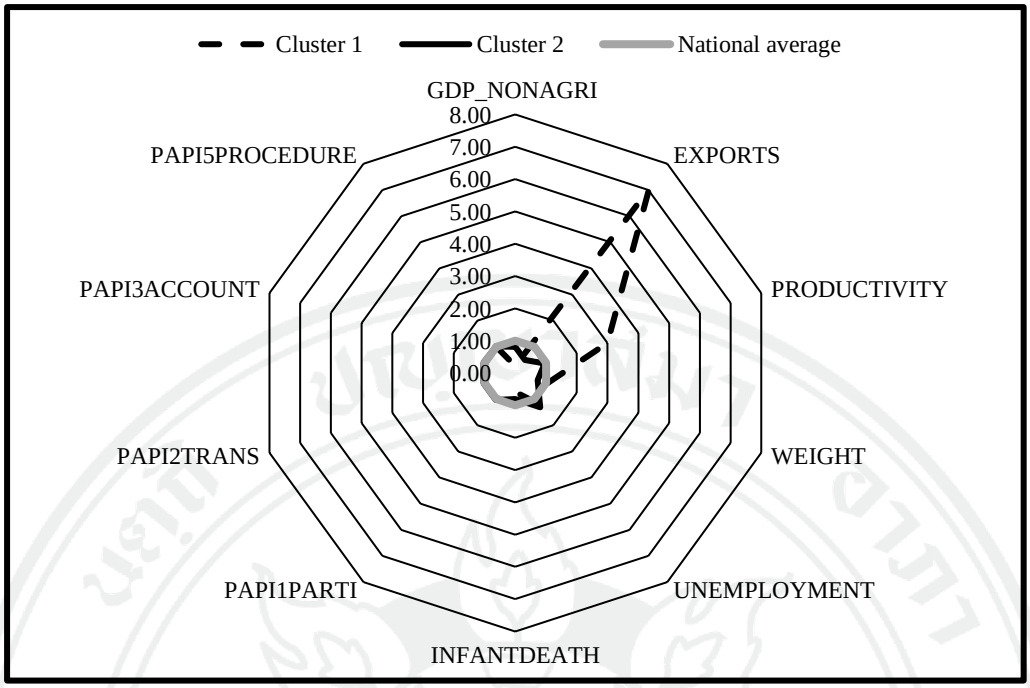

Figure 4.4 Differences with National Average (Cluster 1 and Cluster 2).
Source: Created by the author.

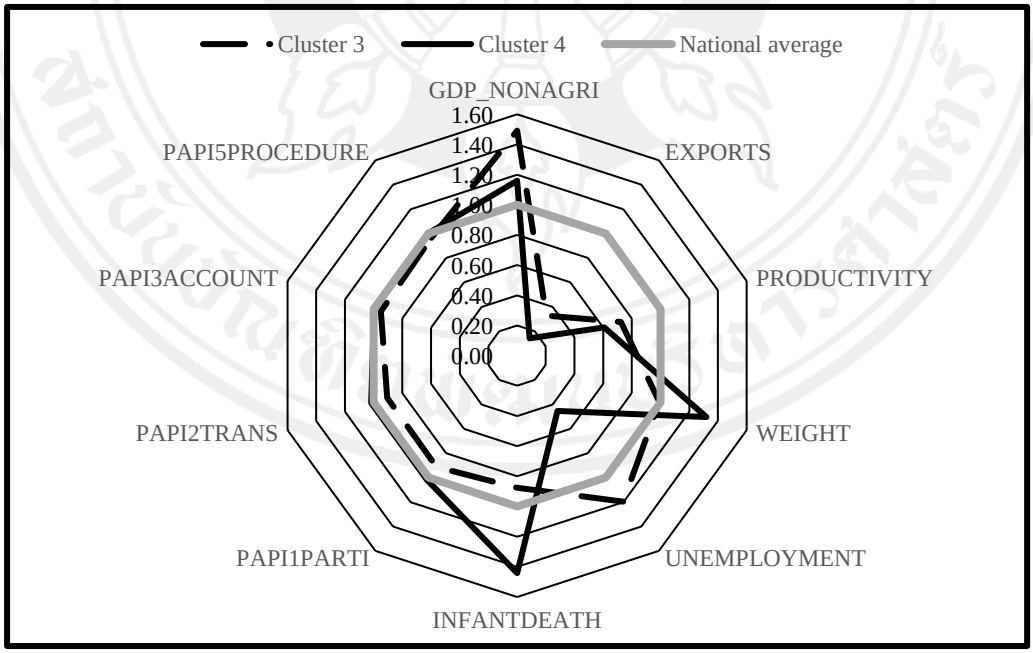

Figure 4.5 Differences with National Average (Cluster 3 and Cluster 4).
Source: Created by the author.

Table 4.13 Cluster Membership.

Province	Region	Developmental cluster	Developmental transition	Transitional trend
Binh Duong	South East	1	No	No
Bac Ninh	Red River Delta	1	No	No
Ba Ria - Vung Tau	South East	1	No	No
Dong Nai	South East	1	No	No
Ho Chi Minh*	South East	1	No	No
Binh Phuoc	South East	2	No	No
Ben Tre	Mekong River Delta	2	No	No
Can Tho	Mekong River Delta	2	No	No
Da Nang	North Central and Central coastal areas	2	No	No
Hai Duong	Red River Delta	2	No	No
Ha Nam	Red River Delta	2	No	No
Hai Phong	Red River Delta	2	No	No
Ha Tinh	North Central and Central coastal areas	2	No	No
Khanh Hoa	North Central and Central coastal areas	2	No	No
Long An	Mekong River Delta	2	No	No
Ninh Binh	Red River Delta	2	No	No

Province	Region	Developmental cluster	Developmental transition	Transitional trend
Nam Dinh	Red River Delta	2	No	No
Quang Binh	North Central and Central coastal areas	2	No	No
Quang Nam	North Central and Central coastal areas	2	No	No
Quang Ninh	Red River Delta	2	No	No
Thanh Hoa	North Central and Central coastal areas	2	No	No
Thua Thien Hue	North Central and Central coastal areas	2	No	No
Vinh Long	Mekong River Delta	2	No	No
Vinh Phuc	Red River Delta	2	No	No
An Giang	Mekong River Delta	3	No	No
Bac Lieu	Mekong River Delta	3	No	No
Dak Lak	Central Highlands	3	No	No
Kien Giang	Mekong River Delta	3	No	No
Ninh Thuan	North Central and Central coastal areas	3	No	No
Soc Trang	Mekong River Delta	3	No	No
Tay Ninh	South East	3	No	No
Tra Vinh	Mekong River Delta	3	No	No
Bac Kan	Northern midlands and mountain areas	4	No	No
Cao Bang	Northern midlands and mountain areas	4	No	No

Province	Region	Developmental cluster	Developmental transition	Transitional trend
Dien Bien	Northern midlands and mountain areas	4	No	No
Dak Nong	Central Highlands	4	No	No
Gia Lai	Central Highlands	4	No	No
Ha Giang	Northern midlands and mountain areas	4	No	No
Hoa Binh	Northern midlands and mountain areas	4	No	No
Lao Cai	Northern midlands and mountain areas	4	No	No
Lai Chau	Northern midlands and mountain areas	4	No	No
Lam Dong	Central Highlands	4	No	No
Son La	Northern midlands and mountain areas	4	No	No
Tuyen Quang	Northern midlands and mountain areas	4	No	No
Yen Bai	Northern midlands and mountain areas	4	No	No
Quang Ngai	North Central and Central coastal areas	No	Messy	Cluster 4 to Cluster 2 to Cluster 3
Binh Dinh	North Central and Central coastal areas	No	Messy	Cluster 2 to Cluster 4 to Cluster 3
Bac Giang	Northern midlands and mountain areas	No	Messy	Cluster 4 to Cluster 3 to Cluster 4
Binh Thuan	North Central and Central coastal areas	No	Messy	Cluster 3 to Cluster 2 to Cluster 3
Ca Mau	Mekong River Delta	No	Messy	Cluster 3 to Cluster 2 to Cluster 3
Quang Tri	North Central and Central coastal areas	No	Messy	Cluster 4 to Cluster 2 to Cluster 4
Hau Giang	Mekong River Delta	No	Negative	Cluster 2 to Cluster 3

Province	Region	Developmental cluster	Developmental transition	Transitional trend
Nghe An	North Central and Central coastal areas	No	Negative	Cluster 2 to Cluster 4
Thai Binh	Red River Delta	No	Negative	Cluster 2 to Cluster 4
Tien Giang	Mekong River Delta	No	Negative	Cluster 2 to Cluster 3
Dong Thap	Mekong River Delta	No	Positive	Cluster 3 to Cluster 2
Ha Noi**	Red River Delta	No	Positive	Cluster 2 to Cluster 1
Hung Yen	Red River Delta	No	Positive	Cluster 4 to Cluster 2
Kon Tum	Central Highlands	No	Positive	Cluster 4 to Cluster 3
Lang Son	Northern midlands and mountain areas	No	Positive	Cluster 4 to Cluster 3
Phu Tho	Northern midlands and mountain areas	No	Positive	Cluster 4 to Cluster 2
Phu Yen	North Central and Central coastal areas	No	Positive	Cluster 4 to Cluster 3
Thai Nguyen***	Northern midlands and mountain areas	No	Positive	Cluster 4 to Cluster 1

Source: Created by the author.

Note: * Ho Chi Minh with the hugest contribution to national economic growth

** Ha Noi capital with developmental transition

*** Thai Nguyen with remarkable developmental transition towards industrial economy

4.1.8 Discussion

The developmental taxonomy provided an understanding of reductive form of Vietnam's 63 provinces as demonstrated in their developmental clusters. Vietnam has been known as a developing country with remarkable growth after the devastation of the Vietnam War nearly 50 years ago. The developmental taxonomy illustrated that Vietnam has been developing with structural transformation, human development and good governance, which is consistent with development theories put forward by Seers (1963, 1969, 1972), Sen (1999) and North (1990).

Initially, the case of Vietnam sheds light on the consistency to the literature written by Seers (1963), "a largely unindustrialized economy, the foreign trade of which consists essentially in selling primary products" (Seers, 1963, p. 80). The world has known Vietnam as the agricultural country and the leading rice exporters. Besides, the investors have recognized the explosion of industrialization, structural transformation and trade openness in some critical metropolis and industrial provinces in various developmental levels; such as Ha Noi capital (i.e., with their developmental transition), Ho Chi Minh city (i.e., with their dynamic and enormous contribution to national GDP), Ba Ria – Vung Tau province (i.e., with oil industry), Dong Nai, Binh Duong, Bac Ninh and Vinh Phuc provinces (i.e., with industrial expansion) and Thai Nguyen province (i.e., with remarkable development towards industrial economy).

Subsequently, the emergence of human development has been reflected alongside with economic growth in the era of industrialization (i.e., raising unemployment rate, concerning social opportunities of education and healthcare, quality of life, and so forth) (Seers, 1969) (Sen, 1999).

Last but not least, the institutional environments are concerned in various efforts to catch up the demand of the State, enterprises and citizens. It seems that all provinces are in the racing of good governance annually, reflecting the independent evaluation of PAPI and PCI. Indeed, good governance and favorable institutional environments are completely necessary in structural transformation and economic growth in the case of developed clusters (i.e., Cluster 2 and Cluster 1). It is consistent to North (1990) and Sen (1990) with his critical assertion: "Economic facilities (in the form of opportunities for participation in trade and production) can help to generate

personal abundance as well as public resources for social facilities" (Sen, 1999, p. 11).

Seers (1972) asserted "the most important use of development indicators is to provide the targets for planning" (Seers, 1972, p.32). Hence, the developmental taxonomy may contribute to the fuller understanding on the development in 63 provinces across Vietnam in the nuanced picture. This taxonomy with different developmental clusters may support the government in designing developmental polices among clusters and provinces in Vietnam. Those provinces in the homogenous groups enable to adapt their experiences in development. On the other hand, those provinces in the heterogenous groups enable to scrutiny the appropriate developmental orientation in the forthcoming future.

4.2 Quantitative Research 2 – The Causal Relationship between Institutional Factors and Economic Development

4.2.1 Panel Regression between Institutions and Economic Development

The study used panel data collected from 63 provinces from 2012 to 2015. For independent variables, Institutions are measured by all sub-indices of PAPI index and PCI index. For dependent variables, Economic Development is measured by GDP per capita (GDPPC), value of exports (EXPORTS), and labor productivity (PRODUCTIVITY).

The raw database was manipulated to curb outliers and skewness by using algorithm transformation (i.e., cubic, square root, logarithm and so forth).

The multicollinearity was considered to detect potential significantly high correlation among independent variables/sub-PAPI variables (i.e., close to 0.9). Table 4.15 shows that there are some significantly acceptable correlations among sub-PAPI variables (i.e., less than 0.6); whilst, there are some significant correlations between each sub-PAPI variable with dependent variables (i.e., GDPPC, EXPORTS, and PRODUCTIVITY). Hence, these input variables are accepted to run several types of regression (i.e., multiple regression/pooled OLS, panel regression).

The multicollinearity was considered to detect potential significantly high correlations among independent variables/sub-PCI variables (i.e., close to 0.9). Table 4.16 shows there are some acceptable correlations among sub-PCI variables (i.e., less than 0.7), while there are some significant correlations between each sub-PCI variable and dependent variables (i.e., GDPPC, EXPORTS, and PRODUCTIVITY). Hence, these input variables are accepted to run several types of regression (i.e., multiple regression/pooled OLS and panel regression).

There are some statistical tests to check the assumptions of the panel regression in each model, such as multicollinearity (i.e., detect potential highly correlations between independent variables), the Breusch and Pagan Lagrangian test (i.e., choose random effect or pooled OLS), and the Hausman test (i.e., choose random effect or fixed effect) (Torres-Reyna, 2007).

