THE EFFECTS OF THE SOCIOECONOMIC, GOVERNANCE AND POLITICAL DETERMINANTS ON THE LOCAL EDUCATIONAL OUTCOMES OF PROVINCIAL ADMINISTRATIVE ORGANIZATIONS

Morakot Muthuta

**A Dissertation Submitted in Partial
Fulfillment of the Requirements for the Degree of
Doctor of Public Administration
School of Public Administration
National Institute of Development Administration
2015**

THE EFFECTS OF THE SOCIOECONOMIC, GOVERNANCE AND POLITICAL DETERMINANTS ON THE LOCAL EDUCATIONAL OUTCOMES OF PROVINCIAL ADMINISTRATIVE ORGANIZATIONS

Morakot Muthuta

School of Public Administration

Professor .... Major Adviser
(Ponlapat Buracom, Ph.D.)

Associate Professor .... Co-Adviser
(Achakorn Wongpreedee, Ph.D.)

The Examining Committee Approved This Dissertation Submitted in Partial Fulfillment of the Requirements for the Degree of Doctor of Public Administration.

Associate Professor .... Committee Chairperson
(Boon-anan Phinaitrup, Ph.D.)

Professor .... Committee
(Ponlapat Buracom, Ph.D.)

Associate Professor .... Committee
(Achakorn Wongpreedee, Ph.D.)

Instructor .... Committee
(Danuvas Sagarik, Ph.D.)

Assistant Professor .... Acting Dean
(Pairote Pathranarakul, Ph.D.)

October, 2015

ABTRACT

Title of Dissertation	The Effects of the Socioeconomic, Governance and Political Determinants on the Local Educational Outcomes of Provincial Administrative Organizations
Author	Miss Morakot Muthuta
Degree	Doctor of Public Administration
Year	2015

_____

In the previous studies on the determinants of public expenditure and public policy outcomes, only socioeconomic and political factors are taken into account. This study, however, has shed new light on how governance factors affect local public expenditure and policy outcomes especially on local education. Provincial Administrative Organizations (PAO) is one of the local administrative organization types which is assigned to administrate education institutes or support education systems or to perform both functions. Therefore, it could play an important role in Thailand's education provision. The underlying objectives of this study are to identify the main factors that affect PAO's public expenditure on primary education, and to assess how PAO's expenditure on education as well as socio-economic and governance variables affect PAO's education outcomes and how PAO could help improve provincial education outcomes. Secondary data were collected and panel data analysis was used to assess the effects of the antecedents on PAO's expenditure on education and the determinants of PAO's education outcomes. The results reveal that PAO's education expenditure is mainly negatively determined by the previous year's GPP per capita. The previous year's local revenue also increases the total education expenditure. Besides, social variables, number of schools and school age population have high impact on PAO's educational expenditure while political variables; the poverty ratio and political continuity have a negative effect on PAO's education expenditure and governance factors; PAO with governance qualification brings about

higher levels of education expenditure. However, the corruption rate has a positive impact on education expenditure which indicates that it is needed to find solutions for solving PAO's corruption in education. For determinants of PAO's education outcomes; accessibility via the enrolment ratio; equality via literacy rate and average years of adult schooling; achievement via Grade 6's average O-Net scores and Grade 6's average GPA, all imply that both education expenditure and socio-economic status determine education outcomes. However, for the PAO's case, education expenditure has a more significant effect on overall education outcomes than the other factors. Moreover, governance factors also have an important role in improving provincial and PAO's education outcomes. Therefore, PAOs should be encouraged to take part in national education development as it could help improve inequality as well as achievement in education with its redistribution policy. Finally, from the results, the governance factor plays an important role in reducing educational disparity by increasing efficiency and effectiveness of PAOs' educational spending and PAO's educational management process.

ACKNOWLEDGEMENTS

I would like to take this opportunity to express my heartfelt gratitude to all those who helped me to make my dissertation a success. I express my sincere and whole hearted thanks, to my esteemed mentor Professor Dr. Ponlapat Buracom for his regular advice, magnitude of dynamic and worthy guidance, suggestions and encouragement throughout my dissertation work. I could not have imagined having a better advisor and mentor for my doctoral study. I express my deepest gratitude to Associate Professor Dr. Achakorn Wongpreedee, my co-adviser, for his inspiring advice and insights as one of a few experts in the local government field in Thailand. I express my heart full thanks to Associate Professor Dr. Boon-anan Phinaitrup, for being the Chairman of my dissertation committee and giving valuable comments. I also would like to thank Dr.Danuvas Sagarik for his insightful comments and questions which gave me incentive to widen my research from various perspectives.

I would like to thank my mother for being my motivation and strength against all odds. I would also like to thank Associate Professor Dr.Kovit Wongsurawat, Teacher Mookda Tarakit and my supporter, Dr.Nongluck Phinainitisart, who inspired me and helped me get through the hardest time in my life. I would like to express my gratitude to my editor, Professor Dr.Brian Sheehan and his spouse, Dr.Samaporn, for their encouragement and suggestions. Last but not least, thanks to Dr.Pongsak Laoswatchaikul for his love, faith and endless support.

Morakot Muthuta

October 2015

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER 1

INTRODUCTION

1.1 Significance of the Study

Education is very crucial for country development. It does not only enable higher productivity, but also helps improve social outcomes including health, and civic engagement. In order to achieve the ultimate education outcomes, policy makers need to understand the determinants of its outcomes. This study aims to identify the determinants of education outcomes of a type of local government in Thailand, Provincial Administrative Organization (PAO), focusing on primary education. The proportion of education expenditure per total expenditure is one of important education indicators to illustrate the priority of education to the government. This research, firstly, examines questions about the determinants of PAO's education expenditures both total education expenditure and per pupil primary education expenditure. The first part findings allow us to thoroughly understand how various determinants are involved in formulating PAO's education policy. In the second part, there are many indicators of education outcomes taken into account in order to provide the big picture of determinants of PAO's education outcomes.

At the national level, public education expenditure is clearly not a panacea to solve education problems. At the local level, education expenditure turns out to involve four key determinants of education outcomes, that is a study that analyzes and determines the dimensions of socio-economic, political and governance factors, to reveal the policy process is therefore worth considering. The research results would be beneficial to policy makers to understand the PAO's context and education situation and shape the local education policy based on the obtained contextual factors.

The education's quality, beginning with primary education, is fundamental to endow individuals with the capacity to successfully pursue their private goals. It also equips them with knowledge and skills, as well as the values and attitudes necessary to contribute effectively to the economic, social and political development of their societies. (World Bank, 1995) In order to make learning effective, it is needed to input a mix of factors which vary from place to place according to local conditions. Increments in education spending do not translate automatically into improved outputs and outcomes. Under conditions of low system efficiency or high inequities or a poor system organization, increasing spending may well prove to be the wrong medicine for the country's educational ailments. Indeed, based on empirical analyses of expenditure and student achievement data, some authors have shown that increases in conventional measures of educational expenditure are not necessarily linked to any significant improvements in student outcomes (Hanushek & Kim, 1995). When spending more resources on education, other factors also need to be in place for the system to respond properly so the intended educational goals are actually achieved. There are many arguments on Hanushek's and his team findings. The results between developed and developing countries are different and still not conclusive about the determinants of education quality whether money or others. (World Bank Institute, 2002)

According to UNESCO, public expenditure on education as a percentage of total government expenditure is one of the important education indicators. It could be used to interpret how government policy priority for education compares to other public investments. However, in the case of Thailand, the proportion of Thailand's education expenditure is approximately 20% of the total national budget. (Bureau of the Budget Office of the Prime Minister Thailand, 2012) Thailand's spending on education, compared with Asian developed countries, is even higher than theirs. OECD countries spend about 6% of their expenditure on educational institutions as a percentage of GDP, Singapore, Japan and South Korea spend on education at 3%, 3.8% and 4.6% respectively. In the case of Thailand, education expenditure is at 4.9% of GDP 2012. (Institute for Statistics, 2015)

Although, Thailand's education expenditures are comparably high, the return on the educational investment is still too low. Thailand is facing many challenges in educational outcomes. While Thailand has been successful at getting children enrolled to high school, many children have relatively weak performance in tests. As for the international measures of learning performance, the PISA results 2012, which is the OECD's standardized test focusing on mathematics, reading, science and problem-solving minor areas of assessment, implying that the children's level of functional literacy is low.(OECD, 2013) According to the Global Competitiveness Report 2013-2014demonstrates that Thailand's Global Competitiveness Index related to education are the index on health and primary education is at 81 ranking and higher education and training index is at 66 raking and the technology readiness is at 78 ranking. (World Economic Forum, 2013) However, when looking at these learning outcomes in depth, a disparity in the outcomes is found. The PISA results were comparably higher in the big cities than in rural areas.

Besides disparity in learning outcomes mentioned above which seems to be most concerned about by the Thai government, the most effective result is that the high primary enrollment rate is not about the education outcomes. (Buracom, 2011) There are also disparities in other education indicators. According to UNDP Human Development Report 2014, the education index consists of 4 indicators: average years in schooling, secondary enrolment rate, average IQ of children aged 6-15, and average O-Net score of upper secondary students, the Thai border provinces ranked as having the lowest scores. Hence, dealing with the disparities in education outcomes in terms of various education indicators are the keys to improve education as a whole. (UNDP, 2014)

As a result of many education outcomes Thailand's government has been facing, the education services do not belong to only the central government. Local governments, which are the closest to local citizens and know their needs, also take part in providing and supporting education, in consequence of the decentralization laws. Public funding for schools nationwide is based on a funding-formula based on level of education and the number of students. The determinants of public education expenditure, according to Sagarik (2012) study, are previous year public education expenditure, socio-economic and political variables. Apart from public education

expenditure allocated from central government, local governments have autonomy to allocate their own revenue and to facilitate education in their areas. However, studies about Thailand' local governments in providing education services are rare. The studies of determinants of education outcomes at local government level in Thailand are also seldom undertaken.

This study is also significant because of the use of evidence from recent statistics incorporated from various sources of data, especially at the PAO level. The data obtained from PAOs has not been in any official database so this would be very beneficial for further studies about PAO public expenditure especially on education. The result of this study can produce both a theoretical contribution, to the extent that it conforms to theory and previous local government analyses, and a contribution to the local development strategies of Thailand. This research may also lead to more useful benchmarks in assessing the determinants and impacts of governments' efforts in making local education policy for other types of local governments.

1.2 Objectives of the Study

1) To examine and analyze the key determinants of education expenditures in PAOs

2) To investigate the determinants of the PAO's education outcomes

3) To provide policy recommendations that will improve the allocation of PAOs' expenditures on education and promote the determinants affecting desirable education outcomes.

1.3 Research Questions

1) What are the socio-economic, political and governance determinants of primary level education expenditure in PAOs?

2) What are the determinants of PAO's primary education outcomes?

3) How should the government develop a policy to improve the PAO's primary education outcomes?

1.4 Scope and Limitations of the Study

The units of analysis of the study follow 23 PAOs from every region in Thailand. The first regions are the Central region and the western region consisting of 5 following PAOs: PathumThani, Ayutthaya, Samutsakorn, Kanchanaburi, Ratchaburi. Northern region follow with 6 PAOs: Chiang Rai, Chiang Mai, Prae, Mae Hong Son, Lampang, Lampoon. There are 6 PAOs from the northeastern and the eastern regions: Yasothorn, Si Saket, Saraburi, KhonKaen, Chachoengsao, and Rayong. The last region is the southern region consisting of 5 PAOs: Chumporn, Nakhon Si Thammarat, Pattani, Ranong, and Satun.

Actually, there are 29 out of 52 PAOs which provide primary education services, but only 23 PAOs could provide data. The problems found in collecting data for example, the loss of data occurs from PAO's office movement, uncooperative officials treating PAO's expenditure information as confidential information, and delays in delivering information.

1) Period of Data

The data used for question No.1 is during 2010-2014 (The determinants of the level of education expenditure in PAOs)

The data mostly used for question No.2 is during 2010-2013 (the determinants of PAO's primary education outcomes)

2) Focus

PAO Education Expenditures and Education Outcomes of PAO Primary Education

3) Level Types of Data

Quantitative analysis is used in this study. Panel data analysis is also employed in this study using secondary data.

4) Limitations of the study

There are many limitations of Thailand's local government's studies.

(1) The lack of long-term local government's data collection

Although there are many government agencies trying to collect local data as well as to set up local data centers such as do the National Statistic Organization (NSO) and Department of Local Administration, the beginning of local data collection

in the same format only happened in 2010. With unavailable data, it impedes researchers to analyze data with many statistical tools. There may also be a problem about unavailability of some data such as the literacy rate and the enrolment rate as a result of discontinuity of central data collection. As for GPP per capita, the information lags for one year. Therefore, the analysis that is used of those data is not as continuous as it should be. Therefore, this study has to adopt cross-sectional data analysis and panel data analysis subject to the data validity. The research about local government in Thailand could hardly portray the trends, patterns or forecasts about them on a long term basis.

(2) The lack of keeping systematic data at the PAO level

The local governments do not collect data systematically and electronically. During the collection of data, it was found that many had lost their annual local legislations. The data was also often lost as the local staff who were in charge of this data were transferred or resigned.

(3) Unable to access the local government's information

Although, there is the Official Information Act, B.E. 2540 (1997) which prescribes about the civil rights to ask for government's agencies' plans, projects including budgetary plans and to inspect the public organizations' performance, some PAOs' staff are uncooperative in providing information especially which is related to fiscal plans.

(4) The lack of a local governance index

Using a proxy of governance awards receivers could provide little knowledge of how much governance affects the PAOs' primary educational outcomes. Conducting a continual local governance index could allow researchers and other interested parties to use other types of statistical tools to analyze the weight of governance effect and other effects on the outcomes.

1.5 Types of Data

Quantitative methods are employed in this study using secondary data. In this study, the quantitative analyses are assigned to test and clarify the determinants of PAOs' education expenditure and education outcomes.

1.6 Organization of the Study

Six additional chapters apply to the rest of this study. Chapter 2 reviews the related literature both regarding theories and empirical evidence, as well as the formulation of conceptual frameworks which form the basis of the studies in subsequent chapters. Chapter 3 explains the research methodology and provides a specific rationale for the variable selections on which empirical analysis is performed. Chapter 4 illustrates the development of local education in Thailand. Chapter 5 presents the findings from the proposed models based on panel data particularly the possible determinants of education expenditures at PAOs and discussion. Chapter 6 identifies the relationship between education expenditures and other factors and the PAO education outcomes with the results discussion. Chapter 7 provides a summary of the results, discusses the possible policy implications of the findings, and suggests a possible line of further study.

CHAPTER 2

LITERATURE REVIEW AND CONCEPTUAL FRAMEWORK

According to Lindblom & Woodhouse, "Public Policy is made via a complex political system and cannot be understood primarily by looking at the action of …top government officials." (Lindblom & Woodhouse, 1993: 3) There are many links between the forces and the policy process and the policy consequences. The study of policy determination could illustrate and shade light on how to improve the results.

Since this study was planned to examine the whole process of local education outcomes, the objective of the chapter is to review previous literature about determinants of education outcomes in terms of educational expenditure and educational performance. The structure of this chapter consists of three parts. The first one is determinants of educational expenditure. The second one is determinants of educational outcomes. The last one is the conceptual framework.

2.1 Literature on Determinants of Educational Expenditure: Theoretical Background

In order to study about the determinants of public policy, it is necessary to base these on theory. The framework of this study is derived from Easton's system theory. (Easton, 1957). System theory is a general theory as its objectives to identify important variables in the whole political system and to seek for relationships among the variables to analyze public policy. There are many factors concerned as this is a multi-dimensional analysis. Moreover, researchers have always interpreted the meaning of policy output and outcomes interchangeably. (Mandl, Dierx, & Ilzkovitz, 2008) An example of this interpretation was Dye's studies in 1967. He defined educational policy outcomes as policy outputs according to Easton's political systems theory. Apart from other educational policy outcomes such as teacher/pupil ratio,

teacher turnover, drop-outs, pupil expenditure was one of these outcomes. His inputs for this research were socioeconomic characters of the cities as a priori indicators of public educational demands. The inputs of the system from the urban environment were size, adult education, occupation, income, race and value of property.

In this study, therefore, the economic, social and political variables are treated as environmental factors while process determinants reflect the system's governance. The theories relating to those determinants are Wagner's law, public choice theories, political concepts and the concept of governance.

2.1.1 System Theory

System theory is a general theory which has objectives to identify important variables in the whole political system and to seek for relationships among the variables. The political system is in an open system which in order to persist depends on coherence and interdependence among the variables by hanging them together. To make it easy to understand, Easton conceptualized the system's components consisting of input, process or system and output as shown in the following diagram.
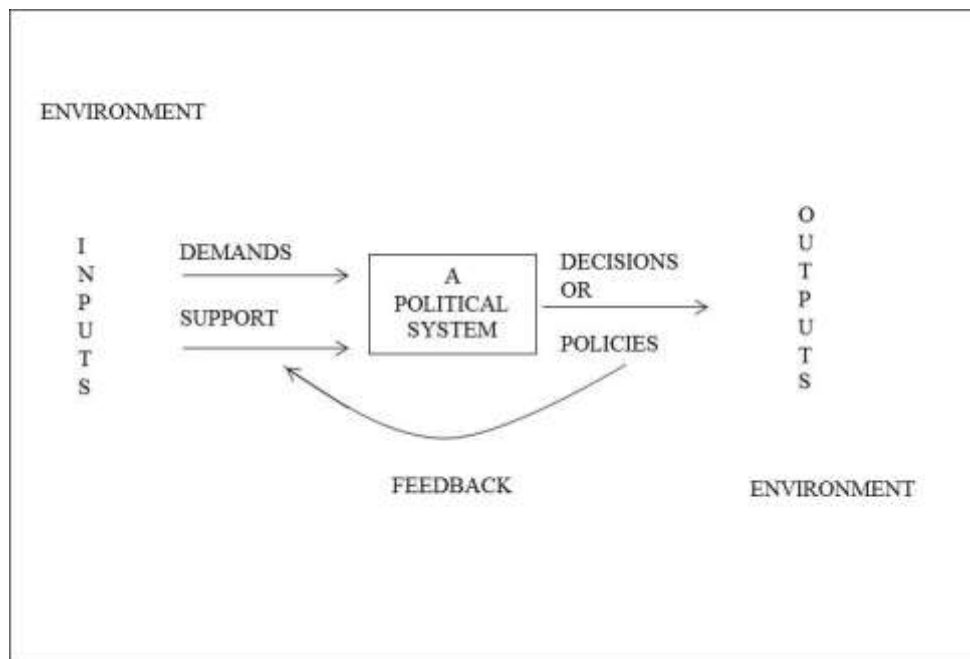
Figure 2.1 System Theory Model
Source: Easton, 1957: 384.

Input can be classified into two aspects which are demand and support. These inputs make the political system dynamic. Demand mean what is being made by persons or groups in the society that cannot all be fully satisfied. There are also two types of demands. One is external demand for example, such as ecology, economy, social structure and demography. All are in the environment shaping the demand into the political system. The other is internal demand coming from the internal situation which is known as "with inputs". For instance, the representative would like to amend the laws or change the process of recruitment. To drive the political system, it is not enough to have only demands. The thing that keeps the process running is support. The domains of support are from the political community, the regime and the government. Outputs are produced by authorities in terms of a political decision or policy while outcomes are the consequences of the outputs. The delays of outcomes result from the time factor. The success or failure of the outcomes depends on the perception and reflects the systems in a form of feedback. (Easton, 1957, 1967) Although there are many approaches to studying public policy such as the elite model, the mix-scanning model, and the decision making model from the paradigm of functionalism and later theories such as game theory and rational choice approaches, system theory is still an approach that can provide virtually unlimited avenues for political research. To avoid the limitations of the approach that some researches in the past tended to be constrained by measurable variables, to set the scope too wide or too narrow, to adopt only multiple regression to analyze the data and to refer only from a trustable single or only very few case studies, researchers have to recognize these issues and try to identify general causal theory for empirical studies. Once this is realized, the system theory could be the best approach for studying any political personality and social sciences of politics. (Rissmiller, 2000). Moreover, there is research which pointed out that another possible weak point of the system theory is the explicability of the distinguishing context, for example, in the case of developed and developing countries. There are many differences in terms of input. In developing countries, the demands are more complex and might have less influence on the policy making process. In order to utilize the theory, it is necessary to study the policy by conducting empirical research in a particular area. (Osman, 2002)

2.1.2 Economic-Demographic Theory and Wagner's Law

Wagner developed "the Law of Increasing State Activity" in 1893. (Wagner, 1958) The law's assumption is that as the economy develops over time, the activities and functions of the government increase. He proposed the theory to explain the relationship between economic growth and public expenditure in that when a country is in the industrialization process, the real per capita incomes increase, the proportion of government expenditure will be higher respectively. (Wagner, 1958) Wagner classified public expenditures into four categories which are defensive, administrative, economic and education. He proposed the theory to explain the relationship between economic growth and public expenditure in that when a country is in the industrialization process, the real per capita income increases, the proportion of government expenditure will be higher respectively. There are three reasons supporting his hypothesis as follows; 1) The government has to perform regulatory functions to substitute for private activity. 2) The more economic growth is known as income elastic, the more cultural and welfare services occur. 3) Once there is an economic development, there is higher demand for public goods and the control of externalities. Therefore, the government has to spend more public expenditure. (Sideris, 2007)

The existence of a positive covariance between the two variables was first postulated by the German political economist Adolph Wagner. Wagner's law has been statistically tested not only from a cross-country perspective but also relying on a standard time-series econometric approach. However, due to the paucity of data when dealing with public finance, empirical works have long suffered from an inadequate methodological framework, especially in early cross-country analyses. It is not surprising that results from these studies have generally been mixed requiring further investigation. (Lamartinaa & Zaghinib, 2011)

2.1.3 The Peacock-Wiseman Hypothesis

Apart from Wagner (1958), Peacock & Wiseman (1979) are also scholars who were interested in the increase in the public expenditure phenomenon. Peacock and Wiseman conducted a new study based on Wagner's Law in 1979. They studied the public expenditure from 1891 to 1955 in the U.K. They found out that Wagner's Law

is still valid. Peacock and Wiseman further stated that revenue collection determines the rise in public expenditure greatly. Over the years, economic development brings about substantial revenue to the governments; it allows public expenditure to increase. (Peacock & Wiseman, 1979) They also were concerned about the relationship between the expectations of people about public expenditure and the tolerance level of taxation. Governments can respond to people's demands only if the government can increase their revenue collection resulting in a higher constant rate of taxation. They further stated that during the times of war, the government further increases the tax rates, and enlarges the tax structure to generate more funds to meet the increase in defense expenditure. After the war, the new tax rates and tax structures may remain unchanged as people get used to them. Therefore, the increase in revenue results in a rise in government expenditure. (Akrani, 2011)

In conclusion, Wagner's law and Peacock-Wiseman hypothesis emphasize the fact that public expenditure has a tendency to increase over time. (Balogun, 2013)

2.1.4 Theory of Local Public Goods

There are many theories relating to local public goods, however, what mentioned here will be only concerned about the topic. Local public goods theory is different from conventional theory on public goods as a result of its assumption. It assumes that the population is not fixed but they are the different communities among population. (Stiglitz, 1982) Two principles of jurisdictional design are also identified by Stigler (1966). The first one is that a representative government works best the closer it is to the people, and the other one is that people should have the right to vote for the kind and amount of public services they want. Therefore, in order to achieve the goal of allocation efficiency the decision making should be made by the closest government to the communities. The optimal size of a jurisdiction would vary with specific instances of economies of scale and benefit-cost spill-outs.

2.1.5 Principles of Fiscal Federalism

Fiscal Federalism identifies the fiscal relations between central and local governments in the lower levels. It is used to explain the allocation of public expenditures and public revenue among different types of governments such as

intergovernmental transfers, grants and taxes. (Kesner-Skreb, 2009) Under its umbrella, there are principles of expenditure assignment, principles of tax assignment, roles and responsibilities of local governments, instruments of intergovernmental finance, for example. (Boadway & Shah, 2009)

2.1.6 Theories in the Public Choice Theory

The assumption of this theory group has arisen from taking political variables into account. The determinants of public expenditure come not only from socio-economic factors as some economists have suggested, but also from political conditions. The greatest contribution of the Public Choice Theory is that it recognizes that politicians are motivated by self-interest.

Public service is supposed to be provided efficiently and effectively. As politicians think of their own interests, what is behind their decision making will reflect different kinds of "free-riding" and "rent seeking" by voters, bureaucrats, politicians, and recipients of public funds. Therefore, the public benefit will not reach those who are in need but goes to the free riders when the distribution of public services is made under this concept. Those examples are the case of politicians. For the bureaucratic system, they will seek for benefits by increasing their power, their manpower budget and other extras. (Felkins, 2013) Public choice theory covers many aspects as follows.

1) The Median Voter Model

The median voter model's was coined by Black in 1948, and was discussed extensively by Downs in his 1957 book An Economic Theory of Democracy. (Poulette, 2013) The core idea of the model is that any politician who strays too far from voters at the philosophical center will soon be out of office. In fact, there is a dynamic that pushes politicians to embrace the preferences of the typical or "median" voter, who sits squarely in the middle of public opinion. (Cowen, 2010) In a democratic regime, political outcomes reflect median voter preferences. The voter expects to be considered as a demand side, so they ask public sector to fulfill their requirements. Their satisfaction indicator will be shown in the next election. Therefore, the median voter conditions such as age, gender, income, information and

expectations have an impact on public policy. If there are any changes in those conditions, they will, definitely affect their preferences. (Congleton, 2002)

2) Political Business Cycle

Many scholars have conducted both theoretical and empirical research on the model. However, the conclusion is still inconclusive as the voter response to economic conditions in the first place, which are inflation and unemployment, are mixed. (Drazen, 2006) It is one of the public choice models focusing on the self-interested incumbent politicians and their parties who can manipulate the state of the macro-economy for political gains. (Konradi, 2009) The incumbent could do this by altering the government expenditure allocation to favor of their voter target before the election period. (Drazen & Eslava, 2010) There are two types of models. 1) Opportunistic model: this model explains the expansion in economic activity induced by an opportunistic incumbent before an election and is meant to increase his chances of re-election. 2) Partisan model: this model has different motivation from the first one. It is induced by varieties among parties in their ideologies and economic goals separated by either left or right wing. (Drazen, 2001)

As local government has been decentralized, they have power in planning, and developing their own jurisdictions. The empirical studies found that the incumbents significantly invested more on the capital expenditure especially in the year of the pre-election period which would increase the chance of re-election (Balaguer, Brun-Martos, Deltell, & Tortosa-Ausina, 2014) and the additional government spending helps increase the percentage of re-election probability. Most cases of local governments found the pattern of opportunistic behavior rather than the partisan model. (Veiga & Veiga, 2007) They also found positive effects of the government spending on education outcomes and earnings. (Litschig & Morrison, 2010)

3) Voter Participation

Downs (1957) developed a model to examine electoral competition. The model consists of political parties, citizens and interested groups. It can be summarized that parties formulate policies in order to win elections, rather than win elections in order to formulate policies. Governing parties only advance policies in so far as they gain votes and further the private ambitions of their members. Social

functions may be by-products of this strategy, but are not the goal. Later, the Downsian model had been used to explain income redistribution through fiscal policy. It delivers a number of testable predictions and in particular: 1) redistribution decreases with the elasticity of the tax base to the tax rate; 2) redistribution increases with the distance between the mean and the median income. These results, coupled with standard economic analysis about the distortions of taxation, deliver a further prediction: 3) inequality decreases output and economic growth. (Larcinese, 2007)

2.1.7 The Concept of Governance

The governance's definitions have been discussed among scholars. Therefore, there is no consensus about its definition. UNESCAP summarized the definition of governance that "governance" means: the process of decision-making and the process by which decisions are implemented (or not implemented). Governance can be used in several contexts such as corporate governance, international governance, national governance and local governance. Good governance consists of eight major characteristics. It is participatory, consensus oriented, accountable, transparent, responsive, effective and efficient, and the rule of law. It could help minimize corruption. (UNESCAP, 2010) Apart from UNESCAP, the World Bank (Kaufmann & Kraay, 2008) also developed Worldwide Governance Indicators (WGI). It contained six aspects of good governance: Voice and Accountability, Political Stability and Violence, Government Effectiveness, Rule of Law, Regulatory Quality and Control of Corruption. Those indicators measure three dimensions which are the government's process, capacity and the respect of citizens for the institutions. The WGI are based on 340 variables produced by 32 different sources, collecting from public, private and non-governmental organizations. (Thomas, 2010; Kaufmann, Kraay & Mastruzzi, 2010) In terms of local government, some have invented their own governance indicators such as Mexico, Romania and Philippines guidelines by UNDP. (Wilde, Narang, Laberge & Moretto, 2009) Although Thailand has promoted local governance, but there is no local governance indicator yet. Therefore, to measure how local government applies governance, alternative approaches need to be used.

Thailand started its local governance and the decentralization movements more than hundred years ago. After the democratic revolution, there were many attempts to set up local governments to support this concept. The peak time of decentralization just happened in the 1990s, decentralization was considered as one of the most significant measures in consolidating Thai democracy. The tangible guarantees of decentralization occurred in the following years of 1994, 1997 and 1999 which witnessed the enactment of three important decentralization-oriented laws: the Constitution of the Kingdom of Thailand 1997 (Gazette (1997) and the Decentralization Plan and Process Act 1999. (Gazette (1999) laws recognized the importance of local governance, establishing over 7,000 local governing bodies across the nation to carry out fundamental public services, and set goals to transfer to them substantial responsibilities and resources from the national government.(Lowatcharin, 2014)

Although local administrative organization is supposed to be autonomous, it has to report to the central government. As it was set up by laws, it also has an obligation to abide by the laws. The definitions of governance are distinctive by organizations in order that the Thai public sector to use the same definition. The definition of good governance composition in Royal Decree on Criteria and Procedures for Good Governance, 2003 (Gazette, 2003) is responsiveness, result-based management, effectiveness and value for money, lessening unnecessary steps of work reviewing mission to meet changing situation, providing convenient and favorable services and regular evaluation. (Royal Decree on Criteria and Procedures for Good Governance B.E. 2546 9th October 2003: 1-2) (Gazette, 2003). In some, it can be concluded into 6 Criteria as followed. 1) Rule of Law 2) Integrity 3) Transparency 4) Participation 5) Accountability 6) Cost Effectiveness or Economy (Good Governance Promotion Section, 2013). Therefore, the administration has to be performed by citizen and government. They have to collaborate as network and support each other among public sector, private sector and people. The people have to participate and public and private sector must have accountability with efficiency, effectiveness, transparency and equity."

According to the 1990's Constitution, The State Administration Act (No. 5), 2002 (B.E. 2545), (Gazette, 2003) Section 3/1 and Royal Decree on Criteria and

Procedures for Good Governance, 2003, (B.E. 2546), every Thailand public sector has to follow. For local administrative organization (LAO), Royal Decree on Criteria and Procedures for Good Governance, B.E. (2546), Section 52 states about LAO's obligation that "the local authority shall make the rule for good governance in accordance with this Royal Decree. Such rule shall have, at least, the rule on lessening step of work and the rule on providing convenient and favorable public service under Part V and Part VII. The Ministry of Interior shall have duty to supervise and facilitate the local authority in making the rule under paragraph one." (Royal Thai Government Gazette, 1993, 2003)

This Royal Decree also defines seven public administration goals in Section 3/1 as follows.

1) Maximize benefits to citizens

2) Achieve public goals

3) Emphasize efficiency & value for money

4) Streamline work processes

5) Periodic reviews to ensure relevance

6) Satisfy citizens' 6 demands

7) Monitoring & Performance Evaluation (Vunnaporn Devahastin Suthapreda, 2013)

The law accordingly outlined the 6 major principles of the rule of law, morality, accountability, participation, responsibility, and cost-effectiveness in the public sector.

Although LAO receive support and facilitate by government to achieve these goals, it has to submit Key Performance Indicators of its performance annually. However, the LAO's governance situation has not improved as it seems. According to the Office of the Auditor General of Thailand' LAO Governance Evaluation Report 2014, there were only 16 LAOs of more than 7,853 LAOs voluntary signed MOU between LAO and Office of the Auditor General of Thailand to admitted governance evaluation process. (The Committee of LAO's Governance Promotion, 2014) In the meantime, LAO are not willing to participate in governance promotion projects; there are high numbers of complaints about corruption. According to NACC's complaint statistics, there are 6,260 complaints during 2009-2013 and most of them are about

frauds. (Thaipublica, 2014)The governance in government agencies in Thailand is needed to be improved as it affects how the whole public policy process performs.

2.2 Empirical Evidences on the Determinants of Local Education Expenditures

There are many studies from several parts of the world on the socioeconomic, political and decision making process factors of the educational outcomes. To understand the factors' characters and how to interpret them, this section reviews each factor and explains how they affect the local education expenditures. The first group of scholars who investigated the relationships among environmental, political and structural factors and public policy outcomes are Hofferbert, 1966; Dye, 1967; Lewis-Beck, 1977 for example. However, they defined the meaning of educational policy outcomes differently. (Hofferbert, 1966; Dye, 1967; Lewis-Beck, 1977) Hofferbert found a significant relationship between environmental factors and public policy outcomes. Dye found a significant partial impact of political factors. While from Lewis-Beck's work using path analysis, the estimation found that the effects coefficients for a common model of welfare policy were rely on socio-economic variables rather than political ones. Later on, many researchers conducted research about the relationship at both national and local level.

There are many researches testing the validity of Wagner's law both for central governments and local governments. However, the results are still inconclusive. For developed countries, there are many studies on the theory for state and local governments which found that there was a significant relationship between economic growth and public expenditures especially on social welfare (Mahdavi, 2009; Zaghini, 2008) as well as in developing countries' cases. (Akitoby, Clements, Gupta & Inchauste, 2006) Within this broad context, the analysis of the size of the government with respect to the degree of development has received a relatively larger attention. In particular, the long-run relationship between government expenditures and economic growth has been a lively topic of empirical assessment. The factors affecting local educational expenditure could be classified as follows.

2.2.1 Economic Factors

There are plenty of economic factors affecting local education expenditures. The interest in how socioeconomic factors affected educational outcomes occurred in terms of policy outcomes since 1970's as mentioned earlier. The economic determinants could be separated into two categories. One is the local residents' factor and the other is the local authorities' fiscal status.

2.2.1.1 Average Income or GDP per capita

Regarding Wagner's Law, the more economic development is, the higher public investment will be. There are many studies supporting this hypothesis. Taylor and Hutcheson (1973) conducted their research by besides examining the environmental factors; they also put cultural and political factors into their research. The results showed that economic development still has an impact on policy outputs as well as the political system variable. Other researchers tried to investigate the relationship among initial income inequality, education and economic growth. The results showed that inequality, in other words, lower income has a negative impact on education expenditure. (Naito & Nishida, 2012; Addison & Rahman, 2001)

2.2.1.2 Local Government Revenue

In general, there are researches which confirmed a relationship between local tax income and local public expenditures. They also found the investment goes to where the tax comes most of the local tax on local spending. (Rockoff, 2010; Koethenbuerger, 2013; Gebremariam, Gebremedhin & Shaeffer, 2012) Yaw, Schoderbek & Sahay (2013) conducted a research by operationalizing panel analysis of the data of 217 K-G12 school districts in New Jersey, USA, from 2002-2009. The result showed that the local tax positively influenced the school district expenditure. (Yaw, Schoderbek & Sahay, 2013). Verina & Chowdhury (2002) studied the determinants of education expenditure for the Russian Federation by utilizing panel data from 88 regions during 1999-2000. They found that local revenue had a positive impact on education expenditure. Verina & Chowdhury (2002), Benabou (1996) de Bartolome (1990), and Fernandez and Rogerson (1997) also found that local government income can affect school spending.

2.2.2 Demographic Factors

2.2.2.1 Population Density

In developed countries, population density has significantly positive effect on government spending including educational affairs. (Dao, 1995) For local government, the net effect of this factor depends on the type of services. In case that the service delivery gains benefit from the agglomeration effect like education services, the cost would be lower with high population density. (Lago-Panas & Marinez-Vezquez, 2013) The research findings about the effect of population density on total public education expenditure are diversified. There are many reasons to support this factor to be negative. In general, education expenditure decreases when population density increases. In other word, the more decentralization, the more cost of education as well. (Council of Europe, 2001) First, it was a result of economy of scales. The other was that areas already had developed infrastructures. (Verina & Chowdhury, 2002) For those studies supported positive effect, they found that population density affect local public expenditure per capita. (Gebremariam, Gebremedhin & Shaeffer, 2012; Gius, 2006)

2.2.2.2 School Age Population

There were many studies found that an increase in the proportion of young people would also generate pressure for increases in total public spending on education. (Marlow & Shiers, 1999; Verina & Chowdhury, 2002; Akanbi & Schoeman, 2013; Sousa & Mendes, 2011; Ahlin & Johansson, 2001) However, local per pupil spending decreases if the number of students increases. The studies operationalized the number of population of school-age children to determine the effect on education expenditures. They expected that it would have negative effect because decreasing in the number of students means higher per pupil expenditure. (Bergstrom & Goodman, 1973; Delavallade, 2006; Fernandez & Rogerson, 1997; Poterba, 1997; Kopanska & Bukowska, 2013)

2.2.3 Political Factors

According to Easton's system model (1957), emphasized the importance of the environment, process and output. The political process is a consequence of the environment and serves to translate factors of that environment into policy output.

(Cnudde & MaCrone, 1969; Dye, 1984) found that the political factor acts as an intervening variable between the socioeconomic environment and output measurement.

2.2.3.1 Median Voter Theory

When the poor is treated as an interest group, they could influence redistribution policy. (Cohen, 2001) In the World Development Report 2004 (World Bank, 2004) it stated about the relationship between pro-poor policy and the poor such as Thailand's first medical insurance scheme, as they are major voters. (Brandeis, 2004). Larcinese (2007) found in his study of 41 countries panel data analysis about the correlation between poverty and the demands of redistribution policy that they are positive significant. (Larcinese, 2007; Lupu & Pontusson, 2011) study revealed that there was a tendency that middle income voter would be in alliance with the low income voters as they could gain benefits from redistributive policy as well.

2.2.3.2 Political Competition

They are many studies which supported that political competition affecting local education spending. Dye found that in competitive states, there was increasing in per capita states' welfare spending. (Dye, 1984) Although political competition affected government social spending, their allocation depended on their contextual factors such as their citizen's needs, capacity for example. (Keefer & Stuti, 2005; Keefer & Razvan, Democracy, Credibility & Clenitelism, 2008) Relating to local education spending, Andersson & Lawrence (2011) found in their studies on three mayoral elections during 2001-2009 that the more political competition, the higher level of local education spending.

2.2.3.3 Political Continuity

Competitive election creates a relationship of formal accountability between policymakers and citizens. Citizens could reward or punish their ex-winner on Election Day. (Ashworth, 2012) Therefore, with term limit, incumbents try to be more responsive in order to win the second election again. Janvry, Finan and Sadoulet (2012) found in their studies that mayors who were able to enter re-election had better performance than term limit reached mayors. In other word, when they reach their term limit, it found that they turned to be lamed ducks. Motta & Moreira (2009) also found that the governors had more incentives to spend on education and health if they

had a chance to be re-elected. In the past, the Chief Executive of PAO has only a two-term limit. However, after Section 35/2 of Provincial Administrative Organization Act, Edition 4, 2009 announced, there is no term limit anymore. Therefore, the concept of political continuity can be applied.

2.2.3.4 Voter Participation

Voter turnout is the channel through which forms of government affect economicpolicies. Higher voter participation induces an increase in government expenditure, total revenues, welfare state spending, and budget deficit. There is relationship between voter participation and local expenditure. (Fumagalli & Narciso, 2011) Aggreborn found that higher voter turnout yields, the larger local public expenditures. (Aggeborn, 2013) When concerned about median voter, when inequality is larger, the positive impact of participation on spending is magnified.This indicates that the difference in the preferences of participants and non-participants is larger whenthere is more inequality. The research adopted a regression analysis on panel data for 41 countries in the period 1972–98 confirmed the importance of turnout as an explanatory variable for social spending (Larcinese, 2007) It also depends on the type of voter preference. If the voter prefer welfare, it can explain a substantial share of the rise in education spending. (Funk & Gathmann, 2011)

2.2.4 Governance Factors

The analysis of local governance in Thailand is constrained by the lack of secondary data. Therefore, it needs to use a proxy to represent governance instead.

