THE ANALYSIS OF THE DETERMINANTS THAT AFFECT EDUCATION EXPENDITURE IN LOW INCOME COUNTRIES AND LOWER MIDDLE INCOME COUNTRIES

Wisaruta Thongkamkaew

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
2020

THE ANALYSIS OF THE DETERMINANTS THAT AFFECT EDUCATION EXPENDITURE IN LOW INCOME COUNTRIES AND LOWER MIDDLE INCOME COUNTRIES

Wisaruta Thongkamkaew
School of Public Administration

..... Major Advisor
(Professor Anchana NaRanong, Ph.D.)

..... Co-Advisor
(Assistant Professor Athakrit Thepmongkol, Ph.D.)

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

..... Committee Chairperson
(Associate Professor Sirirat Choonhaklai, Ph.D.)

..... Committee
(Professor Anchana NaRanong, Ph.D.)

..... Committee
(Assistant Professor Athakrit Thepmongkol, Ph.D.)

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

_____/_____/_____

ABSTRACT

Title of Dissertation	THE ANALYSIS OF THE DETERMINANTS THAT AFFECT EDUCATION EXPENDITURE IN LOW INCOME COUNTRIES AND LOWER MIDDLE INCOME COUNTRIES
Author	Wisaruta Thongkamkaew
Degree	Doctor of Public Administration
Year	2020

This research has aimed to, 1) analyze key factors affecting primary education expenditures in low income countries and lower middle income countries, 2) analyze key factors affecting secondary education expenditures in low income countries and lower middle income countries, and 3) suggest policies regarding the allocation of education expenditures to poor areas and inequalities in education.

The researcher mainly used quantitative research supported by documentary research. The unit of analysis was poor countries, as categorized according to Gross National Income per Capita from the World Bank using the Atlas method with GNI/Capita < US$1,005 and GNI/Capita between US$1,006 - US$3,955. The sample used in this research encompassed 45 countries coming from the group of low income countries and lower middle income countries. Data collection used secondary data and data analysis by the Ordinary Least Square Method (OLS), which is an estimation of the regression coefficient with the significance set at 0.01, 0.05, and 0.10

The results show that government revenue affected education expenditure at the primary level of low income countries and lower middle income countries at .01 statistical significance (β_5 = 0.584458, $p < .01$). Unemployment has redounded educational expenditure at the secondary level of the low income countries and lower middle income countries at .05 statistical significance (β_2 = 0.908276, $p < .05$). Moreover, a low rate of corruption affected education expenditure at the secondary level of low income countries and lower middle income countries at .10 statistical significance (β_4 = 8.151520, $p < .10$).

As for recommendations on guidelines for governments, state income, such as taxes and other fees, should be allocated to poor families for receiving a thorough primary education. Moreover, skill enhancement, such as language and other professional skills,

should be provided for secondary students to prepare them for the labor market. Lastly, the government should allocate as much budget to education as possible in order to use the education sector for truly developing the country.

ACKNOWLEDGEMENTS

I really appreciate and send thanks to my father, my mother, and my brother for their support in every way for me. Also, I greatly appreciate and sincerely thank Professor Dr. Anchana NaRanong, my Major Advisor, for her professional consulting, help and support. I also would like to express my gratitude to Assistant Professor Dr. Athakrit Thepmongkol, my Co-Advisor, who gave me useful advice and techniques for my dissertation. Moreover, I would like to express my sincere appreciation to Associate Professor Dr. Sirirat Choonhaklai, the Committee Chairperson, for her kindness. Additionally, my special thanks to Mr. Byron K. Foxx, my editor. In addition, I would like to thank you, Miss Benjaporn Anthong and Miss Malai Aiemsa-ard.

I wholeheartedly appreciate my friends, Dr. Chanin Chakkrapopyodhin, Mr. Kemmarin Chupradist, Mr. Vutthiwat Ananphutthimet, Miss Benjaporn Chuntarakote, and all my friends at DPA9 NIDA. Also, many thanks to Miss Intira Sriaphai, Miss Sudarat Rakkan, Miss Saguna Mongchom, Mr. Thanagron Reangnok, and Mr. Kitisak Srijamdee for helping me. Finally, I am most grateful to the Public Administration Program, Faculty of Humanities and Social Sciences, Songkhla Rajabhat University for giving me the opportunity to pursue my doctoral studies.

Wisaruta Thongkamkaew

October 2020

TABLE OF CONTENTS

Page

ABSTRACT iii
ACKNOWLEDGEMENTS v
TABLE OF CONTENTS vi
LIST OF TABLES x
LIST OF FIGURES xii
CHAPTER 1 INTRODUCTION 1
1.1 Background and Significance of the Study 1
1.2 Research Questions 4
1.3 Research Objectives 4
1.4 Research Scope 4
1.4.1 Content Scope 4
1.4.2 Area and Population Scope 5
1.4.3 Duration of Research 7
1.5 Research Component 7
1.6 Expected Benefits & Applications 8
1.7 Research Definition 9
CHAPTER 2 LITERATURE REVIEWS 11
2.1 Basic Information on Low Income Countries and Lower Middle Income Countries 11
2.1.1 Country Grouping 11
2.1.2 General Political, Economic and Social Information Related to Low Income Countries and Lower Middle Income Countries 14
2.1.3 Information about Educational Policy 20

2.2 Allocation of Educational Expenditures for Low Income Countries and Lower Middle Income Countries 24
2.2.1 Millennium Development Goals-MDGs (2000 to 2015) 24
2.2.2 Sustainable Development Goals - SDGs (From 2015 to the Present) 27
2.3 Related Theories and Concepts 31
2.3.1 Concepts of Social Policy and Public Expenditure 31
2.3.2 Fiscal Theories and Related Concepts 33
2.4 Review of Related Research 42
2.4.1 Gross Domestic Product (GDP) 42
2.4.2 Export 47
2.4.3 Inequality 50
2.4.4 Democracy 53
2.4.5 Government Revenue 57
2.4.6 Unemployment 61
2.4.7 Corruption 64
2.4.8 Summary of Relationship Direction 68
2.5 Research Framework| 68
CHAPTER 3 RESEARCH METHODOLOGY 70
3.1 Research Design 70
3.2 Analysis Unit, Population and Research Sample 71
3.3 Data Collection Tools 74
3.3.1 Researcher 74
3.3.2 Reliability 75
3.3.3 Data Collection 75
3.3.4 Preparation of Tools for Data Analysis 77

3.4 Analysis of Research Results 77
3.4.1 Preliminary Examination of Data Characteristics 77
3.4.2 Data Analysis 77
3.4.3 Model Analysis Summary 81
CHAPTER 4 RESULTS 82
4.1 Preliminary Examination of Data Characteristics 83
4.1.1 General Information 83
4.1.2 Multicollinearity: Correlation Matrix 86
4.2 Data Analysis 1 (Model 1) 89
4.2.1 Heteroskedasticity Testing 90
4.2.2 Heteroskedasticity Solution 90
4.2.3 Testing of Factors Affecting Primary Education Expenditures 91
4.3 Data Analysis 2 (Model 2) 92
4.3.1 Heteroskedasticity Testing 92
4.3.2 Solving Heteroskedasticity 93
4.3.3 Testing of Factors Affecting Secondary Education Expenditures 93
4.3.4 Heteroskedasticity Testing 95
4.3.5 Testing of Factors Affecting Secondary Education Expenditures 95
CHAPTER 5 CONCLUSIONS, DISCUSSIONS AND RECOMMENDATIONS 97
5.1 Research Summary 97
5.1.1 Research Results 99
5.2 Discussion 101
5.3 Contribution to Theory 109
5.3.1 Government Revenue and Education Expenditures 109
5.3.2 Unemployment and Educational Expenditures 110

5.3.3 Corruption and Educational Expenditures 111
5.3.4 Suggestions for Further Research.....111
BIBLIOGRAPHY.....112
APPENDIX.....120
BIOGRAPHY 123

LIST OF TABLES

Page

Table 1.1 Area and Population Scope of Low Income Countries and Lower Middle ..5

Table 2.1 Country Grouping 12

Table 2.2 Low Income Countries and Lower Middle Income Countries.....13

Table 2.3 Summary of the Relationship of the Gross Domestic Product Variables ...45

Table 2.4 Summary of the Relationship of the Export Variables that Affect Educational Expenditures.....49

Table 2.5 Summary of the Direction of the Relationship of Inequalities in Income ..51

Table 2.6 Summary of the Relationship between Democratic Variables Affecting ...55

Table 2.7 Summary of the Relationship in Government Revenue Variables Affecting 59

Table 2.8 Summary of the Relationship of the Unemployment Variable Affecting...62

Table 2.9 Summary of the Direction of the Relationship of Corruption Variables and Secondary Education Expenditures. 66

Table 2.10 Summary of Relationship Direction.....68

Table 3.1 Low Income Countries and Lower Middle Income Countries. 71

Table 3.2 Sample Group of Countries Used for Data Analysis with a Total of 45.....73

Table 3.3 Data Sources.....76

Table 4.1 General Information.....83

Table 4.2 Correlation Matrix of Model 1 Factors Affecting Expenditures in.....86

Table 4.3 Correlation Matrix Model 2：Factors Affecting Secondary Education....88

Table 4.4 White's General Heteroskedasticity Test.....90

Table 4.5 Solving Heteroskedasticity by Weighted Least Square (WLS) Based on...90

Table 4.6 Testing of Factors Affecting Primary Education Expenditures of Low 91

Table 4.7 White's General Heteroscedasticity Test.....92

Table 4.8 Solving Heteroskedasticity by Weighted Least Square (WLS) According to 93

Table 4.9 Testing of Factors Affecting Secondary Education Expenditures of Low .93

Table 4.10 White's General Heteroscedasticity Test 95

Table 4.11 Testing of Factors Affecting Secondary Education Expenditures of Low95

Table 5.1 The Summary of Relationship Direction. 97

LIST OF FIGURES

Page

Figure 2.1 Human Right vs Type of Political Regime.....15
Figure 2.2 Total Tax Revenues.....16
Figure 2.3 Revenue, Excluding Grants (% of GDP).....16
Figure 2.4 GDP Overview of Low Income Countries and Lower Middle Income.....17
Figure 2.5 Rating of Poverty.....18
Figure 2.6 The Country's Wealthby Considering the Human Capital Dimension.....18
Figure 2.7 Overview of the Population in Low Income Countries and Lower Middle 19
Figure 2.8 The Average Life Expectancy of Each Country's Population. 19
Figure 2.9 Literacy Rate of Various Countries in the World between 2000 and 2012. 20
Figure 2.10 Investment in the Construction of Classrooms in Poor Countries between 2008 and 2015.....25
Figure 2.11 Investment in Increasing in the Number of Teachers in Poor Countries.25
Figure 2.12 Investment in Marginalized Areas of Poor Countries between 2008 and 2015 26
Figure 2.13 Allocation of Education Expenditures Compared between 2012 and.....29
Figure 2.14 Image of Education Expenditure Allocations.....30
Figure 2.15 Relationship between Social Policies, Social Expenditures and Education 32
Figure 2.16 The Increase in Public Spending due to the Growth of Gross Domestic 34
Figure 2.17 Voting and Decisions 38

Figure 2.18 Gini Coefficient 39

Figure 2.19 The World Bank Governance Indicators and the Policy Process. 41

CHAPTER 1

INTRODUCTION

1.1 Background and Significance of the Study

Nowadays, education is an important dimension on a global scale because it affects development in various countries with regard to social quality, poverty rate, economic growth and acceptance amid competition with other countries. The rationale points to awareness and necessity. In the last 3 decades, it can be seen that a global context has put much focus on the development of human capital in order to achieve equality, with continuous and substantial operations at work under the framework and direction of development around the world. The first phase was 2000 - 2015, when the United Nations defined its Millennium Development Goals, MDGs, in the amount of 8 items. Item 2 specified the goal for everyone to receive a basic education (primary education) during the first phase. Children in the poorest countries who were able to receive a primary education increased to only 74 percent. In other words, the results did not achieve the actual goal of 91 percent of all children able to study for a primary education (Natchada Kongsri, 2017)

After 2015, the development agenda for the United Nations determined 17 Sustainable Development Goals (SDGs). The matter of education was included in item 4, which calls for equal quality education, covering and promoting lifelong learning opportunities for everyone, and significantly for those target groups who live in poverty situations, in order for them to thoroughly reach basic resources and services.

As mentioned above, poverty situations, as measured by the poverty rate, affect the development of a country's potential. Therefore, poverty is an indication of backwardness, underdevelopment in the country, and a lack of opportunities, compared to competing countries in a global context. Because these people do not have the

potential, they have a low income that provides insufficient sustenance, and are often illiterate. To solve these problems, the country must be relieved from poverty, the primary need is to be aware and to educate and support education development by proceeding with a goal of human capital development, because if the people of the country have developed, potential knowledge will have also increased. As a result, it will be useful for maintaining employment and driving the country forward. (Natchada Kongsri, 2017) stated that, in order for a country to develop and move towards modernity, that country must rely on its ability to create new institutions, know how to use high technology, control and manage the environment appropriately, and be able to adjust thought and behavior patterns in order to achieve common goals within society. Education is an important part of enhancing this ability, for both individuals and institutions, in order to be an important force in the country's operations. In other words, education is a catalyst for economic, social and political development, and is a main mechanism for the development of "human capital" throughout various developmental areas.

Therefore, based on important considerations such as literacy rate, poverty ranking and national institutions, when considering the human capital dimension, it's important to consider the relationship between poverty and human capital development. This affects improvements in education and pushes all schools to develop their teaching and learning capacity by realizing that human resource development and education are currently necessary. There should be an allocation of investment in education through policy implementation and allocations of expenditure.

Establishing educational policies and implementing them through allocated expenditures is a practice that falls under social policy. In other words, the State has to provide welfare in order to help the poor and disadvantaged improve their quality of life and achieve social equality. This is helped by receiving a thorough education, as revealed by a reduction of inequality and the fact that educated people contribute to a better quality of life, gain knowledge and skills for their careers, including employment considerations, which can affect the country's growth. Therefore, if the State wants to

advance the country, the State must realize a push for educational social policies by accelerating investment in education and develop its human capital, which is the foundation of the country's potential. Therefore, social policies and education investments are interrelated. In other words, the way in which countries can develop and progress is by pushing for concrete social policy, which the government implements by allocating educational expenditures to best enhance its potential. With regards to development of the country's foundations, low income countries and lower middle income countries need social policies that will focus on the development of their foundations for the poor, to help them be thoroughly educated, by allocating educational expenses towards knowledge growth, which can affect employment and help the State to keep up in a current global context.

The allocation of educational expenditures in low income countries and lower middle income countries focuses on investment in education for an equal education of all its people. The state must allocate these educational expenditures. West, Pennell, and West (2000) explained that the basic mechanism for making government investment decisions is to realize the importance of social equality and economic competitiveness. It can be summarized with 3 main factors: an increase in literacy rates, a decrease in threats and economic competitiveness, and an increase in the proportion of student access to education and success of study achievements.

However, this importance is especially a necessity for low income countries and lower middle income countries, who must reform by urging a push on investment in education. According to UNESCO (Wils, 2015), it was revealed that student accessibility goals of the State must expand expenditures at a constant rate every year, according to plan, until 2030 in order to cover and reduce the inequality gap. In other words, an expansion of education expenditure is necessary in low income countries and lower middle income countries, because it is a tool of government investment which enhances economic growth for the country. In the case of low income countries and lower middle income countries, the quality of education is often at a rate that does not keep up with competition on the global stage, affecting national economic development.

Moreover, inequality in society shows a lag behind development. For this reason, the allocation of education expenditure to help solve problems by educating its citizens can have good long-term benefits for the country.

For this research, the researcher focused on studying and analyzing various important factors affecting the educational expenditures of low income and lower middle income countries at the primary and secondary levels, as well as educational expenditures for the poor, and inequitable education in all areas.

1.2 Research Questions

1) Which factors are important to primary and secondary education expenditures in low income countries and relatively lower middle income countries?

2) How can education results offer a guide and suggestions for the allocation of education expenditures to poor and unequally educated groups?

1.3 Research Objectives

1) To analyze key factors affecting primary education expenditures in low income countries and lower middle income countries.

2) To analyze key factors affecting secondary education expenditures in low income countries and lower middle income countries.

3) To suggest policies regarding the allocation of education expenditures to poor areas and inequalities in education.

1.4 Research Scope

1.4.1 Content Scope

1.4.1.1 Study the Variables Obtained from the Literature Review of Related Research as Follows:

1) Independent Variables

(1) Real GDP

(2) Exports

(3) Inequality

(4) Democracy

(5) Government Revenue

(6) Unemployment

(7) Corruption

2) Dependent Variables

(1) Primary Education Expenditure

(2) Secondary Education Expenditure

1.4.1.2 Study from Secondary Data by Using Pool Data

1.4.2 Area and Population Scope

Study low income countries and lower middle income countries, with a total of 81 countries based on the database in November 2018, as follows:

Table 1.1 Area and Population Scope of Low Income Countries and Lower Middle Income Countries.

Africa	Asia-Pacific – Oceania	America	Europe
Angola	Afghanistan	Bolivia	Kosovo
Benin	Bangladesh	El Salvador	Moldova
Burkina Faso	Bhutan	Haiti	Ukraine
Burundi	Cambodia	Honduras	
Cabo Verde	Georgia	Nicaragua	
Cameroon	India		
Congo, Rep.	Indonesia		

Africa	Asia-Pacific – Oceania	America	Europe
Cote d'Ivoire	Kiribati		
Central African Republic	Korea, Dem. People's Rep.		
Chad	Kyrgyz Republic		
Comoros	Lao PDR		
Congo, Dem. Rep.	Micronesia, Fed. Sts.		
Djibouti	Mongolia		
Egypt, Arab Rep.	Myanmar		
Eritrea	Nepal		
Eswatini	Pakistan		
Ethiopia	Papua New Guinea		
Gambia, The	Philippines		
Ghana	Solomon Islands		
Guinea	Sri Lanka		
Guinea – Bissau	Syrian Arab Republic		
Kenya	Tajikistan		
Lesotho	Timor-Leste		
Liberia	Uzbekistan		
Madagascar	Vanuatu		
Malawi	Vietnam		
Mali	West Bank and Gaza		
Mauritania	Yemen, Rep.		
Morocco			
Mozambique			
Niger			
Nigeria			
Rwanda			
Sao Tome and Principe			

Africa	Asia-Pacific – Oceania	America	Europe
Senegal			
Sierra Leone			
Somalia			
South Sudan			
Sudan			
Tanzania			
Togo			
Tunisia			
Uganda			
Zambia			
Zimbabwe			

Source: World Bank (2018a).

1.4.3 Duration of Research

The duration of the research was April 2018 - October 2019.

1.5 Research Component

This research consists of 5 chapters, which are: Introduction, Literature Review, Research Methodology, Study Results, Conclusion with Discussion and Suggestions, as follows:

Chapter 1: Present Background and Significance of the Study, Research Questions, Research Objectives, Research Scope, Content Scope, Area and Population Scope, Duration of research including Expected Benefits and research definition to define the studied variables.