Besides, Developmental Clusters (dummy variable) [2] was added into the causal models to test whether economic development may be different among developmental clusters. Furthermore, the causal relationships between institutional factors and economic development were tested separately in each developmental cluster. These tests would prove a new hypothesis that different levels of development can intervene in the causal relationship between Institutions and Economic Development.

[2] Developmental clusters are defined in the previous research with cluster analysis.

Table 4.14 Models Checking Causal Relationships between Institutional Factors and Economic Development.

MODELS		**EQUATIONS**
PAPI models	Model 1	$logGDPPC_{it} = \alpha + \beta_1 PAPI1PARTI_{it} + \beta_2 PAPI2TRANS_{it} + \beta_3 PAPI3ACCOUNT_{it} + \beta_4 PAPI4CORRUP_{it} + \beta_5 PAPI5PROCEDURE_{it} + \beta_6 PAPI6SERVICE_{it} + \upsilon_{it} + \varepsilon_{it}$
	Model 2	$sqrtEXPORTS_{it} = \alpha + \beta_1 PAPI1PARTI_{it} + \beta_2 PAPI2TRANS_{it} + \beta_3 PAPI3ACCOUNT_{it} + \beta_4 PAPI4CORRUP_{it} + \beta_5 PAPI5PROCEDURE_{it} + \beta_6 PAPI6SERVICE_{it} + \upsilon_{it} + \varepsilon_{it}$
	Model 3	$nsqrtPRODUCTIVITY_{it} = \alpha + \beta_1 PAPI1PARTI_{it} + \beta_2 PAPI2TRANS_{it} + \beta_3 PAPI3ACCOUNT_{it} + \beta_4 PAPI4CORRUP_{it} + \beta_5 PAPI5PROCEDURE_{it} + \beta_6 PAPI6SERVICE_{it} + \upsilon_{it} + \varepsilon_{it}$
PCI models	Model 4	$logGDPPC_{it} = \alpha + \beta_1 PCI1ENVIR_{it} + \beta_2 PCI2LAND_{it} + \beta_3 PCI3TRANS_{it} + \beta_4 PCI4TIME_{it} + \beta_5 PCI5UNOF_{it} + \beta_7 PCI7ACTIVE_{it} + \beta_8 PCI8BUSSUP_{it} + \beta_9 PCI9LABOR_{it} + \beta_{10} PCI10LAW_{it} + \upsilon_{it} + \varepsilon_{it}$
	Model 5	$sqrtEXPORTS_{it} = \alpha + \beta_1 PCI1ENVIR_{it} + \beta_2 PCI2LAND_{it} + \beta_3 PCI3TRANS_{it} + \beta_4 PCI4TIME_{it} + \beta_5 PCI5UNOF_{it} + \beta_7 PCI7ACTIVE_{it} + \beta_8 PCI8BUSSUP_{it} + \beta_9 PCI9LABOR_{it} + \beta_{10} PCI10LAW_{it} + \upsilon_{it} + \varepsilon_{it}$
	Model 6	$nsqrtPRODUCTIVITY_{it} = \alpha + \beta_1 PCI1ENVIR_{it} + \beta_2 PCI2LAND_{it} + \beta_3 PCI3TRANS_{it} + \beta_4 PCI4TIME_{it} + \beta_5 PCI5UNOF_{it} + \beta_7 PCI7ACTIVE_{it} + \beta_8 PCI8BUSSUP_{it} + \beta_9 PCI9LABOR_{it} + \beta_{10} PCI10LAW_{it} + \upsilon_{it} + \varepsilon_{it}$

Source: Created by the author.

Note: DEVELOPMENT_CLUSTER as the control variable.

Table 4.15 Multicollinearity among Sub-PAPI Variables and Economic Development.

	logGDPPC	sqrtEXPORT	nsqrtPRODUCTIVITY	PAPI1PARTI	PAPI2TRANS	PAPI3ACCOUNT	PAPI4CORRUP	PAPI5PROCEDURE	PAPI6SERVICE
logGDPPC	1.0000								
sqrtEXPORT	0.6596*	1.0000							
nsqrtPRODUCTIVITY	0.9145*	0.6900*	1.0000						
PAPI1PARTI				1.0000					
PAPI2TRANS				0.5822*	1.0000				
PAPI3ACCOUNT				0.5520*	0.5982*	1.0000			
PAPI4CORRUP				0.2298*	0.3105*	0.3684*	1.0000		
PAPI5PROCEDURE				0.4073*	0.4493*	0.4364*	0.1678*	1.0000	
PAPI6SERVICE	0.2823*	0.2948*	0.3073*		0.1863*	0.1306*	0.1567*	0.1529*	

Source: Created by the author.

Note: * $p < 0.05$

Table 4.16 Multicollinearity among Sub-PCI Variables and Economic Development.

	logGDPPC	sqrtEXPORT	nsqrtPRODUCTIVITY	PCI1ENVIR	PCI2LAND	PCI3TRANS	PCI4TIME	PCI5UNOF	PCI7ACTIVE	PCI8BUSSUP	PCI9LABOR	PCI10LAW
logGDPPC	1.0000											
sqrtEXPORT	0.6596*	1.0000										
nsqrtPRODUCTIVITY	0.9145*	0.6900*	1.0000									
PCI1ENVIR		-0.1740*		1.0000								
PCI2LAND	-0.2056*	-0.1498*	-0.1438*		1.0000							
PCI3TRANS	0.1983*	0.1917*	0.2915*	0.1743*	-0.1242*	1.0000						
PCI4TIME			0.1848*	0.1265*	0.3001*	0.1774*	1.0000					
PCI5UNOF					0.6565*	-0.1257*	0.2783*	1.0000				
PCI7ACTIVE					0.5095*	0.1576*	0.4297*	0.5543*	1.0000			
PCI8BUSSUP	0.2947*	0.2565*	0.3634*	-0.2972*	-0.3009*	0.1914*	0.2788*	-0.3622*	-0.1368*	1.0000		
PCI9LABOR	0.4923*	0.4635*	0.4945*	-0.1378*	-0.3390*	0.2881*		-0.2509*		0.5457*	1.0000	
PCI10LAW				-0.1949*		0.1889*	0.5396*		0.2055*	0.5385*	0.2491*	1.0000

Source: Created by the author.

Note: * $p < 0.05$

4.2.2 The Prediction of Economic Development from PAPI Indices

Sub-PAPI variables have significant impacts on GDPPC in different sub-models. PAPI1PARTI has significantly negative impacts on GDPPC completely (*p*-value < 0.01, Model 1a, Model 1c); meanwhile PAPI6SERVICE has a significantly positive impact on GDPPC completely (*p*-value < 0.01, Model 1a, Model 1c). However, PAPI5PROCEDURE has significantly negative impacts on GDPPC in the raw model (*p*-value < 0.1, Model 1a) (see Table 4.17).

Sub-PAPI variables have significant impacts on EXPORT in different models. PAPI1PARTI has significantly negative impacts on EXPORT completely (*p*-value < 0.05, Model 2a, Model 2c). Meanwhile, PAPI6SERVICE has significantly positive impacts on EXPORT completely (*p*-value < 0.05, Model 2a) (*p*-value < 0.01, Model 2c). Provincial EXPORT significantly gains more value in Cluster 1 compared to Cluster 2 as the base line (*p*-value < 0.01, Model 2b and Model 2c) (see Table 4.17).

Sub-PAPI variables have significant impacts on PRODUCTIVITY in different models. PAPI1PARTI has significant negative impacts on PRODUCTIVITY completely (*p*-value < 0.01, Model 3a, Model 3c). PAPI2TRANS only has significantly positive impact on PRODUCTIVITY in the raw model (*p*-value < 0.1, Model 3a). PAPI5PROCEDURE has significantly negative impacts on PRODUCTIVITY in different models (*p*-value < 0.1, Model 3a) (*p*-value < 0.05, Model 3c). PAPI6SERVICE has significantly positive impacts on PRODUCTIVITY completely (*p*-value < 0.05, Model 3a) (*p*-value < 0.01, Model 3c). Provincial PRODUCTIVITY significantly gains more value in Cluster 1 and gain less value in Cluster 4, compared to Cluster 2 as the base line (different acceptable benchmarks of *p*-value, Model 3b and Model 3c) (see Table 4.17).

Table 4.17 Causal Relationships between Sub-PAPI Variables and Economic Development.

	log GDPPC			sqrt EXPORT			nrsqrt PRODUCTIVITY		
	Random effect (Model 1a)	Fixed effect (Model 1b)	Fixed effect (Model 1c)	Random effect (Model 2a)	Fixed effect (Model 2b)	Fixed effect (Model 2c)	Random effect (Model 3a)	Fixed effect (Model 3b)	Random effect (Model 3c)
PAPI1PARTI	-0.0885474***		-0.0899514***	-102.6413**		-102.7152**	-0.0078642***		-0.0078714***
PAPI2TRANS	-		-	-		-	-0.003386*		-
PAPI3ACCOUNT	-		-	-		-	-		-
PAPI4CORRUP	-		-	-		-	-		-
PAPI5PROCEDURE	-0.0745536*		-	-		-	-0.0060021*		-0.007499**
PAPI6SERVICE	0.1928583***		0.1776774***	313.7019**		192.0747***	0.0127948**		0.0111452***
Developmental Clusters (Cluster 2 as baseline)									
Cluster 1		-	-		2323.992***	2296.237***		0.0166787***	0.0256327***
Cluster 3		-	-		-	-		-	-
Cluster 4		-	-		-	-		-	-0.0063921**
Prob>chi2 (Hausman test) Fixed effect VS Random effect	0.5649	0***	0***	0.2792	0***	0.0004***	0.1369	0***	0.0762
Prob>chi (Breusch and Pagan Lagrangian multiplier test) Random effect VS Pooled OLS	0***	0***	0***	0***	0***	0***	0***	0***	0***
R-squared within	17.76%	23.50%	18.26%	7.24%	61.63%	65.07%	25.94%	6.45%	28.02%
rho	94.75%	94.04%	94.67%	92.55%	88.92%	89.40%	93.01%	90.22%	88.79%
Prob > F (Testparm) Fixed effect of dummy variable(s)			0.735		0***	0***		0***	

Source: Created by the author.

Note: *** p < 0.01; ** p < 0.05; * p < 0.1

4.2.3 The Prediction of Economic Development from PCI Indices

Sub-PCI variables have significant impacts on GDPPC in different models. PCI1ENVIR, PCI4TIME, PCI8BUSSUP and PCI10LAW have significant positive impacts on GDPPC completely (different acceptable benchmark of *p*-values, Model 4a, Model 4c). Meanwhile, PCI5UNOF has significant negative impacts on GDPPC completely (*p*-value < 0.05, Model 4a, Model 4c) (see Table 4.18).

In the causal models between sub-PCI variable and EXPORT, only PCI9LABOR has significant positive impact under controlled of developmental clusters (*p*-value < 0.05, Model 5c); and provincial EXPORT in Cluster 1 significantly gains more value compared to those in Cluster 2 as the base line (*p*-value < 0.01, Model 5b and Model 5c) (see Table 4.18).

Sub-PCI variables have significant impacts on PRODUCTIVITY in different models. PCI1ENVIR, PCI8BUSSUP and PCI10LAW have significant positive impacts on PRODUCTIVITY completely (different acceptable benchmarks of *p*-value, Model 6a, Model 6c). Meanwhile, PCI2LAND has significant negative impacts on PRODUCTIVITY (*p*-value < 0.05, Model 6a, Model 6c). Provincial PRODUCTIVITY in Cluster 1 significantly gains more value compared to those in Cluster 2 (different acceptable benchmarks of p-value, Model 6b and Model 6c) (see Table 4.18).

Table 4.18 Causal Relationships between Sub-PCI Variables and Economic Development.

	log GDPPC			sqrt EXPORT			nrsqrt PRODUCTIVITY		
	Fixed effect (Model 4a)	Fixed effect (Model 4b)	Fixed effect (Model 4c)	Fixed effect (Model 5a)	Fixed effect (Model 5b)	Fixed effect (Model 5c)	Fixed effect (Model 6a)	Fixed effect (Model 6b)	Fixed effect (Model 6c)
PCI1ENVIR	0.0293524**		0.0283894***	-		-	0.001903***		0.0018694***
PCI2LAND	-		-	-		-	-0.0023694**		-0.002579**
PCI3TRANS	-		-	-		-	-		-
PCI4TIME	0.0249216**		0.0242804*	-		-	-		-
PCI5UNOF	-0.0238183**		-0.0250777**	-		-	-		-
PCI7ACTIVE	-		-	-		-	-		-
PCI8BUSSUP	0.0271331*		0.0266145*	-		-	0.0030457***		0.0031793***
PCI9LABOR	-		-	-		59.21811**	-		-
PCI10LAW	0.0260773**		0.0260401***	-		-	0.0022993***		0.0021581***
Developmental Clusters (Cluster 2 as baseline)									
Cluster 1		-	-		2323.992***	2227.161***		0.0166787***	0.0088325**
Cluster 3		-	-		-	-		-	-
Cluster 4		-	-		-	-		-	-
Prob>chi2 (Hausman test) Fixed effect VS Random effect	0.0001***	0***	0***	0***	0***	0.0001***	0***	0***	0***
Prob>chi (Breusch and Pagan Lagrangian multiplier test) Random effect VS Pooled OLS		0***	0***	0***	0***	0***	0***	0***	0***
R-squared within	48.49%	23.50%	49.49%	16.04%	61.63%	67.63%	60.97%	6.45%	62.68%
rho	96.60%	94.04%	93.03%	93.24%	88.92%	90.22%	96.19%	90.22%	95.81%
Prob > F (Testparm) Fixed effect of dummy variable(s)			0.3254		0***	0***		0***	0.0057***

Source: Created by the author.