2.2.4.1 Corruption

For transparency, it can be interpreted in terms of being corruption-free.There are many studies both on central and local govenrment about the corruption effect on lower social spending including expenditure. Most of them utilized corruption indicators developed by organizations. Gupta,Davoodi & Alonso-Terme (1998) and his team found that corruption has significant distributional effect both budgetary revenue and expenditure. High and rising corruption lower educational spending. They also found in their cross-country analysis that higher corruption increased the share of spending on capital-intensive public investment and reduce the share of social sector spending including education spending. (Croix &

Delavallade, 2009; Delavallade, 2006) Another research found that the corrupted governments tended to shift their investment from high value projects such as health and education to potentially useless project like infrastructure for example. (Shleifer & Vishny, 1993) For local government, there were findings that less corrupted local governments spent more on education than more corrupted ones. (Suryadarma, 2012) The same phenomena had been found in the U.S.. It also found that the corrupted states tended to invest on complex and abtruse cost assessment projects rather than on education. They also concluded that public officials' corruption reduces states' investment in education overall. (Liu & Mikesell, 2014)

Sen (2001) found that local welfare improved with wider democratic participation or greater social inclusion if accomplished under fiscal decentralization. Those factors could be the linkages between governance and local development. The World Bank(2013) study found that districts with better assessed governance index prioritzed more budget to education. Therefore, governance positively associates with education expenditure.

2.2.4.2 Leadership

Governance is how the leadership and organization are organized. Leadership is the ability to create an environment based on guidance, respect, and empowerment of the people to act consistently in the direction of the mission of the organization. It could influence, motivate and enable to get things done. (Bucci, 2014) The key principles of good governance in public sector is to ensure that entities act always in the public interest. One of the required acting is the capability of leadership.Good governance requires clear organizational roles and responsibilities between the governing body, management at all levels, and employees. A competent leader can provide adequate and appropriate strategic direction and oversight is challenging and demanding, so governing body members need the right skills for their roles. (IFAC, 2013) Therefore, PAOs' managements who have leadership can bring about better education outcomes.

2.2.4.3 Transparency

Transparency is related to ability to provide substantive and procedural information. official business conducted in such a way that substantive andprocedural information is available to citizen broadly and understandably. However, the openness

is subjected to the security and privacy protection as well. (Johnston, 2003) Kosack and Fung (2013) found in their study that transparency and accountabilityinterventions improved the quality of public education and health services in developing countries.

2.2.4.4 Parrticipation

According to Uemura's (1999) study, he found that public participation is nota panecea for education improvement. However, it helped increase careful examination of its exercises to become more important. This result is get along with Aceron ,Vitel & Parrera (2013) research. They found that the effect of local public participation depended on the local contexts. It would be effective if the process was initiated by local citizen rather than top-downarrangement.

2.2.4.5 Network

There are many benefits of networked governance: specialization, innovation, speed, flexibility, and increased reach. After the government established network, it will attract highly specialized technical people and enable governement to explore more alternatives in providing public services, enhance the speed of government responds and finally the services will be better delivered. (Goldsmith & Eggers, 2004) Although there are also many obstacles in having networking among public, private and civil society in education provision, Court,Mendizabal, Osborne & Young's (2006) study revealed how the network improves education effectiveness.

Unfortunately, it is not possible to proxy the local authority's govenance, as there is no local governance index like other countries such as the Phillipines. Another way to compensate is to utilize the statistics of govenance award given to local authorities by many reliable organizations.

2.3 Governance Proxies of Determinants of Educational Expenditure and Educational Outcomes

Apart from international organizations' definitions, Rhodes (2003) referred the term 'governance' to a new process of governing. Since there are many meanings of governance, he concluded that there are at least six uses of governance; as the minimal state, as corporate governance, as the new public management, as 'good

governance', as a socio-cybernetic system and as self-organizing networks. In this study, it focuses on the outcomes of primary education provided or supported by PAO, therefore, the definition of governance of this study is as good governance and a socio-cybernetic system. The definition focuses on outcomes as a result of social-political-administrative interventions and interactions which no single actor; public or private could solve the problem alone. (Rhodes, 2003) The operational definition on PAOs with governance qualifications are those having low rate of corruption complaints and either received an award or more on governance. The components of proxies will consist of leadership owning ability to both lead and synchronize every party's requirement, transparency and participation and networking.

The proxies to be used for indicating PAO governance in distinct aspects are Excellent Chief Executive and Director of Education Division or Departments of Local Government on Education Awards granted by Department of Local Administration, Good Governance Awards given by Office of the Decentralization to the Local Government Organization Commission (ODLOC) and and King Prajadhipok's Institute Awards given by King Prajadhipok's Institute.

2.3.1 Excellent Chief Executive of Local Government on Education Awards

The awards are annually presented by Department of Local Administration and Local Education Support Foundation since 2007. They are given local government which Chief Executives have empirical excellent performance in education promotion. As this awards focus on the leadership, this study would take only awards given to Chief Executive Administration into account. This award will be used as a proxy of accountability of PAO in education services.

The objectives of the award are to select the Chief Executive Administration of local administrative organizations who have knowledge, capability, vision and empirical achievements in education and to recognize as well as to encourage the Chief Executive Administration of LAO who appreciate the value of education.

The award nominees are selected from considering application forms and documents illustrating the empirical success in administrating education in such areas.

The awards criteria are following.

1) Vision on education

2) Qualification (Questionaires)

    (1) Basic Qualification

        a) Vision, creativity and leadership

        b) Knowledge, capability and experience in education administration

        c) Virtue, moral and human relations

    (2) Specific Qualification

        a) Managerial competency includes good governance criteria (rules of law, integrity, participation, accountability and value for money), local development plan with process description

        b) Education administrative competency consists of education development plan, education expenditure allocation (not less than 10% of local revenue excluding grants-in aid will not be considered for its LAO's education institute, while not less than 5% for nonformal education), life long learning composed of numbers of education institute, the Office for National Education Standards and Quality Assessment (ONESQA)'s assessment results of schools under LAO's provision, number of nonformal education provision and informal education provision.

        c) Achievements of education adminsitration in detail and other LAO's provisions. (Department of Local Administration, 2013)

2.3.2 Good Governance Awards

The proxy has been used for indicating overall good governance in Provincial Administrative Organization is Good Governance (GG) Awards given by Office of the Decentralization to the Local Government Organization Commission (ODLOC)

The objectives of the GG Awards is to motivate the local government to develop to adopt the good governance concept in performing tasks and be able to respond to local needs by having transparency, encouraging participation and providing good quality services. There are two types of these awards. The first type is the Outstanding Performance. The other type is normal.

The process of the GG Awards evaluation and selection are as follows:

1) Application

2) Preliminary Qualitification Assessment

3) In-depth Qualification Assessment

4) Proposing the selected candidates for the final round

5) Final Evaluation from the central selection committee

6) Announcement

The complaints as well as the inspection results of the Office of Auditor General of Thailand (OAG), Office of National Anti-Corruption Commission (NACC) and Office of Public Sector Anti-Corruption Commission (PACC) are taken into account as well.

2.3.3 King Prajadhipok's Institute Awards

The proxy has been used for indicating transparency and participation is King Prajadhipok's Institute's (KPI) Awards on transparency and participation while the proxy of netwoking is King Prajadhipok's Institute's Awards on networking.

KPI's Awards have been granted to the local administrative organizations having transparency and participation promotion since 2001. In 2009, KPI started classifying the awards into three categories; Transparency and Participation Promotion, Promotion of Peace and Reconciliation and Networking Promotion The criteria and evaluation process of the KPI awards are following.

1) Application Submission

There will be an anuual announcement for KPI Awards Application. Each local government can submit for only one category of awards: Transparency and Participation Promotion, Promotion of Peace and Reconciliation and Networking PromotionThere are two types of KPI award one is KPI Awards and the other one is Golden KPI Awards to be held every two years. The golden awards will be given to those LAOs which received KPI award in the same category 2 times in 5 years.

King Prajadhipok's Institute (KPI) is a section under the House of Representatives Secretariat. The institute was responsible for organizing training, seminars and academic meetings concerning governance in democracies, doing work concerning legislation, making documents, teaching materials and training

technology, preparing the institute to be upgraded to a department-level organization, as well as other tasks it is assigned. (King Prajadhipok's Institute, 2014) In order to promote desirable characteristics of local administrative organizations, KPI has initiated an annual award for local administration offices nationwide. The award will be given based on local administrative offices' achievements in the areas of transparency and the promotion of people participation, Promotion of Peace and Reconciliation and Networking Promotion. Each KPI Award consists of two levels of achievement which are the excellence award receiving honorable trophy and certificate and the certificate received for the local administrative offices that meet KPI standards in such an area. The objectives and key indicators of each KPI Awards categories are shown in the following table. However, since this study focuses only on education expenditure and outcomes, the KPI awards relating to them are in transparency and promotion of participation and promotion of networking categories.

Table 2.1 KPI Awards Categories and Key Indicators

Category	Objectives	Key Indicators
Type 1. Transparency and the Promotion of People Participation	To promote and stimulate local administrative organizations to recognize the importance of good governance concept in administrating local governments especially transparency and people participation	Clear budget allocation principles Innovation of promotion of transparency in administration Accessibility to information Responsibility to people's complaints and problems

Table 2.1 (Continued)

Category	Objectives	Key Indicators
		People participation in anti- corruption protection
		People participation which is meaningful to local development plan process and evaluation
		People participation in initiating and giving suggestion for local programs
		Participation of disadvantaged groups
		People participation in local council provisions
		Innovation of people participation

Table 2.1 (Continued)

Category	Objectives	Key Indicators
Type 3. Promotion of Networking	To promote local administrative organizations as a major local administrator to cooperate with networks from various partners; public sector, private sector and civil society in area	Networking promotion of local administrative organizations policy
		Plans, projects and activities promoting networking
		Local administrative organization's roles in networking establishment
		Networking data base
		Promotion of Learning and experience in working with partners
		Networking Performance Record
		Best practice of networking promotion

2) Preliminary Evaluation

The selection committee would consider preliminary evaluation based on documents submitted by local governments and the point will be given by basic criteria and advanced criteria for each type of awards.

3) Specific Qualification Evaluation

(1) Local citizen satisfaction survey

The committee would distribute satisfaction survey to the candidate's local citizen about the local government performance.

(2) Local government's project and activity evaluation

The committee would collect data on performance of the candidate by using research methodologies such as focus group, observation and interview the citizen living in the project and activity's area.

4) Field Trip Evaluation

After receiving data from stage 3, the committee would consider the data collecting from the field.

5) The KPI's Awards Nominee Selection

After considering the data, the committee would select the nominee by categorizing them into two groups: Meet the criteria and Excellence. In this study, both of them would be counted as they have qualitfication of such governance categories. The committee would take the complaints from the Office of Auditor General, the Anti-Corruption Committee and the Department of Local Administration, Ministy of Interior on frauds into account. (King Prajadhipok's Institute, 2015)

Nevertheless, using these governance awards as a proxy of obtaining good governance of PAO has limitations. In every award, the application procedures begins with filling application forms and illustrating its own achievements. Those achievements could be a part of PAO's strategies to win the awards. (Achakarn Wongpredee, 2010) Therefore, the award proxy would be merely preliminary indicator.

From the theoretical base and literature review, the factors can be summarized as shown in the following table:

Table 2.2 Summary Table of the Literature Showing the Relationship between the Independent Variables and Education Expenditures

Conceptual Framework I			
No.	**Independent Variables**	**Relationship**	**Supporting theories/literatures /scholars**
1	Economic Factors		Wagner's Law
1.1	GPP per capita	+	Meier, Wrinkel & Polinard (1999), Dye, (1967) and Taylor & Hutcheson (1973)
1.2	Local Revenue	+	Rockoff (2010), Koethenbuerger (2013),Verbina & Chowdhury (2002),Gebremariam, Gebremedhin & Schaffer (2012), Yaw, Schoderbek & Sahay (2013), Benabou (1996), de Bartolome (1990) and Fernandez & Rogerson (1997)
2	Social Factors		System Theory
2.1	Number of Students	+	Fernandez & Rogerson (1997) and Kempkes(2006)
2.2	Number of Schools		Grob & Wolter (2007) and Sagarik (2012)
2.3	Population Density	-	Dao (1995), Lago-Panas & Marinez (2013), Verbina & Chowdhury (2002), Gebremariam & Gebremedhin (2006)
2.4	School Age Population	+	Verbina & Showdhury (2002), Akanbi & Schoeman (2010), Sousa & Mendez (2011),, Marlow & Shiers (1999), Ahlin & Johansson (2001)

Table 2.2 (Continued)

Conceptual Framework I			
No.	Independent Variables	Relationship	Supporting theories/literatures /scholars
3	Political Factors		Public Choice Theory
3.1	Poverty Ratio	+	Larcinese (2007), Lupu & Pontusson (2008)
3.2	Political Competition	+	Dye (1984), Keefer & Stuti (2005), Keefer & Razvan (2008), Andersson & Lawrence (2011)
3.3	Political Continuity	-	Ashworth (2012), Janvry, Finan & Sadovlet (2012) and Motta & Moreira (2009)
3.4	Voter Participation	+	Fumagalli & Naciso (2011), Aggeborn (2013), Larcinese (2007)
4	Governance Factors		Governance Concept
4.1	Corruption	-	Gupta, Croix & Delavallade (2009), Delavallade (2006), Shleifer & Vishny (1993), Mauro (1995), Mauro (1998)
4.2	Governance	+	Uemura (1999), Jayasuriya & Wodon (2002), Holloway (2004), Capuno (2005) Sen (2011), World Bank (2013), Kosack & Fung (2013)

2.4 Literature on Determinants of Educational Outcomes

2.4.1 Indicators of Educational Outcomes

"Education quality can no longer be measured solely with inputs or simple outputs. (UNESCO, Darkar Framework for Action. Education for All: Meeting Our

Collective Commitments, 1999) To measure education outcomes, it needs to use indicators. Indicators reflect the way in which an objective can be achieved as well as to what degree approximately the objective has been achieved at any stage. A set of indicators is used to assess and monitor the activity, functioning, quality and outcomes of a system that is based on numerous kinds of data. The indicators could be reliable proxies for the functioning of the system. (Bukobza, 2007)

Therefore, educational indicators are statistics which indicate educational institutes or educational service providers' conditions and performance. They also show some signs of problem or success. The information from indicators could be utilized in education policy making.

Regarding to the eight Millennium Development Goals (MDGs) which range from halving extreme poverty rates to halting the spread of HIV/AIDS and providing universal primary education, all by the target date of 2015, the second Millennium Development Goal ("MDG 2") commits to achieving universal primary education with the following target: 'Ensure that, by 2015, children everywhere, boys and girls alike, will be able to complete a full course of primary schooling'. The three indicators associated with this target are: 1) Net enrolment ratio in primary education 2) Proportion of pupils starting Grade 1 who reach last grade of primary school and 3) Literacy rate of 15-24 year-old women and men. (United Nation, 2002)

As a result of the Jomtien Education for All Conference in 1990 (UNICEF House, 1990) four UN bodies collaborated with 155 governments and 150 NGOs, to sponsor the conference on Education for All (EFA), it was at first place that indicated some consensus between the World Bank, UNDP, UNESCO and UNICEF, and other UN bodies upon this project. In order to pursue EFA targets, there were many conferences afterwards to develop indicators for EFA. The developed indicators stand for accessibility via enrolment ratio, equity via accessibility of disadvantaged children enrolment ratio and gender parity index, equality via access to free and compulsory education and quality via literacy ratio, number of years in schooling and education achievement such as PISA score or other standardized tests scores. (Unterhalter, 2013)

According to UN and other international organizations, the education indicators have been used to portray how the educational outcomes of a country are.

Some important indicators, their definitions and interpretations are summarized in the following table:

Table 2.3 Summary of Important Education Indicators

Indicator Name	Purpose	Definition	Interpretation
Literacy Rate	To show accumulated achievement of primary education system	The percentage of population aged 15 years and over who can both read and write with understanding a short simple statement on his/her everyday life.	The percentage of population aged 15 years and over who can both read and write with understanding a short simple statement on his/her everyday life.
School-life Expectancy	To show the overall level of development of an educational system in terms of the average number of years of schooling that the education system offers to the eligible population, including those who never enter school	The total number of years of schooling which a child of a certain age can expect to receive in the future	A relative high SLE indicates greater probability for children to spend more years in education and higher overall retention within the education system.

Table 2.3 (Continued)

Indicator Name	Purpose	Definition	Interpretation
Net Enrolment Rate	To show the extent of coverage in a given level of education of children and youths belonging to the official age group corresponding to the given level of education	Enrolment of the official age group for a given level of education expressed as a percentage of the Gross National Income (GNI) in a given financial year. GNI also referred to as Gross National Product (GNP)	A higher NER denotes a high degree of coverage for the official school-age population. The theoretical maximum value is 100%.
Net Enrolment Rate	To show the extent of coverage in a given level of education of children and youths belonging to the official age group corresponding to the given level of education	Enrolment of the official age group for a given level of education expressed as a percentage of the Gross National Income (GNI) in a given financial year. GNI also referred to as Gross National Product (GNP)	A higher NER denotes a high degree of coverage for the official school-age population. The theoretical maximum value is 100%.

Table 2.3 (Continued)

Indicator Name	Purpose	Definition	Interpretation
Public Expenditure on Education as % of Gross National Income	To show the proportion of a country's wealth generated during a given financial year that has been spent by government authorities on education. GDP can also be used.	Total public expenditure on education (current and capital) expressed as a percentage of total government expenditure in a given financial year.	A higher percentage of government expenditure on education shows a high government policy priority for education relative to the perceived value of other public investments.

Sorrces: UNESCO & UNESCO Institute for Statistics, 2009.

Apart from international education indicators, there are the indicators used for educational system for different purposes. As it treats education as a system, it receives inputs in the form of new entrants, transforms these inputs through certain internal processes, and finally yields certain outputs in the form of graduates. Therefore, educational indicators can be classified into indicators of size or quantity, equity, efficiency and quality. (Mehta, 1997)

Table 2.4 Indicators of Education System

Indicator Types	Acknowledge	Indicators
Indicators of Access	Used to know whether schooling facilities are adequately utilized	- % of habitations according to population and distance norms accused to primary school facilities - % of habitation served by primary schools within habitation, and walking distance.
Indicators of Coverage	Used to know the interaction between demand and supply	- Admission Rate - Enrolment Rate and - Transition Rate
Indicators of Efficiency	Used to know how indicators of wastage and internal efficiency of education system are measured	- Apparent cohort method - Reconstructed cohort method - True cohort method

Table 2.4 (Continued)

Indicator Types	Acknowledge	Indicators
Indicators of Quality of Education	Used to measure educational attainment by learner's achievement.	- Completion rate - Gross/Net completion ratio - Graduation rate
Indicators of Investment on Education	Used to know how the government spent on education	Unit cost
Indicators of Facilities	Used to know about factors which influence quality of education	- School buildings and equipment - Staff conditions
Gender Parity Index	Used to know the participation of women in and educational activity	- GPI ratio

Source: Mehta, 1997.

2.4.2 Summary of Education Outcomes Categories

It can be concluded from the mentioned education indicators into 5 categories:

1) Accessibility and equality represents the coverage of public education services.

The indicators are many types of enrolment rate. Enrolment rate illustrates the education system's capability to provide opportunity and equity in accessing to education services.

2) Equity determines whether education resources have been allocated equally and appropriately to those in needs such as disadvantage groups, ethnic groups and no gender disparity. The indicators are Gender Parity Index (GPI) and Enrolment proportion.

3) Attainment refers to the highest level of education completed. It is the visible output of education systems and a measure of their success. Average years of adult schooling and literacy rate are the example indicators for this aspect.

4) Quality refers to how education system could provide best learning capacity for students. Therefore, pupil-teacher ratio can be represented. However, the low ratio of this indicator is not necessarily predictive of quality. Other factors have to be taken to concern. (UNESCO-UIS, 2014)

5) Performance/Achievement can be used to monitor and measure student outcomes.

For example, OECD countries developed PISA, the Program for International Student Assessment (PISA) survey measured 15-year-olds' capacity to reason mathematically and use mathematical concepts. In Thailand, according to the Office for National Education Standards and Quality Assessment, ONESQA, education performance indicators used are the percentage of students passed 50% of Ordinary National Educational Test (O-Net). (Office for National Education Standards and Quality Assessment, 2010) , O – Net is an examination of the basic education conducted by The National Institute of Educational Testing Service (Public Organization) (NIETS). The objectives of the test are 1) To test the knowledge and thinking ability of Grade 6, 9 and 12 students according to the Basic Education Core Curriculum B.E 2551 (A.D. 2008)., 2) To assess their academic proficiency according to the Basic Education Core Curriculum B.E 2551 (A.D. 2008) (Ministry of Education, 2008) 3) To provide information to the schools to improve their teaching and learning activities. 4) To evaluate the quality of education at the national level.(NIETS, 2015) Besides national standardized test score, grades and GPA are the most commonly used measure of academic success. (York, 2015)

2.4.3 Theory relating to Determinants of Educational Outcomes

The cultural deprivation theory

It has been used to explain how cultural could impact on education achievement. There are many studies based on this theory which found that the working class has a negative effect on education achievement. Three main aspects of cultural deprivation are intellectual development, language and attitudes. It can be

concluded from those studies' results that working class parents may show a lack of interest in their children's education, and are less able to help their children with homework, and are more likely to speak in a restricted speech code, are more concerned with immediate gratification or earning rather than deferred gratification or education. (Revise Sociology, 2015) Douglas (1964) discovered in his study that working class pupils scored lower on tests of ability than middle-class pupils. He found that working class parents had less tendency to support their children on learning development. While Bereiter and Englemann's (1966) study reveals that the language used in the working class correlated to the children's learning performance as a result of lack of vocabulary and led to communication problem. In addition, Douglas (1964)) also found that working class parents' attitudes toward education played an important role on children learning achievement. The results went along with Feinstein's (1998) study. He found that working-class parents' lack of interest was the main reason for their children's' under-achievement and was even more important than financial hardship or factors within school.

The theory indicated that socio-economic factors are important factors affecting education equality.

2.5 Empirical Evidence of the Association between Education Expenditure and Educational Outcomes

UNICEF's study states that there is no general theory to explain educational outcomes. (UNICEF, 2000) Therefore, this research defines the definition after the literature review of empirical studies as follows:

Leclercq (2005) examined the relationship between education expenditure and outcomes in both developed and developing countries. From the late 1960s onwards especially in 1980s & 1990, there was literature seeking to measure the impact of school inputs and educational outcomes. The inputs resulting from policy could be expenditure which is distributed across sectors, for example, teacher salaries, training, learning materials, building and operation. However, the summarized papers do not suggest how the real relationship between those two educational outcomes really is.

It is difficult to assess the time it takes for inputs into education expenditure to affect learning outcomes. From this report, many researchers found that the educational outcomes resulted from educational reform both in terms of educational plans or specific projects vary from 1-3 months to 4 years. (Gillies, 2010; Galiani & Schargrodsk, 2002; Prichett & Beatty, 2012) However, to conduct research on educational outcomes depends heavily on the data availability on learning outcomes overtime.

Pritchett & Filmer (1997) utilized education production functions to examine a positive theory of the allocation of education expenditure. They arguments are between more budget or reform. The results showed that the spending on education would be allocated to teachers due to their enormous influence and spending bias which directly affects the welfare of teachers rather than to educational outcomes. Therefore, the policy makers should consider reform to change the structure of decision making in order to improve educational outcomes. In other words, education expenditure has less impact on the outcomes than the reform.

Glewwe & Kreamer's (2005) study suggested that the educational inputs have limited impact on improving the quality of schooling in developing countries. This challenge occurs from distortion in the educational budget and often leads to inefficient allocation of spending. They also found that government is more likely to provide more inputs in areas that already have good educational outcomes as a result of political bias. (Glewwe & Kreamer, 2005) This issue is also stated in World Bank Report in 2000 that the areas that have good educational outcomes could receive more inputs from political influence or due to higher taxes. (World Bank, 2000) However, from Glewwe et.al (2012) study about the global trends and found that policy makers in many countries are concerned about the value of education so they have invested more on education recently. Unfortunately, in many countries, they found disappointing results regarding little impact of increased expenditure per student. Therefore, they were interested to find that it is still little known about how much the impact of education expenditure could increase educational outcomes. This study examined the period during 1990-2010 from 5,500 pieces of educational and economic literature and chose only 43 high quality papers to investigate the impact of educational expenditure on educational outcomes. Their literature review led to the

summary of the inputs, in other words, policy outputs, into three categories; infrastructures and materials, teachers, school organizations, which include education expenditure. The result is that it cannot lead to a conclusion of the pupil/teacher ratio. Surprisingly, they found that electrification, school meals and community information campaigns, text books, facilities, principal's characteristics, and teacher salaries have little positive impact on educational outcomes while teacher experience, computers and the internet have mixed results. The high impacts on educational outcomes are the library, teacher knowledge of the subjects, student time in school and tutoring. The major negative impact on the outcomes is teacher absenteeism.

Startz (2012) examined educational reform to improve educational outcomes. His work was based on arguments whether out-of-school factors and quality of teachers affected educational outcomes. In order to measure educational outcome, he operationalized the VAM score (Value added measure) of student achievement. The results found that student background had a significantly higher impact on educational outcomes than teacher inputs.

2.6 Empirical Evidences on the Determinants of Educational Outcomes

From the literature review about education outcomes above, this study will operationalize enrolment ratio as accessibility educational indicators, literacy rate as equality and equality educational indicator, average years of adult schooling as educational attainment indicator, O-net score of Grade 6 students as a proxy of standardized test score and average GPA of Grade 6 students as proxies of local education achievement.

2.6.1 Accessibility to Education
2.6.1.1 Enrolment ratio

1) Administrative Factor- Total Education Expenditure

According to Education for All Global Monitoring Report 2009, it found that in Cambodia, Ghana, Kenya, Mozambique, the United Republic of Tanzania and Zambia improving financing from governments to public education increased a large expansion of primary school enrolment. Baldacci Guin-Sui and

Demello (2003) conducted his study by using panel data from 118 developing countries during 1971-2000. They found a positive significant between public spending and enrolment rate. (Baldacci, Guin-Sui & Demello, 2003)

From Anyanwu and Erhijakpor's (2007) study, it suggested that there were directly significant correlation between public expenditure and primary and secondary educational enrolment rate in Nigeria and other SANE (South Africa, Algeria, Nigeria, and Egypt) countries utilizing panel data during 1990-2002. (Anyanwu & Erhijakpor, 2007)

To investigate the effectiveness of public spending on primary education outcomes in 115districts across three states in India – Uttar Pradesh, Andhra Pradesh and Karnataka. Controlling for factors including per capita income, student-teacher ratio, and ratio of government to private primary schools, Iyer (2009) found in her research that this factor has little impact on enrolment rate and other educational outcomes.

2) Economic Factors

Many studies agreed that student's enrolment is directly affected by the low socio-economic status and low educational level of the parents.

(1) GPP per capita

While finding trivial effect of public spending on educational outcomes, Iyer (2009) found the relationship between per capita income and enrolment rate. Kainuwa and Yusuf and Onphanhdala (2013) also found that income was obviously related linked to the ability to start children schooling. Other scholars found the positive relationship between household income and schooling as it was difficult for parents to send their children to school if they were in poor conditions. This also is one of the main reasons to withdraw their children from school. (Glick & Sahn, 2000; Ray, 2000)

(2) Poverty Ratio

Poverty could be the most common factor deprives children from school enrolment. Although there is free schooling policy, the problems of the poor to send their student to school are not completely vanished. Being in a poor family hamper access to education as the cost relating to school such as school

accessories, books, transportation for example, are burdens to them. (Ananga, 2011; Lewin, 2008; Kadzamira & Rose, 2003)

There are many studies about enrolment rate's determinants and found that poverty is the key factor. Michubu (2005) found in his study relating to factors influencing enrolment. He found that there were factors classified as poverty factors. They were inability to pay school fees, opportunity costs, and poverty levels respectively.

3) Social Factors

(1) Parental Education

Olaniyan (2011) found in his study for educational outcomes in Nigeria that the most important determinant is education of parents as they are more likely to recognize the value of their children's education. (Olaniyan, 2011) In Onzima's research on parents' socio-economic status and pupil educational attainment in Uganda, the results showed that parental education both father and mother were positive correlation with pupil enrolment. (Onzima, 2011) Kainuwa & Yusuf (2013) also found the same relationship in their studies on factors affecting education outcomes in Nigeria.

(2) Population Density

Government has to provide public services to meet minimum population density requirements. In the low population density area, there are less public services including education available. Bezbaruah (2014) found in her study on Education services in Indian slum area that total enrolment rate was less in lower population density area.

(3) School Age Population

According to World Bank 2007 report, as school age population were rising, the supply of education service would be insufficient. The same result also found in Philippines' research. It indicated that the increase of school age population had negative impact on enrolment rate. (Rivera & Tullao Jr., 2009)

(4) Urbanization Ratio

There is disparity between urban and rural area for education. Bezbaruah (2014) also found the disparity between the areas. She also found gender disparity enrolment in urban and rural area. Urban children had more

opportunity in enrolment than the children in rural areas. .The reason why urbanization brought about enrolment is in Deolailika's 1996 study was that the children in rural area need to spend more in order to have schooling than ones in urban area. (Onphanhdala, 2010)

4) Governance Factors

The mentioned factors above are environmental factors influencing education enrolment. However, in order to ensure that children have access to the education equally without any disparities. The internal process is needed to be examined. Found significant influence of public spending on enrolment, Baldacci et al. (2003) also found that the positive effects of education spending are reduced in countries suffering from poor governance. In order to achieve education outcomes target, only higher spending is not insufficient, improving governance must also be applied in policy intervention. Besides Anyanwu & Erhijakpor's (2007) study confirmed the relationship between public education spending and educational enrolment. They also found that other policy interventions relating to governance had to be exercised.

(1) Corruption

There are research results in varied government levels shown the significance of corruption control on educational outcomes. Kiran, Rehman, Iftikhar & Mir (2013) and his colleagues indicated clearly in their studies by using the panel data of four SAAR member countries between the periods 1991-2010 that corruption control had a positive relation with education enrolment. While (Dridi, 2014), also found in his research on corruption and education using cross-country regression analysis, it showed that there was a strong significant negative relationship between corruption and secondary school enrolment rates.

(2) Good Governance Compositions

The quality of leadership and governance has a significant impact on the outcomes of education for young people. The evidence shows that more effective governance and higher quality leadership and management together have a positive effect on the quality of provision and on pupil achievement. (Ofsted, 2011) While leadership could provide clear vision and mission for the organization, governance could improve efficiency in educational system. There are a lot of

improvements in educational enrolment in Cameroon. The primary enrolment rate rose from 69% in 1991 to more than 90% in 2009 due to the more efficient and accountability in educational system. (World Bank, 2011)

2.6.1.2 Literacy rate

Literacy rate is a result of a country's development. (Basic Education Coalition, 2013) It is an important determinant of income (Neumann & Weiss 1995) and is positively associated with other social indicators, such as reduced infant and child mortality rates and improved child nutrition.

1) Administrative Factor- Total Education Expenditure

According to UN's 2003 report, there was positive significant relationship between public education expenditure and the adult literacy rate as it contributed the supply side by making education facilities available. Pehrsson's 2012 study on more than 50 African countries' literacy rate suggested that public expenditure on education had negative impact on literacy rate if there were disparities in allocation between urban and rural areas. (Pehrsson, 2012) Okpala & Okpala (2014) investigated determinants of literacy rate in Sub-Saharan African countries. They found that public expenditure as a percentage of GDP had strong effect on the literacy rate there.

2) Economic Factors

(1) GPP per capita

Verner 2005 found in his research on literacy in Africa that there was negative correlation between income and literacy unless per capita income reached certain level. In this case, the income would have positive effect when it reached about U.S. $2200 a year. Baliamoune-Lutz & Bokoc's 2013 study on literacy improvement in Africa using 26 years of 39 African countries revealed that income was the strongest factors determining literacy improvement.

(2) Poverty Ratio

The poor would have problems in acquiring education for their children. Their spending will focus on what they concern "the essentials" which are food, rent and cloths. Unless they have extra money, they could spend them on their children studying. Therefore, the poverty influences low literacy rate. (Houser, 2009)

Whitehurst and Lonigan (1998) found that students with disadvantaged background would have learning problems and led to literacy rate at last. (Whitehurst & Lonigan, 1998)

   3) Social Factors

   (1) Enrolment Rate

Verner's (2005) cross-national research on literacy revealed that 10% of increasing in primary school enrolment had impact on increasing in literacy rate at 2.6%. Pehrsson (2012) found in panel data analysis on African literacy that the primary enrolment had the strongest impact on literacy rate. (Pehrsson, 2012) Chhetri & Baker (2006) also found the strong positively significant correlation between enrolment rate and literacy rate.

   (2) Parental Education

Treiman (2002) investigated the growth and determinants of literacy in China in 1996. He found that one of the positively significant factors is father's education level. (Treiman, 2002) Verner 2005 literacy rate study showed that parental education had greater impact on literacy rate than enrolment rate. Increasing in adults' years in schooling 10% brought about 3.7% improvements in literacy rate. In Okpala & Okpala's 2014 study also found the positive and significant relationship between adult's school life expectancy and literacy rate. (Okpala & Okpala, 2014)

   (3) Urbanization Ratio

Apart from parental education, Trieman (2002) also found that urban residents had higher literacy rate in China too. There is disparity between urban and rural area in public expenditure allocation in Africa. Therefore citizens in urban area had more privilege to have higher literacy rate. Okpala and Okpala 2014 used OLS regression analysis and found that the residents in urban area had positive and significant relationship with literacy rate at 95 percent.

   4) Governance

   (1) Corruption

Utilizing Transparency International India's cross-state, school-sector corruption index from 2005 and 2008, Canfield 2011 investigated in her study on the relationship between corruption and education outcomes represented by

enrolment rate. She found that the significant negative correlation between corruption and the overall enrolment rate. (Canfield, 2011)

(2) Governance Compositions

Lauglo (2000) found in his study on adult education in Sub-Saharan Africa that literacy program would be more effective if there were local participation to develop the program based on local needs. Leadership is also an important factor in promoting educational outcomes. As in the case of Papua New Guinea, local leaders also played an important role in promoting literacy program. (Downing & Downing, 1986)

2.6.1.3 Education Attainment

The weakness of using highest educational level achieved converted to years of schooling is that it is weakly related to educational output in the form of demonstrated competence. The weakness of using highest educational level achieved converted to years of schooling is that it is weakly related to educational output in the form of demonstrated competence. Therefore, in this study, average years of schooling will be used as a proxy of education attainment.

According to UNDP (2013), average number of years of education received by people aged 25 and older, are from education attainment levels using official durations of each level. At national level, Thailand's average number of years of education is 7.3 years which was convertible to medium human development.

1) Administrative Factor- Total Education Expenditure

Yanga, Sicularb and Laia (2014) found that local public expenditure had positive impact on high school attainment. Hyman (2014), and Cascio, Gordon & Reber (2013), also found the evidence that public spending improve long term educational attainment.

2) Economic Factors

(1) GPP per capita

Holmes conducted a research on various determinants of school completion in Pakistan. She found that many socio-economic factors affect it. The study revealed that males' income was positively and significantly related to years of schooling. (Holmes, 1999) Liua & Yamauchib's (2014) study also revealed that economic development positive significant related to education attainment in

Indonesia. In China Yanga, Sicularb & Laia (2014) estimated the relationship between rural high school attainment and size household income. They found that income was positive significant.

(2) Poverty Ratio

Duncan & Magnuson (2011) found that poverty status negatively affected adult completed years of schooling in the U.S. On the other hand, the adult over the poverty line would have more years of schooling. (Duncan & Magnuson, 2011). They found negative significant effect of poverty on education attainment, Magnuson & Votruba-Drzal (2009) investigated how poverty affected education attainment in the U.S. and found that it reduce a chance of schooling as well as the intergenerational transmission of economic disadvantage. (Magnuson & Votruba-Drzal, 2009)

3) Social Factors

(1) Population Density

In case of Indonesia, Liua & Yamauchi (2014) found that population density had a positive correlation with years of schooling.

(2) School Age Population

According to Keenan's study, it suggested that government could provide public services more effectively when the growth rate of population was more moderate than high. Therefore, school age population has negative effect on education attainment. (Haaga, Bledsoe, Johnson-Kuhn, & Casterline, 1999)

(3) Urbanization Ratio

There was negative significant relationship for rural residents and years of schooling. However, boys living in urban area would have significantly more years of schooling.(Holmes, 1999) Simpkins's 2011 study also found that there was negative significant correlation of living in rural area and adult years of schooling.

4) Governance

Good governance guarantees the standards, access to information, grants incentives and generates effectiveness of schooling system. Therefore, it is very crucial for local government in delivering education services.

(Lewis & Pettersson, 2009) Moreover, regarding to UNESCO (2009)s report, it shown that governance could increase quality as well as equity.

Beaman,Duffo, Pande & Topalova 2011 found in their studies on the relationship between female local leaders and educational attainment in India. The results indicated that there was positive significant relationship. (Beaman, Duflo, Pande & Topalova, 2011)

In terms of corruption, Mo, 2001, found that corruption was negatively associated with average schooling years. (Mo, 2001; Dridi, 2014) investigated the relationship between corruption and education and found that the rise of corruption reduce years of schooling.

Apart from parental background, Hoffman (2006), also found that network neighbourhood had important effect on educational attainment.

2.6.1.4 Education Achievement

Most Countries usually consider educational outcomes from standardized test performance. For international comparison, they will use internationally comparable standardized student achievement tests. (Black & Wiliam, 1998) While (Leclercq, 2005) mentioned in his research that in terms of quality of education, the easiest way is to quantify is the test scores. From the aspect of educational outcomes, (Coleman et al, 1966) by educational scholars today and who stated in his research that socioeconomic advantages are closely associated with academic performance. (Hanushek, 1981) found there was no strong relationship between education spending and education outcomes. Later on, the findings were different from those scholars. They found that "money does matter" for education performance. (Hedges, Laine & Greenwald, 1994) Some scholars examined the money in other forms of inputs such as teacher experience, salary level. (MacPhail-Wilcox & King, 1986)

Education Outcomes means the expected effect of an educational system. They can be what children know, can do or the right attitudes to themselves and their societies. Academic achievement is the key educational outcomes. To evaluate it most often it needs testing as a tool. (Colby et.al, 2000)

From the literature review, this research will operationalize standardized test scores to measure the education quality outcomes. It is more than four decades of

debating whether factors affecting education outcomes. From the first of Equality of Educational Opportunity Report, as known as, "Coleman Report 1966 to Hanushek studies (1981) and other scholars, the findings are varied. However, in the Thailand context of local government, there is no research on this issue to make the education policy better for local government. There is much evidence about factors affecting educational policy outcomes as follows:

      1) Administrative Factors

          (1) Total Education Expenditure

Although there is no clear link between spending on education and the observable of pupils, public policy scholars have tried to find how much and how to spend more effectively. (Mandl, Dierx & Ilzkovitz, 2008) There are abundant researches on public spending on education affect education outcomes. In the Mensah, Schoderbek & Sahay (2013) studies, they found that education expenditure significantly positive affected education outcomes.

          (2) Per Pupil Expenditure

(Cooper's et.al., 1993), team studied about the association between 2 school district inputs student outcomes. They found that there was significant relationship between per pupil expenditure (PPE) and the outcomes. Hedges, Laine & Greenwald (1994) and his associates also found the PPE had significantly positive relation with achievement.

          (3) Local Share of Total Education Expenditure

Many studies confirm that schools with local financial support had more efficiency and effectiveness. Jimenez & Paqueo (1996) found that the schools that received higher proportion of funds from local sources had higher overall scores than those received less ones. While James, King and Suryadi's (1996) studies showed that the schools having a greater share of local resources increased educational output.

          (4) Local government revenue

Yaw, Schoderbek & Sahay (2013) found that student test score is related to the local taxes. They operationalized panel analysis of the data of 217 K-G12 school districts in New Jersey from 2002-2009. The result showed that the local tax positively influenced student test scores. They also conducted a further study

about the relationship between the proportion of the education expenditure and the educational outcomes measured by scores. Benabou, 1996; de Bartolome, 1990) and Fernandez & Rogerson (1997) found that local government income can affect school spending as well as school quality.