Chapter 2: Present basic study of low income countries and lower middle income countries, allocation of low income countries and lower middle income countries'

education expenditures, relevant theories and concepts, review of relevant research, summarize relevant research, include the synthesis of relevant research and conceptual framework in testing statistics, and analyze the research findings.

Chapter 3: Present the research methodology by studying from relevant documents, population and research samples, secondary data sources and statistical analysis methods.

Chapter 4: Present the results of the study by testing Pool Data, analyze important factors affecting the primary and secondary education expenditures in low income countries, and lower middle income countries by Ordinary Least Square method.

Chapter 5: Present a summary of the research results, including a discussion of the research results, theoretical suggestions, and recommendations for the next research.

1.6 Expected Benefits & Applications

1) The results of the study can increase a broader theoretical understanding of various important factors to education expenditures in a country where the people are mainly poor and receive inequitable education.

2) Gain new knowledge about the relationships between variables from the literature review and synthesis from relevant research.

3) The results of the study can offer a guideline and suggestions for the allocation of education expenditures to poor and unequal education areas.

4) To publish in academic journals or research on those factors affecting education expenditures in low income and lower middle income countries

1.7 Research Definition

1) Education Expenditure means the expenditures that the government allocates for investment in primary and secondary education in low income countries and relatively lower middle income countries by using the following variables: Government expenditure per student, primary (% of GDP per capita) and Government expenditure per student, secondary (% of GDP per capita).

2) Low income countries and Lower middle income countries means countries that are grouped by the World Bank based on the GNI per capita assessment using a method called the Atlas method. GNI/Capita (current US $) low income countries (current US $) are less than 1,005 and lower middle income countries equal to GNI/Capita (current US $) 1,006 - 3,955.

3) GDP means Real GDP, the true gross domestic product of low income countries and lower middle income countries using the following variable: GDP per capita (Constant 2010).

4) Exports means the export of goods and services of low income countries and lower middle income countries using the following variables: Exports of goods and services (% of GDP).

5) Inequality means inequality values in the income distribution of low income countries and lower middle income countries using the following variable: Gini Index.

6) Democracy applies to the regime in each country among low income countries and lower middle income countries, with the value set at 0 for a non-democratic governing country, and the value set at 1 in a fully democratic country.

7) Government Revenue means government revenue data, including taxes and various state collections in low income countries and lower middle income countries using the following variables: Revenues, excluding grants (% of GDP).

8) Unemployment means the unemployment rate of low income countries and lower middle income countries using the following variables: Unemployment, in total (% of total labor force) and (modeled ILO estimate).

9) Corruption means corruption in low income countries and lower middle income countries measured by the Control of Corruption, which will be between -2.5 and 2.5. A low Control of Corruption means that there is high corruption, and a high Control of Corruption means that there is low corruption.

CHAPTER 2

LITERATURE REVIEWS

The Analysis of the Determinants that Affect Education Expenditure in Low Income Countries and Lower Middle Income Countries. The researcher studied basic information on low income countries and lower middle income countries, including related research, as follows.

2. 1 Basic information on low income countries and lower middle income countries

2.2 Allocation of educational expenditures for low income countries and lower middle income countries

2.3 Fiscal theories and related concepts

2.4 Related literature

2.5 Research framework

2.1 Basic Information on Low Income Countries and Lower Middle Income Countries

2.1.1 Country Grouping

The World Bank has grouped countries in the world by evaluating gross national income per capita using the Atlas method. Therefore, countries with similar economic databases are in the same country group (World Bank, 2017b) as follows:

Table 2.1 Country Grouping

Threshold	GNI/Capita (current US$)
Low income	< 1,005
Lower middle income	1,006 - 3,955
Upper middle income	3,956 - 12,235
High income	> 12,235

Source: World Bank (2017b).

The Atlas method (World Bankc, 2017) is an evaluation of gross national income per capita for use as a decision-making tool by using the calculations below:

$$e_t^* = \frac{1}{3}\left[e_{t-2}\left(\frac{p_t}{p_{t-2}} / \frac{p_t^{S\$}}{p_{t-2}^{S\$}}\right) + e_{t-1}\left(\frac{p_t}{p_{t-1}} / \frac{p_t^{S\$}}{p_{t-1}^{S\$}}\right) + e_t\right]$$

$$Y_t^{\$} = (Y_t / N_t)/e_t^*$$

$Y_t^{\$}$ or GNI per Capita in U.S. Dollars per year

by e_t^* called the Atlas Conversion Factor

e_t is Average annual exchange rate

p_t is GDP index in year t

$p^{s\$}_t$ is SDR index in year t

Y_t is gross national income per capita

N_t is mid-year population

The list of 81 low income countries and lower middle income countries from the World Bank grouping, as of November 2018, are as follows:

Table 2.2 Low Income Countries and Lower Middle Income Countries

Africa	Asia-Pacific-Oceania	America	Europe
Angola	Afghanistan	Bolivia	Kosovo
Benin	Bangladesh	El Salvador	Moldova
Burkina Faso	Bhutan	Haiti	Ukraine
Burundi	Cambodia	Honduras	
Cabo Verde	Georgia	Nicaragua	
Cameroon	India		
Congo, Rep.	Indonesia		
Cote d'Ivoire	Kiribati		
Central African Republic	Korea, Dem. People's Rep.		
Chad	Kyrgyz Republic		
Comoros	Lao PDR		
Congo, Dem. Rep.	Micronesia, Fed. Sts.		
Djibouti	Mongolia		
Egypt, Arab Rep.	Myanmar		
Eritrea	Nepal		
Eswatini	Pakistan		
Ethiopia	Papua New Guinea		
Gambia, The	Philippines		
Ghana	Solomon Islands		
Guinea	Sri Lanka		
Guinea – Bissau	Syrian Arab Republic		
Kenya	Tajikistan		
Lesotho	Timor-Leste		
Liberia	Uzbekistan		
Madagascar	Vanuatu		
Malawi	Vietnam		

Africa	Asia-Pacific-Oceania	America	Europe
Mali	West Bank and Gaza		
Mauritania	Yemen, Rep.		
Morocco			
Mozambique			
Niger			
Nigeria			
Rwanda			
Sao Tome and Principe			
Senegal			
Sierra Leone			
Somalia			
South Sudan			
Sudan			
Tanzania			
Togo			
Tunisia			
Uganda			
Zambia			
Zimbabwe			

Source: World Bank (2018a).

2.1.2 General Political, Economic and Social Information Related to Low Income Countries and Lower Middle Income Countries

In the research for The Analysis of the Determinants that Affect Education Expenditure in Low Income Countries and Lower Middle Income Countries, we have divided the presentation of general information into 3 parts, as follows:

Political: Visualizes the political information concerning basic information in democratic and authoritarian countries.

Economic: shows basic information on state revenues and economic growth of the countries studied by measuring Gross Domestic Product, national poverty and wealth ranking.

Social: shows basic demographic information in terms of growth, average life expectancy of the study population and the literacy rate of selected countries in the world.

2.1.1.2 Political Information

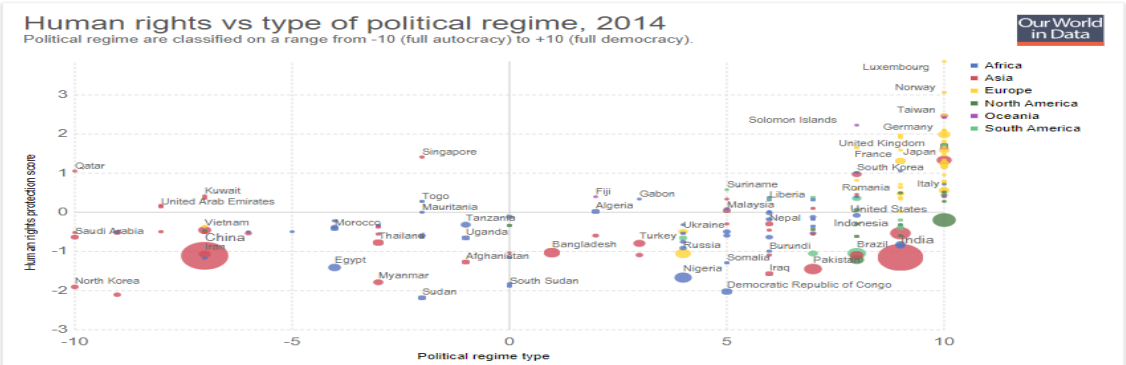

Figure 2.1 Human Right vs Type of Political Regime

Source: Roser and Ortiz-Ospina (2016).

When considering the relationship between human rights and the political power of a country, it was found that poor countries tend to adhere toward the negative line, this includes low income countries and lower middle income countries such as Korea, Dem. People's Rep. (North Korea), Egypt, Arab Rep., Myanmar, Tanzania, South Sudan, Sudan, Nigeria and Afghanistan. Most of these countries are grouped as dictatorships, with values ranging from 0 down to negative 2.

When considering positive numbers ranked for low income countries and lower middle income countries, as shown in the image, Togo and Mauritania fell in a group that is closer to the number 0, indicating that they are less democratic.

Therefore, most of the low income countries and lower middle income countries' general political conditions are either dictatorships and have little democracy.

2.1.2.2 Economic Information

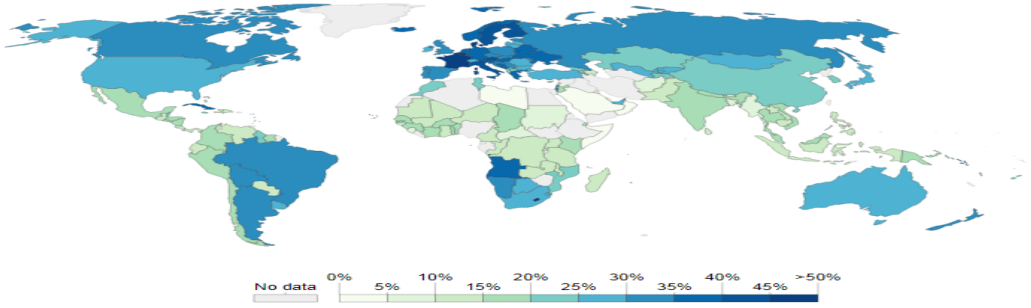

Figure 2.2 Total Tax Revenues

Source: Roser and Ortiz-Ospina (2016).

From the image below, when considering state revenues the total income tax in low income countries and lower middle income countries ranged from 0 percent to 25 percent.

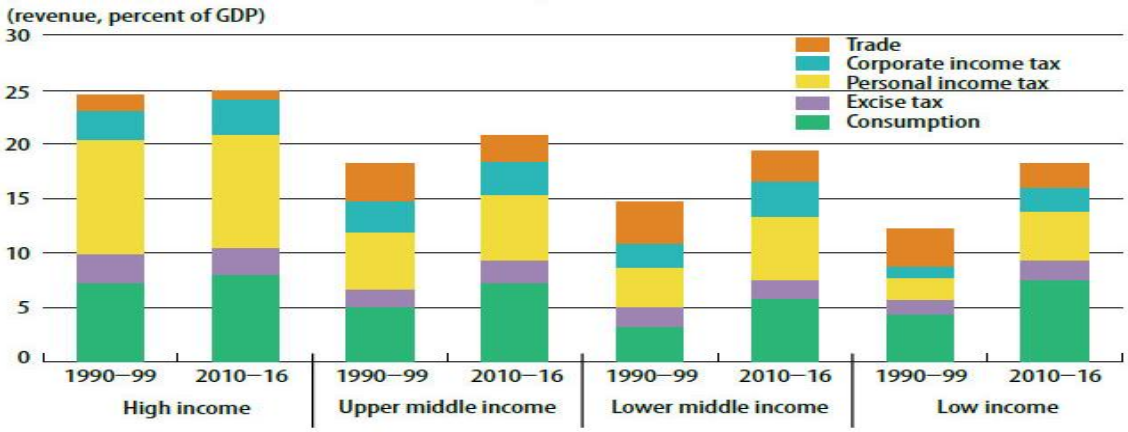

Figure 2.3 Revenue, Excluding Grants (% of GDP)

Source: Coady (2018).

From the image shown, when considering state revenue from tax collections of low income countries and lower middle income countries, it is still a small proportion considering the growth from 1990-1999 compared with 2010-2016, registering between 1-1.5 percent of GDP

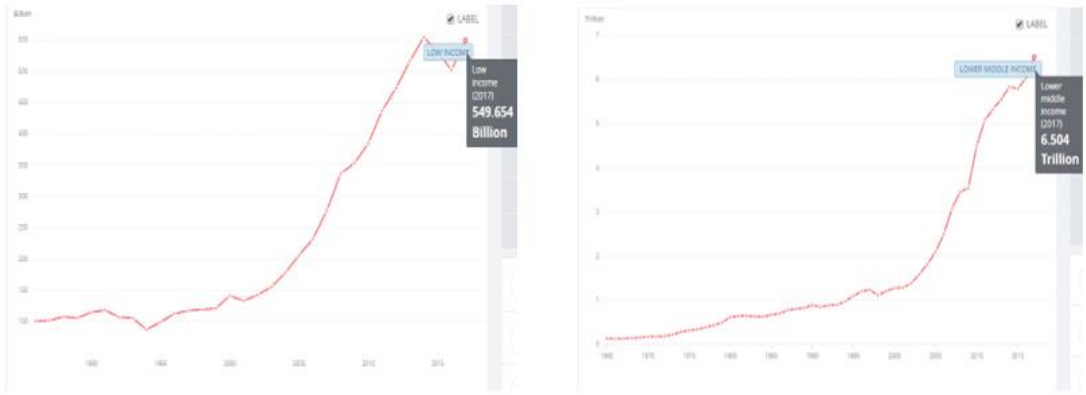

Figure 2.4 GDP Overview of Low Income Countries and Lower Middle Income Countries.

Source: World Bank (2017a).

When considering the economic development of low income countries using the countries' total income from Gross Domestic Product, we found that the overall economy of low income countries in the past 5 years was in an economic slowdown. Meanwhile, the Gross Domestic Product of lower middle income countries has increased, as seen in Figure 2.4.

When considering the target group that received the highest interest in solving educational problems, according to a recent World Bank survey from 2013, it was found that the top 3 poverty ratios were in Africa, South Asia and Latin America, which make up part of the low income countries, followed by Asia Pacific, America, and Europe, respectively.

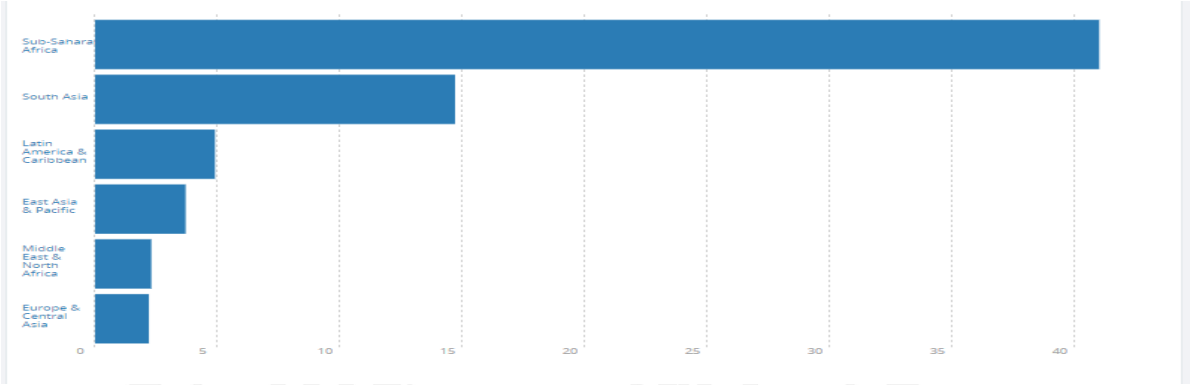

Figure 2.5 Rating of Poverty

Source: World Bank (2013).

According to a World Bank survey from 2018 on the wealth of various countries, including low income countries, lower middle income countries and high income countries, a comparison of analyses from the figure below found that high income countries had the lowest resources, but production and human capital had a higher ratio compared to low income countries, who had the highest resources but whose production and human capital were the lowest ratio.

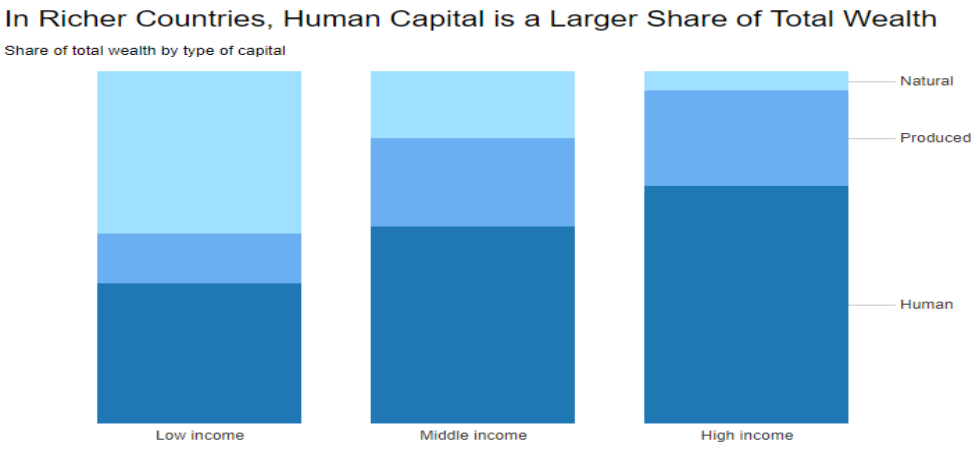

Figure 2.6 The Country's Wealthby Considering the Human Capital Dimension

Source: World Bank (2018b).

2.1.2.3 Social Information

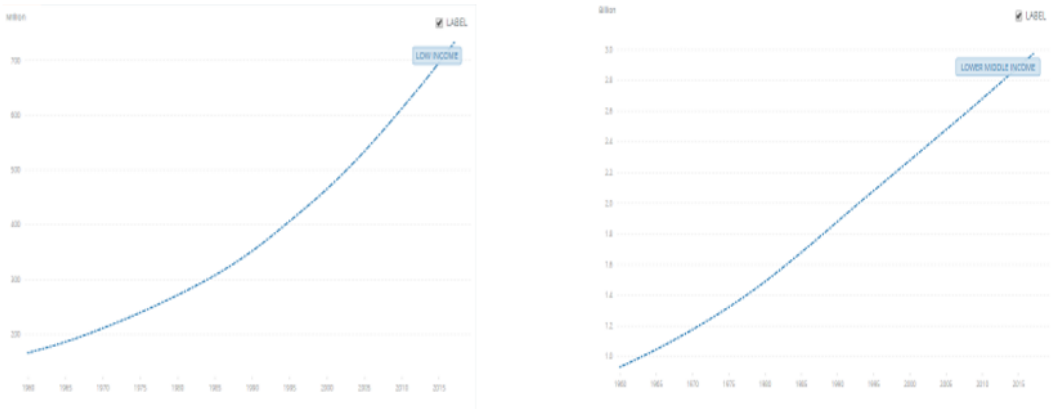

Figure 2.7 Overview of the Population in Low Income Countries and Lower Middle Income Countries.