Note: *** p < 0.01; ** p < 0.05; * p < 0.1

4.2.4 How Different Developmental Levels can Intervene in the Causal Relationship between Institutions and Economic Development

In Cluster 1, sub-PAPI variables have significant impacts on economic development. PAPI1PARTI and PAPI6SERVICE have significantly negative impacts on GDPPC, EXPORT and PRODUCTIVITY. PAPI2TRANS has only significantly positive impact on EXPORT; meanwhile PAPI4CORRUP have significantly negative impacts on GDPPC and PRODUCTIVITY (different acceptable benchmarks of *p*-value; Model a and Model e) (see Table 4.19 and Table 4.20).

In Cluster 2, sub-PAPI variables (PAPI1PARTI, PAPI2TRANS and PAPI5PROCEDURE) have significantly negative impacts on GDPPC and PRODUCTIVITY (p-value < 0.05; Model b and Model j). However, sub-PCI variables have significant impacts on economic development. PCI1ENVIR, PCI3TRANS, PCI4TIME and PCI8BUSSUP have significantly positive impacts on GDPPC, EXPORT and PRODUCTIVITY. PCI2LAND has significantly negative impacts on EXPORT and PRODUCTIVITY; meanwhile PCI9LABOR has significantly positive impacts on GDPPC and EXPORT (different acceptable benchmarks of *p*-value; Model ii, Model vi, and Model x) (see Table 4.19 and Table 4.20).

In Cluster 3, sub-PAPI variables have significant impacts on economic development. PAPI1PARTI has significantly negative impacts on GDPPC and PRODUCTIVITY; meanwhile PAPI4CORRUP has significantly positive impacts on GDPPC and PRODUCTIVITY. However, PAPI5PROCEDURE has significantly positive impact on EXPORT (different acceptable benchmarks of *p*-value; Model c, Model g, Model k). Furthermore, sub-PCI variables have significant impacts on economic development. PCI1ENVIR and PCI5UNOF have significantly positive impacts on EXPORT; meanwhile PCI2LAND has significantly negative impact on EXPORT and PCI7ACTIVE has significantly negative impact on PRODUCTIVITY. PCI4TIME has significantly positive impacts on EXPORT and PRODUCTIVITY. PCI10LAW has significantly positive impacts on GDPPC, EXPORT and PRODUCTIVITY (different acceptable benchmarks of *p*-value; Model iii, Model vii, and Model xi) (see Table 4.19 and Table 4.20).

In Cluster 4, PAPI1PARTI has significantly negative impact on PRODUCTIVITY; meanwhile PAPI6SERVICE has significantly positive impact on EXPORT (different acceptable benchmarks of *p*-value; Model h, and Model l). However, sub-PCI variables has significantly complex impacts on economic development. PCI1ENVIR has significantly positive impacts on GDPPC and PRODUCTIVITY; meanwhile PCI3TRANS has significantly negative impacts on GDPPC and PRODUCTIVITY. PCI5UNOF has negative impact on GDPPC, meanwhile PCI10LAW has positive impact on PRODUCTIVITY. PCI8SUPP has significantly positive impacts on EXPORT and PRODUCTIVITY (different acceptable benchmarks of *p*-value; Model iv, Model viii, and Model xii) (see Table 4.19 and Table 4.20).

Table 4.19 Causal Relationships between Sub-PAPI Variables and Economic Development in Developmental Clusters.

	log GDPPC				sqrt EXPORT				nrsqrt PRODUCTIVITY			
	Fixed effect	Random effect	Random effect	Fixed effect	Fixed effect		Fixed effect	Random effect	Fixed effect	Random effect	Random effect	Fixed effect
	In Cluster 1	In Cluster 2	In Cluster 3	In Cluster 4	In Cluster 1	In Cluster 2	In Cluster 3	In Cluster 4	In Cluster 1	In Cluster 2	In Cluster 3	In Cluster 4
	(Model a)	(Model b)	(Model c)	(Model d)	(Model e)	(Model f)	(Model g)	(Model h)	(Model i)	(Model j)	(Model k)	(Model l)
PAPI1PARTI	-0.2022321**	-0.0803768**	-0.1079876*	-	-948.304***		-	-	-0.0092654**	-0.0056527**	-0.0088388**	-0.0102891*
PAPI2TRANS	-	-0.094528**	-	-	844.4187**		-	-	-	-0.0067489**	-	-
PAPI3ACCOUNT	-	-	-	-	-		-	-	-	-	-	-
PAPI4CORRUP	-0.1322504**	-	0.0807559***	-	-		-	-	-0.0046786**	-	0.0062415***	-
PAPI5PROCEDURE	-	-0.158627**	-	-	-		107.6594**	-	-	-0.0086822**	-	-
PAPI6SERVICE	0.3008609**	-	-	-	766.6454**		-	156.6559**	0.013528*	-	-	-
F-test (for Fixed effect)	10.06***			3.71***	22.46***		2.52*		18.74***			4.70***
Wald test (for Random effect)		61.71***	21.50***					19.95***		58.28***	25.90***	
R-squared within	52.05%	21.65%	32.23%	14.53%	65.05%		23.67%	12.85%	45.76%	21.12%	38.46%	29.13%
rho	95.57%	93.72%	86.82%	81.84%	90.10%		95.09%	90.10%	92.98%	87.08%	81.61%	88.11%
Prob>chi2 (Hausman test) Fixed effect VS Random effect	0.0085***	0.7162	0.8201	0.0465*	0.0105**		0.003***	0.6046	0.0113*	0.464	0.9879	0.0001***

	log GDPPC				sqrt EXPORT				nrsqrt PRODUCTIVITY			
	Fixed effect In Cluster 1 (Model a)	Random effect In Cluster 2 (Model b)	Random effect In Cluster 3 (Model c)	Fixed effect In Cluster 4 (Model d)	Fixed effect In Cluster 1 (Model e)	In Cluster 2 (Model f)	Fixed effect In Cluster 3 (Model g)	Random effect In Cluster 4 (Model h)	Fixed effect In Cluster 1 (Model i)	Random effect In Cluster 2 (Model j)	Random effect In Cluster 3 (Model k)	Fixed effect In Cluster 4 (Model l)
Prob>chi (Breusch and Pagan Lagrangian multiplier test) Random effect VS Pooled OLS	1	0***	0***	0***	1		0***	0***	1	0***	0***	0***

Source: Created by the author.

Note: *** p < 0.01; ** p < 0.05; * p < 0.1

Model f has violation of assumptions

Table 4.20 Causal Relationships between Sub-PCI Variables and Economic Development in Developmental Clusters.

	log GDPPC				sqrt EXPORT				nrsqrt PRODUCTIVITY			
		Random effect	Random effect	Fixed effect		Random effect	Random effect	Random effect		Random effect	Random effect	Fixed effect
	In Cluster 1	In Cluster 2	In Cluster 3	In Cluster 4	In Cluster 1	In Cluster 2	In Cluster 3	In Cluster 4	In Cluster 1	In Cluster 2	In Cluster 3	In Cluster 4
	(Model i)	(Model ii)	(Model iii)	(Model iv)	(Model v)	(Model vi)	(Model vii)	(Model viii)	(Model ix)	(Model x)	(Model xi)	(Model xii)
PCI1ENVIR		0.0287352**	-	0.0458491**		-	32.1413*	-		0.0020518**	-	0.0028512**
PCI2LAND		-	-	-		-89.94731*	-57.96704**	-		-0.0044185**	-	-
PCI3TRANS		0.0523663**	-	-0.0399037**		-	-	-		0.0034801***	-	-0.0047309***
PCI4TIME		0.0437604***	-	-		-	55.91773**	-		0.0023893***	0.0028205*	-
PCI5UNOF		-	-	-0.0608275**		-	42.38065***	-		-	-	-
PCI7ACTIVE		-	-	-		-	-	-		-	-0.0027782***	-
PCI8BUSSUP		0.0425421**	-	-		-	-	55.56321*		0.0032391***	-	0.0062666***
PCI9LABOR		0.0554625**	-	-		127.3615***	-	-		-	-	-
PCI10LAW		-	0.0295157**	-		-	21.22131*	-		-	0.002673***	0.0025604**
F-test (for Fixed effect)				31.66***								9.31***
Wald test (for Random effect)		500.12***	298.34***				41.71***	19.66**		457.58***	239.05***	
R-squared within		71.52%	75.12%	46.07%		42.85%	54.47%	24.27%		72.99%	75.76%	66.12%
rho		96.75%	94.41%	87.85%		85.91%	97.39%	92.68%		93.48%	89.55%	93.25%
Prob>chi2 (Hausman test) Fixed effect VS Random effect		0.0932	0.9993	0.0004***		0.5528	0.9994	0.1111		0.1135	0.9901	0.0455*

	log GDPPC				sqrt EXPORT				nrsqrt PRODUCTIVITY			
		Random effect	Random effect	Fixed effect		Random effect	Random effect	Random effect		Random effect	Random effect	Fixed effect
	In Cluster 1	In Cluster 2	In Cluster 3	In Cluster 4	In Cluster 1	In Cluster 2	In Cluster 3	In Cluster 4	In Cluster 1	In Cluster 2	In Cluster 3	In Cluster 4
	(Model i)	(Model ii)	(Model iii)	(Model iv)	(Model v)	(Model vi)	(Model vii)	(Model viii)	(Model ix)	(Model x)	(Model xi)	(Model xii)
Prob>chi (Breusch and Pagan Lagrangian multiplier test) Random effect VS Pooled OLS		0***	0***	0***		0***	0***	0***		0***	0***	0***

Source: Created by the author.

Note: *** p < 0.01; ** p < 0.05; * p < 0.1

Model i, Model v and Model ix have violation of assumptions

4.2.5 Discussion

In general, institutions are driven factors of economic development in Vietnam in the perspectives of stakeholders (i.e., citizens and enterprises). A series of institutions create favorable conditions for human development, social capital development and business development leading to economic development (i.e., public service delivery, low entry costs for business start-up, limited time requirement or bureaucratic procedures and inspection, developed and high-quality business support service, sound training policies, fair and effective legal procedures or dispute resolution). Meanwhile, there are other institutions having negative relationships with economic development (i.e., participation at local levels, public administrative procedures, easy access to land and security of business premises, minimal informal charges). On one side, it is consistent to New Institutional Economics in general; and Kaldaru & Parts (2008), Osma et al (2012), Vitola and Senelde (2015) in particular. On another side, it is consistent to North (1990) and Aron (2000) explaining institutionalism in Third World countries with the payoff mindset (i.e., institutions are a set of payoffs to economic activity).

Adding Developmental Clusters into the causal models, it reveals that Cluster 1 significantly gains the most economic values than other clusters (i.e., GDP per capita, export and labor productivity). It is consistent to the taxonomy of development in the previous study that “Cluster 1 shoulders the national earnings contributing enormously to the national economic growth”. Cluster 2 with good governance has just chased Cluster 1 to reach economic development with the huge gap between these two clusters. However, it indicates a positive signal of development in Vietnam reflecting an appreciated effort toward development orientation consistent to development theory and sustainable development.

When testing causal relationships between institutional factors and economic development in each developmental cluster, there are some new determinants (i.e., control of corruption, transparent business environment and equitable business information) and some complex impacts with both negative and positive signs in different contexts (public administrative procedures, minimal informal charges). In Cluster 1 and Cluster 2 with higher developmental levels, it reveals that provinces

have created strong institutional environments for business development, human development and social capital development; however it exists some payoffs to gain economic activity (i.e., participation at local levels, transparency of local decision-making, corruption, public administrative procedures, easy access to land and security of business premises). In Cluster 3 with the latter of developmental level, it reveals a significantly contrast result that provinces have gained significant positive points in control of corruption, limited time requirement for bureaucratic procedures and inspection, minimal informal charges. In Cluster 4 with the lowest developmental level, it reveals that provinces have got stuck in a problem of transparent business environment and equitable business information, limited time requirement for bureaucratic procedures and inspection, and minimal informal charges.

Hence, the study contributes significant evidence of Vietnam to support New Institutional Economics and New Public Management:

1. Enabling government-oriented managerialism provides incentives and responsiveness, improves public service delivery, create favorable environment for citizen satisfaction and business development. To do so, the government should be reformed toward smaller size, decentralization, cost-cutting, high quality and performance, effectiveness, and strong institutional environment.
2. Good governance would enhance economic development by lowering transaction cost, lowering transformation cost and increase labor specialization/human development;
3. Different levels of development would intervene in the causal relationship between Institutions and Economic Development.

4.3 Qualitative Research – The Case Study of Ben Tre Province in Vietnam

4.3.1 Why did the author choose Ben Tre province for the case study?

Through the recent years, the Mekong Delta has favorable conditions for socio-economic development with the fully-connected transportation and the government reform. Meanwhile, the Mekong Delta has tackled the climate change with the drought, flooding and saline intrusion caused by the lowering/rising sea levels. Hence, the author chose Ben Tre province as the typical candidate for the research on the development of the unfavorable areas in Vietnam. Ben Tre province is located in the Mekong River Delta in the South of Vietnam. The province is isolated as the island by bordering with the rivers and the East Sea. The geographic feature has been brought both advantages and disadvantages of the provincial development. Ben Tre Province through Provincial Reports/Documents and The Provincial Government

4.3.1.1 Geographics3

Ben Tre province is known as the southern province located in the Mekong Delta in Vietnam, where the Mekong River flows into the East Sea. It is away 86 km from Ho Chi Minh city[4], and 120 km from Can Tho city[5]. The province has the natural borders with three neighboring provinces (i.e., Tien Giang province, Vinh Long province, Tra Vinh province) by Tien river and Co Chien river. Ben Tre province has the area of 2,360 km^2; comprising of An Hoa island, Bao island, and Minh island; deposited alluvia from 4 branches of Cuu Long river (i.e., Tien river, Ba Lai river, Ham Luong river, and Co Chien river). The natural terrain is favored to the waterway across the province; whereas this area had faced with the obstacles from the overland transportation (i.e., before the establishment of Rach Mieu bridge since

[3] Answering from Ben Tre Department of Transportation for the depth-interview.
[4] Ho Chi Minh city is the metropolitan city in the Southern of Vietnam.
[5] Can Tho city is the central city in the Mekong River Delta located in the Southern of Vietnam.