2) Economic Factors

(1) GPP per capita

Average income represents parent's capability to support their children education. Lockheed & Zhao (1992), studied about the differences in achievement of the students to investigate the determinants. They found that average income had a positively significant impact on students' scores. While many scholars found that innate ability and family background such as income has more impact to education outcomes than education production. (Deller & Rudnicki, 1993; Velez, Schiefelbein, & Valenzuela, 1993; (Rajkumar & Swaroop, 2008; Huy, 2012; Marlow, 1997) and (Gilens, 2005)

(2) Poverty Ratio

Poverty ratio represents income inequality which is harmful for public administration in many ways. One of its harm is that it hampers educational attainment. (Kenworthy, 2015) It generates the trends called "income-achievement gap" (the test score gap between children from low and high income families). (Reardon, 2014) also found that low levels of income inequality and high levels of racial inequality, not only in educational achievement and attainment but in access to educational opportunity, labor markets, housing markets, and health care. (Reardon, 2011) Evidence from the U.S. shows that income inequality in the U.S. is worse, therefore, it gratified education outcomes too. They had to focus on children from low-income families to improve education outcomes. (Duncan & Murnane, 2014)

In the context of educational policy, poverty is concerned as a serious constraint on Education outcomes (Performance) as it will deprive children from both learning toll access at home and their less stable and supportive home environment. (Meier, Wrinkel & Polinard, 1999; Dye, 1967) examined whether the impact of structure of city school systems and environment variables have more effect on educational outcomes. The finding is that the environment including median family income is obviously a measure of ability to support education. The research

suggested that the environment variables have more impact than the structural variables.

3) Social Factors

Freeman, Machin & Viarengo (2010) examined the inequality in educational outcomes and relationships with the children's backgrounds especially the socio-economic status. They used a standardized test score, TIMSS, to represent educational outcomes. The results showed that the higher score countries are associated with less inequality in scores across the countries. This paper used the test score of the 8th grade to represent the magnitude and correlation of quality difference in levels and test scores.

(1) Number of Students

Monk & Schmidt (2010) found that too high number of students had negative effect on educational achievement. However, this factor had to take class size into account as well but in this research would not cover that issue.

(2) Population Density

Population density was found significantly impact on educational performance. As it determined the level of public education expenditure, the achievement was a result of the concentration of educational resources. (Unnever, Kerckhoff & Robinson, 2000; Andrews, Duncombe & Yinger, 2002; Driscoll, Halcoussis & Svorny, 2008)

(3) Parental Education

This factor's effects are varied in different countries. There were findings shown that family education has more impact on student's performance in more developed countries. (Heyneman & Loxley, 1983) Apart from family income, Deller and Rudnicki's findings was parental education plays a significant role in determining student achievement. (Deller & Rudnicki, 1993) Onsomu, Kosimbei and Ngware like Velez, Schiefellbein and Valenzuela also found that parent's education had positive relationship with primary education performance. (Onsomu, Kosimbei & Ngware, 2005; Velez, Schiefelbein & Valenzuela, 1993) While Rajkumar and Swaroop paid attention to the overall level of adult literacy rate and found that it was significant positive. (Rajkumar & Swaroop, 2008) Huy found that families with more resources and better human capital would be able to spend more on their children's

education as they focused on household heads' education level. (Huy, 2012) Lockheed & Zhao (1992), they found that parent education associated with students' achievement measured by their math and science scores.

(4) Urbanization Ratio

Urbanization has also facilitated social development such as provision of basic services, including health and education. There are many scholars studied about how to improve education outcomes. Some of them found that the higher level of urbanization affects education outcomes. (Jayasuriya & Wodon, 2002; Rajkumar & Swaroop, 2008)

4) Governance Factors

Governance directly reflects a government's process. There are many researches on how educational inputs such as environmental and political factors associated with educational outputs and outcomes which most of them represented by test scores. However, there are rare studies looking into "the black box" of the educational policy to examine its effect on educational outcomes. This factor is worth to analyze as there is still a need to answer why the areas with the same economic conditions have distinctive educational outcomes. (Xuehui & Han, 2008)

(1) Corruption

Corruption measured by perception indices about education services. The research showed that the high level of corruption had adverse consequences for a country's primary education attainment. (Gupta, Davoodi & Tiongson, 2000) Other research found that in the state had low rate of corruption, the education spending had an impact on education outcomes. (Suryadarma, 2012)

(2) Governance Compositions

Holloway investigated the effect of community connections on educational achievement. The results revealed that the achievement would be higher if there were community connections regardless demographic or social factors. (Holloway, 2004)

As Thailand has no local governance quality index, this study has to adopt proxies that had been used in other researches as references. For example, reelection represents accountability mechanisms and citizen satisfaction. It was considered that

being reelected was an affirmation of trust and confidence. The other proxy was governance awards given to local governments that have indicators of governance for good participation and recognition to local leader whose governance notable progress in education conditions has been achieved. (Capuno, 2005)

One of World Bank's studies found that the 2009 Local Governance Capacity Assessment had strong positive relationship between local governance level and education outcomes. (World Bank, 2010)

Jayasuriya & Wodon (2002) concluded that the extent bureaucratic quality had strong positive impacts on efficiency of education.

There was another World Bank's study on the association between local education governances and education performance: A case study of Indonesia. There were many links between local governance and many types of education outcomes. It found that for intermediate outcomes, education financing, districts that allocated large proportion of budget to education service. Therefore those districts tend to have better education outcomes. It also found that the districts with higher level of transparency and accountability and greater participation of key stakeholders had better education performance. (World Bank, 2013)

2.7 Summary of Dependent and Independent Variables of the Study

The summary of independent variables and supporting literatures and scholars as follows.

Table 2.5 Summary Table of the Literature Showing the Relationship between the
Independent Variables and Enrolment Rate

No.	Independent Variables	Relationship	Supporting literatures and scholars
Conceptual Framework II			
Dependent Variable: Educational Equity and Equality: Enrolment Rate			
1	Administrative Factor		
1.1	Total Education Expenditure	+	Gallagher (1993), Baldacci et al., (2003), Anyanwu & Erhijakpor, (2007) and Iyer (2009)
2	Economic Factors		
2.1	GPP per capita	+	Glick& Sahn (2000), Ray (2000) Iyer (2009), Onphanhdala (2010), Kainuwa & Yusuf (2013)
2.2	Poverty Ratio	+	Kadzamira & Rose, (2003), Michubu (2005), Lewin (2008), Glewwe et.al. (2012)
3	Social Factors		
3.1	Parental Education	+	Onphanhdala (2010), (Onphanhdala, 2010) Onzima (2010),Olaniyan (2011), Kainuwa & Yusuf (2013)
3.2	Population Density	+	(Bezbaruah, 2014)
3.3	School Age Population	-	World Bank (2007), Rivera & Tullao Jr. (2009)
3.4	Urbanization Ratio	+	Deolalikar (1996), Onphanhdala (2010), Bezbaruah (2014)

Table 2.5 (Continued)

Conceptual Framework II			
Dependent Variable: Educational Equity and Equality: Enrolment Rate			
No.	**Independent Variables**	**Relationship**	**Supporting literatures and scholars**
4	Governance Factors		
4.1	Corruption	-	Kiran, Rehman, Iftikhar, & Mir (2013), Dridi (2014)
4.2	Governance	+	Baldacci et al. (2003), Anyanwu & Erhijakpor (2007), Ofsted (2011), World Bank (2011)

Table 2.6 Summary Table of the Literature Showing the Relationship between the
Independent Variables and Literacy Rate

Conceptual Framework II			
Dependent Variable: Educational Equity and Equality: Literacy Rate			
No.	**Independent Variables**	**Relationship**	**Supporting literatures and scholars**
1	**Administrative Factor**		
1.1	Total Education Expenditure	+	UN (2003), Pehrsson (2012),Okpala & Okpala (2014)
2	**Economic Factors**		
2.1	GPP per capita	+	Verner (2005), Baliamoune-Lutz & Bokoc (2013)
2.2	Poverty Ratio	+	Whitehurst & Lonigan (1998), Houser (2009)

Table 2.6 (Continued)

Conceptual Framework II			
Dependent Variable: Educational Equity and Equality: Literacy Rate			
No.	**Independent Variables**	**Relationship**	**Supporting literatures and scholars**
3	**Social Factors**		
3.1	Parental Education	+	Treiman (2002), Okpala & Okpala (2014)
3.2	Enrolment Ratio	+	Verner (2005),Chhetri & Baker (2006), Pehrsson (2012)
3.3	Urbanization Ratio	+	Treiman (2002), Pehrsson (2012), Okpala & Okpala (2014)
4	**Governance Factors**		
4.1	Corruption	-	Canfield (2011)
4.2	Governance	+	Downing & Downing (1986), Lauglo (2000)

Table 2.7 Summary Table of the Literature Showing the Relationship between the Independent Variables and Average Years in School of Adult Population

No.	Independent Variables	Relationship	Supporting literatures and scholars
Dependent Variable:			
Educational Attainment: Average Years in School of Adult Population			
1	**Administrative Factor**		
1.1	Total Education Expenditure	+	Cascio, Gordon, & Reber (2013), Yanga, Sicularb, & Laia (2014) , Hyman (2014)
2	**Economic Factors**		
2.1	GPP per capita	+	Holmes (1999), Liua & Yamauchib (2014), Yanga, Sicularb, & Laia, (2014)
2.2	Poverty Ratio	+	Magnuson & Votruba-Drzal (2009), Duncan & Magnuson (2011)
3	**Social Factors**		
3.1	Population Density	+	Liua & Yamauchib (2014)
3.2	School Age Population	-	Haaga, Bledsoe, Johnson-Kuhn, & Casterline (1999)
3.3	Urbanization Ratio	+	Holmes (1999), Simkins (2011)
4	**Governance Factors**		
4.1	Corruption	-	Mo (2001), Dridi (2014)
4.2	Governance	+	Hoffmann (2006), Lewis & Pettersson (2009), Unesco, (2009), Beaman, Duflo, Pande, & Topalova (2011)

Table 2.8 Summary Table of the Literature Showing the Relationship between the Independent Variables and Average GPA and Standardized Test Score

No.	Independent Variables	Relationship	Supporting literatures and scholars
Dependent Variable:			
Educational Achievement: Average GPA and Standardized Test Score			
1	**Administrative Factors**		
1.1	Total Education Expenditure	+	Mahdl, Dierx & Ilzkovitz (2008), Mensah, Schoderbek & Sahay (2013)
1.2	Per pupil expenditure	+	Cooper & others (1993), Hedges, Laine & Greenwald (1994)
1.3	Local Revenue	+	Yaw, Schoderbek and Sahay (2013), Benabou (1996), de Bartolome (1990), Fernandez & Rogerson (1997)
1.4	% of Local share of total education expenditure	+	Jimenez & Paqueot (1996), James, King & Suryadi (1996)
2	**Economic Factors**		
2.1	GPP per capita	+	Lockheed & Zhao (1992), Deller & Rumicki (1993), Velez, Schiefellbein & Valenzuela (1993), Marlow (1997), Gilens (2005), Sunil, Rajkumar & Swaroop (2002), Huy (2012),
2.2	Poverty Ratio	+	Reardon (2011), Duncan & Murnane (2014), Reardon (2014), Kenworthy (2015)

Table 2.8 (Continued)

Dependent Variable:			
Educational Achievement: Average GPA and Standardized Test Score			
No.	**Independent Variables**	**Relationship**	**Supporting literatures and scholars**
3	**Social Factors**		
3.1	Number of Students	+	Monk & Schmidt (2010)
3.2	Population Density	+	Unnever, Kerckhoff , & Robinson (2000), Andrews, Duncombe & Yinger (2002), Driscoll, Halcoussis, & Svorny (2008)
3.3	School Age Population	-	Haaga, Bledsoe, Johnson-Kuhn, & Casterline (1999)
3.4	Parental Education	+	Onsomu, Kosimbei & Ngware (2014), Stephen, Heyneman & Loxley (1983), Schiefellbein & Valenzuela (1993), Sunil, Rajkumar&Swaroop (2002), Huy (2012), Lockheed & Zhao (1992)
3.5	Urbanization Ratio	+	Jayasuriya & Wodon (2002), Rajkumar & Swaroop (2008)
4	**Governance Factors**		
4.1	Corruption	-	Gupta, Davoodi & Tiongson (2000), Suryadarma (2012)
4.2	Governance	+	Capuno (2005), Xuehiu & Han (2008), World Bank (2010), World Bank (2013), Jayasuriya & Wodon (2002), Holloway (2004)

2.8 Conceptual Frameworks of the Study

To reflect a thorough analysis in education-expenditure determinants, a careful consideration of theories and reality needs to be taken into account. The conceptual framework provides obvious connections from all aspects or approaches that may determine public expenditure on education. From the above review of the literature, it was found that educational expenditure can be determined multi-dimensionally.
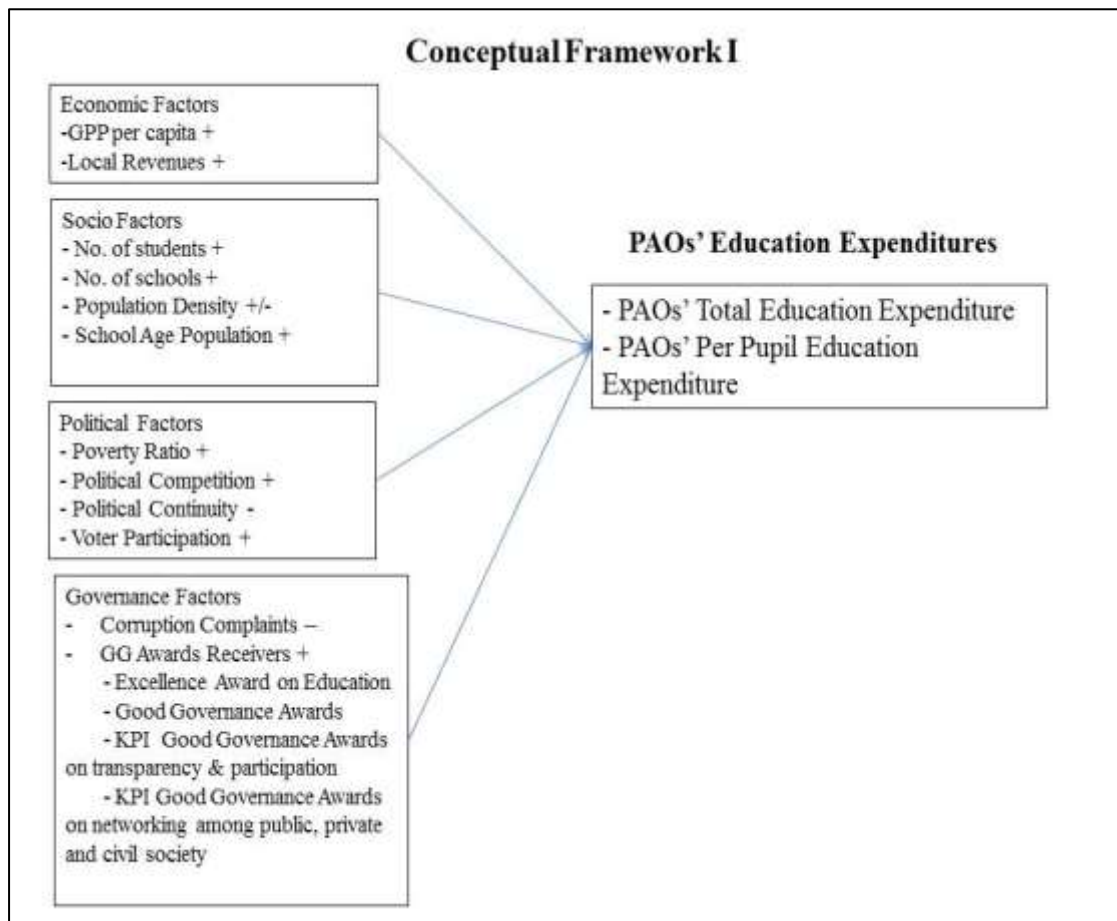
Figure 2.2 Conceptual Framework I: Determinants of PAO's Education Expenditure
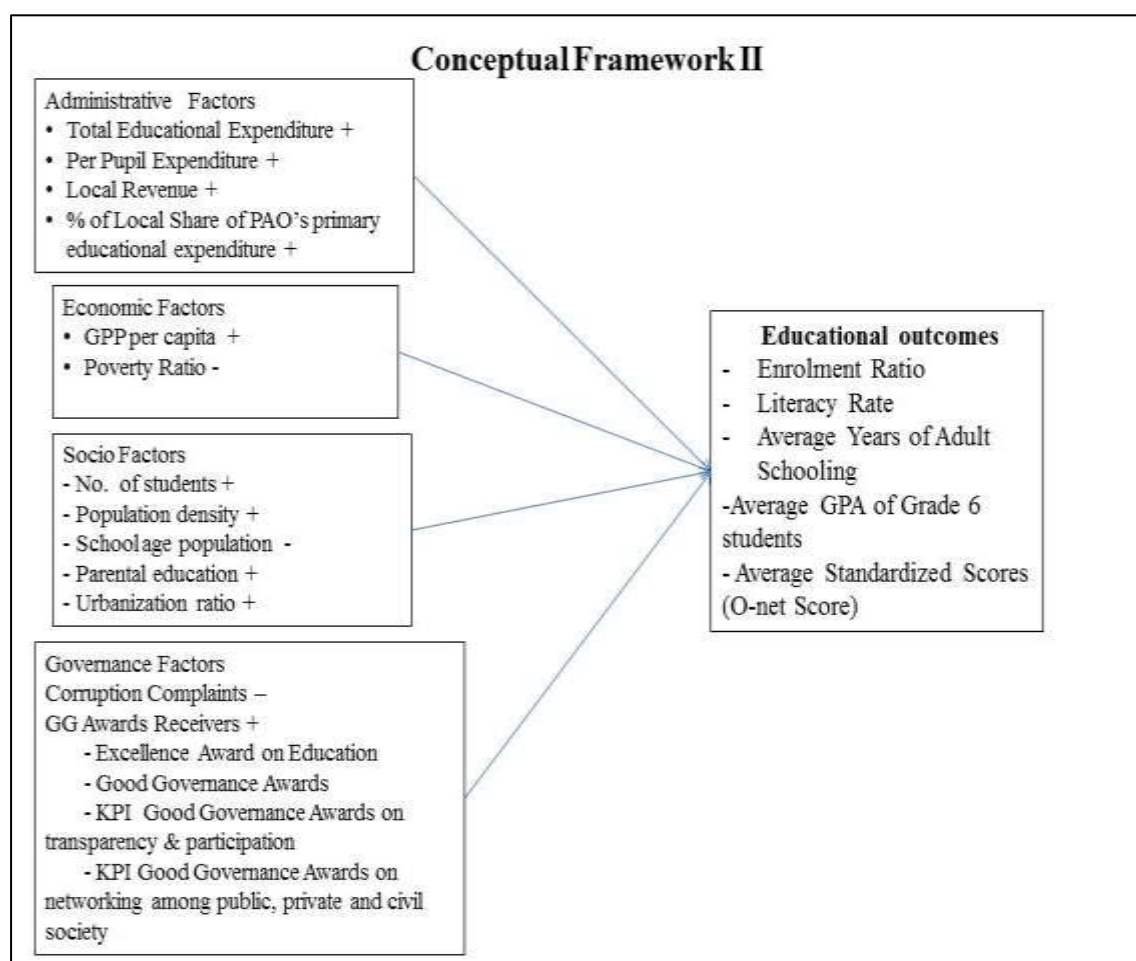
Figure 2.3 Conceptual Framework II: Determinants of PAO's Education Outcomes

CHAPTER 3

METHODOLOGY

This research uses quantitative methods to collect the data from 21 Provincial Administrative Organizations (PAO). The data collection took place from March to July 2015. In this regard, secondary data were collected from various government agencies such as Department of Local Administration, Office of the National Anti-Corruption Commission, Office of the Education Council, Ministry of Education, and National Statistical Office. Therefore, the data are relying heavily on official documentation. The operational definitions of all factors affecting PAOs' expenditure on education are given in Table 3.1, whereas those used in analyzing and examining the effects of various determinants on PAOs' educational outcomes can be found in Table 3.2. Panel Data Analysis with STATA statistics program were employed to conduct the assessments of the factors affecting PAOs' education expenditure the effects of various determinants on PAOs' educational outcomes, respectively.

3.1 Unit of Analysis

The unit of analysis in this study is 21 Provincial Administrative Organizations (PAO) which provide primary education services. However, due to limitations in collecting data, there are only 21 PAOs in this research.

3.2 Operational Definition and Defining Variables for Conceptual Framework I: Determinants of Provincial Administrative Organizations' Education Expenditure

3.2.1 The Decomposition of the Dependent Variables

The dependent variables in the first conceptual framework are two types of PAO's primary educational expenditure. Having discussed in the literature review and the conceptual framework of this research paper, the total educational expenditure could represent local government policy output as it is the result of the PAOs' policy. It can illustrate how each PAO gives priority to local primary education. Therefore, the specific types of educational expenditure investigated in this research include:

3.2.1.1 Total Educational Expenditure (TEDU)

The total educational expenditure has been mostly used to identify the priority of education given by a government. TEDU is the total value of primary educational expenditure of PAOs. It includes the educational budget from PAO's revenue and every type of grants-in-aids for primary education in PAO.

3.2.1.2 Per Pupil Primary Education Expenditure (PPE)

According to Dye 1967, per pupil expenditure can reflect the government's willingness and ability to invest on education. It is enabling us to see how the spending on education among cities varies. It may also imply preliminary educational outcomes.

On the one hand, as PAO's total education expenditure is the budget that PAO could allocate to both its own schools and other schools under various public agencies, it can represent how PAOs support education in terms of the whole province. On the other hand, PPE (Per pupil Primary Education Expenditure) is calculated from the primary educational expenditure allocated from PAO's revenue divided by number of primary students in each PAO. Nevertheless, there are only 16 PAOs which could identify sources of the expenditures.

3.2.2 Explanatory or Independent Variables

The independent variables in this conceptual framework represent economic-demographic, political, and governance dimensions that may affect the relative weights or the allocation of PAO's expenditure on education. The significance of these variables is the key to explaining the policy determinants of public education expenditure. Some variables may affect total expenditure while some others may indeed affect its composition. A closer look, together with careful clarification, needs to be made precisely teach of the independent variables, as they are crucial to the analysis and interpretation. According to Tait and Heller (1982), demographic variables are likely to be the key determinants of the demands for government services. For example, an increase in the school-age population tends to increase the pressure on the government to increase educational expenditure. Therefore, these kinds of variables are to have precise and accurate figures for the completeness of this analysis. Other types of variables, which are difficult to quantify, are in the form of dummy variables. They are proxies of local available data. These variables must be clarified and discussed concerning their importance. For example, political competition and political continuity cannot be easily quantified but it tends to have an impact on public expenditure. Each independent variable will be elaborated as follows.

3.2.2.1 GPP per capita

GPP per capita (Gross Provincial Product per capita) in this study refers to provincial average income. Economic development is a very important determinant of educational expenditure in local, national and international levels. According to theories and empirical studies, they showed that the governments tend to invest immensely in basic infrastructure as well as education in order to create human capital. In this study, economic growth is measured by average income. It can reflect how the economy performs in general or on average in a given period of time.

3.2.2.2 Local Revenue (LCR)

Local Revenue (LCR) means PAO's revenue excluding any grants from central government. Thailand's local government earns revenues from many sources. Most of them are from tax income. The literature review showed that local income tax is associated with local educational expenditure as local government has to spend

their revenue efficiently. Moreover, the government has direct responsibility to the citizens who pay the taxes.

3.2.2.3 Number of Students (NSTU)

Number of students (NSTU) represents the demand side of education expenditure.

3.2.2.4 Number of Schools (NSCH)

Number of schools (NSCH) also represents the demand side of education expenditure.

3.2.2.5 Population Density (POPD)

Population Density is obtained from the number of population divided by district size (sq.m). From the literature, it tells that high population density brings about cost efficiency.

3.2.2.6 School Age Population (SCHP)

School Age Population (SCHP) is a direct determinant of educational expenditure. It means the number of local citizens whose age is lower than 15 years old. It reflects demand for primary education service.

3.2.2.7 Poverty Ratio (POV)

Poverty ratio represents median voter theory. If there is a high poverty ratio, it should correlate with redistributive policy expenditure which includes education service.

3.2.2.8 Political Competition (PCOM)

Political Competition (PCOM) is intended to detect how political competition affects local public educational spending. Welfare spending included tends to be higher in higher political competition areas. PCOM in this study means the number of PAO's Chief Executive Incumbents during the last PAO 5 year elections.

3.2.2.9 Political Continuity (PCON)

Political Continuity (PCON) stands for the continuity of the Chief Executive of PAO (CEP) who was reelected. PCON and will be represented by a dummy variable to check whether the CEP was reelected or not. The reelection without a term limit implies that the local governor has less incentive to invest in education. If there is political continuity, there will be a negative relationship with education expenditure.

3.2.2.10 Voter Participation (VOTP)

Voter Participation (VOTP), according to previous research, is found out to be a key determinant of educational expenditure. The higher voter turnout yields, the larger local public expenditure. In this study VOTP is a percentage of last time CEP's voter in each PAO.

3.2.2.11 Corruption (CORT)

Corruption has negative effect on educational expenditure as suggested in every level research. Those research studies utilized a corruption index to imply the overall level of corruption in that area. Unfortunately, local government in Thailand has no direct corruption measurement except for the number of complaints submitted to the Office of the National Anti-Corruption Commission.

3.2.2.12 Governance Award Receiver (GOVR)

In other countries, for example, Australia has developed a local government governance index. Again, in Thailand, there is no governance index for the local government level. The proxy of governance could be governance awards given to local governments which proved that they met the awards' criteria. There are many types of governance awards given by many reliable organizations. One of the awards that is directly about education is the Leadership Award on local education management given by the Department of Local Administration.

Another local governance award given by the Office of the Decentralization to Local Government Organization Committee since 2003 is the Good Governance Award.

There are many types of good governance awards given by King Prajadhipok's institute (KPI), however, the only two types relating to education services are KPI's Award on Transparency and Participation and KPI's Award on Network.

Therefore, in this study dummy variables are used for this factor. The more awards PAO received, the higher investment on local education is.

3.3 Operational Definition and Defining Variable for Conceptual Framework II: Determinants of PAOs' Educational Outcomes

Educational outcomes become a concern of educational policy makers. From the literature review on determinants of educational outcomes, it shows that there is no guarantee that more educational resources brings about more educational policy's effectiveness. Many researchers found that spending on education had a positive impact on educational performance. Therefore, the dependent variables in the conceptual framework will be the independent variables in the conceptual framework II.

3.3.1 The Decomposition of the Dependent Variables

There are many variables which can be used to represent educational outcomes such as the literacy rate and the dropout rate. However, as mentioned in the previous chapter, Thailand was successful in making Thai people have a high literacy rate which is about 90%. The basic educational enrollment rate is high while the dropout rate during basic education (primary and secondary level) is low. However, Thailand's educational performance compared with other countries is relatively low. It needs to find the proxy of educational outcomes that is both available and varied by area. Therefore the dependent variables of this study are as follows:

3.3.1.1 Provincial Enrolment Rate (PER)

Enrolment rate is used for examining equity and equality in education which indicate educational outcomes. In this research, PER is net enrolment rate of primary students. It was calculated from the number of provincial primary students divided by the number of children aged 6-11 years old in the province X100. There are only two years of data available which are 2011 and 2013.

3.3.1.2 Provincial Literacy Rate (PLR)

Literacy rate also represents equity and equality of the education system. According to the only one year available data in 2010 from the National Census Data, it is the percentage of the literal 15 years old population.

3.3.1.3 Provincial Average years of adult schooling (AYSA)

An indicator of education attainment is the average years of adult schooling. For this variable, there are four years 2010-2013 data from the National Statistical Office.

3.3.1.4 Average Grade 6's O-Net scores (AONT)

Standardized test score is widely used to measure educational performance. Thailand has an annual O-Net test for every student in three educational levels, Grade 6, Grade 9 and Grade 12. In this case, the average Grade 6's O-Net scores of PAOs will be utilized as the educational outcomes measurement.

3.3.1.5 Average GPA of Grade 6 students (AVGG)

GPA is another educational performance indicator to be used in this study. It could portray educational outcomes in terms of curriculum standards learning.

3.3.2 Explanatory or Independent Variables

There are controversies about the determinants of educational outcomes. Some researchers insist that money does matter in improving educational outcomes. Others rely on socio-economic and parental factors rather than school resources. Here are the independent variables to be examined in this conceptual framework II.

3.3.2.1 Total Educational Expenditure (TEDU)

Total Educational Expenditure (TEDU) in the conceptual framework I used as a dependent variable will become an independent variable in this framework. It is PAOs total primary educational expenditure. The association of this factor with PAO's educational outcomes will be examined.

3.3.2.2 GPP per capita

GPP per capita represents provincial economic development in the first conceptual framework as well as in this one. It could help interpreting parental ability to support their children's' education.

3.3.2.3 Per Pupil Expenditure (PPE)

Like TEDU, Per Pupil Expenditure (PPE) from the first framework will be in an outcomes framework as an independent variable. PPE is PAO's per pupil expenditure. However, the data are available for only 16 PAOs.

3.3.2.4 Local Government Revenue (LCR)

From the literature review, there are many studies which found that local government revenue was of positive significant with educational outcomes. In this research, LCR means PAO's revenue from taxation.

3.3.2.5 Percentage of Local Share of Total Education Expenditure (%LCE)

Percentage of Local Share of Total Education Expenditure (%LCE) is one of crucial determinants of educational outcomes of local government policy. It is a direct indicator showing how much local governments pay attention to education in response to their citizens' needs. %LCE is the percentage of PAO's primary education expenditure from PAO's revenue per PAO's total educational expenditure. Like PPE, the data are available for only 16 PAOs.

3.3.2.6 Parent Education (PRED)

Besides parental economic status, parental education is also one of the widely adopted determinants of educational outcomes. Research findings show that PRED has a positively significant effect on educational achievements and attainments. PRED in this study is the provincial average number of years in school.

3.3.2.7 Urbanization Ratio (UBCR)

Urbanization ratio (URCR) can represent the readiness of educational facilities which also links to the educational outcomes. In this study, UBCR is the percentage of population in an urban area.

3.3.2.8 Corruption (CORT)

Corruption affects educational outcomes as it is an indicator of the government's process. In the first framework, it shows the tendency of local government to spend on education rather than infrastructure. In this framework, it implies how local government spends on education. The government's spending on education will lead to higher educational outcomes or not. CORT is the number of PAO's fraud complaints of the Office of National Anti-Corruption Committee.

3.3.2.9 Governance Award Receiver (GOVR)

Governance Awards given by many organizations will also be represented in the governance level of PAO. GOVR is a dummy variable showing if PAO received the awards or not. It can be implied whether PAO which was indicated

as a high level of governance, will lead to higher educational outcomes. There are four awards taken into account in this research as follows.

GOVR1 is for Excellent Chief Executive of Local Government on Education Awards.

GOVR2 is for Good Governance Award

GOVR3 is for King Prajadhipok's Award in Transparency and Participation

GOVR4 is for King Prajadhipok's Award in Networking

3.4 Model Specifications

Defining the Variables for the panel data

$$Y_i = f(b_1X_1, b_2X_2, \ldots\ldots\ldots\ldots)$$

The model specifications for conceptual framework I are:

TEDU = f (GPP, LCR, POPD, SAP, POV, PCOM, PCON, VOTP, CORT, GOVR1, GOVR2, GOVR3, GOVR 4)   (1)

PPE = f (GPP, LCR, POPD, SAP, POV, PCOM, PCON, VOTP, CORT, GOVR1, GOVR2, GOVR3, GOVR 4)   (2)

The model specifications for conceptual framework II are:

PER = f (TEDU, GPP, POV, PRED, POPD, SAP, UBCR, CORT, GOVR1, GOVR2, GOVR3, GOVR 4)   (3)

PLR = f (TEDU, GPP, POV, PLR, UBCR, CORT, GOVR1, GOVR2, GOVR3, GOVR 4)   (4)

AYSA = f (TEDU, GPP, POV, POPD, SAP, UBCR, CORT, GOVR1, GOVR2, GOVR3, GOVR 4)   (5)

$$\text{AONT} = f \text{ (TEDU, LCR, GPP, POV, NSTU, NSCH, POPD, SAP, PRED,}$$
UBCR, CORT, GOVR1, GOVR2, GOVR3, GOVR 4) (6)

$$\text{AONT} = f \text{ (PPE, LCR, \%LCE, GPP, POV, NSTU, NSCH, POPD, SAP,}$$
PRED, UBCR, CORT, GOVR1, GOVR2, GOVR3, GOVR 4) (7)

$$\text{AVGG} = f \text{ (TEDU, LCR, GPP, POV, NSTU, NSCH, POPD, SAP, PRED,}$$
UBCR, CORT, GOVR1, GOVR2, GOVR3, GOVR 4) (8)

$$\text{AVGG} = f \text{ (PPE, LCR, \%LCE, GPP, POV, NSTU, NSCH, POPD, SAP,}$$
PRED, UBCR, CORT, GOVR1, GOVR2, GOVR3, GOVR 4) (9)

Where: TEDU stands for Total primary educational expenditure; PPE = Per pupil expenditure; GPP per capita = Gross Provincial Product per capita; LCR= PAO's Revenue from Taxing; NSTU = Number of PAO's primary students; NSCH = Number of PAO's primary schools. POPD = Population density; SAP= School age population; POV = Poverty Ratio: PCOM= Political competition; PCON = Political continuity; VOTP = Voter participation; CORT = Corruption; GOVR1 = Excellent Chief Executive of Local Government on Education Awards.; GOVR2 = Good Governance Awards; GOVR3 KPI's Awards in Transparency and Participation; GOVR4 = GOVR3 KPI's Awards in Network; AONT = Average O-net score of PAO's grade 6 students; AVGG= Average GPA of PAO's grade 6 students; %LCE= % of Local revenue shared in primary education expenditure; PRED = Parental education; and UBCR= Urbanization ratio.

3.5 Data Collection

The data collection phase indicates the methodology that will be employed to generate the necessary and useful data that can produce an insightful analysis. The analysis of data in this study relies on secondary data as the source of data. Due to the limitation of local government data collection, this research utilized a type of data called panel data analysis, where we are dealing with information about different

individuals 21 PAOs and other government agencies at the same point of time or during the same time period (2010-2013).

For Conceptual Framework I, the panel data of available for 2010-2013, have been used in the panel data analysis from PAOs.

For Conceptual Framework II, the provincial enrolment rate data is available for only 2 years, 2011 and 2013. For the provincial literacy rate, there was only 1 year of data available. Therefore, this dependent variable would be analyzed by cross-sectional data analysis. Average years of provincial adult schooling, average PAO's GPA of Grade 6 students and average O-Net score of PAO's Grade 6 students are examined by panel data analysis as there is four years of data, 2010-2013 available.

3.6   Estimation Procedure and Method

Quantitative methods are employed in this study using secondary data from 21 PAOs and various government agencies. In this study, the quantitative analyses are assigned to test and clarify the determinants of PAOs' education expenditure and the determinants of PAOs' educational outcomes. In this study, due to the data limitation, panel data analysis is assigned to test and clarify the determinants of public expenditure and educational outcomes of PAO's primary education in Thailand.

Both conceptual frameworks mainly use data year of 2010-2013. The panel data analysis is employed using the statistical program which is STATA. The problem of multicollinearity is first tested in order to detect the pair of independent variables that have highly and significant correlations. These variables were removed from the equation to eliminate the multicollinearity problem. The panel data multiple regression with random effects are employed here.

The data has been tested by the Hausman test to run random effect instead of fixed effect. The Hausman test (1978) tests the null hypothesis that the coefficients estimated by the efficient random effects estimator are the same as the ones estimated by the consistent fixed effects estimator. If they are (insignificant P-value, Prob>chi2 larger than .05) then it is safe to use random effects. If you get a significant P-value, however, you should use fixed effects. (Princeton, 2007)

For conceptual framework I, it examines the relationship between the independent and dependent variables, which has been discussed in previous parts, where the independent variables are the determinants of PAOs' educational expenditure, which is the dependent variable. Political Continuity (PCON) adopts dummy variables to represent it. If a PAO's Chief Executives was in the office more than a term meaning that there was political continuity. Other variables take the actual data of each observation as the dependent variables and independent variables, which are the determinants of the dependent variables and they can occur at the same time. This is because the analysis of public expenditure takes into account the socio-economic and political environment that may affect the public decision making on public expenditure. Therefore, as the analysis of this paper focuses on the actual environment or condition that affects the actual education at each particular time, the actual data of each period of time for each variable are appropriate for the analysis, apart from dummy variables, which is political continuity (0/1).

For the conceptual framework II, it investigates the relationship between the independent and dependent variables, which has been discussed in previous parts, where the independent variables are the determinants of PAOs' educational outcomes, which is the dependent variable. Other variables take the actual data of each observation as the dependent variables and independent variables, which are the determinants of the dependent variables and they can occur at the same time. This conceptual framework is different from the previous one as it developed from previous empirical studies not from a theoretical basis. The independent variables are from controversial conclusions whether socioeconomic factors or educational policy represented by educational expenditures have more influence on educational outcomes.