Source: World Bank (2016).

In terms of population growth in low income countries and lower middle income countries, it was found that the number has continuously increased every year, as seen in Figure 2.7.

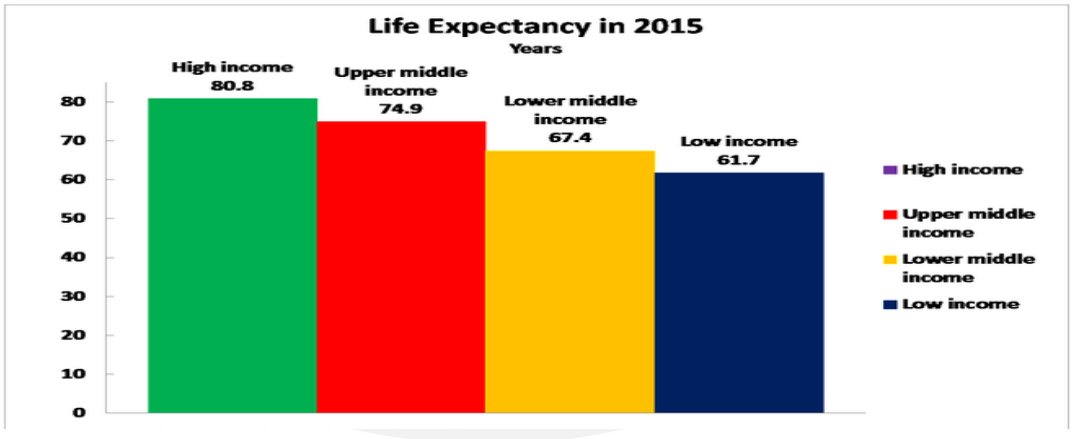

Figure 2.8 The Average Life Expectancy of Each Country's Population.

Source: Ross (2017).

The population is continually increasing every year, but if considering the average life expectancy of the population, it was found that low income countries had an expected average life expectancy of 61.7 years old, while low middle income countries had an expected average life expectancy of 67.4 years old.

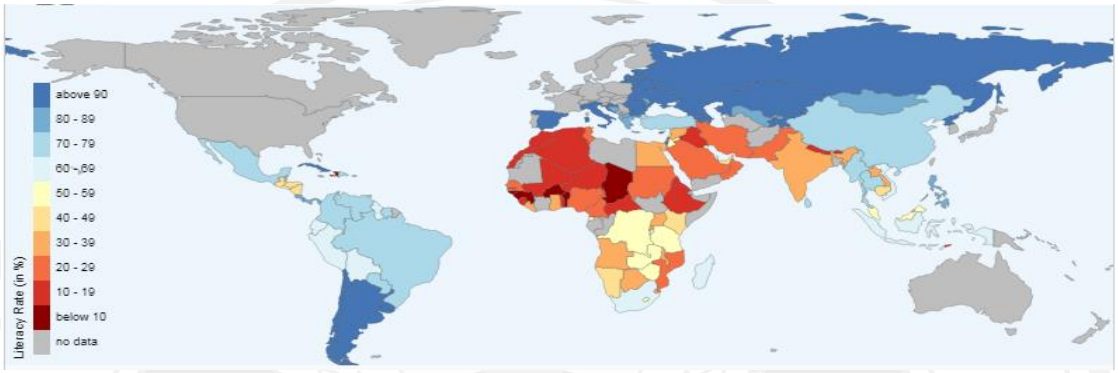

Figure 2.9 Literacy Rate of Various Countries in the World between 2000 and 2012.
Source: Roser and Ortiz-Ospina (2016).

As indicated in Figure 2.9, the countries with the lowest literacy rates were mainly in Africa, ranging from less than 10 percent to 20 percent, followed by South Asia Pacific, including Latin America and the Caribbean, and some European countries, respectively. Literacy rates ranged between less than 10 percent to about 50 percent.

2.1.3 Information about Educational Policy

2.1.3.1 Educational Policy According to the Goal in 2000

Educational funding programs focus on design, production and workforce, with an emphasis on increasing literacy rates, vocational education and training techniques. In this regard, the World Bank considers the need to design manpower as the main reason for supporting educational funding.

From the 1960s until 2000, the World Bank introduced policies for primary and secondary education loans to support the efficiency of practical employment by investing in education for poor and developing countries by focusing

on improving the content of their primary and secondary curricula for students in rural areas. Also included was support for improving teachers' skills to make their working experience more efficient. Most of these policies were in Africa, Asia and Latin America in order to expand educational opportunities for rural students. It involved a process of lending from the World Bank to various countries, leading to the allocation of increased educational expenditures (Heyneman, 2015)

2.1.3.2 Information on Education Policies that Meet the Goals of the United Nations.

1) Goals and Necessities for Early Education (2000-2015)

Since 2000, the development of education has had more concrete goals to reduce poverty for children in underdeveloped areas. The U.N.'s education policy in an initial global context has six main goals (UNESCO, 2014), as follows:

Goal 1:

Half of the world's children still lack primary educational opportunities, especially in Africa. Therefore, the most rewarding goal of achieving success is investing in basic education in poverty-stricken countries.

Goal 2:

The problem of poverty in low income countries increases the problem of sudden resignation among students. This disadvantaged group of children has an impact on the progress of the country as a whole. Therefore, by encouraging these children to complete their primary education it creates opportunities for learning and prosperity in areas with poor children.

Goal 3:

This goal is a push on 2 issues, which are (1) basic skills (literacy and calculation) plus transferable skills (problem-solving, critical thinking, communication, teamwork), and (2) technical and professional skills, by which the government must set policies for pushing educational investment at the elementary to secondary levels in order to obtain skilled labor that meets the needs of the labor market.

Goal 4:

For poor countries, female citizens still have a low literacy rate. Therefore, the state must pay more attention to literacy by allocating national education expenditures to build a foundation for quality of life, gender equality, and enhanced lifelong learning skills.

Goal 5:

The problem of gender inequality must be reduced by creating learning processes for both girls and boys, in order to demonstrate basic educational equality.

Goal 6:

The standard of educational quality is defined by the principles of the development of learners' knowledge and the promotion of values and attitudes of citizenship, as well as the development of creativity, both intellectually and emotionally. Most children in Africa do not yet meet these standards and lack teachers with sufficient ratios for their students. Therefore, primary teachers must be procured with sufficient and affective teaching skills.

2) Goals and Necessities for Education after 2015

The educational policy has seven main goals (UNESCO, 2014), as follows:

Goal 1:

By 2030, boys and girls will be educated by receiving free classes in compulsory education with equal opportunity.

Goal 2:

By 2030, boys and girls in marginalized areas will receive a basic education for at least 9 years without charge.

Goal 3:

By 2030, boys and girls will have a basic knowledge and ability in mathematical calculations, especially the target group of underprivileged children.

Goal 4:

By 2030, boys and girls in marginalized areas or underprivileged youth must have learned professional skills or technical skills at the secondary level.

Goal 5:

By 2030, every youth must create the values and attitudes towards citizenship necessary to live a happy life in peaceful society.

Goal 6:

By 2030, all students must be professionally educated by trained teachers.

Goal 7:

By 2030, most countries around the world will have to allocate educational expenditures as part of their government spending and make it a top priority, including the strengthening of financial cooperation to show that education is important.

Therefore, a summary of 5 issues that need investment in education (UNESCO, 2018) are as follows:

1) The overall education system must focus on the development of quality and equality.

2) Develop teacher competencies in academic matters, rofessionalism, leadership and social participation.

3) Curriculum development with a focus on students at its center, necessary language abilities in a global context and citizenship skills.

4) Develop a system for evaluating student achievements by methods and criteria in accordance with international standards.

5) Promote teacher training on the skills necessary for effective educational development.

As seen from these 5 issues, it is necessary for governments to push forward with their education expenditures for the benefit of national development in order to guarantee equal competition in the global context.

2.2 Allocation of Educational Expenditures for Low Income Countries and Lower Middle Income Countries

2.2.1 Millennium Development Goals-MDGs (2000 to 2015)

This presentation is divided into two important parts: 1) the expansion of investment in the building of classrooms and an increase in the number of teachers in poor countries, and 2) changes in the expansion of educational expenditures for investment in marginalized areas of poor countries.

2.2.1.1 The Expansion of Investment in the Building of Classrooms and Increases in the Number of Teachers in Poor Countries

Since 2000, Millennium Development Goals (MDGs) have been implemented and seen substantial changes in their push to meet their goals during 2008-2015 (Education Policy and Data Center (EPDC.) & UNESCO, 2009).

Investment in the construction of classrooms in poor countries between 2008 and 2015 indicates that most of it has focused on building classrooms starting from the foundation of instruction at the primary level, followed by the secondary level. The importance of this was deemed at an average level of 50 percent, as the chart below indicates.

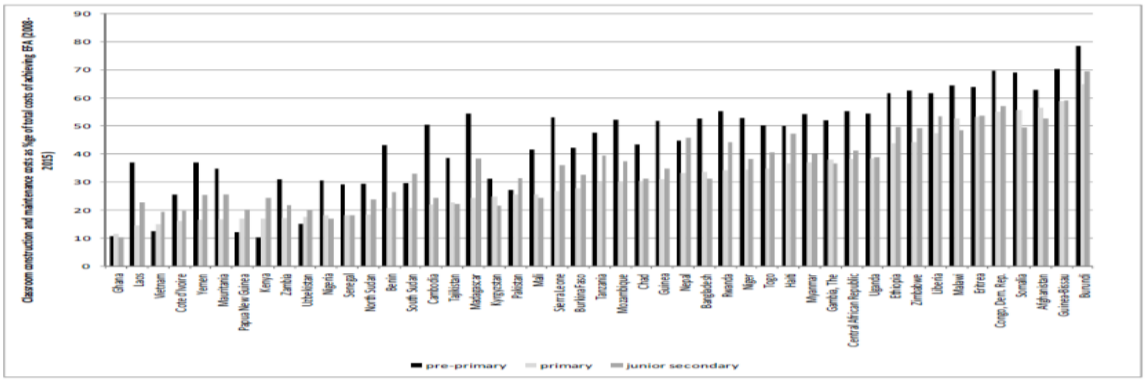

Figure 2.10 Investment in the Construction of Classrooms in Poor Countries between 2008 and 2015.

Source: Education Policy and Data Center (EPDC.) & UNESCO (2009).

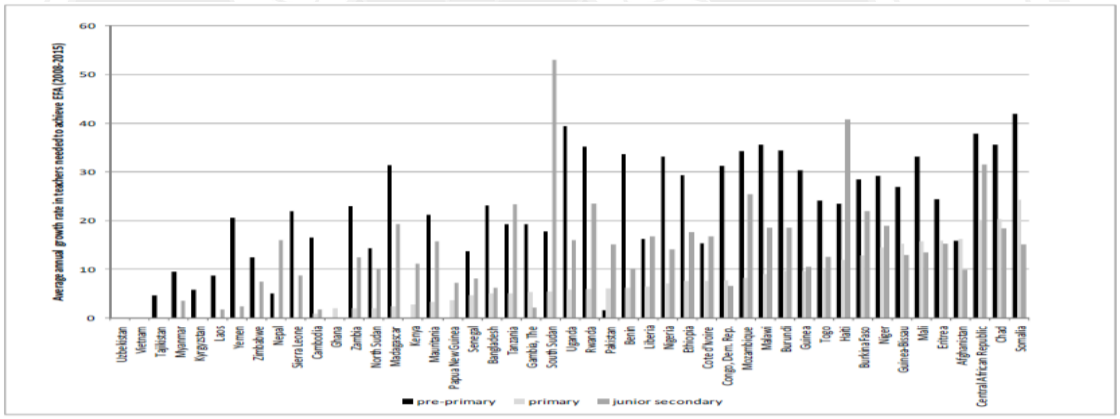

Figure 2.11 Investment in Increasing in the Number of Teachers in Poor Countries between 2008 and 2015

Source: Education Policy and Data Center (EPDC.) and UNESCO (2009).

Figure 2.11 shows that low income countries and lower middle income countries in 2008-2015 had their rate of increase show up mainly in secondary education. South Sudan had a rate of more than 50 percent, which can be analyzed to conclude that during the initial stages of educational development, secondary school teachers were still lacking in a large number of poor countries. If the investment in

additional educational personnel at that level is supported, it will affect the development of national skills and expertise because secondary education leads to a career that is competitive on the global stage. In that regard, it would be good for helping poor countries improve national development and social equality.

2.2.1.2 Expansion of Educational Expenditures for Investment in Marginalized Areas of Poor Countries

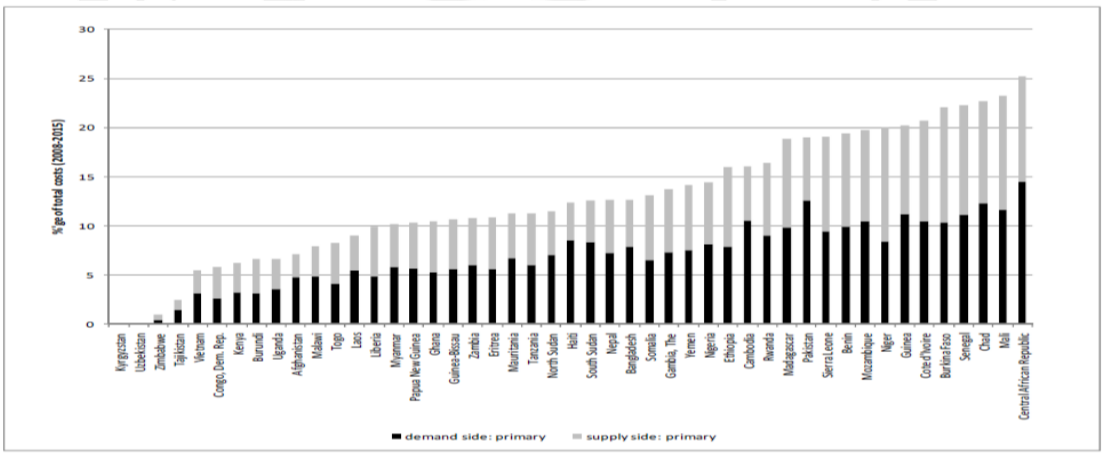

Figure 2.12 Investment in Marginalized Areas of Poor Countries between 2008 and 2015
Source: Education Policy and Data Center (EPDC.) and UNESCO (2009).

As Figure 2.12 indicates, the greatest need is to support the allocation of education expenditures at a high level, as seen from the sample of African countries, such as the Central African Republic, which has the highest demand for educational expenditures at the primary level. When considering the allocation of education expenditures at the primary level among African countries it was found that it was at its highest level of investment among other countries. Moreover, analysis shows that:

1) The marginalized areas of poor countries emphasize the importance of investment and expenditures in education for primary education.

2) It's the marginalized areas of poor countries where the people are in poverty, and where the need for primary education is most important, because it can affect their future well-being.

2.2.2 Sustainable Development Goals - SDGs (From 2015 to the Present)

2.2.2.1 Trends in educational goals among poor countries at the present time Three key points about future educational goals (Burnett & Felsman, 2012) are as follows:

The first point: In the initial stage, the goal has not been achieved. Evidence indicates that, although the expenditure is allocated at the basic level of education, the curricula in many schools have not been sufficient yet.

The second point: Limitations from the first point have led to a rapid expansion of educational expenditures.

The third point: In the global context there is a large middle class. Therefore, after 2015 there should be a focus on investment support for secondary education in order to increase domestic equality and realize the importance of equality in education, and work according to each expertise.

The researcher presented important issues regarding the possible future educational goals for a basic education that focuses on poor countries, as follows:

1) Learning: Focus on learning skills from a basic level of reading and writing in elementary school. This includes problem-solving using important reasoning in communication and teamwork according to the skills of the student, age and focus on language skills in many countries by considering the progress of learning management.

2) Secondary education push: Focus on increasing the number in secondary education, especially in countries that do not have social equality, in order to support changes in a global context for the competition in economic development.

3) Skills and competencies: Mainly to realize that those who have received an education at the secondary level should receive the necessary skills related to the unemployment rate and future economic growth, such as language skills and professional technical skills.

4) Giving importance to education in marginalized areas: In other words, pushing to speed up education for minorities and people in marginalized areas for the purpose of reducing inequality due to poverty. Therefore, they must be thoroughly educated.

5) Elevate the importance of education to fully support human development: Allowing the school to be the center of the community to access and contribute to the development of the family of the student and emphasize the development process for growth and employment.

6) Fundraising: Generate financial support for education in poor countries by establishing funds to support the education of children in the region and improve education in the area.

7) Use of statistical data: Provide a measurement of progress which leads to analysis and improvement of that progress in the future. In this regard, the aforementioned controls aim to improve sustainability in order to meet the needs of poor people.

2.2.2.2 The Allocation of Education Expenditures in Poor Countries in the Future.

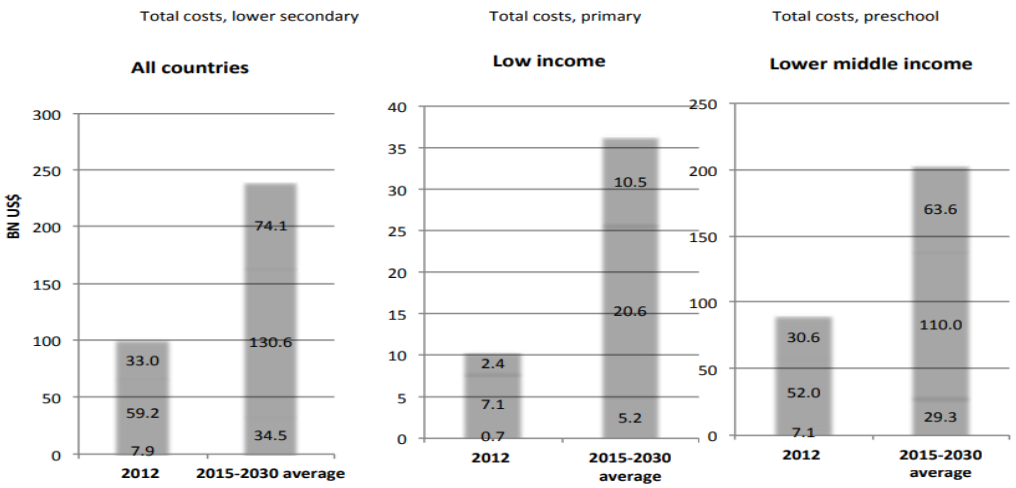

Figure 2.13 Allocation of Education Expenditures Compared between 2012 and 2015-2030.

Source: Wils (2015).

According to Figure 2.13, the allocation of education expenditures among the poorest countries, low income and lower middle income countries in 2015-2030 puts an emphasis on primary education investment from the year 2012 with an allocation of 10 million dollars. After 2015, it increased to approximately 36 million dollars extrapolated out to 2030.

1) At present, the allocation of expenditures for poor countries prioritizes encouraging investment in education at the elementary level for increasing literacy rates and applying knowledge to develop the country in order to achieve its economic growth potential.

2) When countries have the potential, it can result in these countries having the opportunity to enter developed country status.