2009) and has faced with the climate change (i.e., drought, flooding and saline intrusion caused the lowering/rising sea level).

4.3.1.2 Provincial Administration

Ben Tre province is divided into eight districts[6] and one provincial city - known as Ben Tre city. There are three paralic districts in the fully potential to develop the wind-energy and the solar-energy with the accumulative capacity of 395 million kWh, and develop the fishing and aquaculture sectors (i.e., Binh Dai district, Ba Tri district, and Thanh Phu district)[7]. The government has put emphasis on the development of urbanization with fourteen urban areas in various districts with the aim of attracting and appealing the investments across the province (see details in Appendix E)[8]

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[6] Including Ben Tre city, Chau Thanh district, Cho Lach district, South Mo Cay district, North Mo Cay district, Giong Trom district, Binh Dai district, Ba Tri district, Thanh Phu district.
[7] According to the governmental decree no. 2497/QĐ-BCT dated 18th March 2015 on the approval of "Developmental scheme on the wind-energy in Ben Tre province until the year of 2020, vision to 2030.
[8] Answering from Ben Tre Department of Construction for the depth-interview.

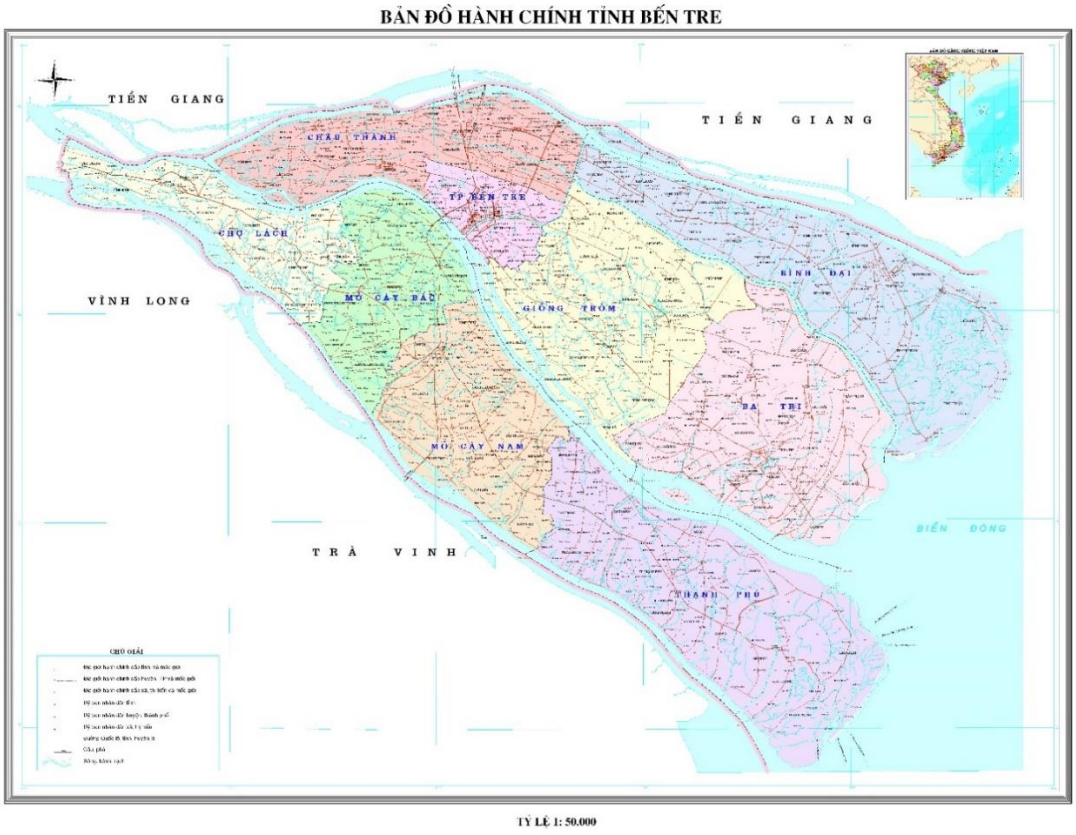


Figure 4.6 Administrational Map of Ben Tre Province with Three Neighboring Provinces including Tien Giang, Vinh Long, and Tra Vinh.

Source: Portal of Ben Tre Province

Note: The Province Is covered by many rivers flowing into East Sea.

The picture was extracted from Portal of Ben Tre Province, managed by E-INFORMATION CENTER OF BEN TRE located at no.7 Cach Mang Thang Tam, Ward 3, Ben Tre city, Ben Tre province.

4.3.1.3 Infrastructure[9]

The government has mobilized the investment on the infrastructure from public and private financial sources to facilitate the cultivation, the transportation, the logistic service and the standard living for their enterprises and citizens. In terms of the transportation, all districts and areas across the province have been fully-connected by highways, provincial roads, and bridges. Since 2009, the State and the province had invested and deployed the use of many crucial bridges[10] to connect Ben Tre with regional and national transportation systems; which is favored to the trade between the province and other main economic regions and abridge the distance between the province and the centers of Mekong River Delta (i.e., Can Tho city) and the South of Vietnam (i.e., Ho Chi Minh city). Indeed, Rach Mieu bridge and Co Chien bridge are recognized as the developmental symbol in Mekong Delta and connection among Tien Giang province, Ben Tre province, and Tra Vinh province. Hence, the infrastructure system in Ben Tre province has well-ensured and responded well to the provincial demands of socio-economic development; especially, it is favored to attract and appeal to the investments across the province (see Figure 4.6 and Table 4.21).

Despite of supplying adequate electricity to all households, the government has been planning for the scheme of the wind-energy and the solar-energy in three paralic districts, leading to the alternative and renewable energy for the sustainable development (see Figure 4.7).

4.3.1.4 Agriculture - Industry and Current Issue of Climate Change Related to the Agriculture

In the year of 2016, the province suffered the critical impact of natural calamities, such as drought and saline intrusion. It was recorded as the most serious

[9] Answering from Ben Tre Department of Transportation for the depth-interview.

[10] On the highway no. 60: Rach Mieu bridge was inaugurated in 2009; Ham Luong bridge was inaugurated in 2010; Co Chien bridge was inaugurated in 2015.

On the highway no. 57: all ferro bridges with the low cart load were replaced by ferro-concrete bridges with the high cart load.

influence on the production of enterprises, the cultivation of peasants and the living of citizens across the province.

In the agriculture – forestry - fishing sector in 2016, the value added only reached 0.9% over 4.3%[11] because of the severe impact of drought and saline intrusion in the beginning period of 2016. Typically, the provincial government punctually granted the compensation budget of 40,271 billion VND to the deprivation on the cereal crop in the region of 22 hectare caused by the severe drought and saline intrusion.

Subsequently, the supply of fresh water to the industrial production also became the critical issue during the drought and saline intrusion in this year. With the prompt governmental supports to surmount these natural obstacles, in 2016, the added value in the industrial sector remained the increasing rate at 15.4%, compared to the same period in 2015.

[11] The valued added in the agriculture – forestry – fishing sector was set 4.3% as the target, according to the provincial resolution no. 15/2015/NQ-HĐND dated 4th December 2015 enacted by People's Assembly of Ben Tre province on the socio-economic development plan in Ben Tre province in 2016 (See details in Appendix F).

Table 4.21 Transportation System in Ben Tre Province.

Transportation Types	Transportation Items	Main Characteristics
External transportation	Highway 60	Linking Ben Tre province with Tien Giang province and Tra Vinh province
	Highway 57	Linking Ben Tre province with Vinh Long province East – West backbone for interconnection among Cho Lach, North Mo Cay, South Mo Cay, Thanh Phu districts
	Rach Mieu bridge	Inaugurated in 2009 Located on highway 60 across Tien river Linking Ben Tre province with Tien Giang province Developmental symbol in Mekong Delta
	Co Chien bridge	Inaugurated in 2015 Located on highway 60 across Co Chien river Linking Ben Tre province with Tra Vinh province Developmental symbol in Mekong Delta
Internal transportation	Provincial road 882	Abridging the distance between Cho Lach district and Ben Tre city
	Provincial road 883	Linking Chau Thanh and Binh Dai districts Backbone transportation of Binh Dai district
	Provincial road 884	Linking Chau Thanh district and Ben Tre city
	Provincial road 885	Linking Ben Tre city and Giong Trom district
	Provincial road 887	Backbone for interconnection among Ben Tre city, Giong Trom district and Ba Tri district
	Ham Luong bridge	Located on highway 60 across Ham Luong river Linking Ben Tre city and North Mo Cay district

Source: Created by the author.

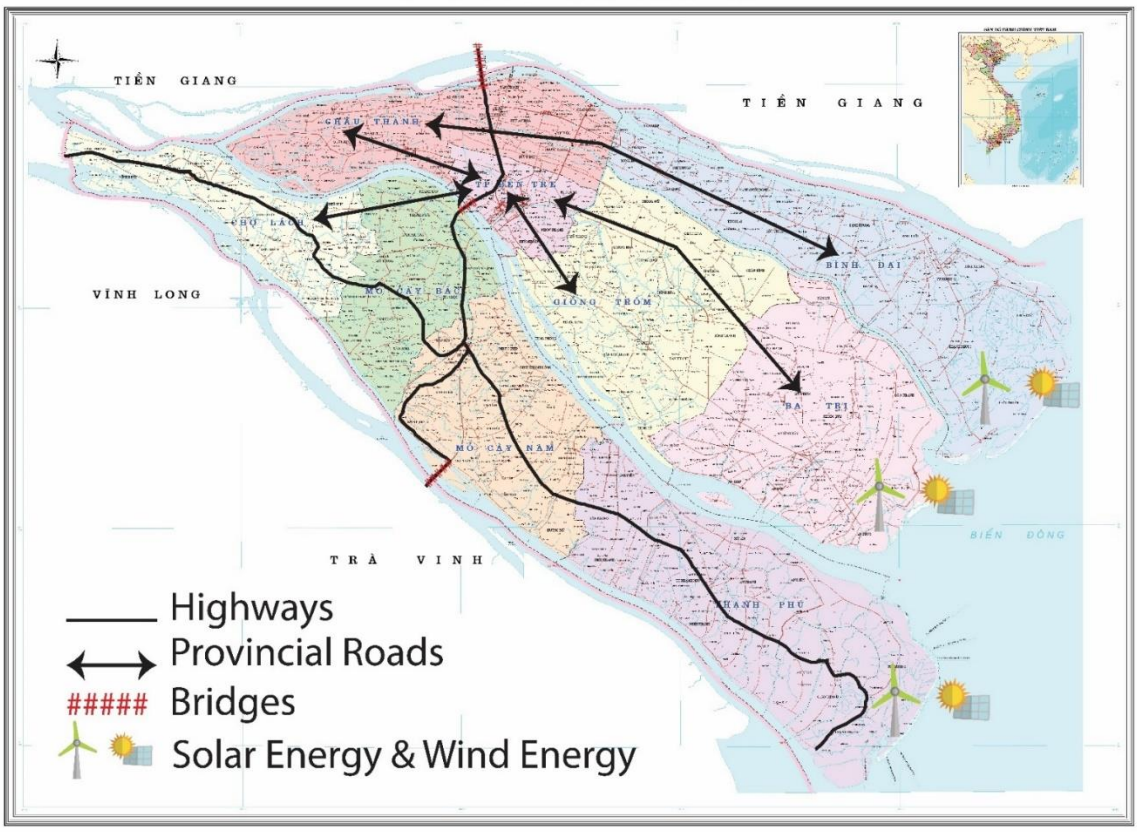
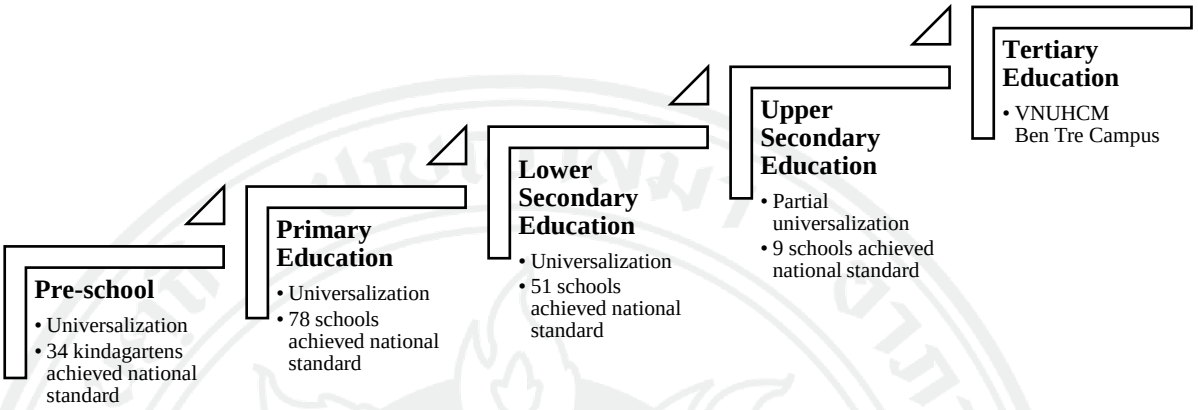


Figure 4.7 Map of Transportation and Potential Renewable Energy in Ben Tre Province.