Table 3.1 Conceptual Framework I's Operational Definitions of Dependent and Independent Variables and Sources of Data

Factor		Operational Definition	Sources
A. Dependent Variables			
TEDU		Total Education Expenditure of PAO's Primary education	21 of Provincial Administrative Organizations
PPE		Education Expenditure of PAO's primary education allocated from PAO's revenue/ number of primary students	16 of Provincial Administrative Organizations
Factor	**Relationship**	**Operational Definition**	**Sources**
B. Independent Variables			
GPP per capita	+	Gross provincial product per capita	Office of the National Economic and Social Development Board
LCR	+	Local government revenue excludes every type of grants-in-aids	21 of Provincial Administrative Organizations
NSTU	+/-	Number of PAO students	21 of Provincial Administrative Organizations
NSCH	+	Number of PAO schools	21 of Provincial Administrative Organizations
POPD	-	Number of population/provincial size	National Statistical Office

Table 3.1 (Continued)

Factor	Relationship	Operational Definition	Sources
B. Independent Variables			
SAP	+	Population age less than 15 years old	Department of Provincial Administration
POV	+	Poverty headcount ratio at national poverty lines (% of population)	National Statistical Office
PCOM	+	Number of incumbents in PAO Chief Executive Election	Office of the Election Commission of Thailand
PCON	-	Use of dummies, 0 = Chief Executive of PAO who was not reelected, and 1 = Chief Executive of PAO who was reelected	Office of the Election Commission of Thailand
VOTP	+	% of voters in the last 4 years PAO's Chief Executive elections	Office of the Election Commission of Thailand
B. Independent Variables			
CORT	-	Number of complaints about frauds	Office of the National Anti-Corruption Commission

Table 3.1 (Continued)

Factor	Relationship	Operational Definition	Sources
GOVR1	+	Use of dummies, 0 = PAO did not receive Governance Awards for Education Provision, and 1 = PAO received the award	Department of Local Administration
GOVR2	+	Use of dummies, 0 = PAO did not receive Good Governance Award, and 1 = PAO received the award	Office of Decentralization to the Local Government Organization Committee
GOVR3	+	Use of dummies, 0 = PAO did not receive King Prajadhipok Awards on transparency and participation, and 1 PAO received the award.	King Prajadhipok Institute
GOVR4	+	Use of dummies, 0 = PAO did not receive King Prajadhipok Awards on Network, and 1 PAO received the award.	King Prajadhipok Institute

Table 3.2 Summary of Conceptual Framework II's Operational Definitions of
Dependent and Sources of Data

Factor	Operational Definition	Sources
A. Dependent Variables		
PER	Provincial primary students/ provincial 6-11 years old population x100 (Net Enrolment Ratio)	2011 Ministry of Education & 2013 Office of Education Council
PLR	% of literate 15 years old up population	2010 National Statistical Office & Department of Provincial Administration
AYSA	Average years of 15 years old up population in school	National Statistics Office
AONT	Average O-Net scores of PAO's Grade 6 students	21 of Provincial Administrative Organizations
AVGG	Average GPA of PAO's Grade 6 students	21 of Provincial Administrative Organizations

Factor	Relationship	Operational Definition	Sources
B. Independent Variables			
TEDU	+	Total Education Expenditure of PAO's Primary education	21 of Provincial Administrative Organizations
PPE	+	Education Expenditure of PAO's primary education allocated from PAO's revenue/ number of primary students	16 of Provincial Administrative Organizations

Table 3.2 (Continued)

Factor	Relationship	Operational Definition	Sources
GPP per capita	+	Gross provincial product per capita	Office of the National Economic and Social Development Board
POV	-	Poverty headcount ratio at national poverty lines (% of population)	National Statistical Office
LCR	+	Local government revenue excludes every type of grants-in-aids	21 of Provincial Administrative Organizations
% of LCE	+	% of Local revenue share in primary education expenditure	16 of Provincial Administrative Organizations
B. Independent Variables			
NSTU	-	Number of PAO students	21 of Provincial Administrative Organizations
POPD	+	Number of population/provincial size	National Statistical Office
SAP	+	Population age less than 15 years old	Department of Provincial Administration
UBCR	+	Urban population as a percentage of the total population	National Statistics Office
CORT	-	Number of complaints about frauds	Office of the National Anti-Corruption Commission

Table 3.2 (Continued)

Factor		Operational Definition	Sources
GOVR1	+	Use of dummies, 0 = PAO did not receive Governance Awards for Education Provision, and 1 = PAO received the award	Department of Local Administration
GOVR2	+	Use of dummies, 0 = PAO did not receive Good Governance Award, and 1 = PAO received the award	Office of Decentralization to the Local Government Organization Committee
GOVR3	+	Use of dummies, 0 = PAO did not receive King Prajadhipok Awards on transparency and participation, and 1 = PAO received the award.	King Prajadhipok Institute
GOVR4	+	Use of dummies, 0 = PAO did not receive King Prajadhipok Awards on Network, and 1 =PAO received the award.	King Prajadhipok Institute

CHAPTER 4

LOCAL EDUCATION DEVELOPMENT IN THAILAND AND THE CURRENT SITUATION

4.1 The National Education Policy

The Constitution of the Kingdom of Thailand (1997) (Constitution of the Kingdom of Thailand B.E. 2540) approved in October 1997, provides guidelines for the country's educational development. The Constitution stipulates the following in regard to the provision of education: (a) the equal right of every person to receive twelve years of quality, free basic education; (b) each person's duty and right to receive education and training; (c) efficient utilization of resources and conservation of local wisdom; (d) emphasis on the private sector's role in supporting educational development; and (e) the right of local organizations to participate in the provision of education**.**

4.1.1 Thailand Education's Structure

According to the National Education Act of 1999, amended in 2002 (ONEC, 2003), (ONEC, 2003) formal education is divided into two levels: basic and higher education. Basic education in Thailand refers to six years of primary education (G1-6), three years of lower secondary (G7-9) and three years of upper secondary education (G10-12). The upper secondary system is further divided into two parallel tracks: general or academic, and vocational. The National Education Act also stipulates that the compulsory education is nine years, extended by three years from the previous structure, including lower secondary education, and that it should be provided free of charge. Although the Act was issued in 1999, the actual implementation of free provision started only in 2002 for the lower secondary level. While the Constitution of 1997 provides that Thai people have an equal right to

receive quality, free basic education for at least twelve years, the last three years of upper secondary education are currently only covered via government subsidy on a per-student basis. The Act contains a number of important features. First, it stipulates the Thai people's fundamental right to receive quality, free basic education for at least twelve years. Second, it sets the foundation for a more creative, questioning approach to studying, which is different from traditional Thai educational norms such as lecturing and rote learning. Third, it sets out to decentralize finance and administration, giving individual teachers and institutions more freedom in curricula and resource mobilization, which in turn increases accountability and ensures that funds are targeted in the right areas.

Figure 4.1 Education Structure: Approximate Starting Age and Duration
Source: UNESCO, 2008: 1.

The National Education Plan 2002-2016 (2002), it focuses on the integration of education into all aspects of people's lives. It emphasizes human-centered development and an integrated/holistic scheme of education, religion, art and culture in order to increase quality of life. The plan serves as a framework for formulating the development and operational plans pertaining to basic education, vocational education, higher education, religion, art and culture. More specifically, it aims to: (a) lead to a knowledge-based economy and society, (b) promote continuous learning,

and (c) involve all segments of society in designing and decision-making concerning public activities. It is also expected that the plan will empower Thai people so that they will be enabled to adjust to world trends and events while maintaining their Thai identity and developing desirable characteristics such as virtue, competency, happiness and self-reliance.

4.1.2 Thailand Educational Administration and Management

Administrative Structure Responsibility for educational management in Thailand is under the mandate of two main ministries: the Ministry of Education (MOE) and the Ministry of the Interior (MOI). According to amendments made to the National Education Act in 2002, MOE is responsible for promoting and overseeing all levels and types of education; formulation of education policies, plans and standards; mobilization of resources for education; promotion and co-ordination in religious affairs, arts, culture and sports in relation to education; as well as the monitoring, inspection and evaluation of educational provision. At the central level, the administration and management of general secondary education (both lower and upper secondary) is under the responsibility of the Office of the Basic Education Commission (OBEC) of MOE. Meanwhile, the Office of the Vocational Education Commission (OVEC) oversees the management of technical and vocational education at the upper secondary level as well as at the post-secondary education. At the decentralized level, the Education Service Areas (ESAs) have been established under the OBEC in response to the decentralization of authority for educational administration as stipulated in the National Education Act of 1999. The country is currently divided into 175 ESAs in 76 provinces, with 172 areas in the provinces and the remaining three in Bangkok, the capital city of Thailand. In accordance with the National Education Act, the Local Administration Organizations (LAOs) can also provide education at any or all levels of education according to their readiness, suitability and local area needs. The Local Education Administration office under the Department of Local Administration Organization, MOI, is entrusted with the tasks of administering and managing primary and secondary education in the municipalities, whereas the Bangkok Metropolitan Administration (BMA) carries this responsibility for the Bangkok metropolitan area. Both entities function under MOI's supervision

and with the Ministry's financial support. The MOE, however, is responsible for prescribing the criteria and procedures for assessing the readiness of the LAOs to provide education services. It also coordinates with the LAOs to promote their capacity in line with the policies and standards required, and advice them on educational budgetary allocations. At the moment, the LAOs play a minor role in providing secondary education, but are expected to become bigger players as the decentralization policy takes effect in the near future. (UNESCO, Secondary education regional information base: country profile – Thailand, 2008)
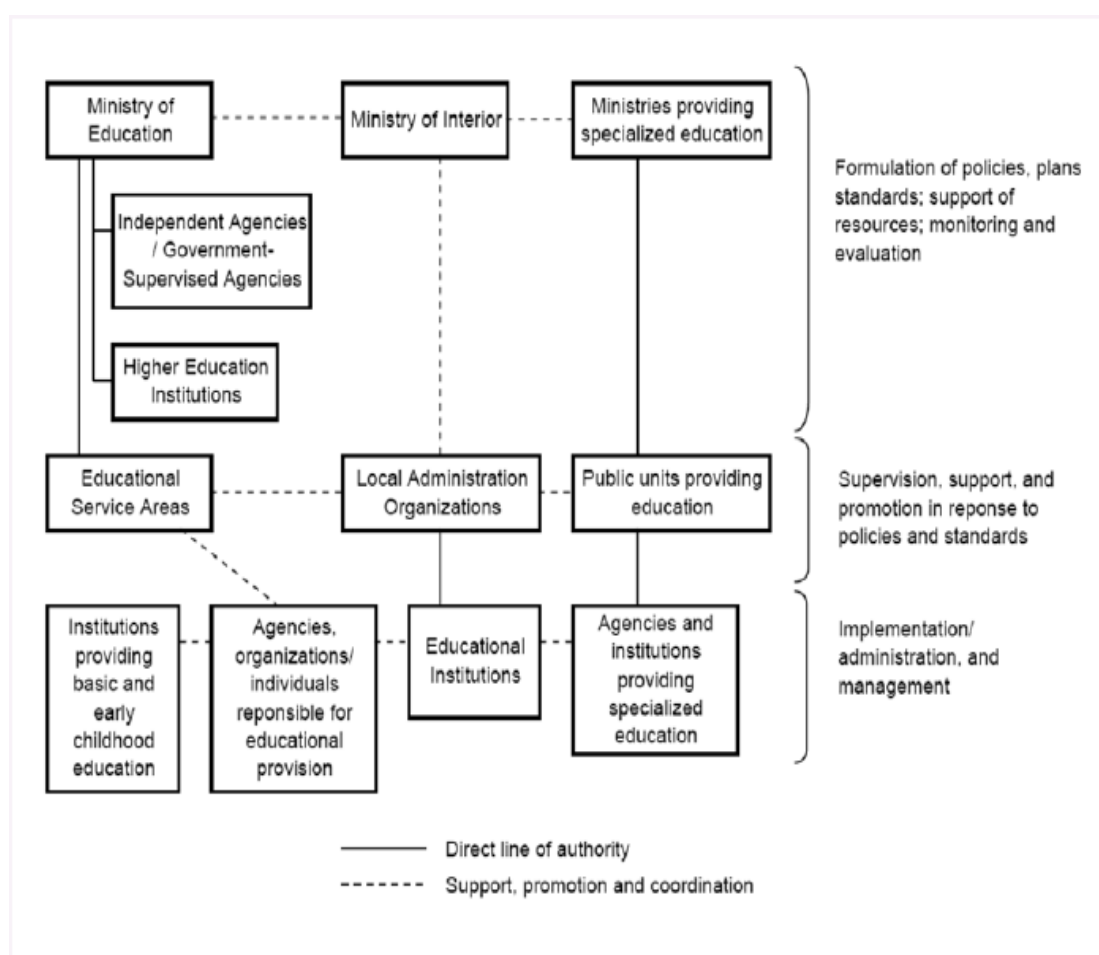
Figure 4.2 Educational Administration and Management Structure
Source: UNESCO, 2008: 6.

4.1.3 Thailand Education Reform

Thailand had three main educational reforms since King Rama V's era. At the first time King Rama V made the reform for civilization as well as remained sovereignty. The second reform occurred in B.E.2520 (1977) due to social changes. The third time was in B.E. 2542, (1999) the same year as the National Education Act B.E. 2542 1999) and the 2nd edition in B.E. 2545 (2002) included creating learning society and concept of sufficiency. (Namuang, 2010)The current reform, the fourth one, is in B.E. 2552(1999). It focuses on lifelong learning. "Lifelong education is the combination of all kinds and all forms of education, formal education, non-formal education and informal education, which will enable people, develop quality of life continuously throughout their lives."

The objectives of the educational reform plan are as follows:

1) Development of people's quality of lives: extending educational opportunities to all throughout their lives, especially the disadvantaged group, the poor, the disabled and those who live in remote areas.

2) Developing Thai society to be virtual and ethical society, local wisdom society and learning society.

3) Promotion participation of all sectors in society and gathering and sharing resources for organizing and supporting education for all.

In the proposal of national education reform in the 2nd decade (B.E.2552-2561) (1999-2018) (ONEC, 2009) There are four policy frames; 1) New Generation of Thai Children's Quality Development, 2) New Generation of teacher's quality Development, 3) New Generation of schools and learning centers' Quality Development and 4) New Education Management's Quality Development. The frameworks which are related to this research are the first one and the forth one. The first policy framework focuses on quality, equality and accessibility of education. The forth one pays attention to the decentralization of education provision, the participation in education administration from parents, community, private and every sector applied the concept of governance and new public management. In Strategic Goals and Education Reform Indicators in the Second Decade (2009-2018), Education Reform Steering Committee has set strategies, indicators and targets for education reform. There are 2 strategies concerning with education outcomes.

Strategic Goal No. 1 Thailand's people and education must have quality and meet international standards.

    1) Indicators and Targets

       (1) Education performance of core subject in national standard test must be higher than 50 percentages

       (2) Education performance in mathematics and sciences has to be increased at least not lower than average score of international level.

       (3) English Performance has to be increased 3% per year

       (4) Information technology skills have to be risen 3% per year.

       (5) The ratio of high school students and vocational students has to reach 60:40

       (6) The graduated vocational and university students obtained international class level and followed the competent standards.

       (7) The average year of schooling (15-59 years old) risen to 12 years

Strategic Goal No. 2 Thai people is a knowledge seeker: able to learn by themselves, fond of reading and continuous pursuit of knowledge

    2) Indicators and Targets

       (1) Students in every level not lower than 75% have skill in searching for knowledge by themselves, love to learn and develop themselves continually.

       (2) The literacy rate (15-60 years old) should reach 100%.

       (3) Sources of knowledge have been utilized not lower than 10%.

       (4) Increase in outside reading/ working average time at least 60 minutes per day.

       (5) Internet usage for learning purpose of 6 years old up population should be higher to 50% (Office of Education Council, 2010)

According to the first Statistics on Educational Development Plan 2013-2015, Thailand's educational institute must have two types of quality assurance in education. The first type is internal and the other is external. It gave the meaning of access to education, equity, literacy and important educational index and indicators that Thailand used as follows. Access to Education indicates how school age population has opportunity to obtain formal education in school. Therefore, access to

education has 2 meanings; 1) First year enrolment ratio (Grade 1) which could be either gross enrolment ratio or net enrolment ratio; 2) Ability to retain students in the system measured by participation rate. 3) Literacy Rate portrays reading, writing and basic understanding in everyday life including math literacy.

4.1.4 Education Quality Assurance

Thailand's quality assurance in educational system comprises of 3 parts. The first one is for student assessment conducted by The National Institute of Educational Testing Service (Public Organization) or NIETS. Teacher assessment undertakes by Office of the Teacher Civil Service and Educational Personnel Commission (OTEPC). The last one is the responsibility of a public organization, Office of the National Education Standards and Quality Assessment (ONESQA) to assess education institutes. For basic education level, the standards compose of 14 standards and 53 indicators that can be classified into 3 groups; 1) Standards for Learners, consisting of 7 standards with 22 indicators, aim at physical, spiritual, intellectual and social development, 2) Standards of Process, consisting of 3 standards with 21 indicators, focus on administrative and teaching-learning processes, and 3) Standards of inputs, indicate the characteristics and readiness of administrators, teachers and the curriculum composing of 4 standards, with 10 indicators.

4.2 Legislative Framework and Key Policy Documents Related to Decentralization on Education

4.2.1 Constitution of the Kingdom of Thailand 2007 (Constitution of the Kingdom of Thailand B.E. 2540.)

Section 80, "The State shall act in compliance with the social, public health, education and culture policies as follows: 4) Promoting and supporting the delegation of powers to the local governments, communities, religious organizations and private sector with a view to provide and participate in educational management for the development of educational quality standard equally and to be in line with the fundamental State policy"

4.2.2 National Education Act, B.E. 2542 (1999) as Amended by Act (No.2), B.E. 2545 (2002) (ONEC, 2003)

Section 9 "In organizing the system, structure, and process of education, the following principles shall be observed: 2) Decentralization of authority to educational service areas, educational institutions, and local administration organizations;" Moreover, in section 42, the Ministry of Education has to regulate and assess Local Administrative Organization (LAO)' readiness in administrating education. It also has to coordinate and support LAOs to provide public education in line with national education policy, to meet the education standards and to give advice on education grant-in aid allocation. In Section 57, educational agencies shall mobilize human resources in the community to participate in educational provision by contributing their experience, knowledge, expertise, and local wisdom for educational benefits. Contributions from those who promote and support educational provision shall be duly recognized. Section 58 states that there shall be mobilization of resources and investment in terms of budgetary allocations, financial support and properties from the central government to local administrative organizations with cooperation of other institutions and privates by providing education shall mobilize resources for education. The other approach is be providers or partners in educational provision to encourage and provide incentives for mobilization of these resources by promoting, providing support and applying tax rebate or tax exemption measures as appropriate and necessary, in accord with provisions in the law. National Education Act B.E. 2542 (1999) and Amendments (Second National Education Act B.E. 2545 (2002))

In can be concluded that the National Education Act denotes that LAOs are decentralized education promotion and administration with abiding the laws of self-learning and developing and child center approach. They have to encourage individual, family, community to take part in both formal and non-formal education administration.

4.2.3 Determining Plans and Process of Decentralization to Local Government Organization Act, B.E.2542 (1999) (The Act of Determining Plan and Process of Decentralization B.E. 2542.)

In this law, administrative service which to be transferred under the Plan Quality of Life is one of the six classification services to be transferred to LAOs. Quality of life consists of livelihood promotion, social security, sports promotion, education, public health, inner city improvement, habitat development, etc.

4.2.4 The Tenth National Economic and Social Development Plan (2007-2011)

A five year strategic plan is based on a collective vision of Thai society to be a "Green and Happy Society," where Thai people are endowed with morality-based knowledge and resilience against the adverse impacts of globalization. The main emphasis of The National Development Plan is to increase capacity for the improvement of quality of life of our people.

Therefore, the Tenth Plan sets specific targets for education as follows

1) Increase the average period of education provided to 10 years.

2) Improve test scores (higher than 55%) in core subjects, at all levels.

3) Raise the percentage of mid-level workforce to 60% of the national labor force.

4) Increase the ratio of research personnel to population by 10:10000.

Details of Thailand's education policy are following.

1) Focusing Invest in raising the quality of the entire educational system, to address the development of teachers, curricula, instructional media and information technology; improve the quality and knowledge of students in accordance with educational plans, available resources and surrounding factors; create a system of life-long learning for Thai people; and establish Thailand as a regional educational hub.

2) Ensure that every Thai citizen has access to no fewer than 12 years of basic education, free of charge, with attention focused on reaching the disadvantaged, the disabled and those living in difficult circumstance; increase access to further education through student loan schemes, linked to policy concerning the

production of knowledgeable and capable graduates; and provide supplementary scholarships for both domestic and overseas education.

3) Adjust teacher training and development to ensure quality and high moral standards among teachers, while guaranteeing teachers appropriate remuneration and welfare for a good quality of life; develop and modernize curricula and instructional media in line with global changes; promote studies in Thai language and history to instill a sense of Thainess; expand the role of creative learning systems through organizations such as the Office of Knowledge Management and Development, the development of a modern library system, and the establishment of new learning environments including knowledge parks, a National Discovery Museum Institute, the Thailand Creative and Design Centre, a center for the development of sports, music and arts, and a center for the treatment and development of autistic persons, children with attention deficit disorder and other disadvantaged individuals.

4) Promote the intensive use of information technology to enhance learning efficiency; ensure access to the necessary infrastructure, technologies and software to complement learning; give particular attention to the development of foreign language learning.

5) Develop the quality and standard of higher education institutions to guarantee a high level of academic and professional services, to achieve excellence in research and innovation, and produce and develop a workforce that corresponds to structural changes within the manufacturing and services sector; accelerate the development of high quality workforce with clear career paths to enhance the country's competitiveness in various sectors such as petrochemicals, software, food, textiles, health, tourism and logistics management; provide occupational and professional competence certification; and continue the expansion of the role of the Fix It Centre at the community level.

6) Promote and adjust regulations to support the decentralization of educational administration and management to district education offices and academic institutions; encourage the involvement of private sector in educational management; build the capacity of local administrations to prepare them for the transfer of responsibility and to ensure the required quality standards are met.

7)   Coordinate all aspects of educational management through the different stages of the planning cycle, including identification, planning, supervision, monitoring and evaluation, making effective use of evaluation outcomes to review and adjust existing strategies, and to develop appropriate, new strategies. (Ministry of Education, 2008)

Regarding to National Education Plan Amended 2009-2016, the sections concerning about LAO are following; 1) Developing education and learning quality in every level and types of education, 2) Increasing the efficiency of LAO's education administration by distributing administrative power to Educational Service Area Office and LAO, 3) Preparing and improving LAO's capability in administrating education services and developing executives, teachers and education personnel in LAO's education systems to be professional in order to set up and being transferred education institutes under supervision of Ministry of Education to give academic advice and control quality, 4) Improving administrative structure and provide education for variety of needs effectively and decentralizing administrative power and education to education institutes and LAOs as well as reviewing and amending regulations to facilitate LAOs and other partners to participate in education administration to achieve education quality and learning goals truly 5) Encouraging every administrative levels at provincial, regional, special area and community to provide education with area-based/community based approaches (Council, 2010) (Office of Education Council, 2010)

4.3 The Development of Local Government's Education Services Provision

Recently, local government has become a key player of public educational service provider. Although, Thailand's education policy is much centralized as every school has an obligation to use central curriculum, report and be evaluated by central agencies, local government has some autonomy according to decentralization concept to provide additional education projects to its students from their own budget either from its revenue or its greater investment on education rather than other functions. Making decisions about them, involves many series of process. Therefore, in order to

improve local educational outcomes, the understanding about the determinants of local educational outcomes is very essential.

4.3.1 The Concept of Decentralization

Thai local government has become a key public educational service provider as a result of decentralization. Moreover, it turns out to be a trend of public administration to decentralize some central government functions to local government. The definition of decentralization is "the removal of certain centralized powers or control to various areas, usually the area where operations take place." (Webster, 2002 in Campo & McFerson, 2015) However, there are wide ranges of meanings as the concept is associated in different country practices. Accordingly, this chapter begins with a definition of the basic concepts all associated with the word decentralization. There are many dimensions of decentralization from the geographic, functional, political/administrative, and to fiscal. Degrees of decentralization are also distinctive by deconcentration, delegation, and devolution. (Campo & McFerson, 2015)

Decentralization also refers to the redistribution of power within the state between the central government and other public authorities. Most previous works on decentralization have focused on decentralization as a transfer of power from the central government to other entities. In an influential work, Cheema, Nellis & Rondinelli (1983) defined decentralization as the transfer of planning, decision-making, or administrative authority from the central government to its field organizations, local administrative units, semi-autonomous and parasternal organizations, local governments or nongovernmental organizations. We continue to use this broad definition, which includes everything from empowering local governments to privatizing state functions. However, in practice, most contemporary discussions of decentralization refer principally to the transfer of functions, powers, and resources from the central government to sub national governments. One of the assumptions of decentralization benefits is to improve the quality of public services and more response to local needs. There are many research conducted on the effect of decentralization to educational outcomes. Faguet & Sanchez (2008) studied about educational decentralization of Columbia and Bolivia. They found that

decentralization of education finance improved enrollment rates in public schools. Both countries shifted their investment from infrastructure to education. Another research found that decentralization has positive impact on educational outcomes in Spain. (Pena & Sole-Olle, 2009) As well as in Egypt, decentralization had relationship with improved educational outcomes. (Nasser-Ghodsi, 2006) While some scholars suggested positive effect of decentralization to both educational expenditure and educational outcomes at the local level. It confirmed that the more decentralization of education, the more local government could meet the real local needs. (Kopanska & Bukowska, 2013)

4.3.2 Local Government in Thailand

The history of local autonomy in Thailand began in 1932 at the same time as the abolishment of absolute monarchy and the democracy introduction. The Thesaban Act (Municipal Administration Act) of 1933 resulted in the establishment in 1935 of the Thesaban as a basis for local government in 35 urban areas across the country. (Nagai, Funatsu, & Kagoya, 2008) Nowadays, Thai local governments are classified into two main categories; general and specific. In the general form, there are three types of local authorities located throughout all seventy-five provinces except Bangkok. They are (i) Provincial Administrative Organization (PAO, seventy-five units), (ii) Municipality (1,136 units), and (iii) Sub-district or Tambon Administrative Organization (TAO, 6,740 units) In the specific form there are two special units of local governments governing specific areas; namely, Bangkok Metropolitan Administration (BMA) and Pattaya City.

In Thailand, every degree of decentralization has been adopted. However, the devolution notion which to be defined as decentralization, has just been enforced from the 1990s. Among Asian countries, Thailand has a two-tier local government same as that of Indonesia, Japan and New Zealand. The main purpose of the decentralization in Thailand was to balance the development of human, social, economic and environmental resources as to achieve sustainable people centered development. With this, the policy required to promote the role of administrators at the local level so that they could enhance their capability and increase the power of local government.

Before 1990s, the public services are the duties of central government and the total public expenditure for local government were just 10% of the national total public expenditures. The Constitution of 1997 requires the promotion of decentralization as a basic policy of the government and this was followed by basic legislation in 1999 in the form of the Decentralization Plan and Procedures Act. As of June 2003, eight enabling laws had been proposed in support of decentralization goals, four of which had been promulgated.(Nickson, Devas, Brillates, & Cabo , 2006) In chapter nine of the constitution, it also defines detailed local government's provision. Section 285 of the 1997 constitution and the Act Determining the Decentralization Plan and Process of 1999 brought about the National Decentralization Committee (NDC). NDC was a key player in drafting the Decentralization Plan. There are many Acts related to local government either were amended or newly enacted by the effect of the promulgation of the 1997 Constitution. In case of Provincial Administration Organization (PAO), The Provincial Administration Organization Act of 1997 was enacted on October 12, 1997. (Nagai, Funatsu & Kagoya, 2008)

While the Constitution of 1997 kicked off the decentralization plan, it increased the degree of decentralization by adding the basic national policy in section 5 to promote and support the decentralization to local governments, communities, religious groups and private sectors to participate in local education management. Therefore, it is the obligation to have people participation in local education management. This was based on the idea that local government could serve the local citizens more effectively than central government. Although the decentralization in Thailand is progressive, the local governments are still dependent on central government as per the following structure.

1) Central government consists of the Cabinet, the ministries and the departments.

2) Local/regional administration (deconcentration) comprises of provinces, districts and villages. The departments which are the Ministry of Interior, the Ministry of Agriculture, the Ministry of Education and the Ministry of Public Health, send out their officials to be posted at branch offices in provincial halls and district offices.

3) Local autonomy (under the State Administration Act of 1991. There are 7,853 local authorities in Thailand (as of September 30, 2014).

The Administrative Structure of the Royal Thai Government is composed of three systems. (Figure 4.3)
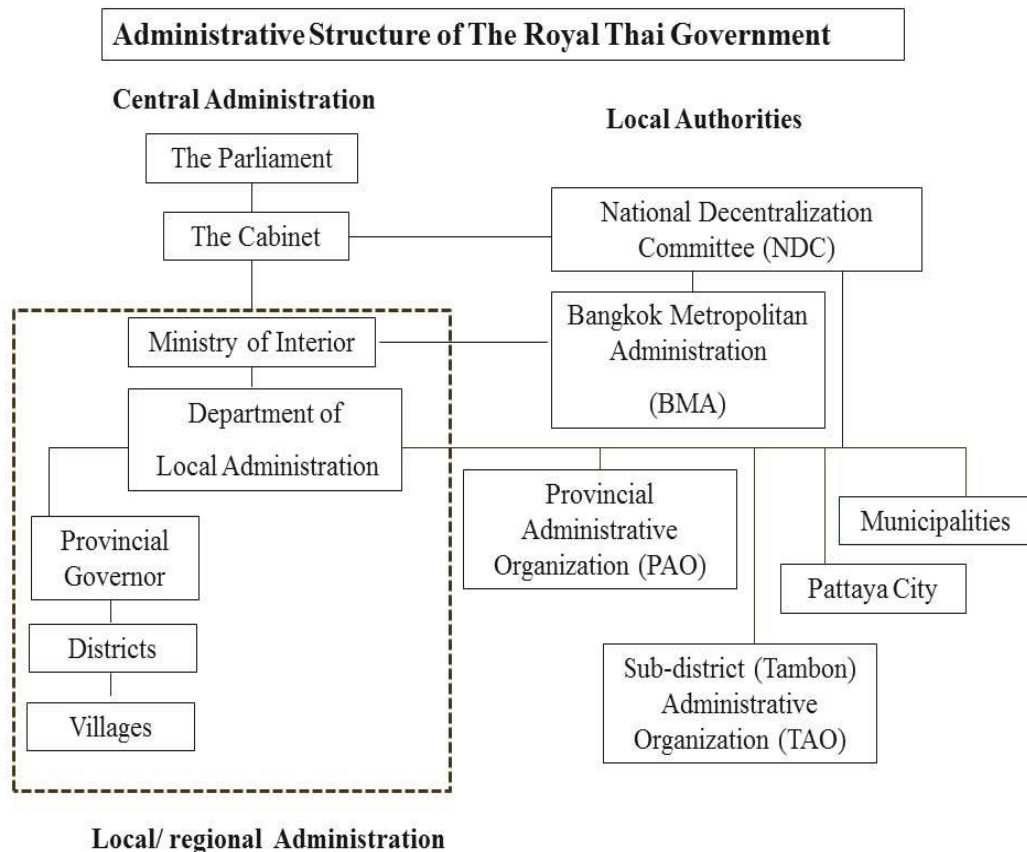
Figure 4.3 Administrative Structure of the Royal Thai Government
Source: Economic Research and Training Center, 2009

Table 4.1 Number of Local Administration Organizations as of September 30, 2014
The Five types of LAOs are classified as the following Table.

Local Government Organizations	
Organizations	**Unit**
Provincial Administrative Organization (PAO)	75
Municipality	2,410
-City	30
-Town	172
-Sub-district	2,208
Subdistrict (Tambon) Administrative Organization (TAO)	5,365
Bangkok Metropolitan Administration (BMA)	1
City of Pattaya	1
Total	7,853

Source: Department of Local Administration, 2015

Although there is attempting to decentralize the authorities to local government, they are still under control and supervision of provincial governor in terms of annual budget approval and other issues relating to head of the LAOs and their councils. What makes Thailand local government distinct is dual system of local administration and local authorities. The LAOs have to report and to ask for approval from local administration although the LAO heads and councils are elected directly from local residents.

The Decentralization Act of 1999 limited 4 years for decentralization and could be extended to 10 years. There are 50 departments and 245 types of services in the decentralization plan. 180 of 245 missions had to be transferred to LAOs since 2007. The Act also states that central government has to allocate 35% of local government budget. However, at the end of 2007, local governments received just

24.1% from the central government. Education Provision is one of the missions to be transferred according to this law.

4.3.3 Local Administrative Organization

Local Administrative Organization, LAO, has two identities. One identity is being a governmental agency according to laws and regulations. The relationship between central government and local government are giver and taker because LAO has to accept transfers from central government. The other one is a local organization. However, LAO is distinct from other governmental agencies because of its accountability and autonomy. Its accountability is for earning its revenue, spending the expenditures and be accountable directly to local people. For autonomy, it has its own management plans, personnel management and fiscal, finance and budgetary management.

In this study, it focuses on PAO which has different functions from other types of LAO. PAO's territory covers the whole province. In principle, it provides only large scale of public services requiring high technology or huge budget that other types of LAO cannot afford. Moreover, in case there is a project overlapping many LAOs' territorial area or need cooperation among varying LAOs, PAO has to be the host of that project. Practically, for educational functions, many PAOs either own schools or support education services many years before the Decentralization Act. PAO's role in education becomes clearer after the act by providing education in institutes by transferring the schools from OBEC to be under PAOs. PAOs are allowed to transfer schools only if they pass OBEC's school transfer standards. They also have rights to allocate budget to schools or OBEC offices upon requests. As a result, they do not have to concern about the principle of territory or huge project.(Patthanasuwanna, 2010)

4.3.4 LAO's Sources of Budget

There are two sources of LAO's budget. The first source is from fiscal money which concurred by local council and approved by legal authorized person; provincial governor, sheriff, assistant district officer, sub-district chief. This includes additional budget, transfer and budgetary amendment. The other sources are extra fiscal money

which includes any other money under responsibility of LAO besides fiscal budgeting such as loads, savings and intergovernmental transfer for example.
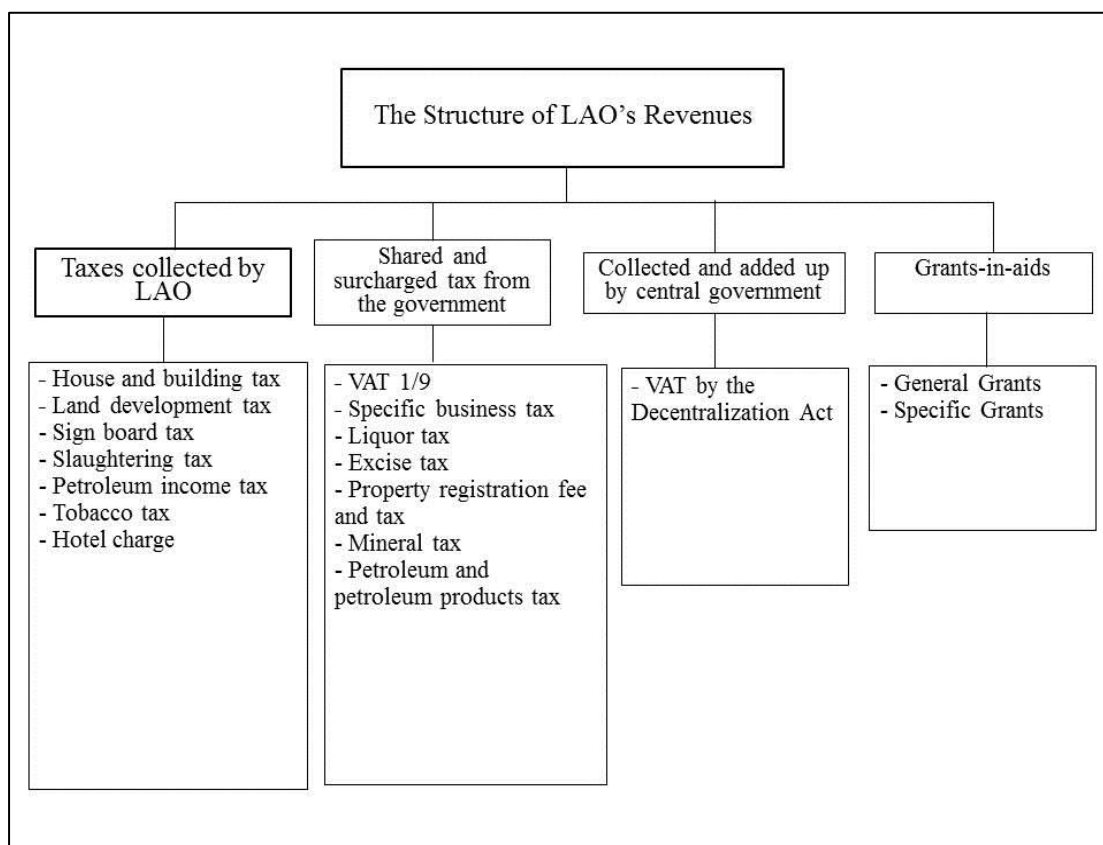
Figure 4.4 Sources of Local Administrative Organization's Revenue

Note: Adopted from Suwanmala and Weist, 2009 (Suwanmala & Weist, 2009)

4.3.5 LAO's Financial Management

LAO's financial management can be divided into two categories. One is revenue. There are many types of local revenues; tax and non-tax.

Types of tax revenues are following

      1) Direct tax such as income tax, asset tax, heritage tax

      2) Indirect tax such as VAT and excise tax

      3) Shared tax such as liquor tax and tobacco tax

      4) Surcharged tax such as tax collected by the Local Government Revenue Acts

Non-tax Revenue consists of fee, fine, license and donated money, transfers, etc.

The other type is expenditure. The LAO's expenditures are categorized into 2 groups. The first group occurred by the LAO's plan. LAO has to plan its activities every fiscal year by the end of September. The other group is the expenditure for its functions. (The Act of Determining Plan and Process of Decentralization B.E. 2542.)
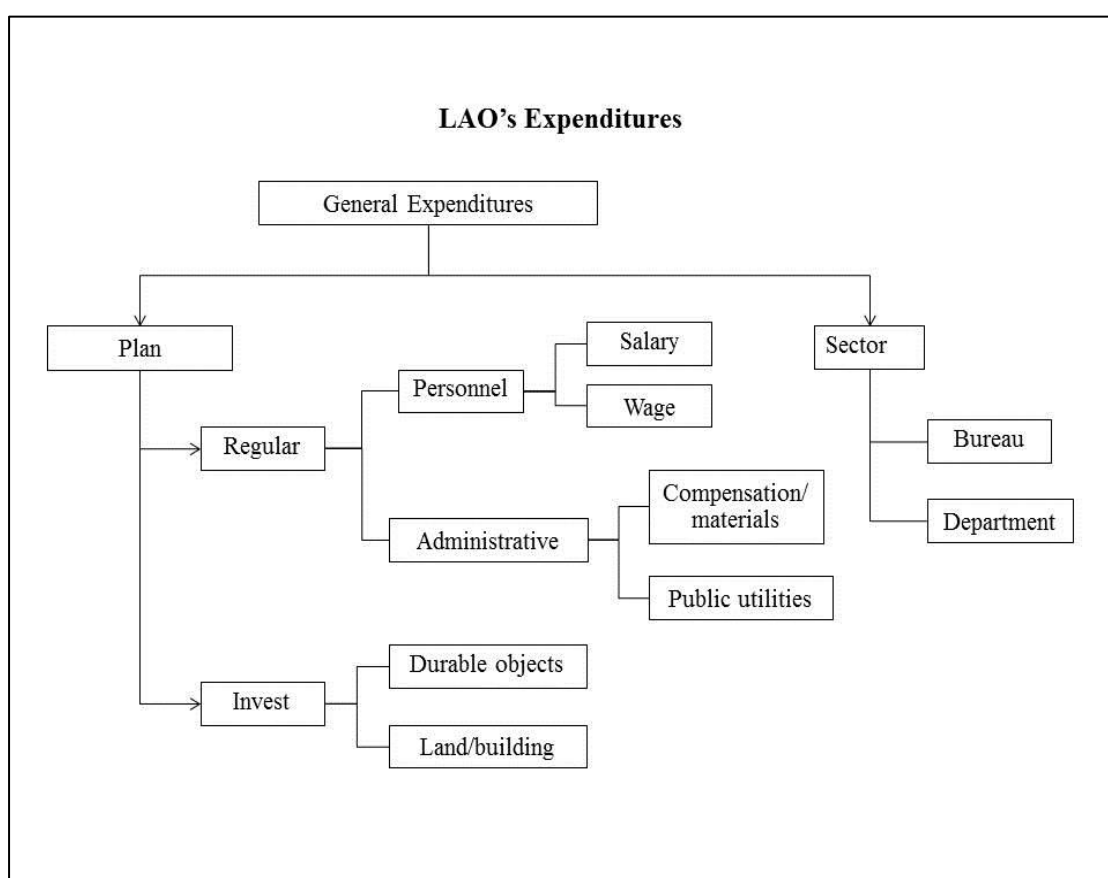
Figure 4.5 Local Administrative Organization's Expenditures

Note: Concluded from Ministerial Rules and Regulations of the Budgetary
Procedures in Local Administrative Organizations (B.E. 2541) (1998)
Section 2 (Thai Royal Gazette, 2000)

The structure of intergovernmental grants-In-aids are following figure.
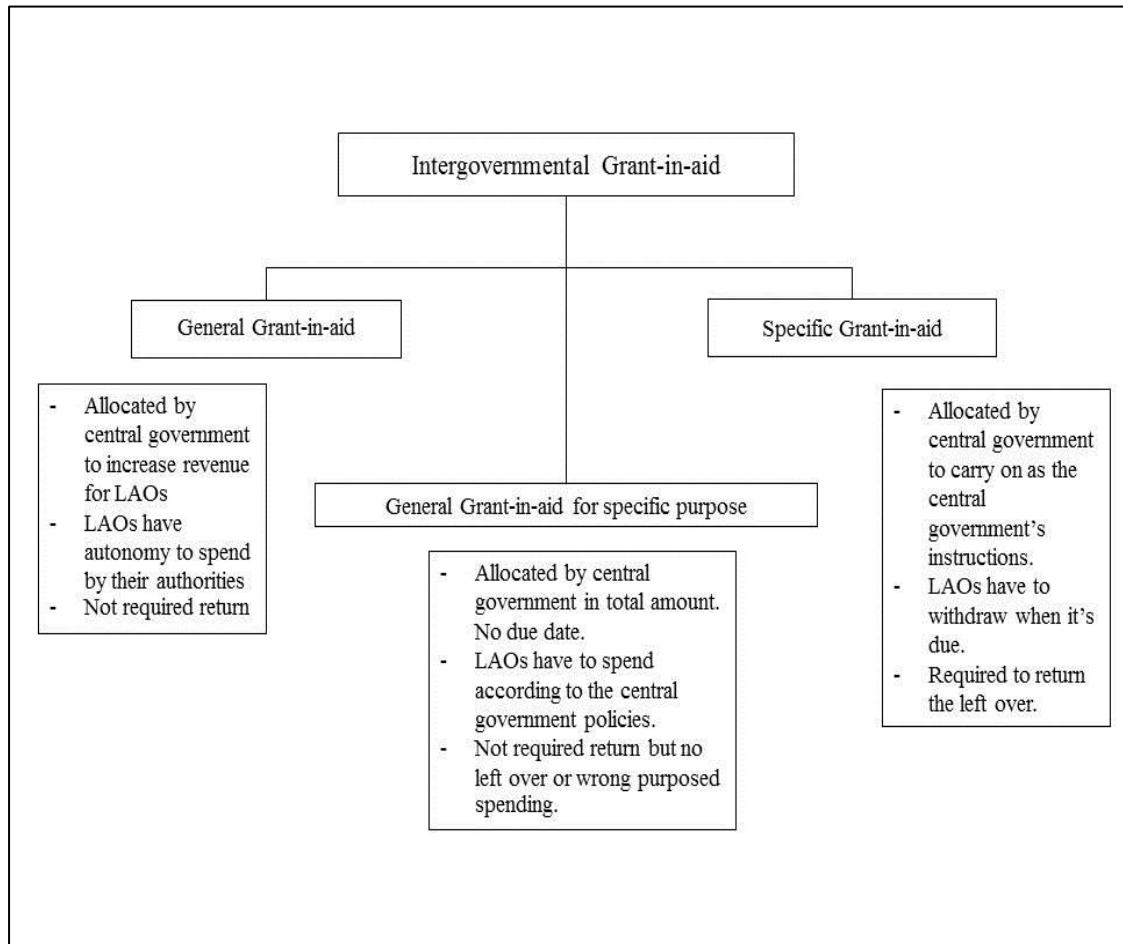
Figure 4.6 Intergovernmental Grant-in-aid

Note: Concluded from Retrospective and Prospective of Intergovernmental Transfer in Thailand, Sakon Varanyuwatana, 2001

The additional budgets from other transfers from the central government are allocated by Office of the Decentralization to the Local Government Organization Committee. The committee will announce the fiscal framework for LAO every year. The reasons to review the framework every year are the changing in central government's revenue and the missions resulting from government's policies. The examples of government policies relating to education are free school 15 years policy,

daily milk project and allowances for students in difficult areas. An example of general grants allocation framework is as follows:
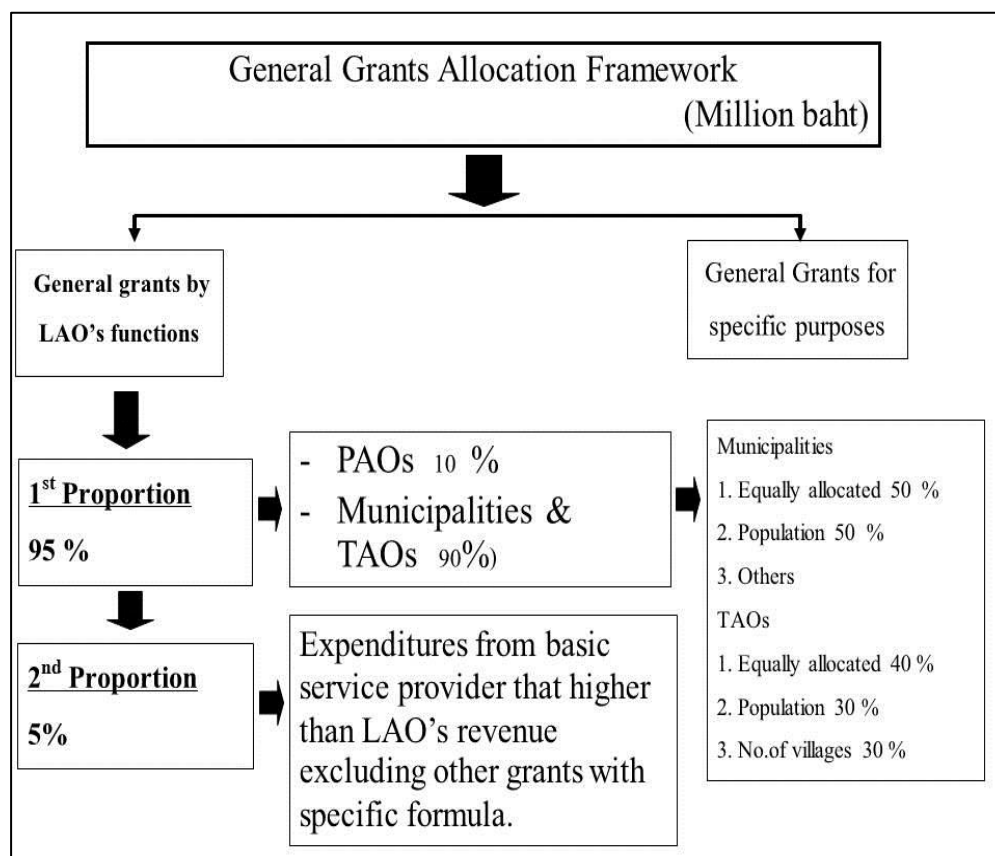
Figure 4.7 General Grants Allocation Framework

Source: Office of Committee of Decentralization to Local Government

Organization, 2009.