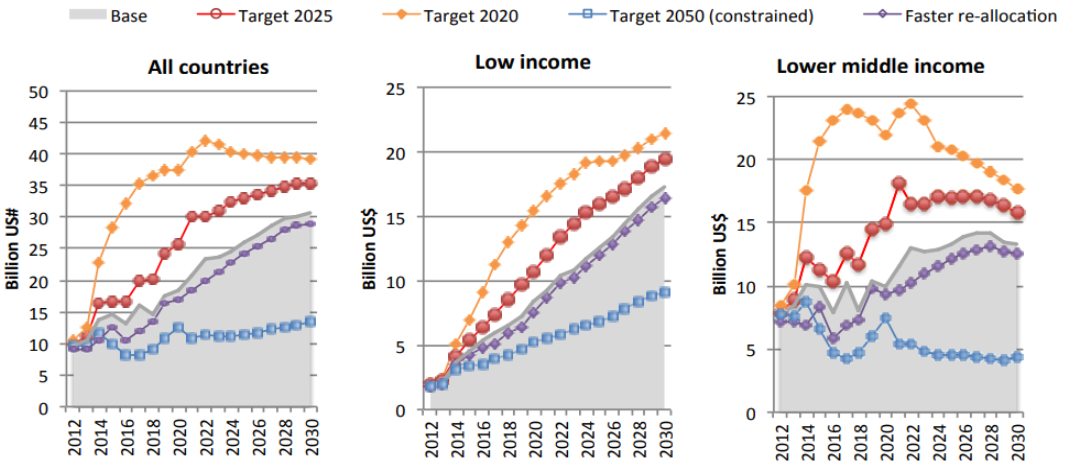

Figure 2.14 Image of Education Expenditure Allocations.

Source: Wils (2015).

When considering the above figure, we see that in 2015 low income countries had been increasing investment in education, when compared with lower middle income countries, as noted with the following:

1) The future picture of the strategic plan of education investment continuously increases the allocation of education expenditures in poor countries. This increase in development expenditure leaps from $5 million to $22 million per year, on average, for the years 2015-2030.

2) The effect of the country's economic growth shows the relationship between economic growth and education expenditure. For this reason, if the country is accelerating investment in education it becomes a cause for national development, affecting economic development because people have the knowledge and skills in their careers to create more employment, with more money circulating in the country and more trade with foreign countries.

3) If poor countries are accelerating their investment in education, they increase the opportunity to escape from the poverty trap of poorer countries.

2.3 Related Theories and Concepts

2.3.1 Concepts of Social Policy and Public Expenditure

In many countries social policy has focused on improving education to improve the potential of children by making them able to support the labor market, which has a positive effect on the country's economy. For this reason, developing human capital through education requires reasonable expenditure to achieve national development goals.

Education has outsized importance highlighting the 3 main points in the framework of policy (Theera Nuchpiam, 2017), namely:

The first point: If countries have a stock of skills, they provide the potential cornerstone for economic growth in a highly competitive international environment.

The second point: The distribution of human capital is the main determinant of income inequality, which is important for receiving a premium wage based on operational skills.

The third point: The link between the human capital of an individual and his/her background is the main determinant of social mobility.

From the 3 main points mentioned above, it can be explained that education is like the main and most important foundation of the country. It is important that the government push social policies to help low income people by providing educational investment welfare through the allocation of expenditures for education in order to develop human capital, to create knowledge, increase employment potential, reduce income inequality and enhance social status to further equality.

Therefore, education expenditure is part of social policy. (Kirati Yosyingyong, 2006) explained that education expenditures are part of social policy, which is the allocation of government investment aimed at improving the welfare of the people by defining boundaries, including policies aimed at promoting the well-being of people, both economically and non-economically. In addition, there should be measures to distribute income and resources from the rich to the poor or underprivileged in society.

In conclusion, policy can be divided into 3 dimensions (Kirati Yosyingyong, 2006), as follows:

1) The dimension of systemic resource allocation and redistribution, including interventions leading to the allocation of new resources to create equality or help the disadvantaged receive more resources.

2) The dimension of welfare management to meet the basic needs necessary for the livelihood of the people in 6 areas: education, employment, social services, housing, social security, and public health.

3) The dimension of changes, modifications and social development in accordance with reasonable desires.

For these reasons, education expenditures operate within the scope of social spending and social spending is within the scope of social policy, as in the image below.

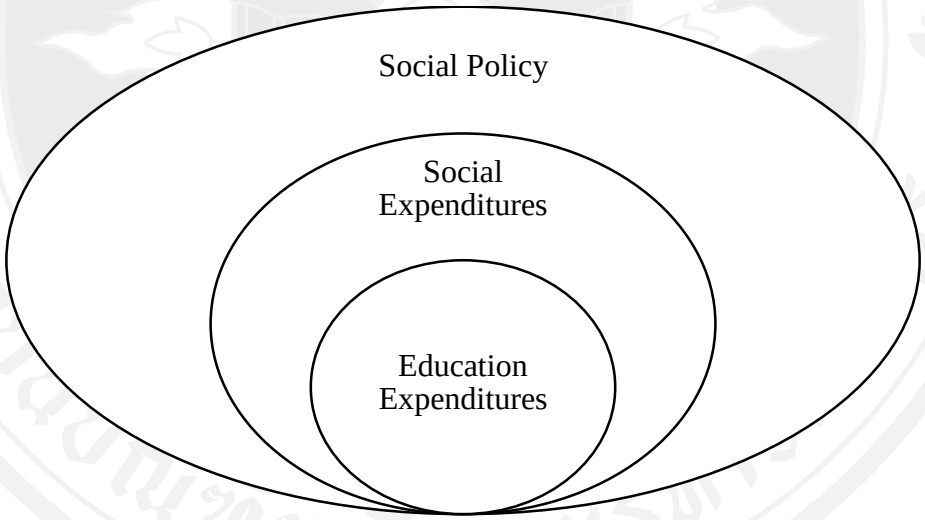

Figure 2.15 Relationship between Social Policies, Social Expenditures and Education Expenditures

Therefore, when explaining the relationship of social policies, social expenditures and education expenditures, one must be aware of the reasons that education expenditures are needed, according to the scope of social expenditure, to

comply with social policy, all with the objective of making people experience well-being and social equality based on 3 main reasons, as follows, (Pritchett & Filmer, 1999):

1) Education is an activity that produces output in national development. Therefore, it is necessary to consider education's roles and responsibilities, the development of teaching processes, teaching materials and textbooks, especially at the basic level, in order to produce effective student output.

2) If the state is pushing the allocation of expenditures to support educational factors such as books, wages and remuneration for teachers, it will increase fluency and affect the quality of education for students.

3) The need for success in educational institutions is what makes policy decisions about the allocation of work related to education, which is to push the government to allocate expenditures for investment in such matters.

Thus, investment in education comes from a large framework of social policy. In other words, it comes from the decision to put policy into practice for the state, which is in line with the national context of education investment by showing concrete actions in the development of the country to enhance education onward into the future.

2.3.2 Fiscal Theories and Related Concepts

2.3.2.1 Wagner's Law (Law of Rising Public Expenditures)

Kuckuck (2012) proposed a theory called Wagner's Law, which is based on the assumption that economic growth relates to government activities in the identical direction and with the following important principles:

1) A changing economic structure is related to various activities. The state is a new activity in society.

2) Increase supervision roles for various public works.

3) Increase external control and welfare.

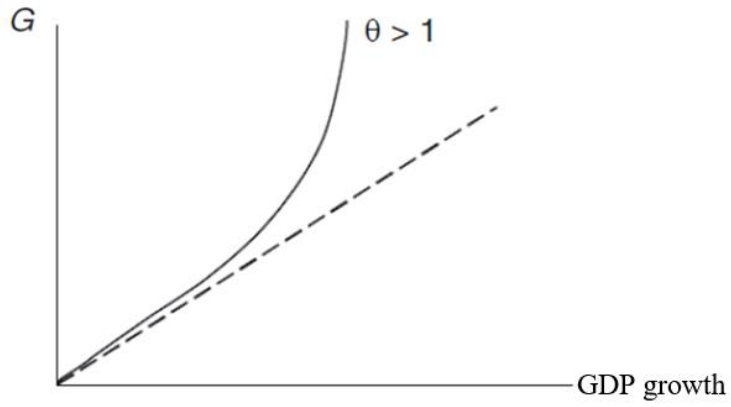

Figure 2.16 The Increase in Public Spending due to the Growth of Gross Domestic Product According to Wagner's Law.

Source: Balatsky (2012).

Adolph Wagner's theory explains that economic growth affects increased demand for public goods and increased investment in social programs such as education. (Balatsky, 2012)

In addition to economic growth factors measured by GDP affecting public spending increases, state revenue also causes public spending increases, according to Wagner's principle that when the country grows more economically, it will increase the tax base and increase revenue collection, which affects government spending. Alan T. Peacock Jack Wiseman (Phichak Phutrakhul, 2018) was a British economist at the London School of Economics who tested Wagner's theory as a case study in England and found that Wagner's principle is still valid, government spending will increase from state revenue collection capabilities. However, it depends mainly on the tax burden of the people, as described in the steps that follow:

1) Higher Level of Expansion

The increase in expenditures can be adjusted proportionally to the tax revenue. Perhaps it is the period of displacement effect, but the level of government expenditure tends to move up all the time and the government must try to find ways to increase income to meet these rising expenditures.

2) Range of Spending Inspections

When the level of government spending has been in shifting ranges for a while, changes in social and economic factors will have the government spending more rapidly than the increase in revenue. Obtaining taxes and duties, which cause government fiscal losses and cause government policies to be monitored and reviewed, is called the Inspection Effect. The government expenditures must be reviewed to reflect government revenue.

3) Acceptable Tax Level

When a significant event causes the government to increase spending, most people will be able to accept higher levels of tax than is acceptable in normal conditions, in order to meet the government's increased expenditure, called Tax Tolerance. However, once the situation has calmed down, the people will continue to accept higher tax levels, causing the government to spend even more.

4) Reviewing the Role of Central Government

The role of increasing central government spending is called the Concentration Effect.

From the hierarchy described above, it is revealed that state revenue is the factor that determines increases in government expenditures.

Therefore, the Law of Rising Public Expenditures, or Wagner's Law, reveals that economic growth measured by GDP and state revenue collection are factors that determine the increase of government expenditure in social investment.

2.3.2.2 Counter–Cyclical Theory

Counter-Cyclical theory is based on Keynesian Economics (Sukhothai Thammathirat Open University, 2011), which offers this economic theory in the book The General Theory of Employment, Interest, and Money. The essence is that workers are able to negotiate a set of monetary wages but are unable to change the product price, causing workers to not accept monetary wage cuts in order to maintain their standard of employment. Therefore, monetary wages in an economy are inelastic and can lead to involuntary unemployment.

In this regard, the study of public expenditure, according to the Counter-Cyclical theory (OECD, 2010) explains that economic factors such as an economic downturn or low unemployment have an impact on the government by increasing public expenditures in order to stimulate the system to expand by maintaining public expenditure measures for the country's economic stability. In other words, in the event that unemployment occurs, the government will have to stimulate higher spending, such as by increasing government investment to provide welfare to the public, such as with education. When government spending increases, it will reduce the country's unemployment.

When considering the unemployment factor which determines the impact of government education expenditures on education, it can be explained that unemployment has a positive relationship with government education expenditures, because if people in the country have been increasingly educated, they will be more able to enter the labor market as needed.

2.3.2.3 Globalization Theory

Concepts that support globalization. This group believes that the emergence of globalization in the economy benefits from economic development and provides opportunities to people with factors of production, both capital, and labor (Basu, 2006). It can be summarized as follows:

1) Capital inflow-outflow increases productivity, production, production demand and labor demand.

2) Worker inflow-outflow increases opportunities for poor people to immigrate to richer countries or where wages are higher.

3) Economic development reduces trade barriers and investment. Poor people are more easily able to enter the market of products and services. It increase incomes for under-skilled labor in countries with a lot of labor.

When analyzing the impact of globalization and educational policy, Findlay and Blanchardy and Olney (2017) explains that this theory links the skills of skilled workers and the poor with a lack of education. The government uses measures

to move the economic sector by exporting because exports are a factor that affects increases in education expenditure. When the government increases investment in education, labor is able to move from the contracted economy to other economic sectors. This theory can be applied to studies in countries with low literacy rates (Berthelemy, 2006) by helping the poor have more education. The government has measures in place to increase education expenditure, which is determined by the impact of globalization on exports (Lindert, 2004).

Therefore, the export factor affects increases in education expenditure by enabling the state to invest in education, both with the allocation of resources and by increasing enrollment rates, thus helping the poor to improve their knowledge within various economic sectors.

2.3.2.4 Public Choice Theory

This theory leads the educational principles of economic theory by explaining political phenomena. In this study, the researcher used 2 related concepts to explain Public Choice Theory, namely Voting and Decisions, and Income Inequality.

1) Voting and Decisions

Voting and Decisions is a theory of democratic governance with an electoral process and a rationale based on a majority. It is related to decisions about the allocation of public expenditures through institutions that come from a democratic representative system by the leader of government and judicial institutions in order to make a decision (Forte, 2010).

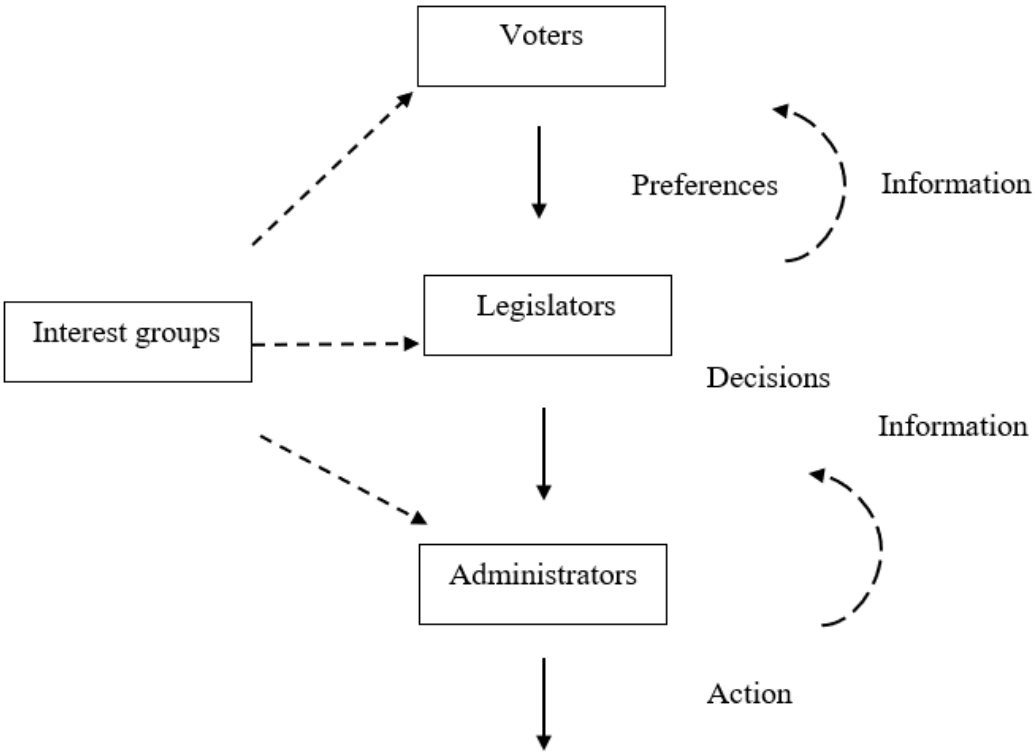

Figure 2.17 Voting and Decisions
Source: Atkinson and Stiglitz (1987).

From Figure 2.17 it can be explained that public decisions regarding elections are based on personal satisfaction through a legitimate process for deciding on government executives, which is based on information as the basis for decision making. The decision takes into account a large number of people, which is an overview of society and is related to an increase in public expenditure. The aforementioned political mechanism demonstrates Representative Democracy and is based on the satisfaction of public decision making that comes from the majority of society and accepts that decision as being the most beneficial decision, accepting that political parties that are elected according to democratic political mechanisms will support public investment through public expenditure (Atkinson & Stiglitz, 1987).

Therefore, the concept of Voting and Decisions explains how Democracy is related to social expenditures such as education expenditures, which are in a positive direction because the political mechanisms that come from legitimate

decisions of the majority of the people offer the best reason and adhere to the collective benefits of society through representatives to support higher public expenditures. In the case of poor and underdeveloped countries, the policy will invest in education after realizing the low literacy rate. Therefore, it is a desire to drive the government to increase investment in primary education (Lindert, 2004).

2) Income Inequality

Income Inequality is a comparison of the income levels of individuals or households to see how much difference or gap exists between inequality coefficients by using the Gini coefficient as a measurement criterion. It is a widely referenced index because it can be clearly interpreted from the numbers. The range is between 0 and 1, where 1 means very high inequality (Arnon Thepsumroeng, 2019). The format of the Gini coefficient graph is described below.

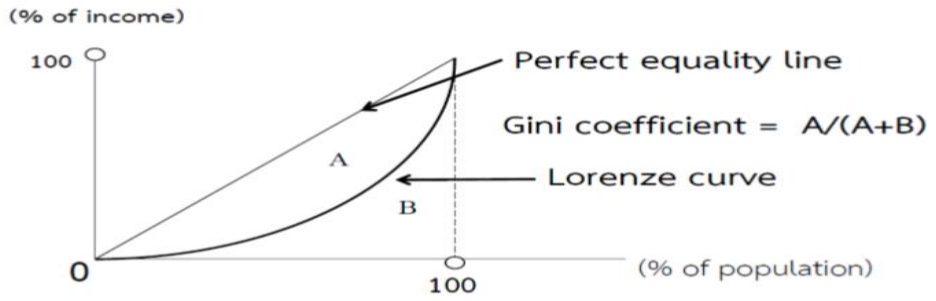

Figure 2.18 Gini Coefficient
Source: Arnon Thepsumroeng (2019).

From Figure 2.18, the horizontal axis shows the proportion of the number of people from the poorest to the richest in one country (0 to 100%) and takes the cumulative proportion of their income to plot via the vertical axis at the plot point. It's called the Lorenz curve by measuring the income distribution in the ratio between the area under the Lorenz curve and the area of the triangle under the perfect equality line. We can show the equation as Gini = A/(A+B), Gini = 0 indicates complete equality.

On the other hand, if Gini = 1 (or 100%) it represents complete inequality (Arnon Thepsumroeng, 2019).

The concept of Income Inequality and the explanation of the political phenomenon under the Public Choice theory can be seen in countries with high-income inequality. Interest groups have unequal grouping capabilities. The poor are median voters who can be influential in the pre-election period with the ability to include groups showing a desire to push political parties to enact public policies and cost programs that show their response to the greater population (Easton, 1965). But the smaller interest groups, which represent urban groups, have more capital. They often have an influence on the government after an election (Collective Action) with the ability to monitor and be aware of the government's actions and have more access to education. Highly influential people tend to drive the government and expenditures. Therefore, the state ends up cutting public spending on social investment for the poor, such as education expenses. In conclusion, high-income distribution inequality will cause the government to reduce public spending (Ulu, 2018).