Source: Created by the author.

4.3.1.5 Education

The province has gained more than 98% at the overall literacy rate, in which 99.3% for the group aged from 15-35 and 98.3% for the group aged 36 above. The significantly high literacy rate is the pushing reason for their further achievements in educational universalization. In the basis, by the year 2016, the province already achieved the educational universalization from pre-school, primary school to secondary school with a mass number of schools recognized the national standard achievement. Especially, Ben Tre city has remained the pioneer for educational universalization from pre-school to upper-secondary school. To encourage lifelong learning and continuing education for everyone, the government established nine Centers of Continuing education in all districts/city across the province. To push the tertiary education, the province established Vietnam National University Ho Chi Minh City – Ben Tre Training Center. This center recruited the first batch since the academic year of 2016-2017 with five undergraduate programs; including Management of Natural Resources and Environment, Food Technology, Civil Engineering, Electrical and Electronic Engineering, and Biotechnology. The province has received approval to transfer the center into Vietnam National University Ho Chi Minh City (VNUHCM) – Ben Tre Campus (see Figure 4.8, Appendix G and Appendix H).



Literacy rate: 98%

Ben Tre city: the pioneer in the educational universalization from pre-school,

Figure 4.8 The Educational Achievements in Ben Tre Province.

Source: Created by the author.

4.3.1.6 Health

The government has made a strong commitment to protect, care and improve public health for everyone. With actively and proactively preventive programs, the province deployed various waves to exterminate larvae in water, propagation to prevent dengue fever and Zika, and stamped epidemic diseases spreading out. The government put emphasis on drilling, propagation, prevention, and control of infectious diseases caused by the severe water shortage, drought, and saline intrusion for all medical workers/officials, medical centers, and hospitals across the province. Across the province, there are totally seventeen health establishments, including three public general hospitals, three public specialist hospitals, ten medical service units, and one private general hospital (see details in Appendix I). The medical human resources, services, and infrastructure at all levels of medical centers/hospital have

been gradually improved with the patient-bed-utilization rate of 92.3%. Typically, doctors are distributed to all communes in all districts/city across the province; 87 communes/wards/small towns are recognized national health criteria; some indicators on health care has been above the targets[12], such as 26.55 patient beds/10,000 inhabitants and 7.56 doctors/10,000 inhabitants. Subsequently, the propagation of health insurance has deployed to everyone with the participation rate of 82% of the whole provincial population, which has been counted until the end of 2017. In addition, the province has strictly managed and controlled medical service, medicine quality, and drug prices in public units (see Figure 4.9).

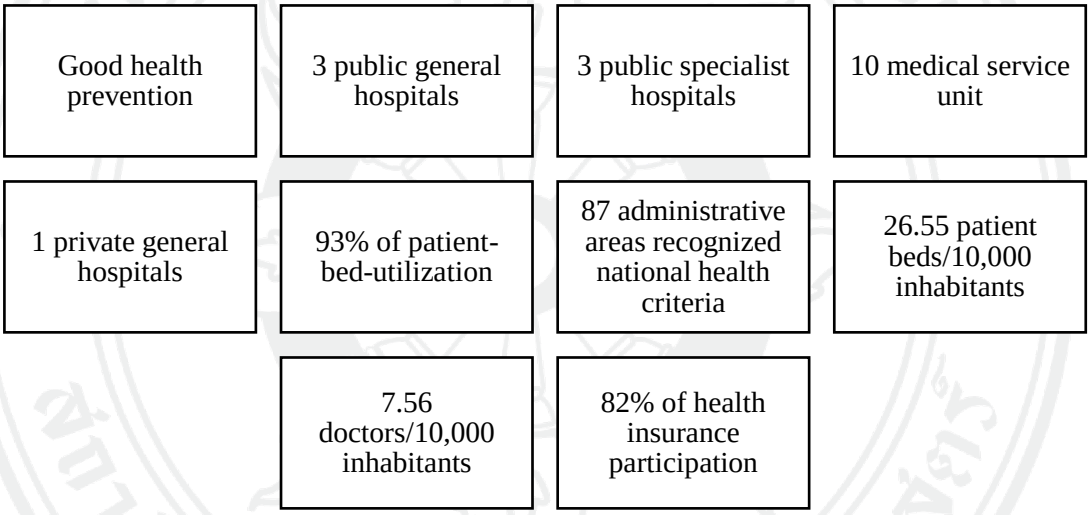


Figure 4.9 The Achievements in the Health Sector in Ben Tre Province.
Source: Created by the author.

4.3.1.7 Social Security – Social Aids

The government has deployed various supportive policies and programs to surmount the poverty issue and social protection adequately and promptly to vulnerable/disadvantaged groups across the province. The province has conceived the

[12] According to the provincial resolution no. 15/2015/NQ-HĐND dated 4th December 2015 enacted by People's Assembly of Ben Tre province on the socio-economic development plan in Ben Tre province in 2016 (See details in Appendix B).

importance of elementary capabilities, social security, and social assistance to these groups. Health insurance, preferential loans, regular assistance with different supportive degrees for exclusive groups have been actual actions from the local government for the inclusive growth.

In another approach to deal with the poverty, the province has deployed the program "Starting a business to escape poverty" with the targets of the poor households since 2016. The objectives of the program are supporting the poor households to implement their start-up ideas and consulting the feasibility of these start-up plans. The start-up program brings to the employed amid the poor living regions. In addition, the province has introduced the exporting of labor to overseas of the youths in the poor households. These provincial efforts mentioned above facilitate for the poor to deploy their start-up in reality, to generate their own livelihoods, and to generate their own income and wealth as well. According to the sustainable development, the poor should be active in improving their livelihoods, rather than just being reliant on the governmental aids and other private sponsorships[13].

4.3.1.8 Gender Equality

The government has also paid attention on the salient issues of gender equality; such as training skills for female participation in National Assembly, and incrementally eliminating gender-based violence.

[13] According to the provincial plan no. 1547/KH-SLĐBXH dated 5th July 2016 enacted by Ben Tre Department of Labor – Invalids and Social Affairs on implementation of start-up to escape poverty (the original name in Vietnamese: "Chương trình Đồng Khởi khởi nghiệp, khởi nghiệp thoát nghèo").

Table 4.22 Statistic Data on Gender-Based Violence in Ben Tre Province.

Issues	2007	2012	2017
Number of girls and women suffered from sexual molestation	17	8	2
Number of girls and women suffered from human trafficking	0	0	0

Source: The report no. 103/BC-BTV dated 30th June 2017 enacted by Ben Tre Women's Union on the 10 years – report of the implementation of the resolution no. 11-NQ/TW dated on 27th April 2007 enacted by Politburo Committee on the female empowerment in the duration of pushing industrialization - modernization in Vietnam (the original name in Vietnamese: "Báo cáo Tổng kết 10 năm thực hiện Nghị quyết 11-NQ/TW, ngày 27/04/2007 của Bộ Chính trị (khóa X) về công tác phụ nữ thời kỳ đẩy mạnh công nghiệp hóa – hiện đại hóa đất nước).

Indeed, the province has struck for female participation in the public sector through projecting, training, allocating, rotating and developing female public servants to become managers in the political system in Ben Tre. Annually, approximately 3000 female public servants are sent for intensive training. By 2017, the province has had five female public servants graduated at doctoral levels, 179 female public servants graduated at master levels, two national research projects with female scientist as the project leaders. Female participation in politics has enhanced through the expansion of party member with the female accumulative rate of 34.56% since 2007. In general, the female participation in political and administrative sectors has been increased across the period of 2010-2012 (i.e., in the provincial level of the Communist Party, in the provincial level of People's Council); however, that participation has been recognized as significant deduction in the provincial level of National Assembly (i.e., the female rate reduced from 42.86% to 28.57%, term 2011-2016 and term 2016-2020, respectively), and in the provincial level of People's

Committee. The Provincial Committee of the Party (2017) pointed out the obstacle of the female participation[14]:

> A group of female public servants has the thought of smugness with their working status and their educational level, as well as has short of their efforts to become a manager. The province should design the alternative policies for female public servants in the intensive training, expansion of their educational levels, and promotion of their further working position (quoted in the report 2017).

4.3.2 The Story of a Younger Citizen in Ben Tre Province

Ms.V - born in Ben Tre city - is the typical example of the younger generation from the elite group in Ben Tre province. She is coming from a business family, who always think about the importance of the education for their children to escape the poverty and develop themselves sustainably. Her parents dropped out the school at the primary level to help the economic situation for their families. Indeed, this fact had been prevailing in the generation born in the war period across the various rural areas in Vietnam. Thus, it is easy to understand on their dreams about the education of their next generation: "Studying is the unique route to be successful in the life and self-care for the own family" (quoted in the depth-interview with Ms.V).

Ms. V's parent has been self-employed and has run their own business in the food sector. Her elder sister had finished the tertiary education at the college in Ho Chi Minh city several years before, then she has been working for the family business. Ms. V had finished her early childhood, primary and secondary levels at the prestigious and elite kindergarten and schools in Ben Tre city[15]. Currently, all her schools, located in the center of Ben Tre city near Ben Tre Department of Education and Training, not only already recognized as national accreditation standards but also

[14] According to the provincial report no. 181-BC/TU dated on 8th June 2017 enacted by Ben Tre Committee of the Party on deploying policies to promote female public servants in Ben Tre province (the original name in Vietnamese: "Tình hình công tác cán bộ nữ tỉnh Bến Tre").

[15] Early childhood education at the Ben Tre small town kindergarten located in Ben Tre city.
Primary education at the Ben Tre elementary school located in Ben Tre city.
Lower-secondary education at the Ben Tre city lower-secondary school located in Ben Tre city.
Upper-secondary education at Ben Tre High School for The Gifted located in Ben Tre city.

become the role model of education development for other districts across the province. She recognized her aptitude for Chemistry during the time studying as the gifted student at the gifted high-school. Indeed, she used to conquer various provincial and national examinations for gifted students within her moment at the secondary schools. Typically, she had participated in the national examination for gifted students on Chemistry. The province and the gifted high-school had paid for her educational fees at the high-school and other salaries to be the provincial gifted-students. In addition, she had joined in various extra-tutor learning after the official learning at school.

Once again, the self-talent had enabled her to finish the first in the entrance for university examination at Vietnam National University Ho Chi Minh City. Since then, she has been following her tertiary education at the university as the gifted students with full scholarships and chances to join various researches in Bio-Chemistry field from faculty lecturers. Indeed, she is thinking about the suitable choice to study abroad for her postgraduate education with her aptitude for Chemistry.

She has recognized the change of her province in various corners, sites, and sectors within the time, especially after the establishment of Rach Mieu bridge as the development era. In the educational sector, the province has put the emphasis on the educational universalization and invested school-infrastructures. For the gifted students, the province has paid all educational fees and other salaries to promote their participation in various provincial, regional, and national examination. Typically, the province has invested on the laboratory system in high-schools to illustrate scientific experiments. It is very important to promote the high-school students to follow further study in the tertiary school. Furthermore, the province has annually commended all Ben Tre students gaining remarkably high scores (i.e., greater than 26 points in the case of Ms. V) in the entrance university examination with the financial support (i.e., 10 million VND in the case of Ms. V). In addition, the province has deployed financial support for Ben Tre citizens who graduated with master and doctoral degrees to come back to work at various public departments/units/agencies in Ben Tre province (i.e., 50 million VND/person for master degree, and 100 million VND/person for doctoral degree). In the trade sector and other eco-social corners, Ben Tre has been changed their developmental image since the establishment of Rach

Mieu bridge and Trung Luong highway. Indeed, it had taken more than 30 minutes by using ferry from Tien Giang province to Ben Tre province; however, these provinces are currently connected by the Rach Mieu bridge as replacement. Before having such bridge, there had been only one supermarket named Quang Dai and Ben Tre market with limited number and types of goods. In fact, Quang Dai supermarket was located on the above story and occupied a quarter of Ben Tre market's area. After the establishment of Rach Mieu bridge, the province had additional supermarkets and shopping centers, such as Coop Mart supermarket and Sense City shopping center. The bridge has really brought the abundant opportunities to further development of the province, such as the trade, the transportation, the modern goods-services (i.e., fashion and cinema), and so forth. She shared about her memory and comparison on the culture and society of Ben Tre citizens in the past and the present:

> Before having Rach Mieu bridge, the students in 7^{th}-8^{th} grades had just worn the normal uniforms and traditional home clothes; the citizen had just gone to Le Anh Xuan cinema with the obsolete decoration and fusty smell. After having such bridge, the younger has become more fashionable with jeans and facial make-up, the citizen has enjoyed their leisure time in the supermarkets and shopping centers with West-East cuisine at restaurants, fast food and desert shops, cinema and shopping stores" (quoted in the depth-interview with Ms.V).