4.3.6 Local Education Expenditure

From the structure of LAO's revenues mentioned above, local education expenditure comes from three main sources. They are local tax revenue, general grants, and general grants in aid with specific purpose.

According to general grants allocation framework 2012 (Office of the Decentralization to the Local Government Organization Committee, 2012), there are many general grants in aids for education purposes including only related to primary education.

1) Free school 15 years consisting of the following expenses.

    a) Per pupil expense: Primary student received 1,900 baht/pupil/year

    b) Book/pupil/year: Grade 1: 561 baht., Grade 2: 604 baht., Grade 3: 778 baht., Grade 4: 653, Grade 5: 796 baht. And Grade 6: 989 baht.

    c) Teaching aids: 390 baht./pupil/year

    d) Student uniform: 360 baht/pupil/year

    e) Activity: 480 baht/pupil/year

2) Education durable objects

3) School building

4) Teacher medical fee

5) Rental fee

6) Pensions

7) Laptop

8) Basic factors for poor students

9) Special fund for schools in southern borders

Some of education expenses are classified into general grants group as followed.

1) Daily Milk 7 baht/pupil/day X 260 days

2) Lunch 13 baht/pupil/day X 200 days

3) Educational potential promotion includes

    a) Curriculum improvement: 20,000 baht/school

    b) Internet access: 9,600 baht/school

    c) Wireless internet: 7,200baht/school

    d) Teacher development: 3,000 baht/teacher

    e) School library renovation: 75,000baht/school

    f) Learning center development: 20,000 baht/school

There are also other projects regarding to government's policies such as awards given to best school projects, ASEAN projects, ASEAN Knowledge Management Center projects, for example.

4) Sports promotion

5) Disadvantaged child who have average family income less than 40,000 baht/year.: 1,000 baht/pupil/year

6) Teacher salary and compensation

LAO allocation framework for education is based on equity principle. Therefore, the education spending per pupil is not varied by areas. Therefore, this study focuses on the varied spending on education such as share of LAO's education from its own revenue and general grants without specific purposes. It is LAO's government decision about how to prioritize the budget and see if the education expenditure affects the local education outcomes.

Provincial Administration Act, B.E. 2540 (1997) and amendment, B.E. 2546 (2003) has some section relating to laws concerning education administration: The Provincial Administrative Organizations covers the area of the whole province, set up with an aim to manage and provide public services within its province, helping the works of municipalities and the sub-district administrations. It has legal status. For education provision, according to Section 45 (8) PAO has obligations to participate in providing education service provider.

Department of Local Administration, Ministry of Interior as a government agency which plays an important role in supervising, encourage and support LAOs to provide education services by enacting the Local Administrative Organization Education Administration Platform in 15 Years 2002-2016 which could be summary as follows. 1) LAO has to undertake basic education administration, 2) The Basic Education Core Curriculum is aimed at the full development of learners in all respects-morality, wisdom, happiness, and potentiality for further education and livelihood.3) Objectives of local education administration is to provide education to every school age population at certain level to receive complete basic education equally and with equality, to administrate basic education to achieve goal, objectives complying with national standards and meet citizen's needs efficiently, to provide education according to local needs and to encourage participation from every partner in the local area. In order to have LAO provide education services coving every aspect of education, there are education policy implementation strategies. In regard with distinctions among LAOs in readiness and capability, LAO has two ways to involve in education administration. 1) Undertaking education administration by running education institute or by being transferred education institutes from Office of Basic Education Commission (OBEC). In order to get transferred the institute from

OBEC, LAO has to meet the transferring criteria of Ministry of Education (MOE). In case a LAO does not pass the standards, MOE has to support the LAO until it ensured to provide qualified education services and passed the standards. 2) Engaging in education by participating in promotion and support budget, instruments including giving advice and education development.

To consider the readiness of LAO for education administration, there are two types of LAO which are the LAO which has already administrated education and the one have not started administrating education. The LAO group can be categorized into 3 groups of high readiness, medium readiness and low readiness. Other issues to be taken into consideration are the local needs and opinion, the opinion of local council, facts, the opinion of the education institute to be transferred, the LAO's potentiality in administrating budget and equipment.

4.4 Thailand Current Education Situations

One of the important objectives of education services is aiming every people acquires Universal Primary Education because a primary education's goal is every citizen is literate. Regarding Thailand's Education Situation in the World Economic Forum 2014, the summary of Thailand's education situation especially on primary education is following.

The main Thailand's basic education takes 12 years excluding pre-school education. The ratio of primary students per primary school age population is 97% which exceeds the enrolment rate target at 95%. Thailand GPI rate (Gender Parity Rate) at primary education level, which is one of international education goals, is at 0.97 while the standard GPI is between 0.95-1.05. For education quality indicators, at primary level, teacher-pupil ratio is at 16:1 in 2014 which is better than international average teacher-pupil ratio at 24:1. The average primary class size in public school is 19 students per class. According to UNDP's Human Development Report 2011the average years of adult schooling is at 6.6 years which is higher than the international average years of adult schooling at 6.2 years. The literacy rate of 15-year old up in Thailand is at 94% in 2012. UNESCO expected that Thailand's literacy rate would be increased to 95% in 2015 while the international average literacy rate of adult

population would be 86% in 2015. (UIS/UNESCO, 2013) In term of education achievement, Thailand joined international education achievement evaluations such as Program for International Student Assessment or PISA to be held every 3-year, and the Trends in International Mathematics and Science Study or TIMSS, held every 4-year, in 2011. PISA test consists of three parts; reading literacy, mathematics literacy and scientific literacy. Thailand has joined PISA Evaluation Program from 2000-2012 and the results were lower than the results of international average scores every time. Thailand ranked 50th out of 65 countries. Thailand joined TIMSS since 1995. At first, Grade 9 student's mathematics and sciences scores in Thailand were higher than the international average level, however, the scores have continually declined until now. As for TIMSS 2011 results of Grade 4 students, the mathematics scores were 458, while was the score for sciences. Both subjects' scores were lower than the international average scores which are 500. One of the education efficiency indicators is Public Expenditure on Education as a Percentage of Total Public Expenditure. This indicator is crucial for both national and local policy makers. It was found that in 2013 that, Thailand had the highest Public Expenditure on Education as a Percentage of Total Public Expenditure among Asian countries at 29.5%. (Office of the Education Council, 2014)

Regarding to Educational Statistics 2011, there are total 4,935,721 elementary students in Thailand. Most of them are taken care by public sector at proportion 79:21. (public: private) Only about 7% of the students are in Bangkok. Although Thailand has high literacy rate which is one of the international educational outcomes is more than 90%. Nevertheless, other international educational outcomes indicators such as PISA scores and Global Competitiveness Index on primary education show that Thailand's educational outcomes are needed to be ameliorated. O-Net (Ordinary National Education Test) scores, which is one of the standardized test of Thailand, it showed that the top score students are from Bangkok and big cities. This phenomenon indicates that disparity in education exists.

Thailand's investment on education is high relatively to other countries in ASEAN. The proportion of Thailand's education expenditure is around 20% of total national budget. (Bureau of the Budget Office of the Prime Minister Thailand, 2012)
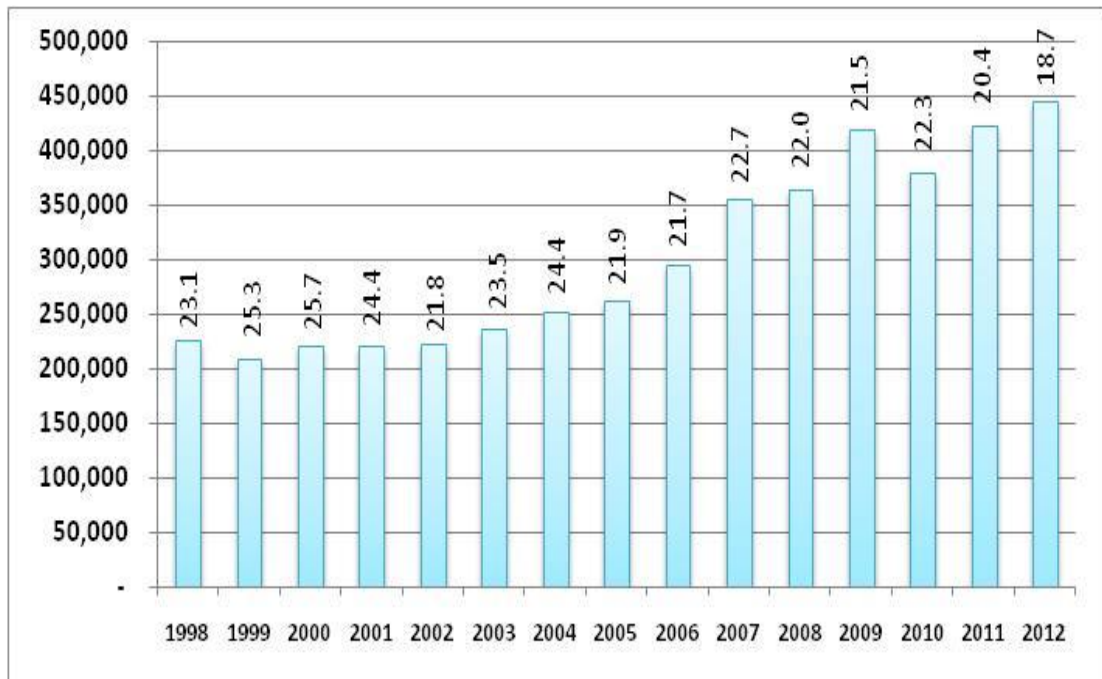
Figure 4.8 The National Educational Expenditure of Thailand, 1998 – 2012
Source: NESDB, 2012.

Besides high spending on education, every government in the past decade launched many policies in order to enhance national education outcomes such as free lunch and milk, free uniform and free 15 year school campaigns. However, according to the vary indicators, the educational outcomes has no sign of progress.

4.5 The Challenges of Thailand's Education

With regards to papers and international organizations reports, the education disparity in Thailand has been decreased. There are more accesses to higher level of education. However, Thailand has been facing many educational challenges.

4.5.1 National Level

UNDP 2014, conducted Human Achievement Index (HAI) and ranked Thailand Human Development at the 103rd from 186 countries. According to the

ranking, Thailand is in the medium human development group. HAI consists of the eight key areas of human development include: health, education, employment, income, housing and living environment, family and community life, transport and communication and participation. In terms of education, Thailand has higher enrolment rate indicating more accessibility of education services and longer average years of schooling from 7.3-8.2 years during 2001-2011. Nevertheless, the mentioned education achievements are merely in terms of quantity. The education development obstacles as for education quality and inequality still remain. UNDP considers the education quality from the standardized test score which is O-Net conducted to test on eight core subjects which dropped from 36.4 percent in 1997 to 34 percent in 2011. When looking into average intelligence quotient (IQ) level of 6-15 years old population was at 98.6 in 2011 which is in the normal range of 90-109 despite almost half of the children were in the low range (under 100). It also found that 6.5% of children fell into the mentally inadequate category, which higher than the international standard of 2%. HAI compares human development at the provincial level in 76 provinces and diagnosed stagnation or slow progress in deprived areas. The provinces in the area that had students' average IQ fell in the low range include 17 out of 19 provinces in the Northeast but only 21 out of 57 provinces in other regions. On the other hand, the top 10 provinces of highest HAI remains in Bangkok, vicinities, central provinces. The variation indicated the signal of several remaining inequality in the provision of education. (UNDP, 2014)

The Office for National Education Standards and Quality Assessment (ONESQA) holds education institute assessments every five year. There were two rounds of assessment until now B.E.2544-2548 (2001-2005) and B.E.2549-2553. (2006-2010) There are 14 standards covering 7 standards for students, 2 standards for teaching and 5 standards for education institute administrators. The standards No.5 considers the number of students passed average score of Ordinary National Educational Test (O-Net). The indicators are based on merely documentary information. There should include other indices that have high correlation with educational achievement. Regarding a TDRI research found that the ONESQA's assessment has no significant effect on learning performance. (Thaipublica, 2015) Thailand's standardized tests are much different from international standardized test.

Testing should be able to assess literacy more than content and it could be other way than multiple choices test. "Good tests should determine children's ability to apply knowledge to their daily life". (Saengpassa & Khaopa, 2012)

For educational inequality, it means the distinction in education outcomes with considering of different backgrounds such as individual, family and institute factors. One of many ways to detect variance of education outcomes is test score. TDRI conducted a research adopted PISA Score in 2012 as the indicators of the inequality. The results show the determinants of education inequality could be explained with education institute or school more than 47%. While family factors could explain it only 9%, 2% is explained by individual factors. In order to diminish the inequality, acknowledging mother, expanding school size, staying family and increasing teacher-pupil ratio could be options. (Bisonyabut, 2015)

4.5.2 Local Level

After the National Education Act 1999 became effective, there are three levels of education decentralization consisting of transferring education institute to LAO, distributing administrative power to educational service area and distributing decision-making power to schools. However, practically, to shorten chain of command by transferring schools under OBEC to LAO has little to be found. (Parandekar, 2011)

There are many challenges in that LAO in providing public services as results of regulations and relationship among ministerial and local level, policy connection between regional and local government, monitoring and balancing system in local government according to the administrative officer influence over LAO officers and the council.

Moreover, there are resistant in transferring public services from ministerial organization to LAO. There are redundancies in public services provision in the same area. The problems of personnel management are both quantity and quality. LAO has lack of revenue assignment although there are regulations allow it to collect many types of tax. For participation, most of the time, the participation is initiated from top-down as it was written in the laws. The civil engagement, in passive form, is not from their own motivation so they do not understand about the objectives and procedures of

the programs. The formal and complex procedures hamper the local people to participate in local government activities. (UNDP, Executive Summary: Policy Recommendation on Decentralization, 2009) Apart from management problems, each local administrative organization's capacity in generating revenue is distinctive. Central government allocates schooling grants in aid per pupil basis; this could not mitigate fiscal disparity between large sizes with high revenue local administrative organizations and small size with low revenue (Tatchalerm Sudhipongpracha & Achakorn Wongpreedee, 2015)

Therefore, at national level, the political structure does not support decentralization as it still holds centralization characteristics. There are policies in terms of laws; however, the government agencies in different levels are not synchronized. The tight rules and regulations hinder education institute to be transferred from OBEC to LAO. There is still lack of autonomy in designing its own curriculum due to national curriculum attachment. At local level, there are misunderstandings about providing education service of LAOs, lacking of creativity and innovation in LAO education as the education personnel stick to conventional approaches, LAO school has no legal person status so it has less decision-making power than OBEC schools; and problems in administration and readiness in undertaken education provisions in some LAOs. (Hunpayoon et.al, 2013) In terms of educational personnel, LAO has weak points in school supervision as they have insufficient professional personnel.

4.6 Summary of Thailand's Education Provision Problems

4.6.1 Undesirable to Implement National Education Policy to Local Administrative Organizations Level

As mentioned earlier, although, Thailand's education expenditures are comparably high, the return on the educational investment is still undesirable. The most effective result is the high primary enrollment rate not about the education achievement. (Buracom, 2011)The PISA's results 2012, which is the OECD's standardized test focusing on mathematics, with reading, science and problem-solving minor areas of assessment, shown that the mentioned countries which spent less than Thailand achieved higher score than Thailand. (OECD, 2013) The Global Competitiveness Report 2013-2014 demonstrates that the Thailand's Global Competitiveness Index related to education are the index on health and primary education is at 81st ranking and higher education and training index is at 66th raking and the technology readiness is at 78thranking. (World Economic Forum, 2013)

The education attainment in national education strategy missed the target as it is aimed at the average years of school would be 10 years and 15 years in 2014 and 2018 respectively. When taking educational trends into account, the average years of schooling was better during 2006-2011 but started declining in 2012. As focusing at 15 years old up population, the average years in school rose from 7.8 in 2006 to 8.2 in 2011. However, in 2012, the years dropped to 8.0 which were far from the expected target. (Office of the Education Council, 2014)

4.6.2 Unable to Access to Education Services

In 2006, 85.3% of School age population during 3-17 year-old accessed in education systems and the percentage increased to 88.1% in 2008. However, from the statistics show that 3-17 year-old populations were not in the education systems at 1,675,165 or 11.2% of the same age range population. It could be interpreted that there were some children could not access or drop out from the systems. (Chiangkool, 2008)

4.6.3 Disparity in Accessing to Education Services Among Regions

According to UNDP's Human Development Report 2014, education indicators reveal that there are development gap between inner and outer provinces. The education index consists of 4 indicators: average years in schooling, secondary enrolment rate, average IQ of children aged 6-15, and average O-Net score of upper secondary students. In Bangkok, Nakhon Nayok, Chon Buri, Nonthaburi and Chiang Mai ranked highest on the education index, while border provinces ranked lowest: Narathiwat (South), Nong Bua Lam Phu (Northeast), Tak and Mae Hong Son (North), and Sa Kaew(Central).The average years of schooling indicates the potential capacity of the people and the work force. All five bottom provinces were remote border provinces; three were in the mountainous North. Nonthaburi and Bangkok had the best records. Upper secondary education (including vocational education) is part of basic education provided free of charge by the state, but is not obligatory. Ranong, Nakhon Nayok and Bangkok had the highest enrolment rate at 100.3 while Narathiwat, Samut Sakhon, Kamphaeng Phet, Rayong, and Tak were the five bottom provinces.IQ is an important asset and a basis for national competitiveness. According to the Department of Mental Health, 2014 in 76 provinces, the national average for children aged 6-15 years old was 98.6 (the normal level is 90-109). The Northeast had the lowest average of 96.0. At the provincial level, Nonthaburi had the highest average of 108.9 while Narathiwat had the lowest average of 88.1. Thirty-eight or half of all the provinces had average IQ lower than 100. Factors contributing to IQ are children's nutrition, health promotion, good environment, and quality education. Special programs are urgently needed to address the underlying problems in selected area, targeting disadvantaged children especially in the rural areas. The average O-Net scores of 8 main subjects for upper secondary level in 2011 were low especially in English language, Mathematics, Sciences, and Arts. Students in large cities close to the growth center had higher scores. Bangkok students had the highest score, followed by Phuket, Nonthaburi, Nakhon Pathom, and Nakhon Nayok. The five lowest scores were in Nong Bua Lam Phu in the Northeast, Mae Hong Son in the North, and in 3 southernmost provinces where students had difficulty accessing education due to security problems. (UNDP, 2014)

Small schools in low income areas especially in rural areas received budgets relatively lower than big schools in higher income places in town. There are fewer teachers and they have to teach the subjects which are not their majors. Therefore, those schools would have average education achievement lower than those in more developed locations. As a result of unequal distribution of income, the poor have tendency to have less education than the higher income groups. Although, the free school policy has been launched, the cost of studying is not only limited to only tuition fee but includes also transportation fee, books, stationary, opportunity cost of working, some children from low income families drop out. (Chiangkool, 2008)

For special needs children, the human right of all people to education was first defined in the United Nations' Universal Declaration of Human Rights of 1948 and further elaborated in a range of international conventions, including the Convention on the Rights of the Child and more recently in the CRPD. In 1994 the World Conference on Special Needs Education in Salamanca, Spain produced a statement and framework for action The Salamanca Declaration encouraged governments to design education systems that respond to diverse needs so that all students can have access to regular schools that accommodate them in child-center pedagogy (5). The Education for All Movement is a global movement to provide quality basic education for all children, youth and adults (6). Governments around the world have made a commitment to achieve, by 2015, the six EFA goals: expand early childhood care and education; provide free and compulsory education for all; promote learning and life skills for young people and adults; increase adult literacy by 50%; achieve gender parity by 2005, gender equality by 2015; and improve the quality of education (6). In Article 24 the CRPD stresses the need for governments to ensure equal access to an "inclusive education system at all levels" and provide reasonable accommodation and individual support services to persons with disabilities to facilitate their education (7). The Millennium Development Goal of universal primary completion stresses attracting children to school and ensuring their ability to thrive in a learning environment that allows every child to develop to the best of their abilities. In general, children with disabilities are less likely to start school and have lower rates of staying and being promoted in school (8, 11). The correlations for both children and adults between low educational outcomes and having a disability is often stronger than the

correlations between low educational outcome and other characteristics – such as gender, rural residence, and low economic status. (UNESCO, 1994)

"Special Needs" is an umbrella underneath an array of diagnoses of what children cannot do. World Health Organization or WHO, defines children with special needs that they are under 3 territories: 1) Impairment or disorder in mental, physical, body parts or structure 2) Disability means the limitations leading to be disabling to live normal life. 3) Handicap is limitation or obstacles that hindering one to accomplish their doing. As a result of definition scope, "Children with special needs" cannot develop their ability with normal assisting or normal class. They need motivation, help, therapy, rehabilitation and special teaching approaches matching with their needs. Therefore, first of all, the designation is useful for getting needed services, setting appropriate goals, and gaining understanding for a child and stressed family.

For Thailand's situation, the Office for promotion of the learning society (2012) and the quality of youth indicated that the percentage of children population with learning disorders (LD) signs soared 13%, more than 900,000 children. In the end, this group of children would be denied from education systems. The importance of paying attention to them is that economists pointed that GDP would be higher 2% if they could be obtained the right education and earn a living by themselves. In order to diagnose the children with LD syndrome, the cooperation among parents, schools and the main organizations handling this problem is needed. However, the most important factor in receiving diagnosis process is parents. There are not many parents understand about LD syndrome and refuse to join the screening process with afraid of their children would be handicapped. In other cases, due to economic factors, the parents are not interested in this issue. In case of Attention Deficit and Hyperactivity Disorders (ADHD), the estimated prevalence of children with ADHD is at 8.1%, equivalent to 1 million young populations. The most severe symptoms of malnutrition and intelligence retard are found in Grade1-5 students in north eastern region. (Office for Promotion of the Learning Society, 2012)

Besides children with disabilities problems, Thailand is also facing children's IQ and EQ crisis. According to IQ and EQ survey of 4,929 Grade 1 students in 2014, the average IQ is at 93.1 points dropping from 94 points in 2011 which are lower than

world standards average at 100 points. There are also found that the children living in urban area would have higher than living in rural area. However, EQ level is normal for both in urban or rural areas. IQ plays an important role in learning intelligence. It is a result of many factors such as good nutrition, warm family and obtaining appropriate learning development (Rajanukul Institute, 2015)

4.6.4 Unable to Link Public Health Services to Education Provision

The results could go in line with World Bank study (World Bank, 2011) in that it found bottlenecks at each a uniquely serious problem in Thailand is iodine deficiency. Its effect has negative relationship with weak learning performance and productivity as student performance shown in tests.

4.6.5 Educational Administration Problems

There are two kinds of quality assessments. The first type is the internal assessment system concerning the factors related to the inputs, processes, and outputs/outcomes. The other type is the external quality assessment focuses on assessment of the educational management results conducted by the Office of National Standards and Quality Assessment (ONSQA. The internal and external quality assessments are connected. In order to accomplish the internal quality assurance, educational institutions need to submit annual reports in the form of the internal self-assessment reports (SAR) to the institution council, the parent organizations, and other relevant organizations, as well as to the public. These documents connect the institutions' internal assessment, their parent organizations' assessment monitoring, and ONESQA's external quality assessment. Hence, educational institutions need to make their comprehensive self-assessment reports that truly reflect the institutions' educational quality in every aspect. Student's Learning Achievement is one of the 12 indicators. Indicator 5, Students' learning achievement has weight 20 from 100 points. Description Students' learning achievement is that the students' learning achievement is at the level of "good" standing and the students demonstrate their learning development in every learning area at Grades 6, 9, and 12. "Good" learning achievement: The percentage of the students who have the O-NET score higher than the minimum required score in every learning area at Grades 6, 9,

and 12. The computation is performed by ONESQA using its calculation formula. Learning development: The institution has the average percentage of students with O-NET's "good" learning achievement in every learning area higher than that in the previous year. (The Office for National Education Standards and Quality Assessment (Public Organization), 2013) The problems as a result of using O-Net scores as the indicator are schools trying to seek solutions to gain high scores by accepting only normal students and avoiding accepting disadvantaged students. Another obstacle is that the O-Net scores would affect only Grade 12 students using the scores in university admission. Therefore, the other grades' exams do not reflect their achievement as they have a lack of motivation in doing the exams. In their opinion the test result is the school's indicators not theirs.

Another problem of education management is teacher and personnel sufficiency and quality. There are disparities in the number of teachers in urban schools and rural schools. There also are problems in lacking of teachers for the whole country especially in sciences, mathematics and English majors. Government could recruit teachers to replace the resigned ones merely 20% of retirement. There are less motivation to become teachers and less morale of the current teachers.(Chiangkool, 2008)

4.4.6 Rules and Regulations Hindering Education Services in Local Administrative Organizations

There are redundancies in services provided. Many types of LAO provide same services due to the decentralization laws. There is also lack in coordinating between LAOs and ministerial organizations. The obstacles of laws and regulations arise from transferring missions having to abide by other related regulations and those laws have not been amended to support the public services transferring. (UNDP, 2009)

In providing education services, there were many problems after transferring resulting from fiscal administration, budget allocation and understanding in fiscal and budgetary rules and regulations, lack of information technology competency and personnel management. (Luedara, 2013)

4.6.7 Corruption

According to local administrative frauds statistics from the Office of National Anti-Corruption Commission (ONACC), are in following tables.

Table 4.2 Local Administrative Frauds Statistics, 2014

ONACC's Local Administrative Fraud Complaints Statistics				
	2010	2011	2012	2013
New Complaints	1,154	1,173	1,182	1,376
Previous Year Backlog	2,656	3,309	3,881	4,197
Verdict	30	31	1	-
Not Pursuit	381	466	462	328
Reject	43	58	59	25
Return to	30	28	34	18
Send to other organizations	13	18	310	133
Remaining issues	3,309	3,881	-	-

Source: Thaipublica, 2014.

Corruption is one of crucial problems in local administrative organization (LAO) in Thailand. It affects efficiency in public spending, losing morale in LAO's staff and discouraging citizen to participate in local activities. Puang-Ngam (2006) found that there were many causes of corruption in LAO;

1) Budgetary frauds, book keeping, purchasing process; most of them are in form of lacking of appropriate record of LAO's bookings.

2) Personal corruption the data indicated that 12% of chief administrative officer had relationships with local administrative organization's contractors. This is reflected in cronyism in LAO's purchasing process

3) Exploiting gaps in laws and regulations to seek benefits

4) Committing frauds innocuously or unethically

In small LAO, personnel recruitment has lack of choices of professional personnel in rules and regulations, so fraud may occur due to their ignorance. On the other hand, frauds happen intentionally.

5) Lack of information access and public relations

There were 15% of LAOs which never publish their expenditures report and other LAO's issues. Moreover, even the LAO staff did not have information about the LAO's budgetary plan

6) Few channels for whistle blowers in organizations

7) Involvement of influential persons in local areas

The locals are afraid of filing complaints and to be witnesses in processes requiring judgement.

The problems mentioned above impede local administrative organization's achievements in providing desirable education outcomes. However, only one or two partners can do nothing to alleviate the facing problems. It needs partnerships including the public sector, private sector and civil society to take part in the problem-solving process.

CHAPTER 5

EMPIRICAL RESULTS AND DISCUSSION OF PROVINCIAL ADMINISTRATIVE ORGANIZATIONS' EDUCATION EXPENDITURE

In this chapter, the empirical results are presented for all equations using the panel data of 23 Provincial Administrative Organizations for 5 years, from 2010-2014. However, regarding to the unavailability of GPP per capita 2014 along with using lag year determinants, this study could utilize only 3 years' data. This chapter provides the results undertaken to find the main factors that affect Provincial Administrative Organization (PAO)'s primary education expenditure. In this respect, the results are in line with the two models developed in this study. The empirical results are accompanied by the interpretation, as well as discussions, of the probable underlying reasons for the estimated results, especially when the results are not consistent with expectations.

In order to know how each PAO gives priority of education, the percentage of education expenditure per total public expenditure is needed to be explored. Table 5.1 represents how each PAO prioritized its educational duty.

Table 5.1 Total PAO's Educational Expenditure per Total PAO's Expenditure (%)

No.	PAO	2010	2011	2012	2013	2014
1	Chiang Rai	15.67	15.06	20.43	17.31	11.79
2	Chiang Mai	12.19	13.83	7.01	11.77	15.37
3	Prae	12.05	10.55	19.09	25.62	27.69
4	Maehongson	6.17	6.59	25.31	10.35	12.09
5	Lampang	2.03	2.14	2.50	4.16	3.76
6	Kanchanaburi	6.82	6.14	10.00	6.56	21.17

Table 5.1 (Continued)

No.	PAO	2010	2011	2012	2013	2014
7	Pathumthani	11.54	42.16	17.38	19.75	23.96
8	PhraNakhon Si Ayutthaya	14.11	12.38	14.82	20.93	19.66
9	Ratchburi	1.65	2.15	3.50	1.94	2.54
10	Samutsakorn	42.82	2.83	1.64	2.41	6.13
11	Saraburi	8.01	9.72	9.24	10.34	10.55
12	Khon Khan	17.49	18.10	14.93	12.99	16.05
13	Yasothorn	8.94	9.31	6.80	10.48	15.03
14	Lampoon	7.23	9.48	8.75	9.07	10.61
15	Srisaket	19.78	15.08	21.55	53.56	45.99
16	Chacheongsao	16.18	14.79	14.91	15.98	21.97
17	Rayong	13.21	11.05	10.34	19.58	14.99
18	Chumphon	17.10	23.00	21.49	25.11	12.76
19	Pattani	3.15	20.74	2.59	1.83	28.90
20	Phuket	24.77	26.45	19.91	24.82	28.75
21	Satun	9.35	8.79	7.75	15.14	16.19
22	Nakhon Si Thammarat	13.09	12.85	9.94	11.65	6.81
23	Ranong	3.88	10.48	5.57	5.46	6.48

In table 5.1, each PAO gives priority to education differently. Therefore, the determinants of PAO's education expenditure are needed to be examined.

The table 5.2 below presents the summary statistics of all the variables incorporated in the conceptual framework I: for PAO's Total Primary Education Expenditure (TEDU). It shows the mean values as well as the maximum and the minimum values of all the variables in the model.

Table 5.2 Descriptive Statistics of all Variables Used for PAO's Total Primary
Education Expenditure

Variables	N	Mean	Standard Deviation	Minimum	Maximum
Dependent Variables					
TEDU	69	8.80E+07	9.71E+07	3763000	4.52 E+08
Independent Variables					
GPP	69	193884.4	206330.1	40156	1011901
LCR	69	3.29E+08	3.59E+08	7000000	1.90E+09
NSTU	69	672.8833	1045.238	39	5144
NSCH	69	1.75	9.50E-01	1	4
POPD	69	210.2743	200.3914	19.24	690.21
SAP	69	96562.33	5.02E+04	24312	220022
POV	69	13.7565	11.0809	0.11	46.8
PCOM	69	1.0667	1.7061	0	6
PCON	69	0.2667	0.4460	0	1
VOTP	69	18	26.6486	0	68
CORT	69	0.4333	0.8707	0	4
GOVR1	69	0.1667	0.3759	0	1
GOVR2	69	0.1167	0.3237	0	1
GOVR3	69	0.1333	0.3428	0	1
GOVR4	69	0.0333	0.1810	0	1

Table 5.2 illustrates the summary statistics of all the variables in the conceptual framework I: for PAO's Per Pupil Primary Expenditure (PPE). There were 16 PAOs able to give PPE information.

Table 5.3 Descriptive Statistics of all Variables Used for PAO's Per Pupil Primary
Expenditure (PPE).

Variables	N	Mean	Standard Deviation	Minimum	Maximum
Dependent Variables					
PPE	48	27248	42620.64	779.52	256300.1
Independent Variables					
GPP	48	212856.9	232079.8	40156	1011901
LCR	48	2.81E+08	3.04E+08	7000000	1.03E+09
NSTU	48	528.9556	462.8767	59	1792
NSCH	48	1.8	0.8421	1	4
OPD	48	177.1224	139.6771	19.24	595.47
SAP	48	96146.42	55174.8	24312	220022
POV	48	14.21733	11.4900	1.6	46.8
PCOM	48	1.1111	1.7993	0	6
PCON	48	0.3111	0.4682	0	1
VOTP	48	18.3369	26.8410	0	68
CORT	48	0.4333	0.8707	0	4
GOVR1	48	0.8889	0.2878	0	1
GOVR3	48	0.1555	0.3665	0	1
GOVR4	48	0.0444	0.2084	0	1

5.1 Factors Affecting Provincial Administrative Organizations' Primary Education Expenditure

As in the conceptual framework I, it contains two dependent variables which have different numbers of units of analysis. There were 23 PAOs providing TEDU information.

Table 5.4 Estimation of the Determinants of PAO's Total Education Expenditure
(Independent Variable: TEDU)

Variable	Coefficients (Robust)	
Model	1	2
GPP per Capita (1-year lagged)	-151.5889***	-
LCR (1-year lagged)	-	0.05531**
NSTU	8620.426	13697.67
NSCH	2.09e+07	3.82e+07**
POPD	117260.9	9850.23
SAP	796.7782**	-
POV	-3720869**	-
PCOM	-2949012	-
PCON	-2.45e+07*	-3.64e+07*
VOTP	-8081.752	-7210.582
CORT	1.55e+07*	1.89e+07*
GOVR1	-	2.21e+07
GOVR2	-	2.26e+07
GOVR3	-	3.75e+07**
GOVR4	-	4.79e+07**
Observation	69	69
R-Squared	0.6122	0.5883

Notes: 1) ***, **, and * denotes significance levels of 1%, 5%, and 10% respectively.

2) Model 1 and 2 are estimated by a Random Effects Method

3) The 69 observations are from 23 provinces and 3 years (2010, 2011 and 2012)

According to Table 5.4, there are two models which can be accepted as a sound explanation of the determinants of PAO's total education expenditure based on its statistical significance as shown for 99%, 95% and 90% respectively. The R-square

value also indicates that the movement of the PAO's total educational expenditure by this set of independent variables by approximately 60 percent.

5.1.1 The Impacts of Economic-Demographic Variables

The first two variables reflect how economic factors have an impact on the allocation of PAO's total education expenditure. First of all, surprisingly, the coefficient of the GPP per capita is negative with high significant. It indicates that GPP per capita negatively determines total education expenditure at the PAO's level. The results are not go in line with Wagner's Law which expects that education expenditure will be raised according to the growth of the economy. The results were also different from the economic factors determining national public spending on education. At the national level, public education expenditure is positively correlated with household income. (Sagarik, 2012) This could be implied that in the case of PAO, the allocation of education expenditure goes in line with local needs. If provincial average income per capita is high, the subsidies from PAO for education would be low. The estimation does not go in line with previous studies on determinants of local government spending on education as well. (Meire et al., 1999; Dye, 1967; Sharkansky, 1971; Fernandez & Rogerson, 1977) In those studies, the average income determinant positively affected public education expenditure.

As for Local Revenue, the coefficient of LCR is significant with a positive sign. This indicates that last year's local revenue is positively related to the current PAO's total spending on education. This estimation supports the previous studies on education expenditure (Kopanska & Bukowska, 2013; Morales, Fortes & Rueda, 2013). They also found that when local government had good capacity in taxing, the allocation to education expenditure would be higher. Because higher local revenue, it induces local government to invest more on education services. (Chakrabarti & Joglekar, 2006)

The demographic variables also have a significant impact on PAO's total education expenditure. As for number of schools, the NSCH has a significant and positive coefficient, implying that PAO's total education expenditure is significantly determined by the number of schools. In the previous studies, enrolment rate and teacher-pupil ratio determined the public education expenditure. (Kempkes, 2010),

(Grob & Wolter, 2007). In this study, due to unavailability of data, the number of schools has replaced those variables. The estimation found the same association between the number of schools and PAO's total education expenditure.