2.3.2.5 Theory of State

1) Good Governance

The World Bank (Orapin Sopchokchai, 1998) defines good governance as constituting a government's mechanisms of resource management, including both the economic and social aspects of the country, for development. It displays 3 characteristics, as follows:

(1) Structure and pattern of the political regime.

(2) Processes and procedures that politicians use to manage economic and social resources for national development.

(3) The ability of the national administrative authority to plan, formulate policies and convert plans and policies into action, as well as change the ways of its national administration.

The World Bank's Good Governance indicators have been compiled from 213 countries around the world between 1996 and 2012. They consists of 6 key indicators: accountability, political stability and non-violence, efficiency, quality, the rule of law and corruption control (CESifo DICE, 2011), as seen in Figure 2.19.

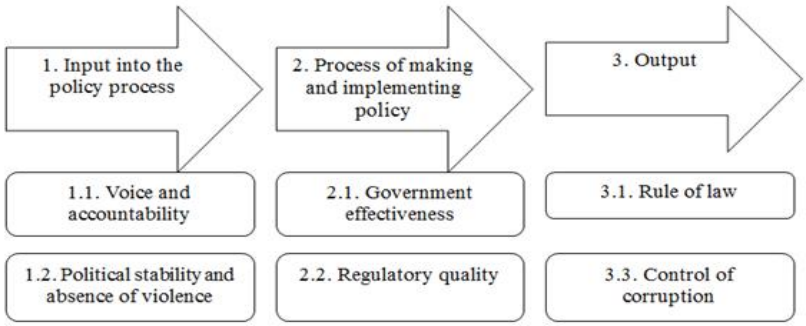

Figure 2.19 The World Bank Governance Indicators and the Policy Process.
Source: Alhanaqtah and Alhanaqtah (2018).

Many countries around the world popularly use the concept of Good Governance as the main management of the country. There have been studies that describe corruption and the links with education expenditure as a reason for the government's decision to implement policies and allocate resources for economic and social development, such as investment in the education sector. (Coco & Lagravinese, 2010) explains that corruption affects education expenditures. That is to say, corruption causes people to reduce their motivation to develop learning skills, which can affect the country's labor productivity. Therefore, the government must issue measures to increase expenditures at the secondary level because this is the education level that will enter the labor market. Education expenditures are increased by the allocation of resources for teaching and learning with modern technology for skills development in order to motivate people to enroll in secondary education. This is consistent with (Jajkowiczm & Drobiszova, 2015; Suryadarma, 2012) who made the assumption that the governing influence of corruption prods increases in public spending by the state to invest in

development, teaching and learning skills, and technology skill development. Therefore, high corruption leads to an increase in education expenses.

Timofeyev (2011) had a different hypothesis from Rogers, Mauro, and Daniel Suryadarma-that corruption leads to a reduction in government expenditure efficiency. This is the reason that the government has to cut social expenses such as education expenses, because they have to choose to invest in only the most necessary social projects. Therefore, the relationship between corruption and education expenditure can go in both directions, in the same direction or in the opposite direction.

In the study of corruption factors, the researcher refers to the principles of Good Governance from the World Bank, which sets the indicators for control of corruption at a value between -2.5 to 2.5. If it has a negative value the control of corruption is low (high corruption) and if a positive value, the control of corruption is high (low corruption) (CESifo DICE, 2011).

2.4 Review of Related Research

In the Analysis of the Determinants that Affect Education Expenditure in Low Income Countries and Lower Middle Income Countries, the researcher reviews the literature as variables that have an influence on the expenditure variables in education, as follows:

2.4.1 Gross Domestic Product (GDP)

2.4.1.1 Related literature

The research of (Mallick, Das, & Prashan, 2016), entitled: Impact of educational expenditure on economic growth in major Asian countries: Evidence from econometric analysis, is an educational expenditure survey on the economic growth of 13 countries, including Bangladesh, China, Hong Kong, India, Japan, Nepal, Pakistan, Malaysia, Philippines, Saudi Arabia, Sri Lanka, Thailand, Turkey from 1973 to 2012. The research hypothesis was that economic growth as measured by gross domestic

product has a positive relationship with education expenditures at both the primary and secondary levels and with a mutual relationship. The results showed that education expenditures are positively correlated with economic growth, meaning that education is one of the key elements of economic growth in these 14 key Asian countries. For this reason, the government should give priority to the allocation of education expenditures to improve the education of the people, because the driving force is the need for the national economy to grow. As people become more educated, their skills affect the country's economic development in the long run.

Kaur, Baharom, and Habibullah (2014) study, Linkages between education expenditure and economic growth: Evidence from 'CHINDIA' (China + India), tested the relationship between educational spending and economic growth in China and India using annual data from 1970 to 2005. The results showed that the relationship between gross domestic product and expenditures for primary and secondary education in both China and India was in the same direction. For this reason, economic growth is an indicator of the importance of education policy, which allocates a large number of educational expenses and shows that education is an important mechanism for the country's economic growth.

Omojimite (2010) wrote Education and Economic Growth in Nigeria: A Granger Causality Analysis, studying Nigeria's data from 1980 to 2005. The hypothesis was that education expenditure will accelerate economic growth by enrolling in primary education in Nigeria, indicating a relationship between education expenditure and economic growth. Therefore, the government should have good funding for the allocation of primary education expenditures, to be more in line with the needs of Nigerian society.

An empirical analysis on the relationship between education expenditure and economic growth in China was reported by (Rao & Lili Jin, 2012), who studied the relationship between public spending on education and economic growth, as measured by Gross Domestic Product in China. The conclusion of the research was that education expenditures have a positive effect on China's economic growth, as measured by the

Gross Domestic Product, because of the Chinese government's investments in education and increasing expenditures in the public finance sector for basic education development results in economic growth.

Spending on education determinant of economic growth using structural equation modeling, by (Priya, Devi, & Nagarajan, 2015), showed that during the period 1990-2012, the education expenses of the Government of India were important factors affecting the country's economic growth as measured by gross domestic product. The overall fiscal policy in India focuses on the framework of the relationship between education expenditures and shared economic growth, with increased driving of basic education expenditure having a positive effect on the country's economic development.

Research on Education, Social equality and Economic growth: A view of the landscape, by (Gylfason & Gylfi Zoega, 2002), concludes that public spending on basic education, especially at the primary level, stimulates the country's economy, as measured by Gross Domestic Product. When considering the empirical results, it was found that in Africa, Asia, Central America and South America, both variables had a positive relationship. A growing economy is the result of investment in education expenses and more students being accepted every year.

And Zhang (2018), studying Structural change with public educational expenditure: Evidence from the People's Republic of China, analyzed the relationship between public spending on education and social structural changes in China, as measured by GDP, indicating economic growth. The results revealed the same direction. Suggestions show that basic education expenditures should be increased, especially in rural areas, because it shows a connection with economic growth.

Table 2.3 Summary of the Relationship of the Gross Domestic Product Variables Affecting Education Expenditures.

Variable: Real GDP	
Research Source	**Relationship Direction**
(Mallick et al., 2016) Title: Impact of educational expenditure on economic growth in major Asian countries: Evidence from econometric analysis.	Same direction
(Kaur et al., 2014) Tittle: Linkages between education expenditure and economic growth: Evidence from 'CHINDIA'	Same direction
(Omojimite, 2010) Tittle: Education and Economic Growth in Nigeria: A Granger Causality Analysis.	Same direction
(Rao & Lili Jin, 2012) Title: An empirical analysis on the relationship between education expenditure and economic growth in China.	Same direction
(Priya et al., 2015) Title: Spending on education determinant of economic growth using structural equation modeling.	Same direction
(Gylfason & Gylfi Zoega, 2002) Title: Education, Social equality and Economic growth: A view of the landscape.	Same direction
(Zhang, 2018) Title: Structural change with public educational expenditure: Evidence from the People's Republic of China.	Same direction

2.4.1.2 Synthesis of research related variables of Gross Domestic Product (GDP)

The review of related research can be summarized as follows:

Gross Domestic Product correlates with education expenditures. Economic growth that is measured by true gross domestic product is a factor driving the government to focus on the allocation of education expenditures at both the primary and secondary levels in order to raise the standard for quality of life for the people. As can be seen from the studies of (Mallick et al., 2016), as people become more educated, their workforce skills affect their ability to develop the national economy in the long run. In addition, the study of (Kaur et al., 2014) emphasized that the government should focus on policies dictating the allocation of education expenses that go in the same direction as the country's economic growth. In addition, an emphasis on the allocation of education expenditures at the basic educational level can be found in the study of (Omojimite, 2010), which reflects the society of Nigeria, where the state must focus on funding for the allocation of expenditures for primary education programs because they are in the same direction with the country's economic growth. This is similar to the policy of the Chinese government. According to a study by (Rao & Lili Jin, 2012), with economic growth positively correlating, the state is even more able to allocate expenditures at the basic educational level. The study by (Zhang, 2018) also reflects China's society, that countries with rural social areas that have expanded links with economic growth in both utilities and infrastructure in the area, exhibit factors that should increase public expenditure on basic education. Also, in many other works, such as the studies of (Priya et al., 2015) and the case from India by (Gylfason & Gylfi Zoega, 2002), the results of these empirical studies in Africa, Asia, Central America, and South America, which all indicate that Gross Domestic Product is an important factor of economic growth, drives the government to invest. Study is especially important at the basic level, because in rural areas the state has accelerated the expansion of economic growth. For this reason, it is a factor that encourages the country to invest in education expenses and thus receive more students every year to support that growth.

In the study of factors affecting education expenditures in low income countries and relatively low middle income countries, an additional aspect of the literature review is growth. The economy, which uses variables measured by Real Gross Domestic Product (Real GDP), has a positive relationship with education expenditures at both the primary and secondary levels. Therefore, the state accelerates investment in education expenses to support future prosperity.

2.4.2 Export

2.4.2.1 Related Literature

Maertens and Verhofstadt (2013) study, Horticultural exports, female wage employment and primary school enrolment: Theory and evidence from Senegal presents their results that the growth of agricultural exports leads to increased family incomes, which affects the enrollment of children at an increased primary level. It points out that exports in Senegal have a positive effect on the development of government policies on educational investment and the allocation of expenditures to support primary school enrollment.

Berthelemy (2006) studied Globalization and Challenges for Education in least developed countries. The study shows that poor countries should open up foreign trade because it increases agricultural production for export, and it is necessary to develop human capital in order to support the production sector, especially the allocation of expenditures for the poor without an education. Therefore, the liberalization of export trade has an influence on education investment.

Blanchardy and Olney (2017) reported on Globalization and Human Capital Investment: Export Composition Drives Educational Attainment. Their research shows the importance of national exports as factors that are related to the movement of human capital that can affect long-term economic growth. That is to say, the more the state exports products, the more it is an impetus for the development of human capital skills to support the agricultural production sector leading to exports. Therefore, more

exports have an influence on the state allocating expenditures for investment in education.

Frank (2017) wrote Making the Grade: The Contribution of Education Expenditure to Economic Growth. His theory is that exports have a positive impact on the country's income growth, which influences the education budget, especially at the basic level.

This study indicates that the country's exports have an effect and are in the same direction as the allocation of education expenses. According to data from 1970 to 2014, it indicates that a country's export variables have a significant relationship with human capital investments, especially at the basic level, as they are factors related to the country's economic growth.

Hecock (2006) wrote Electoral Competition, Globalization, and Subnational Education Spending in Mexico, 1999 - 2004. The paper is an analysis of factors affecting educational expenditures at the basic level in the 29 states of Mexico from 1999 to 2004. According to the theory or hypothesis, exports are effective per education expenditures in the same direction, and the research results were in accordance with the hypothesis, being in the same direction with statistical significance of .01. This study suggests that exposure to the global economy is an export factor that has a distinct effect on education expenditures, especially at the primary level, because it shows the strategic diversity of the State to drive the international economy.

Therefore, from the literature review, the researcher concludes that when analyzing the export variables that affect education expenditures, it is related to the state's need to accelerate the export of the country's important products because they are related to an increase in family income, and the country's economic growth is related to the state's accelerating allocation of educational expenditures to support the enrollment of children, especially at the basic primary level.

Table 2.4 Summary of the Relationship of the Export Variables that Affect Educational Expenditures

Variable: Export	
Research Source	**Relationship Direction**
(Maertens & Verhofstadt, 2013) Title: Horticultural exports, female wage employment and primary school enrolment: Theory and evidence from Senegal.	Same direction
(Berthelemy, 2006) Title: Globalization and challenges for education in least developed countries.	Same direction
(Blanchardy & Olney, 2017) Title: Globalization and Human Capital Investment: Export Composition Drives Educational Attainment.	Same direction
(Frank, 2017) Title: Making the Grade: The Contribution of Education Expenditure to Economic Growth.	Same direction
(Hecock, 2006) Title: Electoral Competition, Globalization, and Subnational Education Spending in Mexico, 1999-2004.	Same direction

2.4.2.2 Synthesis of Related Research of Export Variables

The review of related research can be summarized as follows:

The export factors have a significant effect on the allocation of education expenses in the same direction.

This is confirmed in an empirical study by (Maertens & Verhofstadt, 2013), who present their study in Senegal's case that the growth of agricultural exports

increases the family income of farmers. The increased enrollment of children at the primary school level is consistent with a study by (Frank, 2017) based on the principle that exports have a positive impact on the income growth of countries, which in turn has an influence on the education budget, especially at the basic level. In the study by (Berthelemy, 2006; Blanchardy & Olney, 2017), the results confirm that poor countries should have open trade with foreign countries because it increases their agricultural production for export. Therefore, it is necessary to develop human capital in order to support the manufacturing sector, especially the support of basic education. Therefore, more exports have a greater influence on the state allocating funds for investment in education. As well, (Hecock, 2006) has found the findings consistent with the assumption that significant correlations indicate that exposure to the global economy is an export factor that has a clear effect on educational expenditures, especially at the elementary level.

In this study of factors affecting education expenditures in low income countries and lower middle income countries in export variables, the researcher studied in terms of affecting the allocation of educational expenses, especially at the elementary level, because the export variables are related to increases of income and the economic growth of the country, and is related to human capital skills development. Therefore, an increase in exports will result in the government having to allocate educational expenses to develop human capital to support the production of goods for export.

2.4.3 Inequality

2.4.3.1 Related Literature

Shahabadi, Nemati, and Hosseinidoust (2018) studied The Effect of Education on Income Inequality in Selected Islamic Countries. In this case study, a group of Islamic countries analyzed their data between 1990 and 2013 and found that unequal income distribution had a negative relationship with the enrollment rate in primary and secondary schools. That is to say, in Islamic countries most people have social inequality. There is unequal income distribution which affects the state's

investment in an unbalanced education system in terms of expenditures at the primary and secondary levels.

Yingxiu (2006) study, An inspection on the Gini coefficient of the budget education public expenditure per student for China's basic education, demonstrates the inequality of income distribution when measured by the Gini coefficient, which has the opposite effect of allocating education budgets for students at the basic level of education in China. That is to say, the greater the inequality of income distribution, the lower the educational budget expenditure.

Grigoli (2014) studied A Hybrid Approach to Estimating the Efficiency of Public Spending on Education in Emerging and Developing Economies by studying the allocation of education expenditures resulting from income inequality as measured by the Gini coefficient. He hypothesized that conditions of inequality in income distribution have a relationship in the opposite direction to the expenditure of education. That is to say, in low-income countries, especially Africa, if there is an inequality in income distribution, it results in a lower allocation of expenditures based on student-to-teacher rates and academic results. He found that, according to the research hypothesis, inequality in income distribution has a significant negative correlation with the efficiency of education expenditures.

Table 2.5 Summary of the Direction of the Relationship of Inequalities in Income Distribution that Affects Educational Expenditures.

Variable: Inequality	
Research Source	**Relationship Direction**
(Shahabadi et al., 2018) Title: The Effect of Education on Income Inequality in Selected Islamic Countries.	Opposite direction

Variable: Inequality	
Research Source	**Relationship Direction**
(Yingxiu, 2006) Title: An inspection on the Gini coefficient of the budget education public expenditure per student for China's basic education.	Opposite direction
(Grigoli, 2014) Title: A Hybrid Approach to Estimating the Efficiency of Public Spending on Education in Emerging and Developing Economies.	Opposite direction

2.4.3.2 Synthesis of Related Research on Variables in Inequality

The review of related research can be summarized as follows:

Inequality in income distribution has a significant effect on the allocation of education expenditures in the opposite direction.

It explains that income inequality as measured by the Gini coefficient affects the allocation of education budgets, as confirmed by the empirical studies of (Shahabadi et al., 2018), which reflect that among countries with disparities, high incomes are a problem in national development, affecting unbalanced education expenditures for primary and secondary education. Also, in (Yingxiu, 2006) the higher the Gini coefficient, the lower the basic education budget, and (Grigoli, 2014), who explains that in low income countries, especially Africa, if there is an inequality in income distribution it results in a lower allocation of expenses according to student-teacher rates. Our study found that this was based on the research hypothesis that inequality in income distribution has a significant negative correlation with the efficiency of education expenditure.

Therefore, in studying the factors affecting education expenditures in low income and relatively lower middle income countries for the inequality of income

distribution, the researcher proposed that if the country has a high disparity as measured by the Gini coefficient, it affects an imbalance in budget allocation for education at both the primary and secondary levels.

2.4.4 Democracy

2.4.4.1 Related Literature

Dahlum and Knutsen (2017) wrote Do Democracies Provide Better Education? Revisiting the Democracy–Human Capital Link. They suggested that democracy is more widely accepted than dictatorship in terms of access to education. Their hypothesis was that democracy helps to improve education, especially basic education. Therefore, the regime affects education reform and democracy is related to the potential of the state. That is to say, democracy affects education skills and basic literacy of the people, which is a measure of the country's potential. For this reason, the government must speed up human capital development by allocating educational expenditures.

Brown and Hunter (2004) submitted Democracy and Human Capital Formation: Education Spending in Latin America, 1980 to 1997. Their study found that democracy in Latin America has an impact on education expenditure. A democratic government will provide educational resources at a basic level to increase opportunities for human capital development. In other words, the researcher found that democracy greatly contributes to the allocation of basic education resources because the more democratic the country, the more support for the allocation of state expenditures. This is especially important at the elementary level, because it is the foundation of national development, being the starting point for strengthening human capital skills.

Stasavage (2005) studied Democracy and Education Spending in Africa. His results show that democracy affects changes in basic services. Africa emphasizes that its citizens make decisions in elections. He points out the need for a majority to stimulate African governments to focus on primary education costs, and a democratic regime in Africa is related to primary education expenditures. At the same time, though,

the democracy of the country is not related to university education expenses. According to the findings, political behavior in electoral activities demonstrates that democracy has influence over the decision to allocate government education by focusing on primary education. Most people are in a class that requires basic education, so they have decided to choose the political group that can best help them solve their problems and receive opportunity through education.

Hecock (2006) study, Electoral Competition, Globalization and Subnational Education Spending in Mexico, 1999–2004, is an analysis of factors affecting educational expenditures at the basic level in the 29 states of Mexico from 1999-2004. According to various theories and hypotheses, the level of election competition has a positive effect on education expenditure. In other words, the higher the competition in the state, the better the quality of democracy that will follow, which will have a positive effect on the policy of increasing education spending. Especially at the basic education level.