4.3.3 Self -Observation from the Author in Ben Tre Province

Ben Tre market is located on the bank of small branch of Ham Luong river – called Ben Tre river, and adjacent to the provincial road no. 887. The market provides abundant products, such as fresh food (i.e., meat and vegetable), groceries, home appliances, and the like. The senior citizens, the peasants, the poor households, and other traditional customers are prevailing to go shopping in this traditional market with lots of stalls and kiosks, where bargaining is mainly used to get the suitable price for each product. On the other hand, Coop Mart supermarket located inside of the Sense City shopping center has provided mass of products in the modern selling. All products are packed with eye-catching, arranged in well-ordered shelves, keep in the

good condition, and importantly are specified the origins and expired dates in details. The younger generation, the officers, and medium/high income households tends to go shopping in this supermarket. In addition, Sense City shopping center is prevailing for younger generation and the wealth households to enjoy their leisure time with shopping and watching film at the cinema. Indeed, fast food and Western cuisine have imported and introduced to the citizens, such as Baskin Robin, Lotteria and Pizza Company, and Food Court with East – West food. The apparel, jewelry, pharmaceutical products are exhibited in various private stalls/kiosks inside the shopping center and in the supermarket with abundant goods in types, prices, and origins used for both younger generation, middle-aged group, and senior citizens; such as apparel made in Thailand, foot-wear made in Vietnam (i.e., Kim Huong Fashion kiosk), modern office-costume with international brand-name (i.e., Blue-lite kiosk), under-wear and swim-suit with international brand-names. In the cultural sector, the people usually go to the bookstore (i.e., Fahasha bookstore) and cinema (i.e., Galaxy Cinema). Fahasha bookstore exhibits variety of text-books, reference-books, learning tools, stationary and the like. From my observation and opinions, such bookstore is favorable for the pupils and students not only to follow their study, but also to acquire additional knowledge and improve their skills. Galaxy Cinema is the hang-out place for the younger generation and nuclear families (i.e., parent and their kids) during the free-time and at the weekend. Therefore, the government enables their citizens to develop their intellectual level sustainably along with the general development of the province.

According to the taxi driver, Rach Mieu bridge has played important roles in transportation to connect Ben Tre with Tien Giang and with the national highway across the country by cutting transportation cost and time, and in trade to import and export various types of goods across Vietnam. For example, it takes normally thirty minutes by using the ferry to pass Tien river; however, during the peak seasons like public holidays or Lunar New Year, it takes additionally from one to two hours to make a long queue to reach the ferry. In contrary, according to the drink-sellers near Rach Mieu ferry, the bridge seemed to deprive the livelihood of the sellers near the ferry, such as sold drinks and foods, and provided other services to drivers and passengers. These sellers had other places to continue their small business or find

other livelihoods. It required a lot of exertion for these vulnerable groups with low educational levels to transfer their livelihoods appropriate to the new development era of their province. She shared about her luck:

> I am very lucky to rent another place near the old ferry and on the bank of the river. I had saved a little money during my period of selling foods near the ferry in the past. My working at the time could improve the economic situation of my family, even I could send my children to study at good schools in Ben Tre city. Now, I have just been spending my retired period with my drinking shop. For the other poor households, they cried in desperate with the drinks-foods on their shoulders in the last minute of the ferry. The bridge seems to bring the advantages to the rich and general development for the whole province, meanwhile there are some disadvantaged/vulnerable groups spending their difficult time to find other livelihoods at the historical time of closing the ferry and using the new bridge" (quoted in the depth-interview with one seller).

4.3.4 Essential Factors Leading to The Development Proved by Statistic Data

Geographically, being as isolated island requires the overland transportation to facilitate conditions and push up the processes of development. Hence, infrastructures play an important factor leading to the development in Ben Tre province in terms of economic facilities; including highways, provincial roads, and bridges. The establishment of the Rach Mieu since 2009 had opened the new era of development for this land. Indeed, as seen in the it recorded the signal of economic growth in Ben Tre province in the period 2010-2015; such as transforming into the non-agricultural sectors; increasing nearly two times in GDP and productivity, increasing nearly three times in export values, and gradually decreasing trend in poverty rate (see Table 4.24 and Figure 4.10).

Education also plays an important factor leading to the development in Ben Tre province in terms of social opportunities facilitating economic participation. Basically, the education system has been well-built from preschool, primary level, secondary level to tertiary level under the efforts of the provincial government. Especially, Ben Tre province gradually becomes the pioneer in the national level for being fully educational universalization and providing talent students. With the increasingly attempts mentioned above, the province would have the basis to provide the labor force and the human resource for the non-agriculture sectors in the local sphere (i.e., Ben Tre province), the regional sphere (i.e., the Mekong Delta) and the national sphere (i.e., Vietnam).

The program “Starting a business to escape poverty” is the proper policy to facilitate for the poor to generate their own livelihoods, income and wealth; rather than just being reliant on the governmental aids and other private sponsorships.

Sufficient infrastructures and good education have facilitated to foster the structural transformation of the provincial economy with the increasing non-agricultural GDP and international trade. In the industrial era, the province has witnessed their governance improvement year by year. Evidently, the PCI rankings have been improved from the 30^{th} position to the 5^{th} position after seven years (i.e., the period 2011-2017) since the Rach Mieu bridge opening. This PCI achievement

has reflected the provincial efforts to create enabling business environment to attract both domestic and foreign investment. Likewise, the PAPI rankings have been improved to the 2nd position in 2017, revealing the provincial effort to capture and satisfy their citizens' expectations (see Table 4.23).

Table 4.23 Governance Improvement of Ben Tre Province in the Period 2011-2017.

YEAR	PCI Ranking	PAPI Ranking
2011	30/63	16/63
2012	26/63	25/63
2013	6/63	19/63
2014	18/63	30/63
2015	12/63	13/63
2016	12/63	6/63
2017	5/63	2/63

Source: Center for Community Support Development Studies, Vietnam Fatherland Front, & United Nations Development Program Vietnam (2018), Vietnam Chamber of Commerce and Industry.

Note: The rankings among 63 provinces in Vietnam.

Table 4.24 Economic Statistic Data in the Period 2010-2015 in Ben Tre Province.

YEAR	Agriculture (% of GDP)	GDP (Billion VND)	Export Value (Thousand USD)	Poverty Rate (%)	GDP per capita (Million VND/person)	Productivity (Million VND/worker)
2010	40.90	19,490.00	264,000.00	15.58	15.51	24.59
2011	44.60	24,630.00		12.63	19.58	31.69
2012	40.70	26,134.00	437,100.00	10.65	20.76	33.91
2013	39.10	28,648.00	521,400.00	8.59	22.73	36.93
2014	38.60	31,562.00	611,100.00	6.48	25.01	39.03
2015	36.70	33,452.00	640,900.00	12.01	26.47	41.33

Note: Data collected from the national and provincial statistical yearbooks.

Figure 4.10 Rach Mieu Bridge.

Source: Tran

4.3.5 Discussion

4.3.5.1 What are the Factors Leading to the Development in Ben Tre Province?

The study explores four main factors explaining the development in Ben Tre province; including sufficient infrastructures, good education, self-reliance ability for the poor, and good governance. It is consistent to the meaning of development proposed by Seers (1979), Sen (1999), Vazquez and Sumner (2013).

Rach Mieu bridge opening in 2009 broke down the geographic isolation of the province. Subsequently, fully-connected transportation by highways, provincial roads and other bridges has facilitated overland transportation in the province. Indeed, the research illuminates the socio-economic development in the province since the establishment of the Rach Mieu bridge. The study also indicates the social opportunities (i.e., quintessentially in education) to foster the younger generation in further education and economic participation in either their home province or other developed provinces/cities. These findings are consistent to the definition of development written by Sen (1999) in his book "Development as Freedom":

> Social opportunities (in the form of education and health facilities) facilitate economic participation…economic facilities (in the form of opportunities for participation in trade and production) can help to generate personal abundance as well as public resources for social facilities (Sen, (1999), p. 11).

4.3.5.2 What Considered Issues can Impede the Development in Ben Tre Province? What are Recommendations for the Province to Pursuit the Development and Sustainable Development?

Unfortunately, the climate change along with drought and saline intrusion has become the critical issue and the challenge for the province. Subsequently, gender equality has achieved a good point in gender-based violence; meanwhile the province should create necessary conditions for female participation in the public sector, such

as awaking their motivation for their intensive training, expansion of their education levels, and further promotion of their working position. It is consistent to the urgent warning about the gender equality proposed by Sen (1993) and threats of climate change in the sustainable development considered by Goldin (2016) and Baker (2016).

Taking to the sustainable development discussed by Goldin (2016) and Baker (2016), the province has witnessed the geographic pros and cons. On one hand, the State and the province should design alternative development policies to build resilience and disaster risk reduction caused by the climate change (i.e., drought, flooding and saline intrusion caused the lowering/rising sea level). On the other hand, sustainability in electrical supply should be critically scrutinized to curb their disruption to the living condition, cultivation, and production across the province. The project to develop the potential renewable energy (i.e., the wind-energy and the solar-energy in the paralic districts) would be the echo-solution for the sustainable development in Ben Tre province.

For the long-term viewpoint, the economic growth is necessary condition to reduce poverty, however it is not sufficient condition. The un-favorable province like Ben Tre should put strong emphasis on the human development, social opportunities, economic facilities, and other aspects of sustainable development. Then, when the economic growth comes, the province will lead to not only further development in the broaden meanings, but also the sustainable development. It is consistent to meaning of development proposed by Seers (1979), Sen (1999); the meaning of sustainable development mentioned by Goldin (2016), the global efforts to reach the targets of sustainable development goals (SDGs) (see Figure 4.11).

Figure 4.11 The Provincial Efforts to Follow Sustainable Development Goals (SDGs). SDG 1, SDG 3, SDG 4, SDG 5, SDG 6, SDG 7 and SDG 9 were Found on the Recent Provincial Actions.

Source: Created by the author.

CHAPTER 5

RECOMMENDATIONS FOR POLICY FRAMEWORKS

5.1 Qualitative Recommendations for Policy Frameworks

Strong and weak points among different developmental levels are shown in Table 5.1. From this point, the author would recommend policy frameworks for each developmental cluster:

1. **Cluster 1 and Cluster 2** should seek suitable solutions to sustain economic growth. To approach long – term economic growth, these clusters should focus on human development and good governance. For human development, these clusters should provide not only sufficient but also better education and health care to different groups of people, especially the elite group and the laboring class. For good governance, these clusters should create more favorable institutional environments for enterprises and citizens rather than keep some payoffs in economic activity.
2. **Cluster 3 and Cluster 4** should seek appropriate solutions to gain higher economic growth and gradually transfer into non-traditional economies. These clusters should bring good basic education and primary health care to citizens. Cluster 3 should send their lessons on control of corruption, bureaucratic procedures and inspection and minimal of informal charges. This is the strong point in good governance of Cluster 3 compared to other clusters.
3. **Cluster 4** should scrutinize their orientation for overall development properly; such as following Cluster 1 and Cluster 2 in economic development and human development, and following Cluster 2 and Cluster 3 to create favorable business environment.

Table 5.1 Strong and Weak Points of Different Developmental Levels.

Development Cluster	Developmental Level	Strong Points		Weak Points
Cluster 1	Provinces with the largest industrial economies	Provinces shoulders the national earnings with enormous contribution to the national economic growth	Provinces have created strong institutional environments for business development, human development and social capital development	Provinces have accepted some payoffs to gain economic activity
Cluster 2	Provinces with traditional economies in the transfer to industrial economies			
Cluster 3	Provinces with the largest traditional economies	Provinces have gained significant positive points in control of corruption, limited time requirement for bureaucratic procedures and inspection, minimal informal charges.		
Cluster 4	Provinces with largely traditional economies, low human development and good governance			Provinces have got stuck in a problem of transparent business environment and equitable business information, limited time requirement for bureaucratic procedures and inspection, and minimal informal charges

Source: Created by the author.

5.2 Quantitative Recommendations for Policy Frameworks

The author would recommend the following policy framework for provincial development in Vietnam. According to the analysis of developmental taxonomy and knowledge of development and competitiveness, the author would recommend developmental stage for each developmental cluster based on income threshold.

Provinces in Cluster 1 would be in the second, efficiency-driven stage, by investing roughly half of capital in efficiency enhancers with higher education and training, goods and labour market efficiency, financial market development, technological readiness and market size. The cluster would then invest 40% in basic requirements for institutions, infrastructure, macroeconomic environment, health and primary education. The remaining 10% would be invested in business sophistication and innovation (see Figure 5.1 and Figure 5.2).

Provinces in the other three clusters would considered factor-driven, requiring a substantial 60% capital investment in basic requirements, a moderate investment of 35% in efficiency enhancers and only 5% in innovation and business sophistication (see Figure 5.1 and Figure 5.2).

Development Clusters	POVERTY	VACCINATION	MALNUTRITION	LITERACY	U5DEATH	GDPPC_VND*	PCI**	PAPI***
Cluster 1	2.77	98.17	9.72	97.51	14.93	123,545.30	59.72	36.35
Cluster 2	7.69	95.49	14.17	96.05	20.51	36,677.86	58.98	37.22
Cluster 3	9.92	96.65	15.55	91.86	22.33	31,622.37	58.46	34.78
Cluster 4	19.87	94.42	19.43	87.98	37.38	26,340.17	55.35	36.12
National average	11.52	95.65	15.68	92.78	25.68	41,673.71	57.80	36.29

*GDPPC_VND: GDP per capita in Vietnamese dongs

**PCI: the overall value of PCI

***PAPI: the overall value of PAPI

Figure 5.1 Cluster Centroid of Developmental Taxonomy. Using GDPPC Value to Define Development Stage for each Cluster.

Source: Created by the author.

	STAGE OF DEVELOPMENT				
	Stage 1: Factor-driven	Transition from stage 1 to stage 2	Stage 2: Efficiency-driven	Transition from stage 2 to stage 3	Stage 3: Innovation-driven
GDP per capita (US$) thresholds*	<2,000	2,000–2,999	3,000–8,999	9,000–17,000	>17,000
Weight for basic requirements	60%	40–60%	40%	20–40%	20%
Weight for efficiency enhancers	35%	35–50%	50%	50%	50%
Weight for innovation and sophistication factors	5%	5–10%	10%	10–30%	30%
	For Cluster 2 Cluster 3 Cluster 4		For Cluster 1		

Figure 5.2 Development Stage for each Cluster.

Source: Created by the author.