As for school age population, the coefficient of SAP is also significant and positive, indicating that the change in the school age population affects PAO's total education expenditure. The estimation goes in line with the previous study. (Fernandez & Rogerson, 1997) The results represent that PAO policymakers take into account the demographic factors particularly the demand from the educational sector.

5.1.2 The Impacts of the Political Variables

There are two political variables could explain the impact of political factors on PAO's education expenditure. According to Median Voter Theorem, the assumption is that a positive relationship between median voter's needs, in this case of the poor, and the public expenditure is expected. However, for PAO case, the results are totally different. As for the poverty ratio, it was found to be negatively and significantly related to PAO's total education expenditure. This could imply that the median voter for PAO might not be the poor or the poor might not be interested in education. As in previous research findings, it was found that for the interest group, the poor, they might not pay attention to education which is a long term investment. They prefer welfare in terms of cash transfer. (Clark, Bursztyn & Horowitz, 2011)

The other political variable is political continuity. According to previous studies, it was found that with a term limit, the incumbent who expects to be reelected would allocate more welfare expenditure including education expenditure. (Smart & Sturn, 2013), In the case of PAO, after canceling of the term limit election; it could be found that there has been high political continuity in many places. Although there were changes in persons, the incumbents were from the same family or have a political relationship. Therefore, without a term limit, the incumbent would pay less attention to education.

5.1.3 The Impacts of Governance Variables

As for corruption, it was found to be positively and significantly related to PAO's education expenditure. It could be implied that corruption could be in a form

of education expenditure as education expenditure includes for example capital investments, material purchasing and administrative expenses. The previous studies' findings on corruption were varied. According a one previous study, it was found that in the poor country, the corruption was in the form of capital expenditure rather than education expenditure. However, on the other hand, for the more economically developed countries, the governments would rather invest in health care and education than infrastructure. (De la Croix & Delavalladde, 2009) As a result of the findings, policy makers should pay more attention to the category of expenditure used for education expenditure. Some PAO's tend to invest in education in the form of capital investment such as buildings, playgrounds or multimedia library constructions for PAO's schools as well as other organizations relating to educational service.

As for governance, every variable as a proxy of governance compositions, all have a positive coefficient. However, only two out of four variables are significant. GOVR3 represents the PAO receiving awards from the King Prajadhipok Institute Award on transparency and participation promotion. According to the criteria of KPI Award on transparency and participation promotion, PAO must be the key organization that coordinates in holding meetings on development plan between ministerial agencies and LAO in the province. It also has to encourage citizen to propose an issue unrelated to budgetary plan in PAO's annual code of law. The award focuses on publishing PAO's information to its citizen, allowing them to give comments and suggestions and creating whistle blower channel for filing complaints on fraud. To win the award, PAO has to generate many projects to meet the award criteria. On one hand, the qualification of transparency and participation promotion brings about better budget allocation to education services. What PAO provides for education in the area should be what the local needed. On the other hand, willing to receive this award might induce the PAO to create the projects to meet the criteria. GOVR4 stands for the PAO receiving King Prajadhipok Institute Good Governance Awards on networking. The criteria of this award consist of opening PAO's data access, restricting organization for supporting network building, creating formal and informal forms of networking, having network data updated and modern, initiating projects to solving the current problems to encourage partners' joining. The PAO must be the key player of the network and planning and project initiator. Therefore, it

could be implied that the more transparency, participation and networking of PAO are, the higher education expenditure. In other word, PAO would give more priority to education. The starting point of transparency, participation and network promotion sharing the same is keeping the citizen informed of what PAO's done then opening channel for them to give feedback and suggestion.

5.2 Empirical Estimation of the Determinants of Per Pupil Primary Educational Expenditure

Table 5.4 presents a relatively complete explanation of the determinants of PAO's per pupil primary expenditure based on its statistical significance as shown by both models' R squared value of .4215 and .4233 respectively. It also indicates that the movement of PAO's per pupil primary expenditure is explained by this set of independent variables by more than 40 percent.

Table 5.5 Estimation of PAO's Per Pupil Primary Education Expenditure
(Independent Variable: PPE)

Variable	Coefficients (Robust)	
Model	1	2
GPP per Capita (1-year lagged)	-0.0050061	-
LCR (1-year lagged)	-	0.000369*
NSTU	-31.43752**	-28.69259
NSCH	21753.24**	27411.67
POPD	12.4506	-25.0435
SAP	0.4558	0.3040
POV	-	-790.5891**
PCOM		-3971.721

Table 5.5 (Continued)

Variable	Coefficients (Robust)		
Model		1	2
PCON		-10070.13*	-
VOTP		-132.1114	-
CORT		-	485.655
GOVR1		-	29081.07
GOVR2		-	24002.1*
GOVR3		-	16795.97*
GOVR4		-	4707.617
Observation		48	48
R-Squared		0.4215	0.4233

Note: 1) ***, **, and * denotes significance levels of 1%, 5%, and 10%

respectively.

2) Model 1 and 2 are estimated by a Random Effects Method

3) The 48 observations are from 16 provinces and 3 years (2010, 2011 and

2012)

5.2.1 The Impacts of the Economic- Demographic Variables

In terms of economic-demographic variables, there are three variables that have a significant impact on PAO's per pupil primary expenditure.

The positive coefficient of the LCR lagged indicates that as PAO earned more local revenue last year, PPE tends to increase accordingly.

The estimated coefficient of the NSTU is significant but negative, which go in line with Anderson & Lawrence's study. They found that the more number of students were, the less per pupil spending was.

The estimated coefficient of the NSCH is significant and positive, which could be implied that the change in number of schools impacts PAO's PPE.

For those results stated above, they go in line with Dye's study in 1967. The research's estimation shown that per pupil expenditure was determined by economic-demographic variables. However, the negative coefficient was found when increasing number of enrolment as the expenditure would be divided by more number. (Dye, 1967)

5.2.2 The Impacts of the Political Variables

As for the political variables, POV and PCON have shown statistical negative significance. Poverty ratio representing median voter theorem revealed the same results as PAO's total education expenditure. It could be argued that the policy makers do not take into account the local education needs or the poor do not have an interest in education.

As for political continuity, this pattern is again similar to those of the previous equation in PAO's total education expenditure. It indicates that the more continuity of the politician in a position, the less interest in education's priority.

5.2.3 The Impacts of the Governance Variables

The estimated coefficient of every type of governance is positive. However, for PPE, the quality of governance affected PPE are good governance, transparency and participation. Judging from the result, the PAO's allocation of resources to per pupil primary expenditure has been influenced and determined by the precedent of PAO's governance as the increasing community participation could put pressure on the government to provide necessary resources. However, in case of Columbia, as governance brings about efficiency, the government could provide better education services at the same cost. (World Bank, 2006)

5.3 Discussion

Having discussed the estimations of each equation of PAO's education expenditure, panel data analysis, a summary of the determinants of PAO education expenditures from the two equations should be made in order to simply illustrate the practical results of the analysis in this chapter. Each equation is explained by the same

set of explanatory variables. There are some common variables associated with both equations.

Table 5.6 presents a summary of the variables affecting PAO's education expenditures. From the data illustrated in table 5.3.1, a comparison of the similarities and different of the determinants between two types of PAO's education expenditure are to be further discussed.

Table 5.6 Summary of Factors Affecting PAO's Education Expenditure

PAO's Education Expenditure	Determinants	Signs
	GPP per Capita (1 year lagged)	- (***)
	Local Revenue (1 year lagged)	+ (**)
	Number of Schools	+ (**)
Total Education Expenditure	School Age Population	+ (**)
	Poverty	- (**)
	Political Continuity	- (*)
	Corruption	+ (*)
	Governance 3	+ (**)
	Governance 4	+ (**)
	Local Revenue (1 year lagged)	+ (*)
	Number of Students	- (**)
Per Pupil Expenditure (Primary Education)	Number of Schools	+ (**)
	Poverty	- (*)
	Political Continuity	- (*)
	Governance 2	+ (*)
	Governance 3	+ (*)

First of all, the economic and demographic variables are obviously the most important variables. As for the economic variables, they have positive and significant impacts on the allocation of PAO's education expenditure. GPP per capita last year is the determinant of current PAO's total education expenditure. While last year's local revenue is the determinants of both current PAO's total education expenditure and per pupil expenditure. Judging from the results, PAOs have played a better role in providing primary education services in terms of reducing disparity from budget allocation. The economic development has not determined the PAOs to invest more on education where the average income is already high. Contrarily, the higher average income of citizens is, the lower PAOs allocate education expenditure to. The other economic variable which is positively significant is local revenue. This estimation leads to the expectation that if PAOs could collect more revenue, a higher proportion of PAO's total expenditure would go to education. The policy makers should empower more tax collecting to local governments.

As for demographic variables, they also affect the allocation of PAO's education expenditure. Number of students, number of schools and school age population represent demands of primary education service in a PAO. It can be indicated that PAOs allocate education expenditure to respond to its demands.

Secondly, the governance variables are also having a positive impact on PAO's education expenditure. It can be implied that PAOs allocated more both total education expenditure and per pupil expenditure in the PAOs than has governance. Therefore, governance promotion in local government could bring about higher to local education. Nevertheless, the efficiency of education expenditure should be examined as well.

As for the political variables, only two were found to have a significant but negative impact on PAO's education expenditure which is the poverty ratio as a median voter and political continuity. It can be implied that the policy makers should focus on local government policy especially on a position term limit.

CHAPTER 6

EMPIRICAL RESULTS AND DISCUSSION OF PROVINCIAL ADMINISTRATIVE ORGANIZATIONS' EDUCATION OUTCOMES

In this chapter, the empirical results are presented for seven equations. The results obtained can serve as an explanation of what determined PAO's primary education outcomes.

There are five dependent variables in this framework. The first variable representing accessibility to provincial public education service is enrolment ratio (PER). The second one is to indicate the provincial education equality is the literacy ratio (PLR). The third one, to imply the provincial education attainment is the average years of schooling of the adult population (AYSA). These first three dependent variables portray the overview of provincial education conditions by using only TEDU as one of the independent variables. TEDU is the total education expenditure that the PAO spent for both their own schools and to support other government agencies and other organizations relating to education. PAOs have authority to spend their budget to help improve provincial education as a whole. The fourth one shows the provision to indicate that education achievement is average O-net Score of PAO's primary students (AONT). The last one shows education achievement as well is average GPA of PAO's primary students. Since there are fewer provinces which could provide PPE information, the influence of total educational expenditure and per pupil expenditure on the PAO's primary educational outcomes is analyzed separately. Only 16 out of 21 provinces were able to provide PAO's primary educational expenditure and the percentage of PAOs' revenue in PAOs' primary education expenditure. Therefore, there would be 7 models for the conceptual framework II.

6.1 Determinants of Provincial Administrative Organization's Education Outcomes

There are many indicators of education outcomes. Each of them illustrates government's capacity of education management.

6.1.1 The Empirical Estimation of Provincial Enrolment Ratio (PER)

From this equation, the empirical results are presented for all equations using the panel data of 22 PAOs for 2 years, 2011 and 2013. The results obtained can serve as an explanation of what actually determined the enrolment ratio at provincial level. As PAO's total education expenditure are able to be allocated to every student in a province, and it was treated as administrative variable. The table 6.1 presents the summary statistics for all of the variables incorporated in this study. It shows the mean values as well as the maximum and the minimum values of all the variables in this study.

Table 6.1 Descriptive Statistics of all Variables Used for Provincial Enrolment Ratio (PER)

Variables	N	Mean	Standard Deviation	Minimum	Maximum
Dependent Variables					
PER	44	105.5845	9.0712	80.35	122.73
Independent Variables					
TEDU (1 year lag)	44	9.37e+07	1.06e+08	1.06e+07	4.52e+08
GPP	44	195617.8	206119.2	41597	1058293
PRED	44	8.7940	0.7289	6.93	10.64
POV	44	11.6384	8.9059	0.11	35.89
POPD	44	192.1014	191.6586	19.24	690.21
SAP	44	94889.82	57449.72	20819	222149
UBCR	44	29.2770	13.7134	7.78	68.19

Table 6.1 (Continued)

Variables	N	Mean	Standard Deviation	Minimum	Maximum
CORT	44	0.6136	1.1657	0	6
GOVR1	44	0.1590	0.3699	0	1
GOVR2	44	0.1591	0.3698	0	1
GOVR3	44	0.0909	0.2908	0	1
GOVR4	44	0.0681	0.2549	0	1

The empirical results of this equation of provincial enrolment ratio were analyzed by panel data analysis. The panel data multiple regression with random effects is employed here. The empirical results presented in table 6.2 can serve as provision of an analysis of the determinants of the provincial enrolment ratio.

Table 6.2 Estimation of Determinants of Provincial Enrolment Rate (PER)

Independent Variables	Coefficients (Robust)
TEDU (1 year lag)	$2.65e\text{-}08$***
GPP per capita (1 year lag)	0.000019**
POV	-0.0002422
PRED	-1.0857
POPD	-0.00988
SAP	0.000029
UBCR	-0.0287
CORT	-0.5729
GOVR 1	2.3451
GOVR 2	3.2995
GOVR 3	4.5941
GOVR 4	0.6864

Table 6.2 (Continued)

Independent Variables	Coefficients (Robust)
Observation	44
R-Squared	0.4379

Note: 1) ***, ** , and * denote significance levels of 1%, 5%, and 10% respectively.

2) The model is estimated by using a Random Effects Method

3) The 44 observations are from 22 provinces for 2 years (2011 and 2013)

From the panel data analysis results obtained in table 6.2, they can be considered as a good explanation of the determinants of the provincial literacy ratio based on their statistical significance. This estimation has a significant R-squared value of .4379, which indicates that the provincial enrolment ratio is explained by the set of independent variables of more than 40 percent. From the estimation, there are only two variables that can explain the change of the provincial enrolment ratio which are TEDU 1 year lagged and GPP per capita.

6.1.1.1 The Impacts of the Administrative Variable

It should be remembered and noted that the PAO's total education expenditure could be allocated by PAO to support education provision in the whole province not only for its own school. However, the limitation of this study is that it cannot be classified that how much PAO distributed TEDU to other schools for the sake of education. From the estimation, provincial enrolment is positively and highly significantly determined by TEDU.

6.1.1.2 The Impacts of the Economic-Demographic Variable

The economic variable that shows a highly significant impact from the estimation is GPP per capita. The province with a higher income per capita tends to have higher educational outcomes in terms of the provincial enrolment ratio. In other words, in the higher income province, children have a higher possibility to have education accessibility.

It could be implied from the estimation that PAO is that the local government is closer to the citizens than the central government. Therefore, it could target its

education expenditure to where it is most needed. However, the results also show that there is inequality in access to education. The higher GPP per capita could bring about a higher enrolment ratio. The policy makers should pay attention to the disadvantaged children in order to improve education equity and equality.

6.1.2 Empirical Estimation of the Provincial Literacy Rate (PLR)

For this model, the empirical results are presented for all equations using the cross-sectional data of 19 PAOs in 2010 due to the limit of data availability. The results obtained can serve as an explanation of what actually determined the literacy rate at the provincial level. These empirical results are accompanied by the interpretation, as well as discussion. The table 6.3 below presents the summary statistics of all of the variables incorporated in this study. It shows the mean values as well as the maximum and the minimum values of all the variables in this study.

Table 6.3 Descriptive Statistics of all Variables Used for Provincial Literacy Rate
(PLR)

Variables	N	Mean	Standard Deviation	Minimum	Maximum
Dependent Variables					
PLR	19	83.3268	11.607	61.82	98.47
Independent Variables					
TEDU (1 year lag)	19	6.07e+07	5.32e+07	7334456	1.73e+08
GPP	19	182983.2	201331.3	40156	873240.7
POV	19	15.3815	12.2210	0.60	55.79
PRED	19	8.9052	0.5844	7.7	9.7
POPD	19	168.7484	165.4526	19.14	635.45
SAP	19	96416.42	63646.36	22538	227381
UBCR	19	29.427	15.251	7.99	68.26
CORT	19	0.0526	0.2294	0	1
GOVR1	19	0.1052	0.3153	0	1
GOVR3	19	0.0526	0.2294	0	1

Table 6.3 (Continued)

Variables	N	Mean	Standard Deviation	Minimum	Maximum
GOVR4	19	0.1052	0.3152	0	1

The cross-sectional data analysis results shown in table 6.4 explain the movement of the provincial literacy rate across 19 provinces. This can be seen from their statistical significance as shown by a satisfactory R-Squared value of .8488, which indicates that the movement of the provincial literacy rate is explained by this set of independent variables at approximately 85 percent.

Table 6.4 Estimation of Determinants of Provincial Literacy Rate (PLR)

Independent Variables	Coefficients (Robust)
TEDU (1 year lag)	4.64e-09
GPP per capita (1 year lag)	0.00004**
POV	-0.3151
POPD	0.0185
SAP	3.90e-06
PRED	8.0994
UBCR	0.3525*
CORT	9.2634*
GOVR 1	1.1522
GOVR 3	51.981*
GOVR 4	14.971
Observation	19
R-Squared	0.8488

Note: 1) ***, ** , and * denotes significance levels of 1%, 5%, and 10% respectively.

2) The 19 observations are from 19 provinces and 1 year (2010)

From the estimation above, it can be seen that four out of eleven variables have significant impacts on the provincial literacy rate. Therefore, many variables are incorporated into this model which can explain the provincial literacy rate. However, the results show that the administrative variable which is PAO's total education expenditure has no significant impact on the provincial literacy rate.

6.1.2.1 The Impacts of Economic-Demographic Variables

From the estimation, it seems to be the case that GPP per capita has the most positive and significant impact to determine literacy rate at the provincial level. The provinces that have higher income tend to have a higher literacy rate.

Among the demographic variables, urbanization ratio is the only variable that shows a statistical significance and positively determines the provincial literacy rate. This result could go in line with the previous studies. They explained that being in a more urbanized area having more facilities and infrastructure to support education.

However, both variables signal the disparity in education for those who have low incomes and live in rural areas.

6.1.2.2 The Impacts of Governance Variables

As for the impact of corruption, it was expected to be a negative determinant. However, surprisingly, it positively and significantly determines the literacy rate at provincial level. On one hand, this might occur from the flaw of data limitation. On the other hand, there were studies on public expenditure which found that the government tends to invest on infrastructure or capital expenditure rather than education expenditure as it has less chance for corruption. According to Thailand's local government pattern, it chooses to spend on the capital investment category in education expenditure than to improve curriculum or other aspects relating to education outcomes improvement. Although the intention is to invest on construction, the byproduct of the facilities could improve education outcomes such as providing a library and better learning buildings, etc. Further studies should be conducted in order to examine the efficiency of the education expenditure and the effectiveness of education outcomes.

As for GOVR 3 it represents the PAO received by KPI's award on transparency and participation, as it affects the provincial literacy rate with a positive

impact. From this it could be implied that in the PAO which has transparency and good participation, it would have a higher literacy rate too.

6.1.3 The Empirical Estimation of the Provincial Average Years of Adult Schooling (AYSA)

As for this equation, the empirical results are presented for all equations using the panel data of 22 PAOs for 3 years, from 2010-2011 and 2013. The results obtained can serve as an explanation of what actually determined the average years of adult schooling at the provincial level which represents educational attainment. These empirical results are accompanied by the interpretation. Table 6.5presents the summary statistics of all of the variables incorporated in this study. It shows the mean values as well as the maximum and the minimum values of all the variables in this study.

Table 6.5 Descriptive Statistics of all Variables Used for Provincial Average Years of Adult Schooling (AYSA)

Variables	N	Mean	Standard Deviation	Minimum	Maximum
Dependent Variables					
AYSA	66	8.7434	0.8049	6.72	10.83
Independent Variables					
TEDU (1 year lag)	66	7.15e+07	7.17+07	7334456	4.17e+08
GPP	66	190689.8	196646.7	40156	1011901
POV	66	11.8327	9.0509	0.11	36.07
POPD	66	192.1342	190.8636	19.24	690.21
SAP	66	94909.94	56881.32	19571	222149
UBCR	66	29.6401	13.9604	7.76	68.19
CORT	66	0.6060	1.1351	0	6
GOVR1	66	0.1515	0.3612	0	1
GOVR2	66	0.1363	0.3458	0	1
GOVR3	66	0.0909	0.2896	0	1

Table 6.5 (Continued)

Variables	N	Mean	Standard Deviation	Minimum	Maximum
GOVR4	66	0.0606	0.2404	0	1

The results obtained from the table 6.6 below can somewhat explain the movement of the average years of adult schooling at provincial level. This estimation has a very fair value of R-squared of .5068, which indicates the provincial average years of adult schooling can be explained by the set of independent variables by 50 percent.

Table 6.6 Estimation of the Determinants of Average years of Adult Schooling

Independent Variables	Coefficients (Robust)
TEDU (1 year lagged)	3.24e-09**
GPP per capita (1 year lagged)	9.71e-07*
POV	-0.0067
POPD	0.000513
SAP	2.46e-06
UBCR	-0.002313
CORT	0.0340
GOVR 1	0.0556
GOVR 2	0.2326*
GOVR 3	0.1285
GOVR 4	0.1367
Observation	66
R-Squared	0.5068

Note: 1) ***, **, and * denotes significance levels of 1%, 5%, and 10% respectively.

2) The model is estimated by a Random Effects Method

3) The 66 observations are from 22 provinces and 3 years (2010, 2011 and 2013)

According to the estimation, there are altogether three variables that significantly explain the change in provincial average years of adult schooling. They are TEDU (1 year lagged), GPP per capita (1 year lagged) and GOVR2.

6.1.3.1 The Impacts of Administrative Variable

As for TEDU (1 year lagged), it shows a highly significant impact from the above estimation. TEDU has a positive and significant coefficient, implying that a higher average income province leads to more average years of adult schooling.

6.1.3.2 The Impacts of the Economic-Demographic Variable

GPP per capita (1 year lagged) is the only one of the economic-demographic variables in the above estimation which has illustrated significance in terms of its impact on the provincial average years of adult schooling.

6.1.3.3 The Impact of the Governance Variable

As for the governance variable, GOVR2 or the PAO which received a Good Governance Award, has demonstrated a significant impact on provincial average years of adult schooling. The coefficient of GOVR2 is positive, meaning that the PAO received the award, tends to have more average years of adult schooling.

The estimation of this model sheds some light on the analysis of education attainment for provincial education policy. The last year of PAO's total education expenditure affects the current average years of adult schooling. It could be implied that PAO has capacity in helping improvement in education attainment. Again, GPP per capita (1 year lagged) positively and significantly relates to education attainment as shown in the first two indicators of education outcomes. Therefore, the allocation of education resources should focus on disadvantaged children to close the disparity gap in education. For a governance variable, it can be indicated that governance has an important role in education outcomes improvement. The policy makers need to promote local governance for the efficiency and effectiveness of local government's education service.

6.1.4 The Empirical Estimation of the PAOs' Grade 6 students' Average O-Net Scores (AONT) (TEDU)

In this part, the empirical results are presented for all equations using the panel data of 21 PAOs for 3 years, from 2010-2012. The results obtained can serve as an

explanation whether TEDU and other variables determined PAO's Grade 6 students Average O-Net Scores and PAO's Average GPA of Grade 6 students which represent education achievement. These empirical results are accompanied by the interpretation, as well as a discussion, of the probable underlying reasons for the estimated results. The table 6.7 presents the summary statistics of all of the variables incorporated in this study. It shows the mean values as well as the maximum and the minimum values of all the variables in this study.

Table 6.7 Descriptive Statistics of all Variables Used for TEDU and PAOs' Grade 6 students' Average O-Net Scores (AONT) and PAOs' Average GPA of Grade 6 students (AVGG)

Variables	N	Mean	Standard Deviation	Minimum	Maximum
Dependent Variables					
AONT	63	44.2554	5.7936	36.21	64.42
AVGG	63	2.8239	0.2688	2.31	3.46
Independent Variables					
TEDU	63	7.88e+07	8.86e+07	8189060	4.52e+08
GPP (1 year lag)	63	189903.1	201276.5	40156	1011901
LCR (1 year lag)	63	3.39e+08	3.64+08	7000000	1.90e+09
POV	63	12.2620	9.0303	0.11	36.07
NSTU	63	434.444	426.572	39	1792
POPD	63	169.589	163.776	19.24	690.21
SAP	63	96892.86	57481.56	19571	222149
PRED	63	8.7125	0.8092	6.72	10.83
UBCR	63	28.654	12.3353	7.76	49.65
CORT	63	0.6190	1.1560	0	6
GOVR1	63	0.1269	0.3356	0	1
GOVR2	63	0.1428	0.3527	0	1
GOVR3	63	0.0793	0.2724	0	1
GOVR4	63	0.0634	0.2458	0	1

The results obtained from the table 6.8 can somewhat explain the movement of AONT in terms of TEDU. This estimation has a very fair value of R-squared of 0.5125 and 0.5330 respectively, which indicates AONT can be explained by the set of independent variables by more than 50 percent.

Table 6.8 Estimation of the Determinants of PAO's Average O-Net Scores of Grade 6 Students (TEDU)

Variable	Coefficients (Robust)	
Model	1	2
TEDU	-1.09e-08***	-1.15e-08*
GPP per Capita (1-year lagged)	-	8.05e-06*
LCR (1-year lagged)	-3.04e-06	
POV	-	0.3580**
NSTU	-	-0.0008
POPD	-	0.0045
SAP	-	-0.00042
PRED	-	1.1404
UBCR	0.16277**	-
CORT	-0.1998	-
GOVR1	3.2102**	-
GOVR2	2.3249	-
GOVR3	0.680123	-
GOVR4	4.9645	-
Observation	63	63
R-Squared	0.5125	0.5330

Note: 1) ***, ** , and * denotes significance levels of 1%, 5%, and 10% respectively.

2) Model 1 and 2 are estimated by a Random Effects Method

3) The 63 observations are from 21 provinces and 3 years (2010, 2011 and 2012)

According to the estimation, there are altogether five variables that significantly explain the change in average PAO's average O-Net scores of Grade 6 students. They are TEDU (1 year lagged), GPP per capita (1 year lagged), UBCR and GOVR1.

Schools under PAO have to be conducted by using the national education curriculum which comprises 8 major subject areas: 1) Thai Language 2) Mathematics, 3) Science, 4) Social Science, Religion, and Culture, 5) Health and Physical Education, 6) Art, 7) Career and Technology, and 8) Foreign Languages. Although the Ordinary National Educational Test (O-NET) has been designed to assess their academic proficiency from 8 core subjects, it has an analytical style which is different from teaching in schools. To prepare students for O-NET exams, some schools have conducted a special class for their students. Unluckily, some PAOs do not have the capacity to provide such classes.

6.1.4.1 The Impacts of the Administrative Variable

TEDU is the most significant variable in explaining the PAO's average O-Net scores of Grade 6 students. In the previous studies, there were controversies whether education expenditure had impact on education achievement or not. For the PAO case, the results turned out to be very clear that PAO's average O-Net scores are negatively and highly significantly determined by PAO's total education expenditure. Taking a look at the proportion of PAO education expenditure is clearly needed. This result can be implied that the education expenditure of PAO has not been allocated to improve education achievement. Therefore, the more PAO's total spending on education is, the less education achievement the PAO's primary students obtained.

6.1.4.2 The Impacts of Economic-Demographic Variables

1) GPP per capita (1 year lagged)

As expected, GPP per capita (1 year lagged) has a significant and positive coefficient impact on PAO's average O-Net scores. The estimation implies that the higher income province tends to afford better preparation for O-Net exams.

2) Poverty Ratio

As for the poverty ratio, it highly and significantly determines PAO's average O-Net score. The coefficient of POV is positive, implying that

provinces with greater poverty tend to receive a higher average O-Net score. They have to interpret the results carefully. Some PAOs have provided 100% free schools for their students. Most students in those schools are poor. It could be implied that PAOs target helping poor students. Therefore, the poor could have comparatively high average O-Net scores.

3) Urbanization ratio

Urbanization also determines PAO's average O-Net scores. The coefficient of UBCR is positive and highly significant which means the percentage of people living in urban areas, tends to have higher average O-Net scores. Due to better learning infrastructures including internet accessibility, it could help students live in an urban area with more advantages than those who live in rural areas.

6.1.4.3 The Impacts of Governance Variable

As for the governance variable, GOVR1 represents the PAO which the PAO Chief Executive received a Leadership Award in Education. GOVR1 tends to have a positive and highly significant impact that determines PAO's education achievement. It could be implied that the PAO where the PAO Chief Executive received the award could have an influence on higher PAO's education achievement in terms of average O-Net scores.

6.1.5 The Empirical Estimation of the TEDU and of PAO's Average
GPA of Grade 6 Students (AVGG)

The results obtained from the Table 6.9 can somewhat explain the movement of AVGG. These estimations have very fair values of R-squared of .5140 and .5013, which indicates AVGG in terms of TEDU can be explained by the set of independent variables by more than 50 percent.

Table 6.9 Estimation of the Determinants of PAO's Average GPA of Grade 6
Students (TEDU)

Variable	Coefficients (Robust)	
Model	1	2
TEDU	6.97e-10***	1.00e-09***
GPP per Capita (1-year lagged)	-	-5.98e-08
LCR (1-year lagged)	-4.23e-10***	-
POV	-	0.00702
NSTU	-	0.00014*
POPD	0.00027	-
SAP	1.70e-06	-
PRED	-0.0426	-0.0558
UBCR	-	-0.0033
CORT	-0.00535	-
GOVR1	0.03175	-
GOVR2	0.06732	-
GOVR3	0.07727**	-
GOVR4	0.13116	-
Observation	63	63
R-Squared	0.5140	0.5013

Note: 1) ***, ** , and * denotes significance levels of 1%, 5%, and 10% respectively.

    2) Model 1 and 2 are estimated by a Random Effects Method

    3) The 63 observations are from 21 provinces and 3 years (2010, 2011 and
2012)

    According to the estimation, there are altogether four variables that significantly explain the change in average PAO's average GPA of Grade 6 students

in terms of TEDU. They are GPP per capita (1 year lagged), POPD, UBCR and GOVR1.

6.1.5.1 The Impacts of the Administrative Variable

As for TEDU, clearly TEDU has a positive and very significant impact on PAO's average GPA of Grade 6 students. That is, the PAO with higher spending on total education expenditure, the higher is the average GPA of Grade 6 students.. This could be indicated that the allocation of TEDU might target to improve education achievement in terms of 8 core subjects according to the national curriculum rather than taking O-Net exams.

Of interest is the impact of the lagged variable. The previous year's local revenue has a highly significant but negative influence on average GPA scores, which is opposite to what is predicted by the previous studies. The previous research found that there was a positive impact of local revenue on education outcomes indirectly. The more local revenue PAO earned, the more investment on education should be and this could improve the education outcomes. This estimation shows that the more local revenue collected last year has a negative impact on the current average GPA of Grade 6 students.

Clearly, NSTU has a positive and significant impact on average GPA of Grade 6 students in PAO. That is, the PAOs with larger number of students were allocated more expenditure and this brought about improvement of average GPA.

6.1.5.2 The Impacts of Governance Variables

As for governance variable, GOVR3 stands for the PAO which received KPI's Award on transparency and participation. GOVR3 has demonstrated a highly significant impact on the average GPA. The coefficient of GOVR3 is positive, meaning that the PAO with the award tends to improve education outcomes more than those who did not receive this award.

6.1.6 The Empirical Estimation of the PAOs' Grade 6 students' Average O-Net Scores (AONT) (PPE)

The results obtained from Table 6.10 can somewhat explain the movement of AONT in terms of PPE. This estimation has a very fair value of R-squared of .5068,

which indicates the provincial average years of adult schooling can be explained by the set of independent variables by 50 percent.

Table 6.10 Estimation of the Determinants of PAO's Average O-Net Scores of Grade 6 Students (PPE)

Variable	Coefficients (Robust)	
Model	1	2
PPE	1.48e-06	0.000001
GPP per Capita (1-year lagged)	2.37e-06*	-
LCR (1-year lagged)	-	-2.28e-09
% of LCE	-	-0.000022
POV	-	0.28768
NSTU	0.00061	-
POPD	0.00768*	-
SAP	0.000001	-
PRED	-	1.36179
UBCR	-	0.22665**
CORT	-	-0.34687
GOVR1	-	5.3550***
GOVR2	-	0.9843
GOVR3	-	3.7540
GOVR4	-	0.9826
Observation	48	48
R-Squared	0.6324	0.6481

Note: 1) ***, ** , and * denotes significance levels of 1%, 5%, and 10% respectively.

2) Model 1 and 2 are estimated by a Random Effects Method

3) The 48 observations are from 16 provinces and 3 years (2010, 2011 and 2012)

According to the estimation, there are altogether four variables that significantly explain the change in average PAO's average O-Net scores of Grade 6 students in terms of PPE. They are GPP per capita (1 year lagged), POPD, UBCR and GOVR1.

6.1.6.1 The Impacts of the Economic-Demographic Variables

As for GPP per capita (1 year lagged), the previous year's average income per capita positively and significantly determines PAO's AONT. In other words, the province that has higher income tends to have higher AONT. The results go in line with the estimation of TEDU influence on AONT equation. The higher income population could afford better O-Net preparation for the students such as attending tutoring classes and obtaining books, for example.

1) Population Density

As for POPD, the coefficient of POPD is positive and significant. It could be implied that the province that has a higher population density tends to have better average O-Net scores.

2) Urbanization Ratio

Another social variable that shows as highly significant impact from the above estimations on educational achievement is the urbanization ratio. UBCR has a positive and highly significant coefficient implying that urbanization leads to higher education achievement.

6.1.6.2 The Impacts of Governance Variables

GOVR1 represents the PAO where the PAO Chief Executive received a Leadership Award in Education. GOVR1 has demonstrated a highly significant impact on average O-Net score. The estimation implies that average O-Net score increases with the PAO which has the leader who pays attention to education achievement. The general criteria of the award are to examine Chief Executive of PAO's vision, to complete self-assessment on leadership, ability and experience, virtue and ethic and human relations. The specific criteria are general capacity consisting of 6 governance principles; rule of law, virtue, participation, accountability and value for money. For capability in educational administration, the candidates must have three-year development plan and education development plan, allocate sufficient budget for education. Moreover, their education institute must obtain

satisfactory level of quality assessment and concrete evidences of education achievement. Therefore, in order to receive this award, the PAO's executive is seemed to have comprehensive qualifications especially visions and adopt governance principles in education administration.

6.1.7 The Empirical Estimation of the PAO's Average GPA of Grade 6 Students (PPE)

In this part, the empirical results are presented for all equations using the panel data of 21 PAOs for 3 years, from 2010-2012. The results obtained can serve as an explanation whether PPE and other variables determine PAO's Grade 6 students Average O-Net Scores and PAO's Average GPA of Grade 6 students. These empirical results are accompanied by the interpretation, as well as a discussion, of the probable underlying reasons for the estimated results. The table 6.11 presents the summary statistics of all of the variables incorporated in this study. It shows the mean values as well as the maximum and the minimum values of all the variables in this study.

Table 6.11 Descriptive Statistics of all Variables Used for PPE and PAOs' Grade 6 students' Average O-Net Scores (AONT) and PAOs' Average GPA of Grade 6 students (AVGG)

Variables	N	Mean	Standard Deviation	Minimum	Maximum
Dependent Variables					
AONT	48	43.5927	5.1024	36.21	62.79
AVGG	48	2.8472	0.2704	2.34	3.46
Independent Variables					
PPE	48	25650.99	41012.19	779.52	256300.1
GPP (1 year lag)	48	208457.5	224900.9	40156	1011901
LCR (1 year lag)	48	2.97e+08	3.18+08	7000000	1.03+09
% of LCE	48	50.0716	29.1271	3.28	140.43
POV	48	11.9585	9.0445	1.6	36.07
NSTU	48	517.2292	452.609	59	1792

Table 6.11 (Continued)

Variables	N	Mean	Standard Deviation	Minimum	Maximum
POPD	48	161.781	128.146	19.24	595.47
SAP	48	98656.6	61553.11	24312	222149
PRED	48	8.7179	0.7463	6.72	9.64
UBCR	48	26.449	12.4511	7.76	48.85
CORT	48	0.4791	1.1667	0	6
GOVR1	48	0.0625	0.2446	0	1
GOVR2	48	0.125	0.3342	0	1
GOVR3	48	0.104	0.3087	0	1
GOVR4	48	0.0625	0.2244	0	1

The results obtained from table 6.12 can somewhat explain the movement of AVGG in terms of PPE. This estimation has very fair values of R-squared of .5203 and .5288, respectively which indicate the AVGG can be explained by the set of independent variables by more than 50 percent.

Table 6.12 Estimation of the Determinants of PAO's Average GPA of Grade 6 Students (PPE)

Variable	Coefficients (Robust)	
Model	1	2
PPE	3.40e-06**	4.59e-06*
GPP per Capita (1-year lagged)	-3.25e-07*	
LCR (1-year lagged)	-	-1.26e-12
% of LCE	0.00037	0.00076
POV	0.0049	-
NSTU	0.00061	-

Table 6.12 (Continued)

Variable	Model	Coefficients (Robust)	
		1	2
POPD		0.00011	-
SAP		1.59e-06	-
PRED		-	0.00239
UBCR		-	-0.00246
CORT		-	0.00238
GOVR1		-	0.1035*
GOVR2		-	0.0588
GOVR3		-	0.0060
GOVR4		-	0.1067
Observation		48	48
R-Squared		0.5203	0.5288

Note: 1) ***, **, and * denotes significance levels of 1%, 5%, and 10% respectively.

2) Model 1 and 2 are estimated by a Random Effects Method

3) The 48 observations are from 16 provinces and 3 years (2010, 2011 and 2012)

According to the estimation, there are altogether four variables that significantly explain the change in average PAO's average GPA of Grade 6 students in terms of PPE. They are PPE, GPP per capita (1 year lagged), NSTU and GOVR1.

6.1.7.1 The Impacts of the Administrative Variable

By this time, PPE has demonstrated a highly significant impact on AVGG. The coefficient is positive meaning that the higher PPE, coming from the PAO itself subsidies PAO per pupil expenditure, which tends to increase AVGG of PAO.

6.1.7.2 The Impacts of the Economic-Demographic Variables

The estimation of GPP per capita (1 year lagged) is different from expected.

According to previous studies and the above results, the coefficient of average income per capita is positive and significant. However, in this case, GPP per capita (1 year lagged) has a negative impact on current PAO's average GPA.

As for NSTU, clearly that NSTU has a positive and very significant impact on AVGG. That is, the PAO with larger number of students has a higher average GPA.

6.1.7.3 The Impacts of the Governance Variable

As for the governance variable, GOVR1 represents the PAO where the PAO Chief Executive received a Leadership Award in Education. GOVR1 tends to have a positive and somewhat significant impact that determines PAO's education achievement. It could be implied that the PAO where the PAO Chief Executive received the award could have an influence on higher PAO's education achievement in terms of average GPA of PAO students by increasing PPE.

6.2 Discussion

From the estimations, the PAO educational outcomes are clearly seen determining by many determinants.

6.2.1 The Administrative Determinants

TEDU is a crucial determinant of PAO education outcomes. It has a positive and highly significant impact to most of the education indicators. This result could be implied that money does matter in improving education outcomes at PAO level. The allocation of the expenditure is needed to be monitored as to whether the PAO spends it on capital investment or specifically to supplement of PAO's curriculum for local needs.

6.2.2 The Economic-Demographic Determinants

Considering the determinants of educational outcomes for PAO in the years of study, it is obvious that they are partly determined by a set of economic –demographic

contexts. The results go in line with the reproduction of education theory. This illustrates that policy makers have to pay attention in focusing at disadvantaged students as they could not afford learning facilities to improve their education outcomes.

As for GPP per capita (1 year lagged), it affects most of the education outcomes at PAO level with a positive and highly significant impact. This implies that the distribution of education expenditure and support needs to be put directly to the lower income area.

Urbanization Ratio and Population density also affect PAO's education outcomes. Both coefficients are significant and highly significant in determining some indicators of education outcomes. Living in an urban area is more advantageous than in a rural area in terms of studying. There are many ways to access educational facilities such as libraries, internet and sources of knowledge.