Lovell (1978) wrote Spending for Education: The Exercise of Public Choice. This paper studies the decisions of the state on education expenditures for students based on theories that have assumptions that democratic factors affect the decisions on education expenditure by the government, and when he tested the hypothesis, the research results followed the hypothesis. That is to say, a democratic state that, if it becomes more democratic, will have a significant effect on increases in education expenditure. In this regard, it affects increases in the demand for education in terms of providing the public with more education under democratic rule. Requirements by the state to add equipment, teaching materials, and funds improves education in the country for more people to be able to read and write.

Avelino, Brown, and Hunter (2005) studied The Effects of Capital Mobility, Trade Openness, and Democracy on Social Spending in Latin America, 1980–1999. Their research hypothesis was that democracy affects education expenditures in the same direction. They set the value at 0 for a non-democratic country, and set the

value at 1 for a fully democratic country. The result of the research shows that democracy has a significant effect on educational expenses in Latin America, at the level of .01 in the same direction.

Table 2.6 Summary of the Relationship between Democratic Variables Affecting Education Expenditures.

Variable: Democracy	
Research Source	**Relationship Direction**
(Dahlum & Knutsen, 2017) Title: Do Democracies Provide Better Education? Revisiting the Democracy–Human Capital Link.	Same direction
(Brown & Hunter, 2004) Title: Democracy and Human Capital Formation: Education Spending in Latin America, 1980 to 1997.	Same direction
(Stasavage, 2005) Title: Democracy and Education Spending in Africa.	Same direction
(Hecock, 2006) Title: Electoral Competition, Globalization, and Subnational Education Spending in Mexico, 1999–2004.	Same direction
(Lovell, 1978) Title: Spending for Education: The Exercise of Public Choice.	Same direction
(Avelino et al., 2005) Title: The Effects of Capital Mobility, Trade Openness, and Democracy on Social Spending in Latin America, 1980–1999.	Same direction

2.4.4.2 Synthesis of Research Related Variables of Democracy

The review of related research can be summarized as follows:

Democracy has a significant influence on the allocation of education expenditures in the same direction.

What can be described as a democracy includes the democratic regime of the country and its political culture, such as elections and political party competition, which affects the allocation of education expenditures in a positive relationship. (Same direction). This is in line with (Dahlum & Knutsen, 2017), that democracy affects basic educational skills which are a measure of national potential. For this reason, the state must accelerate the development of human capital by allocating educational expenditures. It is also consistent with the results of a study by (Brown & Hunter, 2004). The more democratic the country, the more support for the allocation of state expenditure, especially at the elementary level, because it is the base of development for the country and a starting point for human capital skills development. In other cases, for example in Africa, (Stasavage, 2005) proposed a political culture and political behavior in the form of people making decisions in elections, reflecting the competitive situation of political parties. The need for a majority will thus stimulate the African government to focus on primary education costs. In addition, (Hecock, 2006) confirmed this with his study, that the higher the state of the electoral competition, the more democratic the country will be regarding the allocation of educational expenditures. Especially at the basic level of education, (Lovell, 1978) has given his findings that, if the state is more democratic, it will significantly increase the allocation of education expenditures in the same direction. Avelino et al. (2005) discovered that democracy affects educational spending in Latin America with statistical significance, at the .01 level in the same direction.

Therefore, the study of factors affecting the allocation of education expenditures in low income countries and relatively lower middle income countries concludes that democratic variables of the country have an influence on the allocation of education expenditures at the primary level in the same direction.

2.4.5 Government Revenue

2.4.5.1 Related Literature

Omotor (2004) wrote An Analysis of Federal Government Expenditure in the Education Sector of Nigeria: Implications for National Development. This study found that the income of the government of Nigeria is an important factor in the allocation of education expenses because education is important in terms of national development. In other words, the state should use tax revenues to implement educational policy processes, because during the 1977-1998 study it was observed that this striking phenomenon continued to cause low-quality teaching and insufficient educational resources. For this reason, if the government brings tax revenues to the allocation of education expenses, it will be a good solution. Therefore, state income is correlated with the allocation of education expenses in Nigeria.

Busemeyer (2007), in his study Determinants of public education spending in 21 OECD democracies, 1980–2001, cites results showing that the revenue from government taxation affects the educational expenses in OECD countries in the same direction. In other words, the results show that in the 21st Century in some democratic OECD countries incomes are relatively low. The state has used tax revenues to allocate investment in education at the basic level in order to drive the development of the country's human capital.

Pantuosco, Seyfried, and Stonebraker (2007) studied The Impact of Lotteries on State Education Expenditures: Does Earmarking Matter? The results of their study show that government revenues from the government lottery is considered to be money in the state fund to contribute to the allocation of education budgets. That is to say, it is an alternative way of checking state revenues from the government lottery and making sure the state does not use this money in a wrong way, but in a way to benefit the state. The state uses a share of the government lottery to allocate investment in education, such as for the allocation of scholarships to needy students, educational materials, and educational media that affects the development of student potential, both at the elementary school level and in secondary education.

Omwami and Omwami (2010) reported on Public investment and the goal of providing universal access to primary education by 2015 in Kenya. The research hypothesis was that the tax rate is a variable that influences the needs of education as an accelerating factor in the allocation of education expenditures, especially at the primary level. The results show that state revenue significantly affected the need for elementary education investment in Kenya to meet educational goals in 2015.

Campbell (2003) wrote Do Lottery Funds Increase Educational Expenditure? Evidence from Georgia's Lottery for Education. Its hypothesis was that influence of the Government Lottery affects the decision to allocate higher education expenditures. The study's results were in line with the hypothesis. In this case, the Government Lottery had a significant influence on the increase in education expenditures at the primary level and in the same direction.

Yuki (2003) studied Distribution of Public Education Spending for the Poor: The Case of Yemen. It hypothesized that state revenue increases were related to the allocation of educational investments to support poor students. In all practicality, the allocation of scholarships, which supports the increase in government revenue in Yemen, affects the decision to allocate higher education expenditures and affects the allocation of expenditures for poor students.

In conclusion, the government's policy regarding the collection of income from taxes, donations, and storage has an effect on the allocation of investment in educational expenditures, which increases the state's income and can drive the state to allocate investment funds in education to help the population.

Table 2.7 Summary of the Relationship in Government Revenue Variables Affecting Educational Expenditures

Variable: Government Revenue	
Research Source	**Relationship Direction**
(Omotor, 2004) Title: An Analysis of Federal Government Expenditure in the Education Sector of Nigeria: Implications for National Development.	Same direction
(Busemeyer, 2007) Title: Determinants of public education spending in 21 OECD democracies, 1980–2001.	Same direction
(Pantuosco et al., 2007) Title: The Impact of Lotteries on State Education Expenditures: Does Earmarking Matter?	Same direction
(Omwami & Omwami, 2010) Title: Public investment and the goal of providing universal access to primary education by 2015 in Kenya.	Same direction
(Campbell, 2003) Title: Do Lottery Funds Increase Educational Expenditure? Evidence from Georgia's Lottery for Education.	Same direction
(Yuki, 2003) Title: Distribution of Public Education Spending for the Poor: The Case of Yemen.	Same direction

2.4.5.2 Synthesis of Related Research of Government Revenue Variables

The review of related research can be summarized as follows:

State revenues, including taxes, donations, and various collections of funds, have a significant influence on the allocation of education expenditures in the same direction.

The empirical results of (Omotor, 2004) reveal that, in the case of Nigeria, the state can use tax revenues to implement education policy processes for national development, such as allocating sufficient educational resources for teaching and learning that invests in both primary and secondary levels. In another study by (Busemeyer, 2007) which supports the study, in the OECD countries the state uses tax revenues to fund education at the basic level. In addition, a study by (Pantuosco et al., 2007) proposed that additional aspects of state revenue variables could be defined as other funds, such as the lottery in the case of New Hampshire. Government revenue from the lottery is in the same direction as education expenses. As well, (Omwami & Omwami, 2010) have shown that state revenue has a significant effect on the need for elementary education investment in Kenya. (Campbell, 2003) shows that, in the case of Georgia, the state's revenue factor is a government lottery that has a significant effect on the increase in primary education spending, and has a relationship in the same direction. (Yuki, 2003) provides a study that supports the increase in government revenue in Yemen that affects decision-making in higher education expenditures and affects the allocation of expenditures to poor students.

Therefore, in the study of factors affecting the allocation of education expenditures in low income countries and lower middle income countries in the state revenue variable, the researcher has defined income derived from taxation and collection of money as supporting the research results, and is influential in the same direction as the allocation of education expenditures.

2.4.6 Unemployment

2.4.6.1 Related Literature

Fredriksen and Fossberg (2014) released a study, The case for investing in secondary education in sub-Saharan Africa (SSA): challenges and opportunities. The research suggests that in sub-Saharan Africa the next two decades will face considerable pressure to expand the secondary education system. With rapid and continuous population growth, most of the population still has a primary education and the country needs a population with potential skills. Therefore, it was found that the unemployment rate is still high. Faced with such pressures, it influences the government's need to speed up education expenditures in order to develop human capital for secondary education to support the global context.

Singh (2003) wrote Skill, Education and Employment: A Dissenting Essay. The results revealed that high unemployment is caused by a shortage of skilled and educated workers. If planning for manpower in India regarding labor skills, it found that in the Indian labor market labor is still unskilled. For this reason, the policy must be accelerated by the allocation of education expenditures at the secondary level, because this is the level that enters the labor market after graduation. Using the money for education investment to train and develop skills for the potential of the population is good for the country.

Prasad (1979) produced Education and Unemployment of Professional Manpower in India. There are findings from research showing that high unemployment is an indication of ineffective manpower in India, including scientists, engineers, doctors and agricultural specialists. In India most of them still have a primary education, but in a competitive world the population needs to have higher education. There is also a shortage of people in vocational education, which is equivalent to secondary education, due to a lack of human capital development to produce manpower with special talents in national development. Therefore, the unemployment rate from lack of specialized manpower in India must solve this problem by accelerating the allocation

of education expenditures at the secondary level to be a ladder to higher education, resulting in the development of the potential of the country. For this reason, a higher unemployment rate will affect the allocation of education expenditures.

Cristescu (2017) studied The Impact of Education on the Unemployment Rate in the Southern European Model. The hypothesis of research was in the context of countries in the region of Southern Europe having a high unemployment rate. Education is an important pillar for economic rehabilitation, where education, especially at the high school level, is what accelerates the promotion of competitiveness by allocating investment in education to support the creation of a high-quality workforce and adapt to the needs of the market. The hypothesis in this study is related in the same direction. Therefore, it was theoretically concluded that in countries with high unemployment rates, this condition forces the state to allocate capital expenditures for the education sector in order to build skills and develop human capital to support adaptation to market demand, and also, for the economic recovery of the country that is growing up.

Table 2.8 Summary of the Relationship of the Unemployment Variable Affecting Educational Expenditures.

Variable: Unemployment	
Research Source	**Relationship Direction**
(Fredriksen & Fossberg, 2014) Title: The case for investing in secondary education in sub-Saharan Africa (SSA): challenges and opportunities.	Same direction
(Singh, 2003) Title: Skill, Education and Employment: A Dissenting Essay.	Same direction
(Prasad, 1979)	Same direction

Variable: Unemployment	
Research Source	**Relationship Direction**
Title: Education and Unemployment of Professional Manpower in India. (Cristescu, 2017)	Same direction
Title: The Impact of Education on the Unemployment Rate in the Southern European Model.	

2.4.6.2 Synthesis of Related Research of Unemployment Variables

The review of related research can be summarized as follows:

Unemployment factors have a significant influence on the allocation of secondary education expenditures in the same direction.

This is consistent with the research hypothesis of (Cristescu, 2017), titled The Impact of Education on the Unemployment Rate in the Southern European Model. In the context of a country with a high unemployment rate, it is, even more, a condition that drives the state to allocate capital expenditures for education. Especially allocation at the secondary level to support the creation of high-quality labor to adapt to market demand, where unemployment and secondary education expenditures are in the same direction.

Confirmed by the empirical results of a study by (Fredriksen & Fossberg, 2014), in the case of sub-Saharan Africa, faced with the pressure of expanding the secondary education system due to a fast-growing population, most of them still have a primary education, which is not enough for the country's potential. It has high unemployment rates, and for this reason, the state must speed up expenditure at the secondary level in order to develop human capital. A study by (Singh, 2003) shows that, in India, the labor market is still unskilled and the unemployment rate is high. Therefore, if the state plans for manpower to develop labor skills, it is necessary to invest in

secondary education. (Prasad, 1979) study, Education and Unemployment of Professional Manpower in India, further expands on the case of India, where the labor market lacks efficient manpower and high unemployment prevails because most of India has only a primary education, which, if the country's potential is ever able to develop the country, the state must allocate expenditures at the secondary level. For this reason, a higher unemployment rate will affect the allocation of education expenditures.

Therefore, in the study of factors affecting the allocation of education expenditures in low income countries and relatively lower middle income countries, unemployment variables that influence education spending, especially at the secondary level, suggest that in low income countries most of the population still does not have a primary education. Labor market competition is related to the country's development potential and high unemployment. Therefore, the higher the unemployment rate is, the more important that the government allocate expenditures for secondary education.

2.4.7 Corruption

2.4.7.1 Related Literature

Suryadarma (2012) study, How corruption diminishes the effectiveness of public spending on education in Indonesia, presents the problem of corruption in Indonesia, one of the most corrupt countries in the world. The research hypothesis was that corruption has a positive impact on the allocation of education expenditures covering the secondary level, with the result of the corruption influencing the effectiveness of allocation in Indonesia's education. Therefore, it can be concluded that, especially if the country has a high level of corruption, it will cause the state to accelerate the allocation of secondary education expenditures to benefit the country's development.

Hakhverdian (2012) studied Institutional Trust, Education, and Corruption: A Micro-Macro Interactive Approach. Its research hypothesis was that corruption correlates with the credibility of secondary institutions, affecting the nation's citizenship. Therefore, the state must focus on investment in education. According to an

empirical study in the case of European countries, corruption has a significant effect on the credibility of secondary education institutions. Therefore, the government must allocate education expenditures at this level of education in order to create institutional credibility.

Jajkowiczm and Drobiszova (2015) studied The Effect of Corruption on Government Expenditure Allocation in OECD Countries. The results of the study suggest a link between corruption and educational expenditures in OECD countries between 1998 and 2011, indicating that corruption correlates with financial expenditures. That is to say, the higher the corruption, the more the government will allocate expenditures for human capital development, especially at the secondary level. The reason is that at the basic level, the country should encourage the population to receive a secondary education because it is a qualification which, once completed, can allow one to enter work in an organization to conduct state audits. Therefore, if there is high corruption, it will result in an increase in secondary education expenditures and for the population to have higher education as a measure to control the problem of corruption.

Coco and Lagravinese (2010) wrote Incentive Effects on Efficiency in Education Systems' Performance. The research hypothesis was that corruption influences the performance of the school. The results of the study show that corruption affects work performance in educational institutions, especially at the secondary level. If corruption occurs, the effectiveness of the secondary education system will decrease. The researcher suggests that the more corruption exists, the more secondary education expenditures must be allocated for work effectiveness. Therefore, corruption is a factor that influences the provision of education.

Timofeyev (2011) studied How Corruption Affects Social Expenditures: Evidence from Russia. The hypothesis was that corruption leads to reduced government expenditure, which is why the government has to cut social expenditures like education expenses, because they have to choose to invest in only necessary social programs. The result of the research shows that high corruption causes lower public expenses.

Kaufmann, Kraay, and Mastruzzi (2003) defined Worldwide Governance Indicators (WGI) in that corruption is controlled by Control of Corruption, with values between -2.5 and 2.5. If there is a low Control of Corruption, it means high corruption, and a high Control of Corruption means low corruption.

Table 2.9 Summary of the Direction of the Relationship of Corruption Variables and Secondary Education Expenditures.

Variable: Corruption	
Research source	**Relationship direction**
(Suryadarma, 2012) Title: How corruption diminishes the effectiveness of public spending on education in Indonesia.	Same direction
(Hakhverdian, 2012) Title: Institutional Trust, Education, and Corruption: A Micro-Macro Interactive Approach.	Same direction
(Jajkowiczm & Drobiszova, 2015) Title: The Effect of Corruption on Government Expenditure Allocation in OECD Countries.	Same direction
(Coco & Lagravinese, 2010) Title: Incentive Effects on Efficiency in Education Systems' Performance.	Same direction
(Timofeyev, 2011) Title: How Corruption Affects Social Expenditures: Evidence from Russia.	Opposite direction
Summary	Same direction and opposite direction

2.4.7.2 Synthesis of Related Research of Corruption Variables

The review of related research can be summarized as follows:

Corruption factors have a significant influence on the allocation of secondary education expenditures in the same direction and opposite direction.

The results are confirmed by the empirical study of (Suryadarma, 2012), which points to countries with high corruption.

In the case of Indonesia, corruption is a variable that drives the state to accelerate secondary education spending. (Hakhverdian, 2012) suggests that corruption has significantly affected the credibility of educational institutions in the secondary school group. This is related to the need to invest in education expenditures at the secondary school level because it will result in an increase in citizenship through higher education. A study by (Jajkowiczm & Drobiszova, 2015) stressed that the higher the corruption in the public sector, the higher the need to speed up the allocation of education, especially at the secondary level, because it will affect the rate of increased enrollment at the secondary level. In other words, this study indicates that corruption factors cause enrollment rates to drop. Therefore, the state must accelerate the allocation of expenditures to increase enrollment rates in secondary schools. A study by (Coco & Lagravinese, 2010) further explained that corruption has an effect on the ability and the work of the school, especially at the secondary level. That is to say, the higher the corruption, the higher the education expenditures must be for work effectiveness. Therefore, corruption is a factor that has a positive influence on the state's allocation of education expenditures, especially at the secondary level. On the other hand, considering the work of (Timofeyev, 2011), high corruption leads to reduced public spending, such as educational expenses, because they have to choose to invest in some social projects.

In the study of factors affecting the allocation of education expenditures in low income countries and relatively lower middle income countries, the aspect of corruption variables that influence education expenditure, especially at the secondary level, suggests that corruption indicates the effectiveness of the education system in the

country. Therefore, if the corruption is higher in that country, the state must accelerate investment in education, especially at the secondary level. On the other hand, high corruption also results in reduced public spending.

2.4.8 Summary of Relationship Direction

Table 2.10 Summary of Relationship Direction.

Relationship Direction	
Variables	**Relationship Direction**
Real GDP	Same direction
Export	Same direction
Inequality	Opposite direction
Democracy	Same direction
Government Revenue	Same direction
Unemployment	Same direction
Corruption	Same direction and opposite direction

2.5 Research Framework

Model

$$\text{PRI EDU EXP} = a + \beta_1 \text{Real GDP} + \beta_2 \text{EXPORT} - \beta_3 \text{INEQUALITY} + \beta_4 \text{DEMOCRACY} + \beta_5 \text{REVENUE} + \varepsilon_i$$

$$\text{SEC EDU EXP} = a + \beta_1 \text{Real GDP} + \beta_2 \text{EXPORT} + \beta_3 \text{UNEMPLOYMENT} - \beta_4 \text{INEQUALITY} \pm \beta_5 \text{CORRUPTION} + \beta_6 \text{REVENUE} + \varepsilon_i$$

Real GDP means true Gross Domestic Product by using GDP per capita (Constant 2010) in the measurement.