CHAPTER 6

CONCLUSIONS

The developmental taxonomy provides the nuanced picture on development across 63 provinces in Vietnam. Four clusters and developmental transition are identified with their main characteristics and implication for the State, the province and policy makers. This taxonomy does not suggest only the classification involving the multidimensional development, but also the classification should be replicated in different periods of time with additional development indicators and dimensions approaching the meaning of the development in the era of sustainable development. Hence, the author would recommend the new avenue for further research focusing on sustainability (e.g., forest protection, marine environment, inclusive growth, and so forth), foreign investment and innovation capacities.

The causal relationship between Institutions and Economic Development was verified in the case of Vietnam during 2012-2015. PAPI sub-indices and PCI sub-indices were used to reflect the Institutions in the perspectives of citizens and enterprises. As consequences, some institutions creating conditions for human development, social capital development and business development positively contribute to economic development. Meanwhile, it appears “payoff” mindset to gain economic priority in Vietnam governance; such as low degree of participation, informal charges in public transactions, low access to land and security. Besides, it is consistent the taxonomy of development in the previous study that “Cluster 1 shoulders the national earnings contributing enormously to the national economic growth”. However, it partially supports the taxonomy of development that Cluster 2 with good governance has just chased Cluster 1 to reach economic development with the huge gap between these clusters. When testing causal relationships between institutional factors and economic development in each developmental cluster, there

are some new determinants (e.g., control of corruption, transparent business environment and equitable business information) and some complex impacts with both negative and positive signs in different contexts (e.g., public administrative procedures, minimal informal charges). Cluster 3 has been emergent to good governance with strong points of control of corruption, bureaucratic procedures and inspection, and minimal of informal charges; rather than Cluster 2 as the consequence in the developmental taxonomy.

From the case study of Ben Tre province, the author would emphasize on the factor driven stage of development in Cluster 2. Indeed, the qualitative research reveals the provincial government puts major investments on institutions, infrastructure, primary health care and good education. Furthermore, the author would give guidelines for further researches. The climate change happening in Ben Tre province and the Mekong Delta along with their severe consequences would be a salient topic. Comparison of the development would be a new avenue for other scholars in the regional and national levels.

Hence, the study contributes significant evidence of Vietnam to support New Institutional Economics and New Public Management:

1. Enabling government-oriented managerialism provides incentives and responsiveness, improves public service delivery, create favorable environment for citizen satisfaction and business development. To do so, the government should be reformed toward smaller size, decentralization, cost-cutting, high quality and performance, effectiveness, and strong institutional environment.
2. Good governance would enhance economic development by lowering transaction cost, lowering transformation cost and increase labor specialization/human development;
3. Different levels of development would intervene in the causal relationship between Institutions and Economic Development.

The study would send both qualitative and quantitative recommendations for policy framework to the government in designing developmental polices in Vietnam. Cluster 1 would follow the efficiency driven stage with major investments on

efficiency enhancers and business sophistication and innovation. On the other hand, the other three clusters would follow the lower development stage called factor driven with huge investment on basic requirements; including institutions, infrastructure, macroeconomic environment, health and basic education. Those provinces in the homogenous groups enable to adapt their experiences in development. On the other hand, those provinces in the heterogenous groups enable to scrutiny the appropriate developmental orientation in the forthcoming future.

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APPENDICES

APPENDIX A

List of Dimensions, Sub-Dimensions and Indicators of PAPI Index

Dimensions	Sub-Dimensions	Indicators
Dimension 1 Participation at Local Levels	Civic knowledge	Civic knowledge
		Knows grassroots democracy decree (%)
		Knows people know, people decide (%)
		Correct term limit of 2.5 years (%)
	Opportunities for participation	Voted in last commune people's council election (%)
		Voted in last national assembly election (%)
		Village chief elected (%)
		Participated in election (%)
	Quality of Elections	More than 1 candidate (%)
		Invited to participate (%)
		Paper ballot was used (%)
		Votes were counted publicly (%)
		Candidate was suggested (%)

Dimensions	Sub-Dimensions	Indicators
		Voted for winner
	Voluntary contributions	Voluntary contribution to project (%)
		Community monitoring board monitors contribution (%)
		Voluntary contribution recorded (%)
		Participated in decision making to start project (%)
		Provided input to project design (%)
Dimension 2 Transparency of local decision-making	Poverty lists	Poverty list published in last 12 months
		Type 1 errors on poverty list (% agree)
		Type 2 errors on poverty list (% agree)
	Communal budgets	Communal budget is made available (%)
		Respondent read communal budget (%)
		Believe in accuracy of budget (%)
	Land-use plan/pricing	Aware of communal land plans (%)
		Comment on communal land plans (%)
		Land plan acknowledges your concerns (%)
		Impact of land plan on your families
		Did not lose land as a result of land plan
		Compensation close to market value (%)
		Informed of land usage (%)

Dimensions	Sub-Dimensions	Indicators
		Land use for original purpose (%)
		Know where to go to get land (%)
Dimension 3 Vertical accountability	Interactions with local authorities	Contacted village head (%)
		Contacted commune PCOM (%)
		Contact with village head successful (%)
		Contact with commune successful (%)
		Made a proposal to authorities (%)
		Proposal successful (%)
	People's inspection boards	village has a PIB (%)
		PIB selected by vote (%)
		PIB effective (%)
	Community investment boards	Commune has a CISB (%)
		CISB effective (%)
Dimension 4 Control of corruption	Limits on public sector corruption	No diverting of public fund (% agree)
		No brides for land title (% agree)
		No kickbacks on construction (% agree)
	Limits on corruption in service delivery	No bribes at hospital (% agree)
		No bribes for teachers' favourism (% agree)

Dimensions	Sub-Dimensions	Indicators
	Equity in employment	No bribes for state employment (% agree)
		Total no relationship
	Willingness to fight corruption	Corruption had no effect on respondent (%)
		Know anti-corruption law (%)
		Provinces serious about combating corruption (%)
		Denunciation price '000s VND (Imputed)
		Victim did not denunciate bribe request (%)
Dimension 5 Public Administrative Procedures	Certification Procedures	Applied for certification service (%)
		Total quality of certification procedures (8 criteria)
	Construction Permit	Applied for construction permit (%)
		Did not use many windows for construction permit (%)
		Received construction permit (%)
		Total quality of construction procedures (8 criteria)
	Land procedures	Took part in land procedures (%)
		Did not use many windows for land (%)
		Received land title (%)
		Total quality of land procedures (8 criteria)
	Personal procedures	Took part in personal administrative procedures (%)
		Took quality of personal procedures (8 criteria)

Dimensions	Sub-Dimensions	Indicators
		Did not use many windows for personal procedures (%)
Dimension 6 Public Service Delivery	Public Health	Share with health insurance (%)
		Quality of health insurance (4 pt scale)
		Quality of free medical care for kids (5 pt scale)
		Poor households are subsidized (%)
		Checks for children are free (%)
		Total hospital quality (10 criteria)
	Primary Education	Kilometer walk to school
		Minutes to school
		Rating of primary school (5 pt scale)
		Total school quality (9 criteria)
	Infrastructure	Households with electricity (%)
		Quality of road (1 = All dirt; 4 = All asphalt)
		Frequency of garbage pick-up (0 = Never, 4 = Everyday)
		Share drinking tap water (%)
		Share drinking unclean water (%)
	Law and order	How safe is your locality (3 = Very safe)
		Change in safety over time
		Crime rate in locality (% Victim of crime)

APPENDIX B

List of Dimensions and Indicators of PCI Index

Dimensions	Indicators
Dimension 1 Low entry costs for business start-up	Length for business registration in days (Median)
	Length of business re-registration in days (Median)
	Median number of days to wait for Land Use Right Certificate (LURC)
	Percentage of firms waiting for more than one month to complete all steps necessary to start operations
	Percentage of firms waiting for more than three months to complete all steps necessary to start operations
	Percentage of firms registering or re-registering through one-stop-shop
	Procedures at one-stop-shop are transparently listed (% Agree)
	Guidance and instruction on procedures at one-stop-shop are clear and adequate (% Agree)
	Staffs at one-stop-shop are professional and knowledge (% Agree)
	Staffs at one-stop-shop are friendly (% Agree)
	IT application at one-stop-shop is good (% Agree)
	None of the criteria above are met (% Agree)

Dimensions	Indicators
Dimension 2 Easy access to land and security of business premises	Percentage of firms that own land and are in possession of an LURC
	Percentage of land that has been registered and provided with official LURCs
	Percentage of firms that say nonstate enterprises do not have difficulties in accessing land or expanding premises
	Firms' rating of expropriation risk (1: Very high to 5: Very low)
	Percentage of firms that say compensation for land is always or highly likely fair
	Percentage of firms that agree that changes in government land prices reflect changes in market prices
	Percentage of firms that have completed land procedures in the last two years and have encountered no difficulties in land-related procedures
	Percentage of firms that want to have LURCs but don't have LURCs because of complicated procedures and troublesome staffs
Dimension 3 Transparent business environment and equitable business information	Access to planning documents (1 = easy to access; 5 = impossible to access)
	Access to legal documents (1 = easy to access; 5 = impossible to access)
	Relationship important or very important to get access to provincial documents (% Important or Very important)
	Negotiations with tax authority are an essential part of doing business (% Agree or Strongly agree)
	Predictability of implementation of central laws at the provincial level (% Usually or Always)
	Business Associations' role in advising and countering provincial policies (% Important or Very important)
	Openness and quality of provincial webpage
	Percentage of firms have accessed provincial websites (%)

Dimensions	Indicators
	Budget documents have enough details for use in business activities (% Yes)
	Budget documents are published right after being approved (% Yes)
Dimension 4 Limited time requirement for bureaucratic procedures and inspection	Percentage of firm spending over 10 percentage of their time on understanding and complying with regulations Median number of inspections (all agencies)
	Median tax inspection hours
	Government officials are effective (% Strongly agree or Agree)
	Government officials are friendly (% Strongly agree or Agree)
	Firms don't have to travel trips to obtain stamps and signatures (% Strongly agree or Agree) Paperwork is simple (% Strongly agree or Agree)
	Fees are listed publically (% Strongly agree or Agree)
	No noticeable improvements are made (% Strongly agree or Agree)
Dimension 5 Minimal informal charges	Enterprises in my line of business usually have to pay for informal charges (% agree or totally agree) Percentage of firms paying over 10 percent of their revenue for informal charges
	Rent-seeking phenomenon is popular in handling administrative procedures for business (% strongly agree or agree) Percentage of firms saying that informal charges usually or always deliver expected results Informal charges are at acceptable levels (% Strongly agree or Agree)
Dimension 7 Proactive and creative provincial	Firms' assessment of the attitude of provincial government toward private sector (% Positive or Fairly positive)

Dimensions	Indicators
leadership in solving problems for enterprises	The PPC is flexible within the legal framework to create favorable business environment for nonstate firms (% Strongly agree or Agree)
	The PPC is very proactive and innovative in solving new problems (% Strongly agree or Agree)
	There are good initiatives at the provincial level but they are not well implemented by departments (% Strongly agree or Agree)
	Provincial leaders have good policies they are not well implemented at district level (% Strongly agree or Agree)
	Province's reaction to lack of clarity in central policies/documents: % delay and seek instructions and do nothing
Dimension 8 Developed and high - quality business support service	Number of trade fairs held by province in previous year and registered for present year
	Ratio of the total number of service providers to the total number of firms (%)
	Ratio of the number of nonstate and FDI service providers to the total number of service providers (%)
	Firm has used business information search services (%)
	Firm used private provider for above business information search services (%)
	Firm intends to use above service provider again for business information search services (%)
	Firm used private provider for consulting on regulatory information (%)
	Firm intends to use above service provider again for consulting on regulatory information (%)
	Firm has used business match making services (%)
	Firm used private provider for business match making services (%)
	Firm intends to use above service provider again for business match making

Dimensions	Indicators
	services (%)
	Firm has used trade promotion services (%)
	Firm used private provider for trade promotion services (%)
	Firm intends to use above service provider again for trade promotion services (%)
	Firm has used technology related services (%)
	Firm used private provider for technology related services (%)
	Firm intends to use above service provider again for technology related services (%)
	Firm has used accounting and financing training services (%)
	Firm used private provider for above accounting and financing training services (%)
	Firm intends to use above service provider again for accounting and financing training services (%)
	Firm has used business administration training services (%)
	Firm used private provider for above business administration training services (%)
	Firm intends to use above service provider again for accounting and financing training services (%)
	Firm has used business administration training services (%)
	Firm intends to use above service provider again for business administration training services (%)
Dimension 9 Sound labor training policies	Services provided by provincial agencies: general education (% Very good or Good)
	Services provided by provincial agencies: vocational training (% Very good or

Dimensions	Indicators
	Good)
	Firm has used labor exchange services (%)
	Firm used private provider for above labor exchange services (%)
	Firm intends to use above service provider again for labor exchange services (%)
	Percentage of total business costs spent on labor training
	Percentage of total business costs spent on labor recruitment
	Overall satisfaction with labor (% Agreeing labor meets firm needs)
	Ratio vocational training school graduates to untrained laborers
	Secondary school graduates as % of workforce
	Percentage of workers having completed training at vocational schools
Dimension 10 Fair and effective legal procedures for dispute resolution	Legal system provided mechanism for firms to appeal against officials' corrupt behavior (% Always or Usually)
	Firm confident that legal system will uphold property rights and contracts (% Strongly agree or Agree)
	Cases filed by non-state entities at Provincial Economic Court per 100 firms
	Non-state claimants as a percentage of claimants at Provincial Economic Court
	Provincial court judge economic cases by the law (% Agree or Strongly agree)
	Provincial court resolve economic cases quickly (% Agree or Strongly agree)
	Court judgements are enforced quickly (% Agree or Strongly agree)
	Legal aid agencies support business in the use of law when disputes arise (% Agree)