6.2.3 The Governance Determinants

As for the governance variables, it is clear that PAO's governance is the key determinant to improve education outcomes. The accountability of PAO's Chief Executive represented through receiving the Leadership Award on Education. The estimations shown that PAO's Chief Executive who pay attention to education services has a positive and highly significant impact on education achievement. Another award which indicates that the PAO has good governance implementation is the Good Governance Award presented by the LGCC. It also leads to increasing in average years of adult schooling in terms of education attainment. For the PAO which receives the KPI's Award on transparency and education is also presented in the estimation that it is positive and highly significant. It could be implied that the PAO which has the qualification of transparency and gets citizens involved in PAO's activities, tends to have better education equity, equality and achievement.

Nevertheless, due to the limitation of data for the provincial literacy rate, the result of the corruption coefficient is needed to be carefully interpreted. As well as the estimation of AVGG: TEDU equation, it shows that the coefficient of local revenue is negative. The result is different from the previous studies' findings which show that

the greater proportion of local revenue in education expenditure should lead to higher education outcomes.

Table 6.13 Factors Affecting PAO's Education Outcomes

Education Outcomes	Determinants	Signs
Provincial Enrolment Ratio	Total educational expenditure (1 year lagged)	+ (***)
	GPP per Capita (1 year lagged)	+ (**)
Provincial Literacy Rate	GPP per Capita	+ (**)
	Urbanization Ratio	+ (*)
	Corruption	+ (*)
	Governance 3 (KPI's award in transparency & participation)	+ (*)
Provincial Average Years of Adult Schooling	Total educational expenditure (1 year lagged)	+ (**)
	GPP per Capita (1 year lag)	+ (*)
	Governance 2 (Good Governance Award)	+ (**)

Table 6.13 (Continued)

Education Outcomes	Determinants	Signs
PAO's Grade 6 Students' Average O-Net Scores (TEDU)	Total educational expenditure	- (***)
	GPP per Capita (1 year lagged)	+ (*)
	Poverty Ratio	+ (**)
	Urbanization Ratio	+ (**)
	Governance 1 (Leadership in Educational Management)	+ (**)
PAO's Grade 6 Students' Average O-Net Scores (PPE)	GPP per capita	+ (*)
	Population density	+ (*)
	Urbanization Ratio	+ (**)
	Governance 1 (Leadership in Educational Management)	+ (***)
PAO's Grade 6 Students' Average GPA (TEDU)	Total educational expenditure	+ (***)
	Local revenue	- (***)
	Number of students	+ (*)
	Governance 3 (KPI Award on transparency and participation)	+ (**)

Table 6.13 (Continued)

Education Outcomes	Determinants	Signs
PAO's Grade 6 Students' Average GPA (PPE)	Per pupil expenditure	+ (**)
	GPP per capita	- (*)
	Number of students	+ (**)
	Governance 1 (Leadership in Educational Management)	+ (*)

CHAPTER 7

CONCLUSION AND RECOMMENDATIONS

The study was conducted with the objectives to find out the key determinants that affect provincial administrative organization (PAO)'s education expenditure and education outcomes focusing on primary education level. The ultimate expectation was to utilize the results of how local administrative organizations LAO, the closest government unit to citizens knowing best about its local needs, such as a PAO could help bring about better education outcomes in Thailand by improving the allocation of budget to the education sector; decreasing education inequality; enhancing education quality, providing education services with effectiveness and efficiency. In the end, it is aimed at finding the solutions to the PAO's education problems.

7.1 Conclusion of the Study

According to the objectives of this study, the aim is to answer the following questions. First, what are the socio-economic, political and governance determinants of primary level education expenditure in PAOs? Second, what are the determinants of PAO's primary education outcomes? Third, how should the government develop a policy to improve the PAO's primary education outcomes? From reviewing the relevant literature, a number of theories and hypotheses have been chosen to test for their plausibility in explaining PAO's.

For the first research question, in order to come up with the main factors that affect PAO's expenditure on primary education, a comprehensive review of the literature was conducted and two models were developed to analyze two dependent variables which are total education expenditure (TEDU), per pupil primary expenditure (PPE) the extent to which the analysis seeks to explain the behavioral pattern by referring to multidimensional independent variables, including socio-

economic, demographic, politics and governance which are rarely taken into consideration of budget allocation research. TEDU is the total education expenditure that PAO's allocate budget for every type of education in PAO territory including both PAO's revenue and grants-in aid. PPE is the education expenditure that is allocated from PAO's revenue to primary education provision illustrating PAO's capability and intention. The models include the economic-demographic factors, which are one year lagged GPP per capita, one year lagged local revenue, number of schools, number of students, population density, parental education; political factors, which are the poverty ratio, political competition, political continuity as a dummy variable, and voter participation; governance factors, which are corruption which is the Office of National Anti- Corruption Commission's number of complaints on fraud, 4 proxies of governance factors representing 4 governance awards as dummy variables; Excellent chief executive administration award in education, Good Governance Award, King Prajadhipok's Institute award on transparency and participation promotion and King Prajadhipok's Institute award on networking promotion. In the past, there is no panel data analysis on LAO's education expenditure. This study is the first one which obtained PAO education expenditure data for five years (2010-2014). Most of the previous data are qualitative analysis of a certain LAO and the macro focusing researches sponsored by government agencies giving an overview of LAO's spending not on education provision especially. The data are applied to determine factors that statistically affect PAO's educational expenditure policy.

For the second question, it considers PAO's education outcomes as the dependent variables. Since there are distinctive dimensions; accessibility, equality and achievement of education outcomes reflecting how the PAO's educational administration are, the education outcomes in this study composed of enrolment rate, literacy ratio, average years of adult schooling, average O-Net scores and average GPA of primary students of PAO schools. The first three dependent variables portray how PAOs are involved in supporting provincial education systems while the other two variables elucidate how PAO's administer PAO education institutes in terms of education achievement. From reviewing the relevant literature, a number of theories and hypotheses have been chosen to test for their plausibility in explaining PAO's

educational outcomes. Given the scarcity of relationships between educational expenditure and educational outcomes research in Thailand, this study revisits the argument to seek for an appropriate policy for its LAO's taken PAO's primary education as a case study. Therefore, this study provides a comprehensive examination with multidimensional analysis of the policy determinants to fit the context of PAO's including administrative, social, economic, demographic, politics and governance factors. There are three main points that should be summarized regarding the framework of this study. Considering the analytical framework and objectives, there are seven models to analyze five dependent variables and two types of analysis are incorporated in this study, which are the panel data analysis for 4 dependent variables and the cross-sectional data analysis which is used by only the literacy rate model due to data limitation. The choice of independent variables used in explaining the situation of educational outcomes also varies from those in the literature. Therefore, the multidimensional analysis for the policy determinants used in this study is based on adjustments according to the theoretical background, with some evidence from previous studies.

Having discussed the possibilities of variables that may determine education outcomes in PAO's, there are altogether five equations. These equations divide education outcomes by types, which are enrolment ratio, literacy rate, and average years of adult schooling, average O-net scores and average GPA of PAO's primary students. These equations are extended to include a number of independent variables. The independent variables used in this study comprise three main categories, including administrative, economic-demographic, and governance variables. The sets of independent variables vary by dependent variables based on literature review and data limitation that could be summarized as follows.

1) Enrolment ratio; administrative variable is PAO's total education expenditure; economic-demographic variables include GPP per capita, poverty ratio; and social variables which are parental education, population density, school age population and urbanization ratio; governance variables which are governance factors, which are corruption which is the Office of National Anti- Corruption Commission's number of complaints on fraud, 4 proxies of governance factors represented by 4 governance awards as dummy variables; Excellent chief executive administration

award in education, Good Governance Award, King Prajadhipok's Institute award on transparency and participation and promotion and King Prajadhipok's Institute award on networking promotion.

2) Literacy rate; the administrative variable is PAO's total education expenditure; economic-demographic variables including GPP per capita, poverty ratio; social variables which are parental education, enrolment rate, and urbanization ratio; governance variables which are governance factors, which are corruption which is the Office of National Anti- Corruption Commission's number of complaints on fraud, 4 proxies of governance factors represented by 4 governance awards as dummy variables; Excellent chief executive administration award in education, Good Governance Award, King Prajadhipok's Institute award on transparency and participation and promotion and King Prajadhipok's Institute award on networking promotion.

3) Average years of adult schooling; administrative variable is PAO's one year lagged total education expenditure; economic-demographic variables include GPP per capita, poverty ratio; social variables which are population density, school age population and urbanization ratio; governance variables which are governance factors, which are corruption which is the Office of National Anti- Corruption Commission's number of complaints on fraud, 4 proxies of governance factors represented by 4 governance awards as dummy variables; Excellent chief executive administration award in education, Good Governance Award, King Prajadhipok's Institute award on transparency and participation and promotion and King Prajadhipok's Institute award on networking promotion.

4) Average O-Net scores of PAO's primary students (AONT)

This dependent variable has two different dependent variables needed to be analyzed in different models. One is TEDU and the other is PPE.

(1) AONT- TEDU model

The administrative variable is PAO's one year lagged total education expenditure, economic-demographic variables including GPP per capita, poverty ratio; social variables which are the poverty ratio, number of students, population density, school age population, parental education, and urbanization ratio; governance variables which are governance factors, which are corruption which is the Office of

National Anti- Corruption Commission's number of complaints on fraud, 4 proxies of governance factors represented by 4 governance awards as dummy variables; Excellent chief executive administration award in education, Good Governance Award, King Prajadhipok's Institute award on transparency and participation

and promotion and King Prajadhipok's Institute award on networking promotion.

(2) AONT- PPE model

Administrative variable is PAO's one year lagged total education expenditure; economic-demographic variables include GPP per capita, poverty ratio; social variables which are administrative variable is PAO's total education expenditure; economic-demographic variables include GPP per capita, the poverty ratio, percentage of local revenue allocated to PAO's primary education service; social variables which are the poverty ratio, number of students, population density, school age population, parental education, and urbanization ratio; governance variables which are governance factors, which are corruption which is the Office of National Anti- Corruption Commission's number of complaints on fraud, 4 proxies of governance factors represented by 4 governance awards as dummy variables; Excellent chief executive administration award in education, Good Governance Award, King Prajadhipok's Institute award on transparency and participation and promotion and King Prajadhipok's Institute award on networking promotion.

5) Average GPA of PAO's primary students (AVGG)

This dependent variable has two different dependent variables needed to be analyzed in different models. One is TEDU and the other is PPE.

(1) AVGG-TEDU model

The administrative variable is PAO's one year lagged total education expenditure; economic-demographic variables include GPP per capita, poverty ratio; social variables which are the poverty ratio, number of students, population density, school age population, parental education, and urbanization ratio; governance variables which are governance factors, which are corruption which is Office of National Anti- Corruption Commission's number of complaints on fraud, 4 proxies of governance factors represented by 4 governance awards as dummy variables; Excellent chief executive administration award in education, Good Governance

Award, King Prajadhipok's Institute award on transparency and participation and promotion and King Prajadhipok's Institute award on networking promotion.

(2) AONT- PPE model

The administrative variable is PAO's one year lagged total education expenditure; economic-demographic variables include GPP per capita, the poverty ratio; social variables which are administrative variable is PAO's total education expenditure; economic-demographic variables including GPP per capita, poverty ratio, percentage of local revenue allocated to PAO's primary education service; social variables which are the poverty ratio, number of students, population density, school age population, parental education, and urbanization ratio; governance variables which are governance factors, which are corruption which is the Office of National Anti- Corruption Commission's number of complaints on fraud, 4 proxies of governance factors represented by 4 governance awards as dummy variables; Excellent chief executive administration award in education, Good Governance Award, King Prajadhipok's Institute award on transparency and participation and promotion and King Prajadhipok's Institute award on networking promotion.

All of the final equations, with appropriately-assigned independent variables, were regressed using the panel data regression with the random effect technique as a result of Hausman's test. Robust standard error is employed to solve the multicollinearity (by using the STATA program)

The overall results of the estimation of the analysis of PAO's education expenditure determinants in chapter five can be summarized as follows:

1) The two proposed equations using panel data analysis can fit and explain the behavior of PAO's educational expenditure allocation. One is for Provincial Administrative Organization's total education expenditure (TEDU) and the other one is for PAO's per pupil expenditure for primary education (PPE)

2) The one-year lagged GPP per capita has particularly illustrated the most significant role in provincial administrative organization's total educational expenditure (TEDU). This economic variable has demonstrated significant and negative signs in the coefficients, the base of the previous year's average income used by policy makers in allocating educational expenditure TEDU has played an important role in reducing economic disparity. PAO would invest more on education,

if the average income was low. Therefore, this is in not accordance with the prediction of Wagner's Law and Peacock and Wiseman hypothesis in responsive to economic growth. In this case, PAO allocates education expenditure to those in need rather than to those who already have money. The results reveal the good character of PAO in Thailand that could not be explained by economic theories and most previous research.

3)   Local revenue is another economic variable which are found to have statistical influence on both types of educational expenditures. Nevertheless, the positive coefficient of local revenue for TEDU is more significant than for PPE.

4) The demographic variables have also demonstrated a significant impact on TEDU and PPE. The number of schools was found to have a positive and significant impact on both TEDU and PPE. However, the number of students was found to have a significant and negative impact on PPE as the number of students was higher, the lower PPE would be. Moreover, this study finds that high school age population significantly and positively affects TEDU. The implication is that when school age population increases, PAO's policy makers allocate a bigger budget for PAO's education services. Therefore, there are many demographic variables found to be significant in this study. This is according to what Wagner's Law predicts. PAO takes demographic and education variables into account when allocating education expenditure.

5) The effect of the political variables was also found in this study. This study finds that the poverty ratio represents median voter significantly and negatively affects the expenditure allocated to both TEDU and PPE. The implication is that when the poverty ratio increases, policy makers allocate a smaller budget for basic education. This is contradictory to the expected results that the median voter at the local level is the poor or what the poor needs is not education services but other types of expenditure such as infrastructure construction which creates more jobs directly. There should be further study on this issue that which group is the median voter at PAO's level and what type of services the median voter needs from PAO. For political continuity, as expected and predicted by the previous research results that without a term-limit of local government's chief executive officer, that is, political continuity tends to decrease the budget allocated to education. The results showed

negative effects of political continuity to both TEDU and PPE. The results show that the longer in position of PAO's executive administration has illustrated a significant and negative impact on educational expenditure.

6) For governance factors, they were expected to have positive impact on education expenditure except for corruption. However, the results turned out contrarily, corruption has a significant and positive impact on TEDU. It could be implied that education expenditure is usable for doing corruption in PAO's. TEDU was determined by the corruption rate. From the results, there should be solutions to this problem as soon as possible as the education expenditure will not be utilized for education services efficiently and effectively. The proportion of education expenditure would go to building construction rather than to other categories to improve education outcomes. Nevertheless, governance compositions such as transparency, participation and networking promotion in PAO's are found to be positively and significantly impact to both TEDU and PPE. The PAO's governance proxies represent that the PAO that meet criteria of good governance awards; Good Governance Awards, King Prajadhipok's Institute's Awards (KPI's Awards) on Transparency and Participation and Promotion and KPI's Awards on Networking Promotion. The PAOs which received the awards tend to spend more on education expenditure.

The estimation for the second conceptual framework can be summarized as follows.

1) The seven proposed equations using panel data analysis can fit and explain the determinants of PAO's educational outcomes in terms of accessibility, equality and achievement; provincial enrolment ratio, (PER), provincial literacy rate (PLR), provincial average years of adults schooling (AYSA), PAO's Grade 6's average O-Net scores (AONT) and PAO's Grade 6's average GPA (AVGG).

2) First, the administrative variable, PAO's total education expenditure (TEDU), is used for education institute administration and for supporting provincial education systems. It tends to have a very high significant impact on various types of education outcomes except PLR. It could be interpreted that PAO has played an important role in provincial education support.

3) Secondly, the economic-demographic variable, GPP per capita, tends to have a significant impact on overall education outcomes at provincial level. Average income positively determines most kinds of educational outcomes. The results are in accordance with sociological theory in that socio-economic status positively affects education outcomes due to their capability to support children's education and the appreciation of education value. Urbanization also illustrates that education outcomes respond to accessibility of education infrastructures and facilities such as internet access, libraries and sources of information.

4) Thirdly, TEDU has for the most part a positive effect but shows little ambiguity in its negative effect in AONT. The results could be implied that TEDU has been spent for improving 8 core subjects of the national basic education curriculum but not for taking the O-Net test. Therefore, TEDU has a negative impact on AONT but a positive impact on AVGG.

5) Fourthly, surprisingly local revenue which is one of the economic variables highly significant and negatively impacted in the AVGG-TEDU model. This might be interpreted that the high level of local revenue did not guarantee efficient education administration. Therefore, the greater level of local revenue is, the less AONT than could be.

6) GPP per capita represents the economic status illustrating that it determines education outcomes at provincial level. However, when comparing to PPE's effect on average GPA, GPP per capita reveals its negative effect on GPA. PPE has a highly significant and positive impact on GPA.

7) With the limitations as well as the inflexibility of the results from the cross-sectional data analysis of provincial literacy ratio which has only one year's available data (2010) regression analysis, the results reveal that the corruption rate has a positive impact on the literacy rate.

8) Precisely, governance proxies are related to provincial education outcomes and well as PAO's education outcomes. The governance characters that positively impact on overall education outcomes are PAO's with good governance, transparency and participation promotion tends to have more desirable education outcomes. In additions, from the results revealed that the PAO's with excellent executive administration tend to have higher O-Net scores and GPA.

Therefore, for PAO's education outcomes, the administrative variable which is TEDU is the most significant determinant of education outcomes followed by socio-economic variables.

7.2 The Importance of Governance in Reducing Local Education Disparity

According to the results of both conceptual frameworks, governance variables play an important role in determining desirable education outcomes in provincial and PAO level. Governance reflects interaction among parties. Although in the first framework, corruption proxy has positive effect on PAOs' education expenditure; it has no significant effect on education outcomes in the second framework. Due to the limitation of obtained data on governance, this study cannot tell which group or independent variables affect the education outcomes most. What we know from the results is having governance has positive effect on PAOs' primary education outcomes. Having governance in transparency and participation category brings about educational accessibility and in good governance results in educational attainment. Educational achievement drives mainly by leadership of PAOs. Regardless the financial status of PAOs, governance can diminish education disparity as the right process help boost the efficiency and effectiveness, concern relationship between government and citizens and check and balance the government functioning. (Kickert, 2005)

7.3 Theoretical Contributions

Although this study is policy-oriented in nature, focusing only on policy determinant analysis and aiming to gain a thorough understanding of the behavior of the local administrative organization in cases of provincial administrative organization in allocating public expenditure on education and determinants of provincial administrative education outcomes, there are some significant theoretical contributions.

This study sheds new light on empirical evidence of the determinants of public education expenditure and public education outcomes at local government levels. Based on long term data of provincial administrations on primary education expenditure, local revenue and achievements, this research should result in a contribution to both national and local policy analysis. The theoretical contributions generated in this study are as follows:

First, this study utilized concept of governance in analyzing local education expenditure and education outcomes. In the past, there were arguments on the determinants of public expenditure which were socioeconomic and political factors. For determinants of public education outcomes, there was either public expenditure or socioeconomic status of population. With governance, PAOs could reduce disparity on education by providing educational services more effectively according to the study's results.

Second, this study could indicate which components of governance should be promoted in order to improve educational outcomes in specific educational indicators. To enhance efficiency of educational expenditure allocation, transparency and participation as well as governing by network should be promoted. While to increase educational attainment, it needs overall good governance, to accomplish higher educational achievement, the local governments' management should be encouraged to understand the importance of education.

 Third, the results indicate that provincial administrative organization (PAO) educational expenditure are not determined and guided by the government's perception of the economic situation, on the contrary, the results indicate that PAO allocated more education budget into relative low GPP per capita. These findings were contradicted in most previous research. Therefore, it could be implied that a PAO distributes its expenditure to those in need where most low income people live. Nevertheless, last year local revenue affected the ability to spend on current education expenditure so that PAO's education policy is determined by local needs and PAO's fiscal capacity. Evidence reflects that PAO allocated education expenditure based on local needs are the number of schools and school age population. In terms of political variables, the poverty ratio contrasted with the expected results which may occur when the poor do not prefer other types of service to education. While another

significant political factor which went in line with previous research on political continuity, it reveals that without a term limit, the local government executives would pay less attention to education provision. Regarding governance factors, this study added this factor into the model to analyze if governance could help improve PAO's education expenditure allocation or not. It found that the corruption factor related to increases in education expenditure of PAO. It can be implied that education expenditure includes capital investment. The proportion of education expenditure is needed to be examined to utilize on what improves education outcomes most. The governance awards indicate that there are relationships between governance and increases in PAO's education expenditure. These theoretical contributions add to the literature by allowing future research to address these issues in policy planning to improve education expenditure allocation. Local administrative organization is so unique that Wagner's Law and Peacock & Wiseman concept could explain just part of the economic-demographic determinants.

Forth, after revisited the controversial research results whether education expenditure relates to education outcomes or not, this study reveals that PAO's education expenditure do matter with PAO's education outcomes. PAO's total education expenditure (TEDU) which is allocated to support education systems for the whole province plays an important role in encouraging the provincial enrolment ratio, the provincial average years of adult schooling. Like TEDU, PPE increases education outcomes in terms of increases in PAO's average GPA of Grade 6 students. Aligned with sociological theory on cultural reproduction; socio-economic variables affect education outcomes especially average income and urbanization ratio.

Fifth, this study also proves that a number of theories such as Wagner's Law, Peacock & Wiseman concept, public choice theories are invalid in the case of local administrative organization's educational expenditure policy in Thailand. Moreover, the estimations in other local governments in other countries are not able to explain the specific characters of Thailand's local government. The results obtained in this study illustrate that the educational expenditure policy in Thailand is made differently perhaps from the case of other countries.

Lastly, the study results have contributions to policy recommendation that governance should be promoted as norms and practices of local governments in order to reduce educational disparity and increase educational attainment and achievement.

7.4 Policy Implications

The results obtained from this research provide insightful information for policy implications. These policy implications are based on the analysis and empirical results of this study given the specific socio-economic and political contexts of provincial administrative organizations providing primary education services in Thailand.

This study will provide policy implications for improving local education expenditure allocation to response to the local needs efficiently as well as for enhancing local education outcomes to achieve national education targets, to alleviate disparity in education and to be responsive to local needs. Taking national education problems into account, local government should take part in supporting education systems because it knows best about the local needs. The implications in this research are for every level of policy makers to take them into account. The policy implications are following.

7.4.1 Policy Implications for Improving Local Government's Education Expenditure Allocation

Based on this study's results, there are many variables affecting provincial administrative organization (PAO)'s education expenditure which is the indicator of the priority of education from the local government's viewpoint.

7.4.1.1 Increase in promoting PAO to invest on education in remote and less developed areas and in creative ways

According to the results, the areas which have low average income tend to receive higher allocation of education expenditure at the PAO level. Therefore, PAO should be encouraged to support education systems as it revealed that PAO has pro-poor policy and is able to allocate from its total PAO's budget to reduce disparity in education at the provincial level. Besides investing in remote and needed areas,

PAO also allocates education expenditure to those in need as shown in the estimated results of social factors; number of schools, number of students and school age population. Some PAOs realize the problem of lack of teachers in schools under the Office of Basic Education Committee (OBEC) in their territories due to inability to recruit teachers by the OBEC recruitment process. They allocate budget to hire teachers for those schools. As free-school policy is free only for tuition, other costs relating to school attendance are still burdens for the poor. Some PAOs also provide free transportation, uniforms, books and stationary to increase accessibility and a lower dropout rate. Moreover, due to an anti-school transferring atmosphere, PAO's that would like to have transferred the OBEC's schools have to start from the underdeveloped schools in distant areas first. Therefore, the PAO's education expenditure helps redistribute benefits to rural areas and tackle the problems at the right place responsive to local needs.

At central government and ministerial levels, there should be macro policy to encourage local government to fill the gap that the schools cannot do themselves. To help local government to be successful in supporting education systems as mentioned above, the rules and regulations hindering the flexibility of the local government process should be reviewed and eliminated. On the other hand, the Department of Local Administration should promote and acknowledge the local government's creativity in problem-solving on education provision so that other local governments could learn and adopt such approaches.

7.4.1.2 Increase in efficiency of local administrative organization revenue collecting systems

For local revenue factor, precisely, the more local revenue collected in the last year, the more education expenditure to be spent in the current year. Hence, increase in efficiency of local government's tax collection could improve both total education expenditure and per pupil primary expenditure.

7.4.1.3 Establish an Independent Office to monitor and control local administrative organization's corruption and promote local governance

Nowadays, there are more than 7,000 local administrative organizations in Thailand. In order to monitor and control corruption and promote local governance thoroughly, it is suggested the need to establish an independent organization to

perform these tasks. The organization should help generate local governance indicators to ensure that the good governance concept is implemented at the local government level.

7.4.1.4 Establish local administrative organization's obligations to publish its financial budget to the public and keep the record for at least 10 years with serious punishment for violations.

In order to impede corruption in government agencies, increase in LAO's data accessibility is one of many ways to do so. There are problems in keeping continuous data from the past especially financial data; therefore, it is difficult to inspect suspicious transactions within financial statements, purchasing orders or contractors' contracts of LAO. There are also complaints on frauds about relationships between the chief executive officer of the LAO and construction contractors and suppliers. Obligations on publishing and keeping LAO's data could generate easier inspection and prevent corruption.

7.4.1.5 Improve the criteria of local administrative organization's education expenditure

Most of total education expenditure is in the form of teacher's salaries and wages followed by capital investment and the least proportion goes to improve education achievement. Specify the minimum percentage of local administrative organization's education spending should be at least 10% of total annual expenditure and the proportion of education expenditure categories per capital investment must be 70:30 which could be a preliminary guarantee of budget allocation to education service.

7.4.1.6 Implement participatory budgeting in LAO using a simple approach

The local development plan or what relates to financial issues is complicated to many local citizens. To motivate citizens to do participatory budgeting, there should be a simplifying budgeting process and technical terms so that most citizens could get involved in the process.

7.4.2 Policy Implications for Improving Local Government's Education Outcomes

With regard to the estimated results of this study of PAO's education outcomes, it indicates that PAO's total education expenditure and per pupil primary education expenditure has a high impact on improving education outcomes at the local level. However, there are disparities in education occurring from social status in terms of average incomes and urban areas which have more developed infrastructures and educational facilities such as access to the internet, libraries and sources of information. Governance factors also play important roles in increasing local education outcomes especially transparency and participation promotion which mean efficiency and effectiveness of utilizing education expenditure are also crucial in bringing about desirable education outcomes and excellent PAO's chief executive administration awards on education. Therefore, the implications suggested in this study result from applying the results to current national and local education problems.

7.4.2.1 Establish measurable and applicable governance index for local government

According to the results, governance components are crucial for improving PAOs' education outcomes. In order to increase local government's performance on education functions, governance concept should be mandatorily adopted in local governments' working process.

1) Establish substantial participatory budgeting on local education

2) Increase role of local education network in quality assurance process

3) Educate local government's management to understand the importance of local governments' role in education function.

7.4.2.2 Linking national education target to local education targets

For central government: Improving standardized test/ set up possible targets/ teacher performance evaluated from students' performance in each subject (Chetty, Friedman & Rockoff, 2011) support teachers to conduct research from the

teaching experience especially on the teaching approach resulting in better education outcomes and use it for performance appraisal

7.4.2.3 Establish local administrative organization's teacher and education personnel development center

Living in a remote area, it less motivates teachers to teach there. To utilize local teacher and local staff, it needs to keep them up-to-date with current teaching techniques and innovation. Having the center could help set standards for educational personnel at local government's schools. Another problem which local schools face is lack of supervision expertise. Inside and outside school supervisions are very crucial to preserve and improve schools to have higher standards as well as quality. Nowadays, there is no educational supervisor in every LAO that provide education services therefore, training the existing personnel, teachers and other staff is crucial in improving local education outcomes.

7.4.2.4 Reinforce providing correct personal data of students

Correct and timely data on education is very important for education planning both for budget allocation and identifying needs of local people. The data collection should cover every issue concerning education quality. Although, some of them are in SAR, Self-Assessment Report, but there is no linkage between local level data to the national level. The education information at the Department of Local Development is for per pupil and grant in aids allocation from the central government to LAOs not for education policy-making.

7.4.2.5 Promoting education for disadvantaged children in local areas

In order to improve accessibility and equality in education, attracting disadvantaged children groups into the education systems is crucial for improving national productivity. LAO should take part in providing good education for these groups of students in different ways from the ministerial level. Diagnosis symptoms, providing special classes and linking children's health care problems with education outcomes problems taking care of nutrition for children in local areas and providing iodization if necessary should be undertaken by LAO or LAO's schools.

7.4.2.6 Support having special subjects or teaching methods in local administrative organization education institutes.

According to diversity in each LAO, the objective of education is to be able to adapt and live in the homeland happily, special curriculum promoting local wisdom heritage, utilizing retired teachers and elder citizens as well as vocational training for specific professional careers in the area such as in tourist attractions; translation or tour guides should be promoted in LAO's education.

7.4.2.7 Encourage local governance in designing specific education outcomes for each local administrative organization

Each local government should have its own education outcomes which are compatible with its local conditions.

7.4.2.8 The Chief Executive of PAOs should be trained or envisioned on the importance of education and how PAOs could help support national education systems to meet national education targets.

There should be promoted local governance concepts such as transparency, accountability, efficiency and networking in designing LAO's special curriculum where the laws should be revised to support the notion.

7.5 Suggestions for Further Studies

There are some suggestions for further studies and research in the future. The further studies may focus on best practice of local administrative organizations providing education services both for education institute administration and supporting the education systems. There should be research on LAOs that provide special classes or additional curriculum based on their unique local needs and readiness. Based on this research results, it is interesting to conduct in-depth analysis and research on median voter preferences in the local government level to seek for the most wanted policy. For governance factors, they are important to both education expenditure and outcomes, there should be research on local governance index, participation, transparency and networking promotion.

In the context of Thailand's education provision, precisely, national policy implementations are still problematic. Paying more attention to study on local education policy is beneficial. The government agencies that are closest to citizen and know their needs best could improve nation-wide education outcomes either by

education institute administration or supporting education systems or both. Policy makers need to seek solutions to deploy the national policy at ministerial level and to the local government level more effectively. Hence the research on how education should be cascaded to the lower government level of how to facilitate LAO to perform its education tasks by deregulating or adjusting policy. Since the local government has autonomy, the solutions for education problems such inequality, accessibility, disadvantaged children support are more creative. What policy makers need is to find how to make local governments realize their power in improving national education outcomes and productivity which are the future of our nation. Therefore, how LAO's could fill the national education policy gap to achieve national education goals as well as their own goals are worth studying further. Finally, this study left the room for further studies on corruption in local education expenditure.

BIBLIOGRAPHY

Aceron, J.; David , R.; Vital, M.; Santos, J. & Parrer, K. 2013. **Civil Society Participation and Education Spending of Philippine Cities.** GDN Working Paper Series. Retrieved April 14, 2015 from http://www.gdn.int/ html/workingpapers.php?mode=download&file=WP80-Philippines-Education_207.pdf

Achakorn Wongpreedee. 2010. Good Governance (?) in Phitsanulok Municipality. **NIDA Case Research Journal.** 2 (January): 45-86.

The Act of Determining Plan and Process of Decentralization B.E. 2542. **Royal Thai Government Gazette.** (11 November 1999)

Addison, T. & Rahman, A. 2001. **Why is So Little Spent on Educating the Poor? United Nations University.** Helsinki: United Nations University.

Aggeborn, L. 2013. **Voter Turnout and the Size of Government**. Uppsala: Uppsala University, Department of Economics.

Ahlin, A. & Johansson, E. 2001. Individual Demand for Local Public Schooling: Evidence from Swedish Survey Data. **International Tax and Public Finance.** 8 (4): 331-351.

Akanbi, O. A. & Schoeman, N. J. 2013. The Determinants of Public Expenditure and Expenditure on Education in Particular in a Selection of African Coutries. **South African Journal of Economic and Management Sciences.** 13 (1): 50-61.

Akitoby, B.; Clements, B.; Gupta, S. & Inchauste, G. 2006. Public Spending, Voracity, and Wagner's Law in Developing Countries. **European Journal of Political Economy.** 22 (December): 908– 924.

Akrani, G. 2011. **Wagner Law of Increasing State Activity - Public Expenditure.** Retrieved April 14, 2015 from http://kalyan-city.blogspot.com/2011/ 02/wagner-law-of-increasing-state-activity.html

Ananga, E. D. 2011. Typologies of School Dropout: the Dimensions and Dynamics of Exclusion from Universal Basic Education in Ghana. **International Journal Educational Development.** 31 (4): 374–381.

Andersson, K. & Lawrence, D. 2011. **Too Close to Call: Political Competition and Social Spending in Chilean Municipalities.** Retrieved April 14, 2015 from https://duncanflawrence.files.wordpress.com/2012/09/lawrence-andersson-mpsa-2011.pdf

Andrews, M.; Duncombe, W. & Yinger, J. 2002. Revisiting Economies of Size in American Education: Are We any Closer to a Consensus?. **Economics of Education Review.** 21: 245–262.

Anyanwu, J. C. & Erhijakpor, A. E. 2007. **Education Expenditures and School Enrolment in Africa: Illustrations from Nigeria and Other SANE Countries.** Gulf of Guinea: African Development Bank.

Ashworth, S. 2012. Electoral Accountability: Recent Accountability: Recent Theoretical and Empirical Work. **The Annual Review of Political Science.** 15: 183-201.

Balaguer, M. T.; Brun-Martos, M. I.; Deltell, A. F. &Tortosa-Ausina, E. 2014. Local Governments' Re-Election and Its Determinants: New Evidence Based on a Bayesian Approach. In **International Conference on Regional Science: Financing and The Role of the Regions and Towns in Economic Recovery.** Zaragoza, Spain: University of Zaragoza. Pp. 1-33.

Baldacci, E.; Guin-Sui, M. T. & Demello, L. 2003. More on the Effectiveness of Public Spending on Healthcare and Education: A Covariance Structure Model. **Journal of International Development.** 15 (August): 709-725.

Baliamoune-Lutz, M.; & Bokoc, S. H. 2013. Trade, Institutions, Income and Human Development in African Countries. **Journal of African Economies.** 22 (2): 323-345.

Balogun, I. O. 2013 (February 23). **Theories of Public Expenditures.** Retrieved March 18, 2015 from http://strategistng.blogspot.com/2013/02/theories-of-public-expenditures.html

Basic Education Coalition. 2013. **Building Economic Growth through Basic Education.** Retrieved September 8, 2015 from http://www.basiced.org/wp-content/uploads/Factsheets/Building_Economic_Growth_through_Education-2013.pdf

Beaman, L.; Duflo, E.; Pande, R. & Topalova, P. 2011. **Female Leadership Raises Aspirations and Educational Attainment for Girls: A Policy Experiment in India**. Retrieved September 8, 2015 from http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3394179/

Benabou, R. 1996. Heterogeneity, Stratification and Growth: Macroeconomic Implications of Community Structure and School Finance. **American Economic Review.** 86 (June): 584-609.

Bereiter, C. & Engelmann, S. 1966. **Teaching Disadvantaged Children in the Preschool**. Urbana: Prentice-Hall.

Bergstrom, T. C. & Goodman, R. P. 1973. Private Demands for Public Goods. **American Economic Review.** 63 (June): 280-296.

Bezbaruah, M. 2014. **Factors Affecting School Enrollment: A Study in the Noida's (India) Slum Area.** Retrieved August 7, 2015 from https://www.academia.edu/9486284/FACTORS_AFFECTING_SCHOOL _ENROLLMENTA_STUDY_IN_THE_NOIDA_S_India_SLUM_ AREA

Boadway, R. & Shah, A. 2009. **Fiscal Federalism: Principles and Practice of Multiorder Governance.** New York: Cambridge University Press.

Brandeis, L. D. 2004. **The World Development Report: Chapter 5 Citizens and Politicians.** Washington D.C.: The World Bank.

Bucci, R. V. 2014. Leadership and Governance. In **Medicine and Business: A Practitioner's Guide.** New York: Springer. Pp. 9-20.

Bukobza, G. 2007. **Indicators in Education Systems.** Retrieved July 19, 2015 from http://www.academy.ac.il/data/projects/34/Indicators-Background.pdf

Buracom, P. 2011. **Public Spending: Allocative Efficiency and International Experience**. Samutprakarn,: D.K. Printing.

Bureau of the Budget Office of the Prime Minister Thailand. 2012. **Budget in Brief.** Bangkok: Bureau of the Budget.

Campo, S. S. & McFerson, H. M. 2015. **Public Management in Global Perspective**. New York: Routledge.

Canfield, K. 2011. **Estimating the Effects of Corruption on Educational Outcomes in the Indian Public Schooling System.** Boston, Mass: Department of Economics of Amherst College.

Capuno, J. J. 2005. **The Quality of Local Governance and Development under Decentralization in the Philippines**. Philippines: School of Economics University of Philippines.

Cascio, E. U.; Gordon, N. & Reber, S. 2013. Local Responses to Federal Grants: Evidence from the Introduction of Title in the South. **American Economic Journal: Economic Policy.** 5 (August): 126-159.

Chakrabarti, A. & Joglekar, R. 2006. Determinants of Expenditure on Education. **Economic and Political Weekly.** 41 (15): 1465-72.

Chetty, R.; Friedman, J. N. & Rockoff, J. E. 2011. **The Long-Term Impacts of Teachers: Teacher Value-Added and Student Outcomes in Adulthood**. Cambridge: National Bureau of Economic Research.

Chhetri, N. & Baker, D. P. 2006. **The Environment for Literacy among Nations: Concepts, Past Research and Preliminary Analysis.** Pennsylvania: UNESCO.

Clark, D. A.; Bursztyn, L. & Horowitz, M. A. 2011. Defining the Computational Structure of the Motion Detector in Drosophila. **Neuron.** 7 (June): 1165–1177.

Cnudde, C. F. & MaCrone, D. J. 1969. Party Competition and Welfare Policies in the American States. **The American Political Science Review.** 63 (3): 858-866.

Cohen, S. 2001. **Macro Economic.** London: Routledge.

Colby, J.; Witt, M. & Associates. 2000. **Defining Quality in Education.** New York: UNICEF.

Coleman, J. & Others. 1966. **Equality of Educational Opportunity.** Washington D.C.: U.S. Government Printing Office.

The Committee of LAO's Governance Promotion. 2014. **Local Authority Governance Evaluation Report.** Bangkok: Office of the Auditor General of Thailand.

Congleton, R. D. 2002. **The Median Voter Model.** Retrieved July 19, 2015 from
　　　　http://rdc1.net/forthcoming/medianvt.pdf

Constitution of the Kingdom of Thailand B.E. 2540. **Royal Thai Government
　　　　Gazette.** 114 (11 October 1997)

Cooper, B. S. & Others. 1993. School Site Cost Allocations: Testing a Micro-
　　　　Financial Model in 23 School Districts in Ten States. In **The American
　　　　Education Research Association Annual Meeting.** Pp. 53.

Council of Europe. 2001. **Methods for Estimating Local Authorities' Spending
　　　　Needs and Methods for Estimating Revenue.** Strasbourg Cedex:
　　　　Council of Europe Publishing.

Court, J.; Mendizabal, E.; Osborne, D. & Young, J. 2006**. Policy Engagement: How
　　　　Civil Society Can Be More Effective.** Retrieved July 19, 2015 from
　　　　http://www.odi.org/sites/odi.org.uk/files/odi-assets/publications-opinion-
　　　　files/200.pdf

Cowen, T. 2010. Why Politics is Stuck in Middle. **The New York Time.** Retrieved
　　　　July 19, 2015 from http://www.nytimes.com/2010/02/07/business/
　　　　economy/07view.html?_r=0

Croix, D. d. & Delavallade, C. 2009. Growth, Public Investment and Corruption
　　　　with Falling Institutions. **Economic of Governance.** 10 (3): 187-219.

Dao, M. Q. 1995. Determinants of Government Expenditures: New Evidence from
　　　　Disaggrigative Data. **Oxford Bulletin of Economics and Statistics.** 57
　　　　(Febuary): 67-76.

De Bartolome, C. 1990. Equilibrium and Inefficiency in a Community Model
　　　　Model with Peer Effects. **Journal of Political Economy.** 98 (11): 110-
　　　　133.

Delavallade, C. 2006. Corruption and Distribution of Public Spending in
　　　　Developing Countries. **Journal of Economics and Finances.** 30 (2):
　　　　222-239.