EXPORT means Exports by using means of goods and services (% of GDP) in the measurement.

INEQUALITY means inequality in income distribution by using the Gini Index in the measurement.

DEMOCRACY means the governing system of the country and assigns the value. The Dummy is 0, meaning a non-democratic governing country, and 1 means a fully democratic country.

REVENUE means state revenue, including tax and state storage. The variable used to measure is Revenue, excluding grants (% of GDP).

UNEMPLOYMENT means Unemployment. The variable used to measure is Unemployment, total (% of the total labor force) (modeled ILO estimate).

CORRUPTION means fraudulent conduct by those in power, measured by the Control of Corruption variable, based on the Worldwide Governance Indicators, between -2.5 and 2.5. A low Control of Corruption means high corruption, and a high Control of Corruption means low corruption.

PRI EDU EXP means primary education expenditure measured by using government expenditure per student, primary (% of GDP per capita).

SEC EDU EXP means secondary education expenditures measured by using Government expenditure per student, secondary (% of GDP per capita).

CHAPTER 3

RESEARCH METHODOLOGY

Research for The Analysis of the Determinants that Affect Education Expenditure in Low Income Countries and Lower Middle Income Countries used quantitative methodology as its main method and documentary research as a support method. The researcher conducted the research as follows:

1) Documentary Research

Study documents, textbooks and research related to various factors that are important to the allocation of public expenditure in education.

2) Statistical Analysis

Study secondary data by analyzing Pool data.

3.1 Research Design

This research uses Quantitative Methodology as the main method, and documentary research as a support method by collecting data from documents and various research studies on important variables affecting education expenditures.

The reason that the researcher chose to use this study method

This thesis is a presentation of an empirical study with confirmed numbers. That is to say, achievements and the relationship of variables with any significance gleaned from the analysis of data during the period indicates the key factors affecting education investment that sustains development in a global context. Therefore, the researcher views that the research of the Determinants that Affect Education Expenditure in Low Income Countries and Lower Middle Income Countries should use a quantitative methodology because it will receive a concrete result, not from an attitude or opinion,

but from a test of variables to prove that educational results can be used to develop education investment plans for countries with poor people in need.

3.2 Analysis Unit, Population and Research Sample

The analysis unit is comprised of poor countries divided by the World Bank's criteria, and based on the Gross National Income per capita using the Atlas method. In this regard, Low Income Countries constitute GNI/Capita <US $1,005, and Lower Middle Income Countries have a GNI/Capita (current US $) 1,006-3,955. The population used in this research includes Low Income Countries and Lower Middle income Countries for a total of 81 countries, as of November 2018 (World Bank, 2018a) in alphabetical order they are :

Table 3.1 Low Income Countries and Lower Middle Income Countries.

Africa	Asia-Pacific-Oceania	America	Europe
Angola	Afghanistan	Bolivia	Kosovo
Benin	Bangladesh	El Salvador	Moldova
Burkina Faso	Bhutan	Haiti	Ukraine
Burundi	Cambodia	Honduras	
Cabo Verde	Georgia	Nicaragua	
Cameroon	India		
Congo, Rep.	Indonesia		
Cote d'Ivoire	Kiribati		
Central African Republic	Korea, Dem. People's Rep.		
Chad	Kyrgyz Republic		
Comoros	Lao PDR		
Congo, Dem. Rep.	Micronesia, Fed. Sts.		
Djibouti	Mongolia		

Africa	Asia-Pacific-Oceania	America	Europe
Egypt, Arab Rep.	Myanmar		
Eritrea	Nepal		
Eswatini	Pakistan		
Ethiopia	Papua New Guinea		
Gambia, The	Philippines		
Ghana	Solomon Islands		
Guinea	Sri Lanka		
Guinea – Bissau	Syrian Arab Republic		
Kenya	Tajikistan		
Lesotho	Timor-Leste		
Liberia	Uzbekistan		
Madagascar	Vanuatu		
Malawi	Vietnam		
Mali	West Bank and Gaza		
Mauritania	Yemen, Rep.		
Morocco			
Mozambique			
Niger			
Nigeria			
Rwanda			
Sao Tome and Principe			
Senegal			
Sierra Leone			
Somalia			
South Sudan			
Sudan			
Tanzania			
Togo			
Tunisia			

Africa	Asia-Pacific-Oceania	America	Europe
Uganda			
Zambia			
Zimbabwe			

Source: World Bank (2018a).

When compared to the table, (Krejcie & Morgan, 1970) received a sample of 66 countries. But in this study, there were limitations in data integrity which limited actual analysis of the results to a total of only 45 countries.

Table 3.2 Sample Group of Countries Used for Data Analysis with a Total of 45 Countries.

Africa	Asia-Pacific-Oceania	America	Europe
Benin	Bangladesh	Bolivia	Moldova
Burkina Faso	Bhutan	El Salvador	Ukraine
Burundi	Georgia	Honduras	
Cabo Verde	India	Nicaragua	
Cote D'ivoire	Indonesia		
Central African Republic	Lao PDR		
Congo, Dem.Rep.	Mongolia		
Egypt, Arab Rep.	Myanmar		
Eswatini	Nepal		
Ethiopia	Pakistan		
Gambia, The	Sri Lanka		
Ghana	Timor-Leste		
Kenya	Vanuatu		

Africa	Asia-Pacific-Oceania	America	Europe
Lesotho			
Madagascar			
Malawi			
Mali			
Morocco			
Mozambique			
Rwanda			
Senegal			
Sierra Leone			
Tanzania			
Togo			
Tunisia			
Zimbabwe			

Source: World Bank (2018a).

3.3 Data Collection Tools

3.3.1 Researcher

In this research, the researcher was critical for collecting data. The researcher prepared knowledge by studying documents, internet resources, research papers and international publications related to factors affecting educational expenditures, including situations related to investment in education in a global context. In addition, the researcher further studied statistical and econometric analyses to make the analysis process more accurate.

3.3.2 Reliability

1) Review literature related to education by collecting documents, internet resources, research papers and international publications related to factors affecting education expenditures, including situations related to investment in education in a global context.

2) Check quantitative data from various sources that are reliable for statistical analysis.

3) Consult with the advisor for opinions and comments about the correctness of the variables in order to cover the research objectives to be used in the analysis process of the research data.

3.3.3 Data Collection

3.3.3.1 Secondary Data

The researcher read related research that has been published at the international level and analyzed and synthesized the related research to get the study variables which were found from the literature review, the variables are as follows:

1) Independent Variables

(1) Real GDP

(2) Export

(3) Inequality

(4) Democracy

(5) Government Revenue

(6) Unemployment

(7) Corruption

2) Dependent Variables Include Education Expenditures, which are:

(1) Primary Education Expenditures

(2) Secondary Education Expenditures

3.3.3.2 Data Sources

Data collection used secondary data which was obtained from data searches from various sources. The research is based on World Bank data due to the credibility and up-to-date information that is more complete than other sources. The democratic variables were searched from various sources such as the Ministry of Foreign Affairs and basic information on politics and governments of the countries, as follows:

Table 3.3 Data Sources

Variables Used in the study	**Data Status**
Real GDP GDP per capita (Constant 2010)	21 March 2019
Export Exports of goods and services (% of GDP)	30 January 2019
Inequality Gini Index	18 October 2018
Democracy	Present
Government Revenue Revenue, excluding grants (% of GDP)	14 November 2018
Unemployment Unemployment, total (% of total labor force) (modeled ILO estimate)	30 January 2019
Corruption Control of Corruption	Present
Primary Education Expenditure Government expenditure per student, primary (% of GDP per capita)	30 January 2019
Secondary Education Expenditure Government expenditure per student, secondary (% of GDP per capita)	30 January 2019

3.3.4 Preparation of Tools for Data Analysis

Research for The Analysis of the Determinants that Affect Education Expenditure in Low Income Countries and Lower Middle Income Countries was carried out as follows. The researcher collected data of all variables used in the study for a sample of 45 countries from 1960–2017, it was found that in some years there is no data of variables or countries. Therefore, the researcher used an average method by calculating all available data in each variable for each country in order to get an average of the data for each variable of each study country, which could be used for statistical analysis and testing.

3.4 Analysis of Research Results

Analysis of research results using EViews was divided into 3 main steps, as follows:

3.4.1 Preliminary Examination of Data Characteristics

The basic statistical testing of variables used in the data analysis are Mean, Median and Std. Dev. Multicollinearity test method to examine any problems in the case. The independent variables in the regression equation have high relationships by checking with a correlation Matrix to consider the relationship between independent variables in pairs. If the correlation coefficient is greater than 0.8, it is considered that the Multicollinearity has a problem.

3.4.2 Data Analysis

Estimate the regression coefficient by Ordinary Least Square Method: OLS was set for statistical significance at the level of .01, .05, .10. In this regard, when estimating linear regression with the least squares method, or OLS, the conditions and assumptions according to the Classical Linear Regression Model (CLRM) (Gujarati, 2003) were as follows:

1) The regression equation is linear in Parameters, that is, the parameters (β_i) must be raised to one power and are in Linear Combination in between without considering the function model of the independent variable and the variable that must be a Linear Combination.

2) The independent variable (X_i) must be a fixed value.

3) The mean value of the random variables is at error at any X_i value is zero.

4) The variance of the random variable is Homoscedasticity.

5) The variance of the random variable has no Autocorrelation.

6) Independent variables and random variables have no relationship.

7) The number of observations must be greater than the number of parameters in the model that requires estimation.

8) The data of independent variables must be diverse in order to be able to see the trend or direction of the relationship of those independent variables to the Y_i variable.

9) The regression model is correctly specified. That is to say, the function model is correct and has the right independent variables without missing independent variables that should be in the model and there are no unrelated or inappropriate independent variables in the model.

10) Perfect Multicollinearity. In other words, the independent variables defined in the model must not have a completely linear relationship, and the independent variables must not have a high relationship.

The research for The Analysis of the Determinants that Affect Education Expenditure in Low Income Countries and Lower Middle Income is comprised of data analysis using pool data, so there is no need to inspect Autocorrelation.

Heteroskedasticity investigates problems related to tolerances. The variance of the errors obtained from the estimation equations are not constant and there is a method to check the White's General Heteroscedasticity Test (Gujarati, 2003) as follows:

1) Hypothesis

H_0: No Heteroscedasticity

H_1: Heteroscedasticity does exist

2) Set the significance level (α) by specifying the level at .01, .05, .10

3) The calculation of nR^2 is determined by the Obs * R-squared value of the White Test.

4) The opening of the Chi-Square table, where α is the specified significance level and K is the number of independent variables.

5) The summary is as follows:

(1) In case of Perfect Heteroscedasticity, Obs* R-squared is less than Chi-Square from the table, which does not reject H_0 (Accept H_0), which means Perfect Heteroscedasticity at the specified significance level.

(2) In the case of Imperfect Heteroscedasticity, Obs* R-squared is higher than Chi- from the table, which rejects H_0, meaning Imperfect Heteroscedasticity at the specified significance level.

Heteroskedasticity Solution

Use Weighted Least Square (WLS) (Gujarati, 2003)

Plausible Assumptions about Heteroscedasticity Pattern

From the 2 variables regression model

$$Y_i = \beta_1 + \beta_2 X_i + u_i$$

Assumption 1 The variance of the term error is proportional to X_i^2

$$E\left(u_i^2\right) = \sigma^2 X_i^2$$

Based on the concept of Park and Glejser, we believe that the variance of μ_i is the quadratic proportion of the variable described X. Therefore, transform according to Assumption 1 is

$$\frac{Y_i}{X_i} = \frac{\beta_1}{X_i} + \beta_2 + \frac{u_i}{X_i}$$

$$= \beta_1 \frac{1}{X_i} + \beta_2 + v_i$$

When V_i is a disturbed expression that is translated and equal to μ_i / X_i and can prove that

$$E\left(v_i^2\right) = E\left(\frac{u_i}{X_i}\right)^2 = \frac{1}{X_i^2} E\left(u_i^2\right)$$

$$= \sigma^2$$

Therefore, the variability of the new V_i has the same variance characteristics. Then, we continue with regression analysis with OLS and the converted equation by regressing Y_i/X_i with $1/X_i$

From the equation

$$\frac{Y_i}{X_i} = \frac{\beta_1}{X_i} + \beta_2 + \frac{u_i}{X_i}$$

It can be noticed that the point of intersection coefficient on the vertical axis of the converted regression is β_2, which is the slope coefficient in the original equation.

The slope coefficient in the equation

$$= \beta_1 \frac{1}{X_i} + \beta_2 + v_i$$

Which is β_1 or cross point coefficient on the vertical axis in the original equation. Therefore, if looking backward from the original model, we can do so by multiplying the estimated equation by X_i

3.4.3 Model Analysis Summary

Factors affecting primary and secondary education expenditures in low income countries and lower middle income countries and suggestions from the research findings.

CHAPTER 4

RESULTS

In research for The Analysis of the Determinants that Affect Education Expenditure in Low Income Countries and Lower Middle Income Countries, the researcher reveals the results in order, as follows:

4.1 Preliminary Examination of Data Characteristics

The basic statistics of variables used in data analysis are the Mean, Median, Std. Dev. and Multicollinearity. These 4 statistics examine potential problems in the event that the independent variables in the regression equation have a high relationship with the Correlation Matrix.

4.2 Data Analysis Model 1

Estimating the regression coefficient using the Ordinary Least Square Method: OLS.

Heteroskedasticity exists when the variability of the random disturbance is different across elements of a vector. Here, variability could be quantified by the variance or any other measure of statistical dispersion. Thus heteroskedasticity is the absence of homoskedasticity, which is given when the estimation equation is inconsistent, using the White's General Heteroscedasticity Test, which is a statistical test that establishes whether the variance of the errors in a regression model is constant: that is, for homoskedasticity.

The solution of Heteroskedasticity is Weighted Least Square (WLS).

Model summary: factors affecting low income countries and lower middle income countries' primary education expenditure.

4.3 Data analysis model 2

Estimating the regression coefficient using the Ordinary Least Square Method: OLS.

Heteroskedasticity exists when the variability of the random disturbance is different across elements of a vector. Here, variability could be quantified by the variance or any other measure of statistical dispersion. Thus heteroskedasticity is the absence of homoskedasticity, which is given when the estimation equation is inconsistent with the White's General Heteroscedasticity Test, which is a statistical test that establishes whether the variance of the errors in a regression model is constant: that is for homoskedasticity.

The solution of Heteroskedasticity is Weighted Least Square (WLS)

Model summary: factors affecting low income countries and lower middle income countries' secondary education expenditure.

4.1 Preliminary Examination of Data Characteristics

4.1.1 General Information

Table 4.1 General Information

	AVERAGE_REAL GDP	AVERAGE_EXPORT	AVERAGE_INEQUALITY	AVERAGE_DEMOCRACY	AVERAGE_ GOVERNMENT REVENUE	AVERAGE_UNEMPLOYMENT	AVERAGE_CORRUPTION	AVERAGE_PRI EDU EXP	AVERAGE_SEC EDU EXP
Mean	1208.132	26.710	41.442	0.866	19.615	7.2004	-0.5612	13.033	22.6207
Median	832.205	24.796	40.500	1.000	17.4551	5.4536	-0.6069	11.204	18.7216

	AVERAGE_REAL GDP	AVERAGE_EXPORT	AVERAGE_INEQUALITY	AVERAGE_DEMOCRACY	AVERAGE_ GOVERNMENT REVENUE	AVERAGE_UNEMPLOYMENT	AVERAGE_CORRUPTION	AVERAGE_PRI EDU EXP	AVERAGE_SEC EDU EXP
Maximum	2836.832	73.427	56.250	1.000	54.253	32.336	0.9858	39.109	63.5337
Minimum	260.572	6.087	27.9263	0.000	6.7353	0.8435	-1.4127	5.1456	4.1733
Std. Dev.	831.997	13.813	7.2549	0.3437	9.3304	6.2571	0.47212	6.882	14.155
Skewness	0.6917	1.199	0.3214	-2.157	1.7874	2.2277	0.8958	1.986	1.2338
Kurtosis	2.1750	4.933	2.3203	5.6538	6.8521	8.4328	4.4757	7.7229	4.1505
Sum	54365.92	1201.986	1864.912	39.000	882.674	324.0196	-25.258	586.5290	1017.932
Obser-vations	45	45	45	45	45	45	45	45	45

Table 4.1 shows the general characteristics of data from a sample of 45 countries as follows:

Average_Real GDP found that the value of products and services per capita at fixed prices for the 2010 base low income countries and lower middle income countries was in the range of 2,836.83 to 260.57 US $, for an average of 1,208.13 US $. The distribution of the true gross domestic product is at 832 US $.

Average_Export indicates that exports of goods and services in countries with low income countries and lower middle income countries ranged between 73.427 percent and 6.087 percent of their gross domestic product. The average was 26.710 percent and the distribution of exports was at 13.813 percent.

Average_Inequality found that inequality of income distribution in low income countries and lower middle income countries had a Gini Index between 56.250 and 27.9263, with an average of 41.442 percent. The distribution of inequality for income distribution was at 7.2549 percent.

Average_Democracy found that low income countries and lower middle income countries have both non-democratic and democratic rule. But most of the trends from the sample groups in the countries used in this study were democratic.

Average_Government Revenue found that government revenue, including tax and state storage, in low income countries and lower middle income countries ranged from 54.253 percent to 6.7353 percent of gross domestic product, with an average of 19.615 percent and the distribution of income from the State equaling 9.3304 percent.

Average Unemployment found that the unemployment rate of low income countries and lower middle income countries ranged between 32.336 percent and 0.8435 percent of the total workforce, averaging 7.2004 percent. The distribution of unemployment was 6.2571 percent.

Average_Corruption found that low income countries and lower middle income countries had an average corruption control of -0.5612, which indicates high corruption. When considering the minimum and maximum values of corruption control, it was found to be between -1.4127 (high corruption) and 0.9858 (low corruption).

Average_Primary Education Expenditure found that the cost of education for elementary students in low income countries and lower middle income countries ranged between 39.109 percent and 5.1456 percent of the country's average gross domestic product. The Mean was 13.033 percent and the distribution of education expenditure at the elementary level was 6.882 percent.

Average_Secondary Education Expenditure found that the cost of education for secondary students in low income countries and lower middle income countries ranged between 63.5337 percent and 4.1733 percent of the average gross domestic product of 100 percent. The Mean was 22.6207 percent and the distribution of secondary education expenditures was at 14.155 percent.

4.1.2 Multicollinearity: Correlation Matrix

Table 4.2 Correlation Matrix of Model 1 Factors Affecting Expenditures in Education.