Dimensions	Indicators
	Formal and informal cost are acceptable (% Agree and Strongly agree)
	Judgement by the court is fair (% Agree or Strongly agree)
	Willingness to use court in case a dispute arises (% Yes)

APPENDIX C

References of National and Local Documents

NO	TYPES	CODE	ISSUED DATE	ORGANIZATION	CONTENT
1	Circular	02/2014/TT-BGDĐT	8th February 2014	Ministry of Education and Training	Promulgating statutes of national accreditation of pre-schools
2	Decree	2497/QĐ-BCT	18th March 2015	The State	The approval of "Developmental scheme on the wind-energy in Ben Tre province until the year of 2020, vision to 2030
3	Joint circular	05/2015/TTLT-BTP-BCA-BYT	15th May 2015	Ministry of Justice, Ministry of Public Security, and Ministry of Health	Instructions on joint execution of administrative procedures for registration for birth, permanent residence, health insurance for children under six
4	Resolution	15/2015/NQ-HĐND	4th December 2015	People's Assembly of Ben Tre province	The socio-economic development plan in Ben Tre province in 2016
5	Plan	1547/KH-SLĐBXH	5th July 2016	Ben Tre Department of Labor – Invalids and Social Affairs	Implementation of start-up to escape poverty (the original name in Vietnamese: "Chương trình Đồng

NO	TYPES	CODE	ISSUED DATE	ORGANIZATION	CONTENT
					Khởi khởi nghiệp, khởi nghiệp thoát nghèo")
6	Report	427/BC-UBND	12th December 2016	People's Committee of Ben Tre Province	Implementation of the provincial resolution no. 15/2015/NQ-HĐND dated 4th December 2015 enacted by People's Assembly of Ben Tre province on the socio-economic development plan in Ben Tre province in 2016, tasks and deployment in 2017.
7	Report	181-BC/TU	8th June 2017	Ben Tre Committee of the Party	Deploying policies to promote female public servants in Ben Tre province (the original name in Vietnamese: "Tình hình công tác cán bộ nữ tỉnh Bến Tre")
8	Report	103/BC-BTV	30th June 2017	Ben Tre Women's Union	The 10 years – report of the implementation of the resolution no. 11-NQ/TW dated on 27th April 2007 enacted by Politburo Committee on the female empowerment in the duration of pushing industrialization - modernization in Vietnam (the

NO	TYPES	CODE	ISSUED DATE	ORGANIZATION	CONTENT
					original name in Vietnamese: “Báo cáo Tổng kết 10 năm thực hiện Nghị quyết 11-NQ/TW, ngày 27/04/2007 của Bộ Chính trị (khóa X) về công tác phụ nữ thời kỳ đẩy mạnh công nghiệp hóa – hiện đại hóa đất nước).

APPENDIX D

References of National and Local Statistical Yearbooks

NO	LEVEL	NAME OF BOOK	PUBLISHING HOUSE	EDITOR-IN-CHIEF	ISBN
1	National	Statistical Yearbook of Vietnam 2014	Statistical Publishing House	Mr. Do Van Chien	978-604-75-0180-9
2	Provincial	Ben Tre Statistical Yearbook 2015	Thanh Nien Publishing House	Mr. Nguyen Tien Dung	
3	Provincial	Ben Tre Statistical Yearbook 2014	Thanh Nien Publishing House	Mr. Nguyen Tien Dung	
4	Provincial	Ben Tre Statistical Yearbook 2013	Thanh Nien Publishing House	Mr. Huynh Van Tuoi	

APPENDIX E

List of 14 Urban Areas in Ben Tre Province

NO	URBAN AREAS	LOCATION	TYPES
1	Ben Tre city	Ben Tre city	III
2	Binh Dai small town	Binh Dai district	IV
3	Ba Tri small town	Ba Tri district	IV
4	An Thuy commune		V
5	South Mo Cay small town	South Mo Cay	V
6	Huong My commune		V
7	Thanh Phu small town	Thanh Phu district	V
8	Cho Lach small town	Cho Lach district	V
9	Vinh Thanh commune		V
10	Chau Thanh small town	Chau Thanh district	V
11	Tien Thuy commune		V
12	Giong Trom small town	Giong Trom district	V
13	My Thanh commune		V
14	Phuoc My Trung commune	North Mo Cay district	V

Source: Ben Tre Department of Construction.

APPENDIX F

Key Targets on Socio-Economic Development Plan in Ben Tre Province in 2016

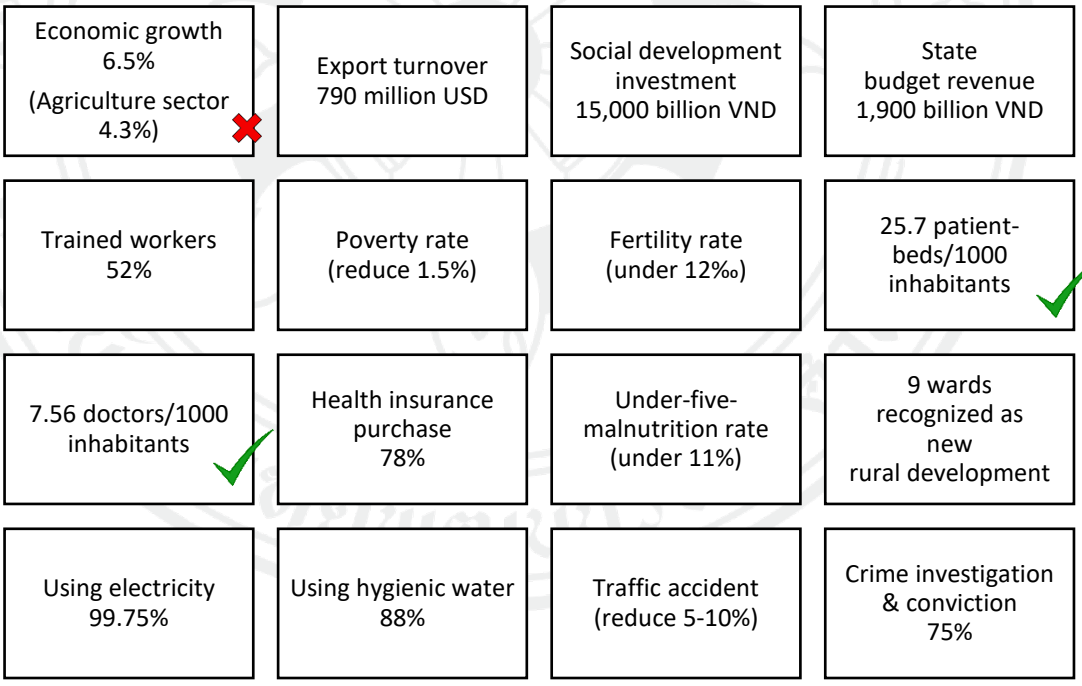
(According to the provincial resolution no. 15/2015/NQ-HĐND dated 4th December 2015 enacted by People's Assembly of Ben Tre province on the socio-economic development plan in Ben Tre province in 2016)

1. The economic growth – GRDP[16] is expected to reach 6.5%/year; among which, the agriculture – forestry – fishing sector is expected to increase by 4.3%, the industry – construction is expected to increase by 10%, the service sector is expected to increase by 7.1%;
2. The economic structure (counted by value added): Sector I: 38.6%; Sector II: 16.9%; Sector III: 40.7%;
3. The total export turnover: 790 million USD;
4. The total social development investment: 14,875 billion VND;
5. The state budget revenue is expected to reach 1,800 billion VND counted by the Central estimation, and 1,940 billion VND counted by the provincial estimation for striving;
6. The state budget expenditure is expected to reach 4,744 billion VND counted by the Central estimation; and 4,885 billion VND counted by the provincial estimation;
7. The percentage of trained workers is expected to reach 52%. Creating employment for 18,000 workers, in which 500 exporting workers;
8. The poverty rate is expected to reduce by 1.5%;
9. The fertility rate is expected to reduce and maintain under 12‰;
10. It is expected to reach 25.7 patient-beds per 1000 inhabitants, 7.56 doctors per 1000 inhabitants;

[16] GRDP: Gross regional domestic product.

11. It is expected to reach 78% of provincial population in purchase of medical insurance;
12. The under-five-malnutrition rate is expected to be under 11%;
13. It is expected to be recognized as new rural development for 9 wards;
14. The rate of households using electricity: 99.75%;
15. In rural areas, the rate of households using hygienic water is expected to reach 88%, in which 44% for rate of households using fresh water;
16. The rate of traffic accident is expected to reduce to 5-10%, compared to the year of 2015 in 03 given criteria;
17. Investigating and convicting crimes and civil cases is expected to reach at least 75%.

Socio-economic development targets in Ben Tre in 2016



Note: Red cross represents the drought and saline intrusion causing loss in the agriculture sector with the added value of 0.9% over 4.3%.

Green ticks represent the achievement in the health sector compared to the development plan in 2016.

APPENDIX G

List of Priority Upper-Secondary Schools and Upper-Secondary Schools for The Gifted

NO	NAME OF SCHOOL	LOCATION
1	Ben Tre High School for The Gifted	Ben Tre city
2	Nguyen Dinh Chieu	Ben Tre city
3	Phan Thanh Gian	Ba Tri district
4	Phan Van Tri	Giong Trom district
5	Le Qui Don	Binh Dai district
6	Tran Van On	Chau Thanh district
7	CheGhe-Va-Ra	South Mo Cay district
8	Tran Van Kiet	Cho Lach district
9	Ngo Van Can	North Mo Cay district
10	Le Hoai Don	Thanh Phu district

Source: Ben Tre Department of Education and Training.

APPENDIX H

List of Continuing Education Centers

NO	DISTRICTS/CITY	LOCATION
1	Ben Tre city	184 Dong Khoi, Phu Khuong Ward, Ben Tre city, Ben Tre province
2	Chau Thanh district	Chau Thanh small town, Chau Thanh district, Ben Tre province
3	Binh Dai district	Binh Dai small town, Binh Dai district, Ben Tre province
4	Ba Tri district	Ba Tri small town, Giong Trom district, Ben Tre province
5	Giong Trom district	Giong Trom small town, Giong Trom district, Ben Tre province
6	North Mo Cay district	Phuoc Khanh, Phuoc My Trung commune, North Mo Cay district, Ben Tre province
7	South Mo Cay district	Mo Cay Nam small town, South Mo Cay district, Ben Tre province
8	Cho Lach district	Ap Dai An, Hoa Nghia commune, Cho Lach district, Ben Tre province
9	Thanh Phu district	Thanh Phu small town, Thanh Phu district, Ben Tre province

Source: Ben Tre Department of Education and Training.

APPENDIX I

List of Public and Private Health Establishments in Ben Tre Province

NO	NAME OF ESTABLISHMENTS	TYPES	LOCATION	PUBLIC/ PRIVATE
1	Nguyen Dinh Chieu hospital	General hospital	Ben Tre city	Public
2	Traditional Medical hospital	Specialist hospital		Public
3	Minh Duc General hospital	General hospital		Private
4	Medical service unit in Ben Tre city	Medical service unit		Public
5	Tuberculosis and Lung Disease hospital	Specialist hospital	Chau Thanh district	Public
6	Ben Tre Metal/Psychiatric hospital	Specialist hospital		Public
7	Medical service unit in Chau Thanh district (main subunit)	Medical service unit		Public
8	Medical service unit in Chau Thanh district – Ham Long subunit	Medical service unit		Public
9	General hospital in Minh island	General hospital	South Mo Cay district	Public
10	General hospital in Ba Tri area	General hospital	Ba Tri district	Public
11	Medical service unit in	Medical service unit		Public

NO	NAME OF ESTABLISHMENTS	TYPES	LOCATION	PUBLIC/ PRIVATE
	Ba Tri district			
12	Medical service unit in Binh Dai district	Medical service unit	Binh Dai district	Public
13	Medical service unit in Cho Lach district	Medical service unit	Cho Lach district	Public
14	Medical service unit in Giong Trom district	Medical service unit	Giong Trom district	Public
15	Medical service unit in Thanh Phu district	Medical service unit	Thanh Phu district	Public
16	Medical service unit in South Mo Cay district	Medical service unit	South Mo Cay district	Public
17	Medical service unit in North Mo Cay district	Medical service unit	North Mo Cay district	Public

Source: Ben Tre Department of Health.

BIOGRAPHY

NAME	Han Nu Ngoc Ton
ACADEMIC BACKGROUND	Bachelor's Degree with a major in Biotechnology from International University - Vietnam National University Ho Chi Minh City, Ho Chi Minh City, Vietnam in 2012. Master's Degree with a major Business Administration from International University - Vietnam National University Ho Chi Minh City, Ho Chi Minh City, Vietnam in 2015.
EXPERIENCES	Studied and conducted researches in Bachelor and Master degrees in International University - Vietnam National University Ho Chi Minh City (the research - oriented university in Vietnam). Received a scholarship from NIDA and CP Foundation for enrolling in the doctoral level program at the Graduation School of Public Administration, National Institute of Development Administration (NIDA), Bangkok, Thailand in 2016. Attended Eastern Regional Organization for Public Administration (EROPA) Conference - "The Role of Public Governance in Achieving Sustainable Development Goals: Transforming, Empowering, and Network-Building" with the paper "An Attempt on Gender Equality to Achieve Sustainable Development in Vietnam" (11 – 15 September 2017 in Seoul, South Korea). Attended The 2018 KAPA International Conference with the paper "Policy Analysis on Early Marriage Issue among The Ethnic Minority Groups in Vietnam" (21 – 23 September 2018 in Seoul, South Korea).