Deller, C. S. & Rudnicki, R. D. 1993. Production Efficiency in Elementary
　　　　Education: the Case of Maine Public Schools. **Economics of Education
　　　　Reivew.** 12 (March): 45-57.

Deolalikar, A. B. 1996. The Determinants of Primary School Enrollment and
        Household Schooling Expenditures in Kenya: Do They Vary by
        Income?. In **The Workshop on Determinants of Educational**
        Attainments in Sub-Saharan Africa. Washington D.C.: University of
        Washington. Pp. 1-22.

Department of Local Administration. 2013 (October 6). **Announcement of**
        Excellent Awards in Education for Chief Executive Administration
        and Director of Education Division Application. Bangkok: Department
        of Local Administration.

Douglas, J. 1964. **The Home and the School: A Study of Ability and Attainment**
        in the Primary School. London: Springer.

Downing, J. & Downing, M. 1986. Experiments in Linguistics and Literacy in Papua
        New Guinea. In **Bibliographical References.** Canada: University of
        Victoria. Pp. 31-33.

Downs, A. 1957. **An Economic Theory of Democracy.** New York: Harper & Row.

Drazen, A. 2001. The Political Business Cycle after 25 Years. In **NBER**
        Macroeconomics Annual 2000. Ben S. Bernanke and Kenneth Rogoff,
        eds. Cambridge, MA: MIT Press. Pp. 75-138.

Drazen, A. 2006 (December 7). **Political Business Cycle.** Retrieved February 3,
        2015 from http://econweb.umd.edu/~drazen/working_papers/
        palgrave_pbusinesscycle.pdf

Drazen, A. & Eslava, M. 2010. Electoral Manipulation via Voter-Friendly
        Spending: Theory and Evidence. **Journal of Development Economics.**
        92 (1): 39–52.

Dridi, M. 2014. Corruption and Education: Empirical Evidence. **International**
        Journal of Economics and Financial Issues. 4 (3): 476-493.

Driscoll, D.; Halcoussis, D. & Svorny, S. 2008. Gains in Standardized Test
        Scores: Evidence of Diminishing Returns to Achievement. **Economics**
        of Education Review. 27 (April): 211-223.

Duncan, G. J. & Magnuson, K. 2011. **The Long Reach of Early Childhood**
        Poverty. Retrieved August 8, 2015 from http://www.stanford.edu/
        group/scspi/_media/pdf/pathways/winter_2011/

Duncan, G. J. & Murnane, R. J. 2014. Growing Income Inequality Threatens American Education. **Phi Delta Kappan.** 95 (December): 8-14.

Dye, T. R. 1967. Governmental Structure, Urban Environment, and Education Policy. **Midwest Journal of Political Science.** 11 (August): 353-380.

Dye, T. R. 1984. Party and Policy in the States. **The Journal of Politics.** 46 (4): 1097-1116.

Easton, D. 1957. An Approach to the Analysis of Political System. **World Politics.** 9 (April): 383-400.

Easton, D. 1967. **A Systems Analysis of Political Life.** New York: John Wiley & Sons; Economic Research and Training Center

ERTC. 2009. **Decentralization and the Budget for Social Services at Tambon Administrative Level.** Bangkok: Economic Research and Training Center.

Faguet, J.-P. & Sanchez, F. 2008. Decentralization's Effects on Educational Outcomes in Bolivia and Colombia. **World Development.** 36 (7): 1294-1316.

Feinstein, L. 1998. **Pre-school Educational Inequality? British Children in the 1970 Cohort.** London: The Centre's Human Resources Programme London School of Economics and Political Science.

Felkins, L. 2013 (December 12). **Introduction to Public Choice Theory.** Retrieved January 29, 2015 from http://perspicuity.net/sd/pub-choice.html

Fernandez, R. & Rogerson, R. 1997. **The Determinants of Public Expenditures: Evidence from the States, 1950-1990.** NBER Working Papers Series No.5995. Retrieved July 19, 2015 from http://www.nber.org/papers/w5995

Freeman, R. B.; Machin, S. J. & Viarengo, M. G. 2010. **Variation in Educational Outcomes and Policies across Countries and of Schools within Countries.** London: Centre for the Economics of Education.

Fumagalli, E. & Narciso, G. 2011. **Political Institutions, Voter Turnout and Policy Outcomes.** Trinity Economics Papers number tep0211. Retrieved July 19, 2015 from https://www.tcd.ie/Economics/TEP/2011/TEP0211.pdf

Funk, P. & Gathmann, C. 2013. How do Electoral Systems affect Fiscal Policy? Evidence from Cantonal Parliaments, 1890-2000. **Journal of the European Economic Association.** 11 (October): 1-28.

Galiani, S. & Schargrodsky, E. 2002. Evaluating the Impact of School Decentralization on Educational Quality. **Economia.** 2 (2): 275-302.

Gebremariam, G. H.; Gebremedhin, T. G. & Shaeffer, P. V. 2012. County-Level Determinants of Local Public Services in Appalachia: A Multivariate Spatial Autoregressive Model Approach. **The Annual Regional Science.** 49 (August): 175-190.

Gilens, M. 2005. Inequality and Democratic Responsiveness. **The Public Opinion Quarterly.** 69 (5): 778-796.

Gius, M. P. 2006. Using Panel Data to Determine the Effect of the Americans with Disabilities Act on Per-Student Public Education Expenditures at the State Level. **Public Budgeting & Finance.** 26 (3): 81-88.

Glewwe, P. & Kreamer, M. 2005. **Schools, Teachers, and Education Outcomes in Developing Countries.** Policy Paper No.009. Massachusetts: Bureau for Research in Economic Analysis of Development.

Glewwe, P.; Hanushek, E.; Humpage, S. & Ravina, R. 2012. **School Resources and Educational Outcomes in Developing Countries: A Review of the Literature from1990-2010.** Chicago: University of Chicago Press.

Glick, P. & Sahn, D. E. 2000. Schooling of Girls and Boys in a West African Country: The Effects of Parental Education, Income and Household Structure. **Economic of Education Review.** 19 (February): 63-87.

Goldsmith, S. & Eggers, W. D. 2004. **Governing by Network: The New Shape of the Public Sector.** Washington D.C.: Brooking Institution Press.

Good Governance Promotion Section. 2013 (March 24). **The Origin of Governance and Good Governance.** Retrieved April 14, 2015 from http://www.dla.go.th/upload/templateOrganize/tempNews/2013/3/24252_2.pdf

Grob, U. & Wolter, S. C. 2007. Demographic Change and Public Education Spending: A Conflict between Young and Old? **Education Economics.** 15 (3): 227-292.

Gupta, S.; Davoodi, H. & Alonso-Terme, R. 1998. **Does Corruption affect Income Inequality and Poverty?** Working Paper No.76. Washington D.C.: International Monetary Fund.

Gupta, S.; Davoodi, H. &Tiongson, E. 2000. **Corruption and the Provision of Health Care and Education Services.** Washington D.C.:IMF.

Haaga, J. G.; Bledsoe, C. H.; Johnson-Kuhn, J. A. & Casterline, J. B. 1999. **Critical Perspectives on Schooling and Fertility in the Developing World.** Washington D.C.: National Academy Press.

Hausman, J. A. 1978. Specification Test in Econometrics. **Econometrica.** 46 (6): 1251-1271.

Hanushek, E. A. 1981. Throwing Money at Schools. **Journal of Policy Analysis and Management.** 1 (1): 19-41.

Hanushek, E. A. & Kim, D. 1995. **School, Labor Force Quality, and Economic Growth.** Messachusettes: NBER.

Hedges, L. V.; Laine, R. D. & Greenwald, R. 1994. Does Money Matter? A Meta-Analysis of Studies of the Effects of Differential School Inputs and Student Outcomes. **Educational Researcher.** 23 (3): 5-14.

Heyneman, S. P. & Loxley, W. A. 1983. The Effect of Primary-School Quality on Achievement across Twenty-Nine High and Low Income Countries. **American Journal of Sociology.** 88 (6): 1162-1194.

Hofferbert, R. I. 1966. The Relation between Public Policy and Some Structural and Environmental Variables in the American States. **The American Political Science Review.** 60 (March): 73-82.

Hoffmann, F. 2006. Network Effects and the Educational Attainment of Young Immigrants. In **The CEPA-Empirical Micro Seminar and the Graduate Research Seminar.** Canada: University of Toronto.

Holloway, J. H. 2004.. How the Community Influences Achievement. Research Link. **Schools as Learning Communities.** 61 (May): 89-90.

Holmes, J. 1999. **Measuring the Determinants of School Completion in Pakistan: Analysis of Censoring and Selection Bias.** Connecticut: Economic Growth Center Yale University.

Houser, L. 2009. **Poverty and its Effect on Childhood Literacy.** Retrieved July 15, 2015 from http://users.manchester.edu/Student/lehouser/ProfWeb/ HouserLE340RdgResearch.pdf

Hunpayoon, S.; Kaewkumkong, A. & Jaiborisut, W. 2013. **Education Administration with Decentralization Concept: Comparative Studies of Thailand and Republic of Korea.** Bangkok: National Research Council of Thailand.

Huy, V. Q. 2012. Determinants of Educational Expenditure in Vietnam. **International Journal of Applied Economics.** 9 (1): 59-72.

Hyman, J. 2014. **Does Money Matter in the Long Run? Effects of School Spending on Educational Attainment.** Retrieved August 8, 2015 from http://www personal.umich.edu/~jmhyman/-Hyman_JMP.pdf

IFAC. 2013. **Good Governance in the Public Sector-Consultation Draft for an International Framework.** New York.the International Federation of Accountants (IFAC).

Iyer, T. 2009. **Is Public Expenditure on Primary Education Effective? Evidence from Districts across India.** Durham, North Carolina: Duke University.

James, E.; King, E. M. & Suryadi, A. 1996. Finance, Management, and Costs of Public and Private Schools in Indonesia. **Economic of Education.** 15 (4): 377–386.

Janvry, A.; Finan, F. & Sadoulet, E. 2012. Local Electoral Incentives and Decentralized Program Performance. **The Review of Economics and Statistics.** 94 (3): 672-685.

Jayasuriya, R. & Wodon, Q. 2002. **Explaining Country Efficiency in Improving Health and Education.** Washington D.C.: World Bank.

Jimenez, E. & Paqueo, V. 1996. Do local contributions Affect the Efficiency of Publicprimary Schools?. **Economics of Education Review.** 14 (4): 377-386.

Johnston, M. 2003. **Good Governance: Rules of Law, Transparency and Accountability.** Retrieved August 8, 2015 from http://unpan1.un.org/ intradoc/groups/public/documents/un/unpan010193.pdf

Kadzamira, E. & Rose, P. 2003. Can Free Primary Education Meet the Needs of the
         Poor? Evidence from Malawi. **International Journal of Educational
         Development.** 23 (September): 501-516.

Kainuwa, A. & Yusuf, N. B. 2013. Influence of Socio-Economic and Educational
         Background of Parents on their Children's Education in Nigeria.
         International Journal of Scientific and Research Publications. 3 (10):
         1-8.

Kaufmann, D. & Kraay, A. 2008. **Governance Indicators: Where Are We, Where
         Should We Be Going?** Jakarta: World Bank.

Kaufmann, D.; Kraay, A. & Mastruzzi, M. 2010. **The Worldwide Governance
         Indicators: Methodology and Analytical Issues.** U.S.A.: Brookings
         Institution.

Keefer, P. & Razvan, V. 2008. Democracy, Credibility and Clenitelism. **Journal of
         Law, Economics and Organization.** 24 (2): 371-406.

Keefer, P. & Stuti, K. 2005. **Democracy, Public Expenditures and the Poor:
         Understanding Political Incentives for Providing Public Services.**
         Washington D.C.: The World Bank Research Observer.

Kempkes, G. 2010. **Rapid Demographic Change and the Allocation of Public
         Education Resources: Evidence from East Germany.** Discussion Paper
         No. 16/2010. Frankfurt: Deutsche Bundesbank.

Kenworthy, L. 2015. **Is Income Inequality Harmful?** Retrieved March 29, 2015
         from http://lanekenworthy.net/is-income-inequality-harmful/.

Kesner-Skreb, M. 2009. Fiscal Federalism. **Financial Theory and Practice.**
         33 (2): 235-237.

Kickert, W. J. 2005. Public Governance in the Netherlands: an Alternative to
         Anglo-American 'Managerialism'. In **Governance and the Public Sector.**
         R. Hodges, ed. UK: Edward Elgar. Pp. 180-201.

King Prajadhipok's Institute. 2014. **History.** Retrieved September 8, 2015 from
         http://kpi.ac.th/history.html

King Prajadhipok's Institute. 2015. **Award.** Retrieved June 9, 2015 from
         http://award.kpi.ac.th

Kiran, H.; Rehman, S.; Iftikhar, M. N. & Mir, R. 2013. Does Corruption Effects on Social Sector in SAARC Region? **Journal of Asian Development Study.** 2 (2): 53-59.

Koethenbuerger, M. 2013. How Do Local Governments Decide on Public Policy in Fiscal Federalism? Tax VS. Expenditure Optimization. **Journal of Public Economics.** 95 (December): 1516–1522.

Konradi, A. 2009. Buying Votes: Examining Tufte's Political Business Cycle under an Adaptive Expectations Framework. **The Park Place Economist.** XVII: 39-46.

Kopanska, A. & Bukowska, G. 2013. **Determinants of Local Public Education Expenditures.** Retrieved July 15, 2015 from http://www.svt.ntnu.no/iso/ Marianne.Haraldsvik/Workshop2013/Papers2013/KopanskaBukowskaTro ndheim14-04-2013.pdf.

Kosack, S. & Fung, A. 2013. Does Transparency Improve Governance?. **Annual Review of Political Science.** (Forth coming): 1-23.

Lago-Panas, S. & Marinez-Vezquez, J. 2013. **The Challenge of Local Government Size: Theoretical Perspectives, International Experiences and Policy Reform.** Cheltamham, UK: Edward Elgar.

Lamartinaa, S. & Zaghinib, A. 2011. **Increasing Public Expenditures: Wagner's Law in OECD Countries**. **German Economic Review.** 12 (2): 149-164.

Larcinese, V. 2007. Voting over Redistribution and the Size of the Welfare State: The Role of Turnout. **Political Studies.** 55 (October): 1-18.

Lauglo, J. 2000. **Engaging with Adults: The Case for Increased Support to Adult Basic Education in Sub-Saharan Africa.** N.P.: World Bank Africa Region Human Development Department.

Leclercq, F. 2005. **The Relationship between Educational Expenditures and Outcomes.** Paris: DIAL.

Lewin, K. 2008. **Strategies for Sustainable Financing of Secondary Education in Africa.** World Bank Working Paper No 136. Washington D.C.: World Bank.

Lewis, M. & Pettersson, G. 2009. **Governance in Education: Raising Performance.** Retrieved July 5, 2015 from http://papers.ssrn.com/ sol3/papers.cfm?abstract_id=1992404

Lewis-Beck, M. S. 1977. The Relative Importance of Socioeconomic and Political Variables for Public Policy. **American Political Science Review.** 71 (June): 559-566.

Limited World Health Organization. 2011. **World Report on Diabilities.** Malta: WHO.

Lindblom, C. E. & Woodhouse, E. J. 1993. **The Policy-making Process.** 3rd ed. New Jersey: Prentice Hall.

Litschig, S.& Morrison, K. 2010. **Working Paper: Government Spending and Re- Election.** Bacelona: Department of Economics and Business Universitat Pompeu Fabra.

Liu, C. & Mikesell, J. L. 2014. The Impact of Public Officials' Corruption on the Size and Allocation of U.S. State Spending. **Public Administration Review.** 74 (May/June): 346-359.

Liua, Y. & Yamauchib, F. 2014. Population Density, Migration, and the Returns to Human Capital and Land: Insights from Indonesia. **Food Policy.** 48 (October): 182-193.

Lockheed, M. E. & Zhao, Q. 1992. **The Empty Opportunity: Local Control of Secondary Schools and Student Achievement in the Philippin**es**.** Washington D.C.: World Bank.

Lowatcharin, G. 2014. **Along Came the Junta: The Evolution and Stagnation of Thailand's Local Governance.** Retrieved April 14, 2015 from http://kyotoreview.org/yav/along-came-the-junta-the-evolution-and- stagnation-of-thailands-local-governance/

Luedara, K. 2013. The Potential of Basic Educational Management of the Local Administration in Pathumthani Province. **RMUTT Global Business and Economics Review.** 8 (July): 149-162.

Lupu, N. & Pontusson, J. 2008. Income Inequality, Electoral Rules and the Politics of Redistribution. In **The 2008 Workshop in Comparative Political Economy at Yale University.** Connecticut: Princeton University.

Lupu, N. & Pontusson, J. 2011. The Structure of Inequality and the Politics of Redistribution. **American Political Science Review.** 105 (May): 316-336.

MacPhail-Wilcox, B. & King, R. A. 1986. Production Functions Revisited in the Context of Educational Reform. **Journal of Education Finance.** 191-222.

Magnuson, K. & Votruba-Drzal, E. 2009. Enduring Influences of Childhood Poverty. **Focus.** 26 (Fall): 32-37.

Mahdavi, S. 2009. **A Re-examination of Wagner's Law Based on Disaggregated U.S. State-Local Government Expenditure.** Texas: UTSA College of Business Knowledge for a New World.

Mandl, U.; Dierx, A. & Ilzkovitz, F. 2008. **The effectiveness and Efficiency of Public Spending.** Brussels: Economic and Financial Affairs, European Commission.

Manual for Basic Educational Institutions. 2011. **The Third-Round of External Quality Assessment (2011-2015).** Bangkok: Zeno Publishing and Packaging Company.

Marlow, M. L. 1997. Public Education Supply and Student Performance. **Applied Economics.** 29: 617-626.

Marlow, M. L. & Shiers, A. F. 1999. Do Law Enforcement Expenditures Crowd-Out Public Education Expenditures? **Applied Economics.** 31 (2): 255-266.

Mehta, A. C. 1997. **Education for All in India with Focus on Elementary Education: Current Status, Recent Initiatives and Future Prospects.** Retrieved July 15, 2015 from http://www.educationforallinindia.com/page101.htm

Meier, K. J.; Wrinkel, R. D. & Polinard, J. L. 1999. Representative Bureaucracy and Distributional Equity: Addressing the Hard Question. **The Journal of Politics.** 61 (4): 1025-1039.

Mensah, Y. M; Schoderbek, M. P. & Sahay, S. P. 2013. The Effect of Administrative Pay and Local Property Taxes on Student Achievement Scores: Evidence from New Jersey Public Schools. **Economics of Education Review.** 34 (June): 1-16.

Michubu, W. M. 2005 (September 1). **Factors Influencing Enrolment and Completion Rates in Public Secondary Schools in Meru North District, Kenya.** Retrieved August 7, 2015 from http://ssrn.com/abstract= 2245927.

Ministry of Education Thailand. 2008. **Directive of the Ministry of Education**. No. OBEC 293/2551. Bangkok: Ministry of Education Thailand

Mo, P. 2001. Corruption and Economic Growth. **Journal of Comparative Economics.** 29 (March): 66-79.

Monk, J. & Schmidt, R. 2010. **The Impact of Class Size and Number of Students on Outcomes in Higher Education.** Retrieved July 11, 2015 from http://digitalcommons.ilr.cornell.edu/workingpapers/114/.

Morales, A. M.; Fortes, I. A. & Rueda, A. G. 2013. Institutions and Public Expenditure on Education in OECD Countries. **Review of Public Economics.** 204 (1): 67-84.

Motta, R. & Moriera, A. 2009. Political Factors and the Efficiency of Municipal Expenditure in Brazil. **Economia Aplicada.** 13 (4): 353-371.

Naito, K. & Nishida, K. 2012. The Effects of Income Inequality on Education Policy and Economic Growth. **Theoretical Economics Letters.** 109-113.

Nagai, F.; Funatsu, T. & Kagoya, K. 2008 **Local Government in Thailand— Analysis of the Local Administrative Organization Survey.** Retrieved March 17, 2015 from Local Government in Thailand-Analysis of the Local Administrative Organization Survey.

Namuang, A. 2010**.** Educational Reform in Thailand. **Prince of Naradhiwas University Journal.** (May-August): 112-121.

Narit Bisonyabut. 2015 (January 29). **Educational Inequality.** Retrieved July 13, 2015 from http://tdri.or.th/tdri-insight/kt37/ (In Thai)

National Education Council. 2010. **National Education Plan Amended B.E.2552-2559.** Bangkok: Office of National Education Council. (In Thai)

Nasser-Ghodsi, N. 2006. **An Analysis of Egypt's Education Reform Program Outcomes inEgypt.** Master's thesis, Stanford University.

Neuman, S. & Weiss, A. 1995. On the Effects of Schooling Vintage on Experience- Earnings Profiles: Theory and Evidence. **European Economic Review.** 39 (5): 943-955.

Nickson, A.; Devas, N.; Brillates, A. B. & Cabo , W. L. 2006. **Asia-Pacific United Cities and Local Governments.** Washington D.C.: World Bank.

NIETS. 2015. **O-NET (Ordinary National Educational Test).** Retrieved August 13, 2015 from http://www.niets.or.th/en/catalog/view/2211

OECD. 2013. PISA 2012 Results in Focus: **What 15-Year-Olds Know and What They Can Do with What They Know.** Retrieved July 10, 2015, from http://www.oecd.org/pisa/keyfindings/pisa-2012-results-overview.pdf

Office of the Decentralization to Local Government Organization Committee. 2008. **Decentralization to Local Government Organizations (No. 2) 2008 and Plan of Action and Procedures for Decentralization to Local Government Organizations (No. 2).** Bangkok: .Office.

Office for National Education Standards and Quality Assessment, P. O. 2010. **Manual of the 3rd Educational Quality Assurance (2011-2015), Elementary Education, School Book: Edited November 2011.** Bangkok: Offset Plus.

Office for National Education Standards and Quality Assessment (Public Organization). 2013. **Manual for Basic Educational Institutions: The Third-Round of External Quality Assessment (2011-2015).** Bangkok: Zeno Publishing and Packaging.

Office for Promotion of the Learning Society. 2012. **Learning Disability Situation "LD-Autistism- ADHD-Learning Disorder Reached 13%; More than 900K has Pre-Symptoms of LD without any Screening.** Retrieved August 22, 2015 from http://www.qlf.or.th/Mobile/Details?contentId=530

Office of Education Council. 2010. **Strategic Goals and Education Reform Indicators in the Second Decade (2009-2018).** Bangkok: Office of Education Council.

Office of Education Council. 2014. **Thailand's Education Situation in the World Forum 2014.** Bangkok: Prikwan Graphic.

Ofsted. 2011. **School Governance: Learning from the Best.** Retrieved July 11, 2015 from http://www.eesforschools.org/pdf-files/Ofsted%20Report% 20Summary.pdf.

Okpala, A. & Okpala, C. 2014. The Role of School Life Expectancy and Urbanization on Adult Literacy Rates in Sub-Saharan Africa. **International Business & Economics Research Journal.** 13 (2): 329-334.

Olaniyan, O. 2011. **The Determinants of Child Schooling in Nigeria.** Nairobi: The African Economic Research Consortium.

ONEC. 2003. **The National Education Act, BE. 2542 (1999) Amendments (Second National Education Act. B.E. 2545 (2002).** Bangkok: Pimdeekarnpim. (In Thai)

ONEC. 2009. **National Education Reform in the 2nd Decade (B.E.2552-2561) (1999-2018).** Retrieved July 13, 2015 from http://admin.e-library. onecapps.org/Book/1003.pdf. (In Thai)

Onphanhdala, P. 2015. Revisiting the Determinants of Primary School Enrolment in Lao PDR. **International Coorperation Journal.** 22 (January): 1-19.

Onsomu, E. N.; Kosimbei, G. & Ngware, M. W. 2005**.** Impact of Gender and Socioeconomic Factors on Primary Education Performance in Kenya: Empirical Evidence. In **International Invitational Educational Policy Research Conference, Paris, France 2005.**

Onzima, R. R. 2011. **Parents Socio-Economic Status and Pupils Education Attainment in Selected Primary Schools.** Retrieved August 8, 2015 from https://www.academia.edu/552340/Parents_socio-economic_ status_and_pupils_education_attainment_in_selected_primary_schools

Osman, F. A. 2002. Public Policy Making: Theories and Their Implications in Developing Countries. **Asian Affairs.** 37-53.

Parandekar, S. 2011. **Analysis of Efficiency of Education Expenditures Thailand: Public Finance Management Report.** Washington DC.: World Bank.

Patthanasuwanna, P. 2010. **Provincial Administrative Organization School: The Role of Local Government in Education.** Bangkok: Thammasart University.

Peacock, A. T. & Wiseman, J. 1979. Approaches to the Analysis of Government Expenditure Growth. **Public Finance Review.** 7 (1): 3-23.

Pehrsson, M. 2012. **Determinants of Literacy in Africa: A Panel Data Study.** Lund: Lund University.

Pena, P. S. & Sole-Olle, A. 2009. **Evaluating the Effects of Decentralization on Educational Outcomes in Spain.** Barcelona, Spain: Universitat de Barcelona**.**

Poterba, J. M. 1997. Demographic Structure and the Political Economy of Public Education. **Journal of Policy Analysis and Management.** 16 (1): 48-66.

Poulette, J. 2013. **The Median Voter Theorem and Its Applications.** Retrieved February 6, 2015 from https://www.cornellcollege.edu/politics/Reading%20-%20The%20Median%20Voter%20Theorem%20and%20its%20Applications%20-%20J%20Poulette.pdf

Princeton University. 2007. **Data and Statistical Services.** Retrieved June 29, 2015 from http://dss.princeton.edu/online_helpstats_packages/stata/panel.htm

Pritchett, A. & Beatty, L. 2012. **From Schooling Goals to Learning Goals: How Fast Can Student Learning.** Washington D.C.: Center for Global Development.

Pritchett, L. & Filmer, D. 1997. **What Education Production Functions Really Show: A Positive Theory of Education Expenditures.** Washington D.C.: World Bank.

Rajanukul Institute. 2015 (May 27). Retrieved August 22, 2015 from http://www.rajanukul.go.th/new/index.php?mode=maincontent&group=225&id=3867&date_start=&date_end

Rajkumar, A. S. & Swaroop, V. 2008. Public Spending and Outcomes: Does Governance Matter? **Journal of Development Economics.** 86 (April): 96-111.

Ray, R. 2000. Child Labour, Child Schooling and Their Interaction with Adult Labour: Empirical Evidence for Peru and Pakistan. **World Bank Economic Review.** 14 (2): 347-367.

Reardon, S. 2014. **Income Inequality, Schooling, and Educational Outcomes.** Retrieved March 29, 2015 from http://cepa.stanford.edu/news/income-inequality-schooling-and-educational-outcomes

Reardon, S. F. 2011. The Widening Academic Achievement Gap Between the Rich and the Poor: New Evidence and Possible Explanations. In **Whither Opportunity? Rising Inequality and the Uncertain Life Chances of Low-Income Children.** R. Murnane & G. Duncan, eds. New York: Russell Sage Foundation Press.

Royal Decree on Criteria and Procedures for Good Governance B.E. 2546. **Royal Thai Government Gazette.** (9 October 2003)

Russell Sage Foundation.Revise Sociology. 2015 (February 15). **The Effect of Cultural Deprivation on Education.** Retrieved August 12, 2015 from http://revisesociology.com/2014/02/15/the-effect-of-cultural-deprivation-on-education/

Rhodes, R. 2003. **Understanding Governance: Policy Networks, Governance, Reflexivity and Accountability.** Berkshire, UK: Open University Press.

Rissmiller, K. J. 2000. Approaching a Model of Policy Change: A Challenge to Political Science. In **The Eighteen International Conference of the System Dynamics Society, Bergen.** Pp. 1-18.

Rivera, J. P. & Tullao Jr., T. S. 2009. Economic, Demographic, and Other Factors Affecting School Participation among Children in Urban and Rural Households the Case of Pasay and Eastern Samar. **Policy Brief: Poverty and Economic Policy Network, Community-Based Monitoring System.** 2 (6): 1-4.

Rockoff, J. E. 2010. Local Response To Fiscal Incentives in Heterogeneous Communities. **Journal of Urban Economics.** 68 (2): 138-147.

Rondinelli, D. A.; Nellis, J. R. & Cheema, G. S. 1983. **Decentralization in Developing Countries: A Review of Recent Experience.** Washington D.C.: World Bank.

Saengpassa, C. & Khaopa, W. 2012 (February 27). O-Net Test Stuck in 20th Century Say. **The Nation.** Retrieved September 8, 2015 from http://www.nationmultimedia.com/national/O-Net-test-stuck-in-20th-century-academic-says-30176752.html

Sagarik, D. 2012. **The Analysis of the Determinants of Education Expenditures in Thailand.** Bangkok: NIDA.

Sakon Varanyuwatana. 2001. **Retrospective and Prospective of Intergovernmental Transfers in Thailand.** Retrieved April 12, 2015 from http://www.econ.hit-u.ac.jp/~kokyo/symposium/PDF/Thailand.PDF.

Sen, A. K. 2001. What is Development About? In **Frontiers of Development Economics: The Future in Perspective.** G. M. Meier & J. E. Stigiltz, eds. New York: The Oxford University Press. Pp. 506-513.

Sharkansky, I. 1971. Economic Theories of Public Policy: Resource-Policy and Need-Policy Linkages between Income and Welfare Benefits. **Midwest Journal of Political Science.** 15 (4): 722-740.

Shleifer, A. & Vishny, R. W. 1993. Corruption. **The Quarterly Journal of Economics.** 108 (3): 599-617.

Sideris, D. 2007. **Wagner's Law in 19th Century Greece: A Cointergrationand Causality Analysis.** Athens: Bank of Greece.

Simkins, C. 2011. **The Determinants of Educational Attainment.** Retrieved August 8, 2015 from http://www.econrsa.org/papers/w_papers/wp31.pdf

Sousa, M. & Mendes, C. 2011. Locally Provided Public Schooling in Brazillian Municipalities. **Economia, Brasillia (DF).** 12 (3): 427-444.

Startz, R. 2012. **Policy Evaluation Versus Explanation of Outcomes in Education: I.E. Is it the Teachers? Is it parents? A Policy Brief.** Retrieved August 8, 2015 from http://www.econ.ucsb.edu/~startz/PolicyEvaluationEducation.pdf

Stigler, G. J. 1966. The Tenable Range of Functions of Local Government. In **Public Finance and Fiscal Policy : Selected Readings.** Boston, Mass.: Houghton Mifflin. Pp. 206-214.

Stiglitz, J. E. 1982. **The Theory about Local Public Goods Twenty Five Years after Tiebout's: A Perspective.** Massachusetts: National Bureau of Economic Research.

Suryadarma, D. 2012. How Corruption Diminishes the Effectiveness of Public Spending on Education in Indonesia. **Bulletin of Indonesian Economic Studies.** 48 (1): 85-100.

Suwanmala, C. & Weist, D. 2009. Thailand Decentralization: Progress and Prospects. In **Decentralization Policies in Asian Development.** S. Ichimura & R. Bahl, eds. Singapore: World Scientific. Pp. 210-211.

Tait, A. A. & Heller, P. S. 1982. **International Comparisons of Government Spending.** Washington D.C.: IMF.

Taylor, G. A. & Hutcheson, J. D. 1973. Religious Variables, Political System Characteristics, and Policy Outputs in the American States. **American Journal of Political Science.** 17 (May): 414-421.

Thaipublica. 2014 (September 1). **Local Administrative Frauds Statistics.** Retrieved April 14, 2015 from http://thaipublica.org/2014/09/statistics-local-government-fraud/

Thaipublica. 2015 (March 25). **Somkiat Tangkitvanich, President of TDRI Raises an Issue on "Thailand and New Future of Education" Student Being in Class 1,000-1,200 Hours/Year-Teacher in Class 84 Days/Year-ONESQA assesses Teacher only from Paper.** Retrieved September 8, 2015 from http://thaipublica.org/2015/03/trdi-education/ (In Thai)

Tatchalerm Sudhipongpracha & Achakorn Wongpreedee. 2015. Disequalizing Equalization Grant: An Assessment of the Relationship between Equalization Grant and Local Fiscal Capacity in Northeast Thailand. **Asian Affairs: An American Review.** 42 (1): 1-21.

Thomas, M. 2010. What do the Worldwide Governance Indicators Measure? **European Journal of Development Research.** 22 (1): 31-54.

Treiman, D. J. 2002 (Octorber). **The Growth and Determinants of Literacy in China.** Retrieved September 8, 2015 from http://papers.ccpr.ucla.edu/ papers/PWP-CCPR-2002-005/PWP-CCPR-2002-005.pdf

Uemura, M. 1999. **Community Participation: What Do We Know?** Washington D.C.: World Bank.

UIS/UNESCO. 2013. Adult and Youth Literacy. **UIS Fact Sheet.** 26 (November): 1-4.

UNESCO. 2003. The Role of Public Expenditure in Provision of Education and Health. In **Economic and Social Survey of Asia and the Pacific 2003.** New York: UN. Pp. 225-265.

UNDP. 2009. **Executive Summary: Policy Recommendation on Decentralization.** Bangkok: UNDP.

UNDP. 2013. **Human Development Report.** Retrieved August 4, 2015 from http://hdr.undp.org/en/content/mean-years-schooling-adults-years.

UNDP. 2014. **Thailand Development Report 2014.** Bangkok: UNDP.

UNESCAP. 2010 (January 23). **What is Good Governance?** Retrieved March 10, 2015 from http://www.unescap.org/sites/default/files/good-governance.pdf

UNESCAP. 2014. **What is Good Governance?** Retrieved July 8, 2015 from http://www.unescap.org/sites/default/files/good-governance.pdf

UNESCO. 1994. **The Salamanca Statement and Framework for Action on Special Needs Education.** Retrieved July 13, 2015 from http://unesdoc.unesco.org/images/0009/000984/098427eo.pdf

UNESCO. 1999. **Darkar Framework for Action Education for All: Meeting Our Collective Commitments.** Retrieved July 13, 2015 from http://www.unesco.org/carneid/dakar.pdf

UNESCO. 2008. **Secondary Education Regional Information Base: Country Profile – Thailand.** Bangkok: UNESCO.

UNESCO. 2009. Chapter 3: Raising Quality and Strengthening Equity: Why Governance Matters. In **Education for All Monitoring Report.** New York: UNESCO. Pp. 127-201.

UNESCO Institute for Statistics. 2015. **Government Expenditure on Education.** .
     Retrieved July 7, 2015 from http://data.worldbank.org/indicator/
     SE.XPD.TOTL.GD.ZS/countries

UNESCO & UNESCO Institute for Statistics. 2009. **Education Indicators:**
     Technical Guidelines. New York: UNESCO.

UNESCO-UIS. 2014. **Towards Indicators for a Post-2015 Education**
     Framework. Retrieved July 7, 2015 from http://www.uis.unesco.org/
     Education/Documents/towards-indicators-for-post-2015-education-
     framework-nov2014.pdf

UNICEF. 2000. **Defining Quality in Education.** New York: United Nations
     Children's Fund.

UNICEF House. 1990. **Meeting Basic Learning Needs: A Vision for the 1990s.**
     New York: The Inter-Agency Commission (UNDO, UNESCO, UNICEF,
     WORLD BANK).

United Nation. 2002. **The Millennium Development Goals, Millennium Project.**
     New York: UN.

United Nations Development Programme. 2014. **Thailand Development Report**
     2014. Bangkok: UNDP.

Unnever, J. D.; Kerckhoff, A. C. & Robinson, T. J. 2000. District variations in
     Educational Resources and Student Outcomes. **Economics of Education**
     Review. 19 (June): 245–259.

Unterhalter, E. 2013. **Working Paper Education Targets, Indicators and a Post-**
     2015 Development Agenda: Education for All, the MDGs, and Human
     Development. London: Institute of Education University of London.

Veiga, L. G. & Veiga, F. J. 2007. Political Business Cycles at the Municipal Level.
     Public Choice. 131 (April): 45-64.

Velez, E.; Schiefelbein, E. & Valenzuela, J. 1993. **Factors affecting Achievement**
     in Primary Education. Human Resources Development and Operations
     Policy Working Papers No. HRO 2. Washington, DC: World Bank.

Verina, I. & Chowdhury, A. 2002. **What Determines Public Expenditures in a Transition Economy?** World Institute for Development Economic Research, Discussion Paper No. 60. Retrieved July 4, 2015 from http://epublications.marquette.edu/cgi/viewcontent.cgi?article=1492&context=econ_fac.

Verner, D. 2005. **What Factors Influence World Literacy? Is Africa Different?** Washington D.C.: World Bank.

Vunnaporn Devahastin Suthapreda. 2013. **Defining the Governance Challenge for the Thai Public Sector.** Retrieved August 8, 2015 from http://www.opdc.go.th/uploads/files/2556/asean/material/27AUG/Country%20Presentation_Thailand.pdf

Wagner, A. 1958. Three Extracts on Public Finance. In **Classics in the Theory of Public Finance.** R. M., ed. New York: Macmillan. Pp. 1-16.

Whitehurst, J. G. & Lonigan, J. C. 1998. Child Development and Emergent Literacy. **Child Development.** 69 (June): 848-872.

Wilde, A.; Narang, S.; Laberge, M. & Moretto, L. 2009. **A Users' Guide to Measuring Local Governance.** Oslo: UNDP, Oslo Governance Centre.

Wittayakorn Chiangkool. 2008. **Thailand's Education Situation Report 2007-2008.** Bangkok: Office of Education Council. (In Thai)

The World Bank. 1995. **Priorities and Strategies for Education: A World Bank Review.** Washington D.C.: The International Bank for Reconstruction; World Bank.

World Bank. 2000. **World Development Report 2000/2001: Attacking Poverty.** Washington, D.C.: World Bank.

World Bank. 2001. **Effect of Population Growth and Urbanization in the Pacific Islands.** Retrieved from http://siteresources.worldbank.org/INTPACIFICISLANDS/Resources/Chapter+1.pdf

World Bank. 2004. **World Development Report 2004: Making Services Work for Poor People.** Washington D.C.: World Bank; Oxford University Press.

The World Bank. 2006. **The World Bank Participation Sourcebook.** Washington D.C.: World Bank.

World Bank. 2007. **Integrated Public Expenditure and Financial Review.** Washington D.C.: World Bank.

World Bank. 2010. **Governance Matters to Education Outcomes. The Indonesia Local Education Governance Index (ILEGI): A Report Card of 50 Local Governments.** Jakarta: World Bank.

World Bank. 2011. **Cameroon: Governance in the Education Sector.** Retrieved from http://siteresources.worldbank.org/INTCAMEROON/Resources/ cameroon-governance-in-the-education-sector.pdf

World Bank. 2013. **Local Governance and Education Performance: A Survey of the Quality of Local Education Governance in 50 Indonesian Districts.** Jakarta: The World Bank Office Jakarta.

World Bank. [2015]. **Accountability in Governance.** Retrieved August 8, 2015 from http://siteresources.worldbank.org/PUBLICSECTORANDGOVER NANCE/ Resources/AccountabilityGovernance.pdf

World Bank Institute. 2002. **Education Financing in Developing Countries: Level and Sources of Funds.** Washington D.C.: World Bank Institute.

World Economic Forum. 2013. **The Global Competitiveness Report 2013-2014: Full Data Edition.** Geneva: SRO-Kundig.

Xuehui, A. & Han, L. 2008. **Education Governance and Children's Educational Outcome in Rural China.** EADN Individual Research Grant Project.

Yanga, J.; Sicularb, T. &Laia, D. 2014. The Changing Determinants of High School Attainment in Rural China. **China Economic Review.** 30: 551-566.

Yaw , Y. M.; Schoderbek, M. P. & Sahay, S. P. 2013. The Effect of Administrative Pay and Local Property Taxes on Student. **Economics of Education Review.** 34 (June): 1–16.

York, T. T. 2015. Defining and Measuring Academic Success. **Practical Assessment, Research & Evaluation.** 20 (5): 1-20.

Zaghini, S. L. 2008. **Working Paper: Increasing Public Expenditures:Wagner's Law in OECD Countries.** Frankfurt: Center for Financial Studies.

BIOGRAPHY

NAME   Morakot Muthuta

ACADEMIC BACKGROUND   1st Class Honor

Bachelor's Degree with a major in

Political Science in International Relations from

Kasetsart University, Bangkok,

Thailand in 2001

Master's Degree in Business Administration

with a major in International Business form

Siam University, Bangkok

Thailand in 2005

(Full Scholarship)