VARIABLES	AVERAGE_REAL GDP	AVERAGE_EXPORT	AVERAGE_ INEQUALITY	AVERAGE_DEMOCRACY	AVERAGE_ GOVERNMENT REVENUE
AVERAGE_ REAL GDP	-				
AVERAGE_ EXPORT	0.7330	-			
AVERAGE_ INEQUALITY	-0.0903	0.0059	-		
AVERAGE_ DEMOCRACY	0.0776	0.1624	-0.1351	-	
AVERAGE_ GOVERNMENT REVENUE	0.4951	0.5602	-0.0134	0.1586	-

From Table 4.2 it's revealed that the relationship between independent variables used in the study was between 0.7330 and -0.1351, with the most independent variable pairs, Real GDP and Export, having a relationship value at 0.7330.

This was followed by Independent variable pairs between Export and Government Revenue, with a relation of 0.5602.

Followed by Independent variable pairs between Real GDP and Government Revenue with a relation of 0.4951.

Followed by Independent variable pairs between Export and Democracy with a relation of 0.1624.

Followed by Independent variable pairs between Democracy and Government Revenue with a relation of 0.1586.

Independent variable pairs between Real GDP and Democracy had a relation of 0.0776.

Independent variable pairs between Export and Inequality had a relation of 0.0059.

Independent variable pairs between Inequality and Government Revenue had a relation of -0.0134.

Independent variable pairs between Real GDP and Inequality had a relation of -0.0903.

Independent variable pairs between Inequality and Democracy had a relation of -0.1351.

When considering all pairs we found that the value was less than the criteria of 0.8. Therefore, it can be concluded that the independent variables affecting the educational expenses at the primary level do not result in a Perfect Multicollinearity problem (no problems of independent variables with high relationships).

Table 4.3 Correlation Matrix Model 2 : Factors Affecting Secondary Education Expenditures.

VARIABLES	AVERAGE_REAL GDP	AVERAGE_ UNEMPLOYMENT	AVERAGE_ INEQUALITY	AVERAGE_ CORRUPTION	AVERAGE_ GOVERNMENT REVENUE
AVERAGE_ REAL GDP	-				
AVERAGE_ UNEMPLOYMENT	0.2695	-			
AVERAGE_ INEQUALITY	-0.0903	0.4148	-		
AVERAGE_ CORRUPTION	0.3208	0.2996	0.1660	-	
AVERAGE_ GOVERNMENT REVENUE	0.4951	0.5410	-0.0134	0.3000	-

From table 4.3, we found that the relation between the independent variables used in the study were between 0.5410 and -0.0903, with the most variable independent pair being Unemployment and Government Revenue, with a relation of 0.5410, This was followed by the independent variable pairs between Real GDP and Government Revenue with a relation of 0.4951.

The independent variable pairs between Unemployment and Inequality had a relation of 0.4148.

The independent variable pairs between Real GDP and Corruption had a relation of 0.3208.

The independent variable pairs between Corruption and Government Revenue had a relation of 0.3000.

The independent variable pairs between Real GDP and Unemployment had a relation of 0.2695.

The independent variable pairs between Unemployment and Corruption had a relation of 0.2996.

The independent variable pairs between Inequality and Corruption had a relation of 0.1660.

The independent variable pairs between Inequality and Government Revenue showed a relation of -0.0134.

The independent variable pairs between Real GDP and Inequality had a relation of -0.0903.

When considering all pairs, we found that the value was less than the criteria of 0.8. Therefore, it can be concluded that the independent variables affecting educational expenses at the secondary level do not result in a Perfect Multicollinearity problem, (no problems of independent variables with high relationships).

4.2 Data Analysis 1 (Model 1)

(Model)

$$\text{PRI EDU EXP} = a + \beta_1 \text{ Real GDP} + \beta_2 \text{ EXPORT} - \beta_3 \text{ INEQUALITY} + \beta_4 \text{ DEMOCRACY} + \beta_5 \text{ REVENUE} + \varepsilon_i$$

4.2.1 Heteroskedasticity Testing

Table 4.4 White's General Heteroskedasticity Test.

Heteroskedasticity Test: White			
F-statistic	4.959054	Prob. F(5,39)	0.0013
Obs*R-squared	17.49012	Prob. Chi-Square(5)	0.0037

From Table 4.4, when checking the problems related to the errors, it was observed that Obs * R-squared was 17.49012. The Prob. Chi-Square value of 0.0037 was less. Therefore, it can be concluded that Heteroscedasticity occurs.

4.2.2 Heteroskedasticity Solution

Using the Weighted Least Square (WLS) method based on Assumption 1 (Gujarati, 2003).

Table 4.5 Solving Heteroskedasticity by Weighted Least Square (WLS) Based on Assumption 1

Heteroskedasticity Test: White			
F-statistic	1.208037	Prob. F(4,40)	0.3225
Obs*R-squared	4.850241	Prob. Chi-Square(4)	0.3030

From Table 4.5, an investigation of problems related to tolerances revealed that Obs* R-squared was equal to 4.850241. The Prob. Chi-Square value of 0.3030 is high, so it can be concluded that Heteroscedasticity occurs.

4.2.3 Testing of Factors Affecting Primary Education Expenditures

Table 4.6 Testing of Factors Affecting Primary Education Expenditures of Low Income Countries and Lower Middle Income Countries.

Variables	Coefficient	Std. Error	t-Statistic	p-Value
1/ AVG_GOVERNMENT_REVENUE	3.492942	4.540766	0.769241	0.4463
AVG_EXPORT/ AVG_GOVERNMENT_REVENUE	-0.009542	0.065642	-0.145358	0.8852
AVG_INEQUALITY/ AVG_GOVERNMENT_REVENUE	-0.018698	0.101479	-0.184257	0.8547
AVG_DEMOCRACY/ AVG_GOVERNMENT_REVENUE	-0.572082	1.692473	-0.338015	0.7371
Constant	0.584458***	0.112324	5.203341	0.0000
R-squared	0.050978			
Adjusted R-squared	-0.043925			
S.E. of regression	0.260518			

Note: * the significant level of .10,

** the significant level of .05,

*** the significant level of .01

From Table 4.6 it was found that, when using the Weighted Least Square (WLS) method according to Assumption 1, the Government Revenue variable is Constant (C) and the p-Value is 0.0000, which concludes that government income affects primary education expenditures of low income countries and lower middle income countries with statistical significance at the level of .01, and in the same direction ($\beta_5 = 0.584458$, $p < .01$), in accordance with the research hypothesis.

4.3 Data Analysis 2 (Model 2)

(Model)

$$\text{SEC EDU EXP} = a + \beta_1 \text{ Real GDP} + \beta_2 \text{ EXPORT} + \beta_3 \text{ UNEMPLOYMENT} - \beta_4 \text{ INEQUALITY} \pm \beta_5 \text{ CORRUPTION} + \beta_6 \text{ REVENUE} + \varepsilon_i$$

4.3.1 Heteroskedasticity Testing

Table 4.7 White's General Heteroscedasticity Test

Heteroskedasticity Test: White			
F-statistic	2.539274	Prob. F(27,17)	0.0245
Obs*R-squared	36.05895	Prob. Chi-Square(27)	0.1140

From Table 4.7, examining the problems related to the error, the Obs * R-squared was equal to 36.05895. The Prob. Chi-Square value was 0.1140. Therefore, it can be concluded that Heteroscedasticity occurs.

4.3.2 Solving Heteroskedasticity

Using Weighted Least Square, WLS according to Assumption 1 (Gujarati, 2003).

Table 4.8 Solving Heteroskedasticity by Weighted Least Square (WLS) According to Assumption 1.

Heteroskedasticity Test: White			
F-statistic	0.278121	Prob. F(16,28)	0.9952
Obs*R-squared	6.170956	Prob. Chi-Square(16)	0.9861

From Table 4.8, the investigation of problems related to tolerances revealed that Obs* R-squared equaled 6.170956. The Prob. Chi-Square value of 0.9861 was high. Therefore, it can be concluded that Heteroscedasticity occurs.

4.3.3 Testing of Factors Affecting Secondary Education Expenditures

Table 4.9 Testing of Factors Affecting Secondary Education Expenditures of Low Income Countries and Lower Middle Income Countries.

Variables	**Coefficient**	**Std. Error**	**t-Statistic**	**p-Value**
1/AVG_GOVERNMENT_ REVENUE	9.823786	11.74275	0.836583	0.4079
AVG_EXPORT/ AVG_GOVERNMENT_ REVENUE	-0.110805	0.166008	-0.667470	0.5084

Variables	Coefficient	Std. Error	t-Statistic	p-Value
AVG_UNEMPLOYMENT/ AVG_GOVERNMENT_ REVENUE	0.057182	0.476705	0.119953	0.9051
AVG_INEQUALITY/ AVG_GOVERNMENT_ REVENUE	0.149206	0.254625	0.585983	0.5613
AVG_CORRUPTION/ AVG_GOVERNMENT_ REVENUE	7.259667*	3.788977	1.915997	0.0627
Constant	0.697368*	0.355991	1.958947	0.0573
R-squared	0.133882			
Adjusted R-squared	0.022842			
S.E. of regression	0.658224			

Note: * the significant level of .10,

** the significant level of .05,

*** the significant level of .01

From Table 4.9, Corruption in low income countries and lower middle income countries had statistical significance at the level of .10 ($\beta_5 = 7.259667$, $p < .10$), but not according to the research hypothesis. That is, the corruption variable here defines the Control of Corruption, which, if in a positive direction means that corruption is low. Therefore, it is not consistent with high corruption, affecting secondary education expenditures and Government Revenue to be Constant (C) and the p-Value to be equal to 0.0573. It can be concluded that state income affects low income countries and lower middle income secondary education in countries with statistical significance at the level

of .10 and in the same direction ($\beta_6 = 0.697368$, $p < .10$), according to the research hypothesis.

(Model)

$$\text{SEC EDU EXP} = a + \beta_1 \text{ Real GDP} + \beta_2 \text{ UNEMPLOYMENT} - \beta_3 \text{ INEQUALITY} \pm \beta_4 \text{ CORRUPTION} + \beta_5 \text{ REVENUE} + \varepsilon_i$$

4.3.4 Heteroskedasticity Testing

Table 4.10 White's General Heteroscedasticity Test

Heteroskedasticity Test: White			
F-statistic	0.813525	Prob. F(5,39)	0.5473
Obs*R-squared	4.250133	Prob. Chi-Square(5)	0.5140

From Table 4.10, the investigation of problems related to tolerances revealed that Obs* R-squared equaled 4.250133. The Prob. Chi-Square value of 0.5140 was high. Therefore, it can be concluded that Heteroscedasticity occurs.

4.3.5 Testing of Factors Affecting Secondary Education Expenditures

Table 4.11 Testing of Factors Affecting Secondary Education Expenditures of Low Income Countries and Lower Middle Income Countries.

Variables	**Coefficient**	**Std. Error**	**t-Statistic**	**p-Value**
Constant	23.61253	14.62584	1.614439	0.1145
AVG_REAL GDP	-0.004116	0.002698	-1.525529	0.1352
AVG_ UNEMPLOYMENT	0.908276**	0.417017	2.178032	0.0355

Variables	Coefficient	Std. Error	t-Statistic	p-Value
AVG_INEQUALITY	-0.025568	0.305671	-0.083647	0.9338
AVG_CORRUPTION	8.151520*	4.393205	1.855484	0.0711
AVG_GOVERNMENT REVENUE	0.156813	0.276115	0.567928	0.5733
R-squared	0.306276			
Adjusted R-squared	0.217337			
S.E. of regression	12.52270			

Note: * the significant level of .10,

** the significant level of .05,

*** the significant level of .01

From Table 4.11 it was revealed that the unemployment variable had a p-Value of 0.0355. It can be concluded that unemployment affects secondary education expenditures in low income and lower middle income countries at a significant level of .05 and in the same direction (β_2 = 0.908276, p <.05), according to the research hypotheses and corruption variables, which found that the p-Value was equal to 0.0711.

In conclusion, corruption affects secondary education expenditures of low income and lower middle income countries at the .10 level (β_4 = 8.151520, p <.10), but not according to the research hypothesis. That is to say, the Corruption variable here defines the Control of Corruption. If Corruption Control is in a positive direction (low corruption) it isn't inconsistent with high corruption, which affects secondary education expenditures. Therefore, low corruption significantly affects secondary education expenditures in low income and lower middle income countries.

CHAPTER 5

CONCLUSIONS, DISCUSSIONS AND RECOMMENDATIONS

5.1 Research Summary

The research on The Analysis of the Determinants that Affect Education Expenditure in Low Income Countries and Lower Middle Income Countries has the following research questions: Which factors are important for primary and secondary educational expenditures in low income countries and lower middle income countries, what educational results can act as a guide, and what suggestions regarding allocation of educational expenditures to groups can be offered? How are poor areas and unequal education levels dealt with? The objectives of the research are: 1) To analyze key factors affecting primary education expenditures in low income countries and lower middle income countries. 2) To analyze key factors affecting secondary education expenditures in low income countries and lower middle income countries. 3) To suggest policies regarding the allocation of education expenditures to poor areas and inequalities in education.

In the literature review, the researcher studied basic information on low income countries and lower middle income countries, as well as relevant research of each study variable. The relationship direction can be summarized as follows:

Table 5.1 The Summary of Relationship Direction.

Relationship Direction	
Variables	**Relationship Direction**
Real GDP	Same direction
Export	Same direction

Relationship Direction	
Variables	**Relationship Direction**
Inequality	Opposite direction
Democracy	Same direction
Government Revenue	Same direction
Unemployment	Same direction
Corruption	Same direction and opposite direction

Research framework

Model

$$\text{PRI EDU EXP} = a + \beta_1 \text{ Real GDP} + \beta_2 \text{ EXPORT} - \beta_3 \text{ INEQUALITY} + \beta_4 \text{ DEMOCRACY} + \beta_5 \text{ REVENUE} + \varepsilon_i$$

$$\text{SEC EDU EXP} = a + \beta_1 \text{ Real GDP} + \beta_2 \text{ EXPORT} + \beta_3 \text{ UNEMPLOYMENT} - \beta_4 \text{ INEQUALITY} \pm \beta_5 \text{ CORRUPTION} + \beta_6 \text{ REVENUE} + \varepsilon_i$$

This study used a Quantitative Methodology as the main method followed by Documentary Research that was supported by collecting data from various documents and research on the important variables affecting the allocation of education expenditures. The researcher read the related research which was published at the international level, then analyzed and synthesized the related research to get the variables used in this study.

The units of analysis are poor countries divided by the World Bank's Gross National Income Per Capita criteria using the Atlas method as follows: Low Income Countries GNI/Capita < US$1,005, and Lower Middle Income Countries GNI/Capita (current US$ 1,006 - 3,955).

The population used in the research was 81 low income countries and lower middle income countries, as of November 2018, from the World Bank source. The sample used in this study was considered from data integrity according to the variables

in each country that could be used for data analysis and processing, then selecting 45 countries in total for the sample.

The researcher used the average, which is consistent with the pooled data, by calculating the total available data for each variable in each country in order to get the average, which could then be analyzed and tested using the Ordinary Least Square Method: OLS, with statistical significance set at the levels of .01, .05 and .10.

5.1.1 Research Results

5.1.1.1 General characteristics of data from a sample of 45 countries, as follows:

Real gross domestic product determined that the value of products and services per capita at a fixed price for the year 2010 of low income countries and relatively lower middle income countries was in the range of US$ 2,836.83 to 260.57, with an average of US$ 1,208.13, and the distribution of real gross domestic product equaling US$ 832.

For Imports, we found that exports of goods and services from low income countries and lower middle income countries ranged between 73.427 percent and 6.087 percent of the gross domestic product, with an average of 26.710 percent, and the distribution of exports totaling 13.813 percent.

For Inequality, we found that inequality in the income distribution of low income countries and lower middle income countries ranked Gini Index values between 56.250 and 27.9263 percent, with an average of 41.442 percent and inequality distribution at 7.2549 percent.

Democracy found that low income countries and lower middle income countries have both non-democratic and democratic rule. But most of the trend from the sample group of countries used in the study was democratic.

For Government Revenue we found that government revenues, including taxes and collections, in low income countries and lower middle income countries ranged between 54.253 and 6.7353 percent of the gross domestic product,

which was equal to 19.615 percent, and the distribution of government revenue was 9.3304 percent.

For Unemployment, we found that the unemployment rate of low income countries and lower middle income countries ranged between 32.336 and 0.8435 percent, total unemployment was equal to 7.2004 percent and the distribution of unemployment was 6.2571 percent.

Corruption found that low income countries and lower middle income countries have a Control of Corruption equal to an average of -0.5612, which indicates high corruption, and when considering the minimum and maximum values of Corruption Control, we found that it was between -1.4127 (high corruption) and 0.9858 (low corruption).

Primary Education Expenditures found that expenditures on education for primary students in low income countries and lower middle income countries ranged between 39.109 and 5.1456 percent of the gross domestic product, with the average being 13.033 percent and the distribution of education expenditures at the primary level being 6.882 percent.

Secondary Education Expenditures found that expenditures on education for low income countries and lower middle income countries ranked between 63.5337 and 4.1733 percent of GDP, with the average being 22.6207 and the distribution of education expenditures at the secondary level being 14.155.

5.1.1.2 Perfect Multicollinearity Testing

Independent variables in both models 1 and 2 were Perfect Multicollinearity (no problems of independent variables with high relationships).

5.1.1.3 Data Analysis

1) Factors affecting low income countries, and lower middle income countries, elementary education expenditures

It was found that when using Weighted Least Square (WLS) as per Assumption 1, the Government Revenue variable was Constant (C), and we found

that the p-Value was 0.0000, which can be summarized as affecting the expenditure in primary education of low income countries and lower middle income countries with statistical significance at the level of .01 and in the same direction (β_5 = 0.584458, $p < .01$), which is in accordance with the research hypothesis.

2) Factors affecting low income countries' and lower middle income countries' secondary education expenditures

It was found that the Unemployment variable had a p-Value equal to 0.0355. Unemployment affects low income countries and lower middle income countries' secondary education with statistical significance at the level of .05 and in the same direction (β_2 = 0.908276, $p < .05$.), which is in accordance with the research hypothesis.

Corruption resulted in a p-Value of 0.0711. It can be concluded that corruption affects secondary education expenses in low income countries and lower middle income countries with statistical significance at the level of .10 (β_4 = 8.151520, $p < .10$), but not according to the research hypothesis. That is, the Corruption variable here defines the control of corruption, which, if the control of corruption is in a positive direction means low corruption. Therefore, it is not in line with the hypothetical research that high corruption affects secondary education expenditures. Therefore, it can be concluded that low corruption significantly affects low income countries' and lower middle income countries' secondary education.

5.2 Discussion

1) Hypothesis: Real gross domestic product affects education expenditures in low income countries and lower middle income countries in the same direction.

The results show that true Gross Domestic Product does not affect education expenditures in those low income countries and lower middle income countries that do not conform to the research hypothesis. Discussing the result in Equation 1, when

solving the error with Weighted Least Square (WLS) according to assumption 1, the researcher divided the independent variables into both equations using Government Revenue variables. But the Real GDP variable does not affect the expenditures on primary education, with the p-Value of 0.4463 (ns), and when considering Equation 2, the Real GDP variable has no effect on secondary education expenditures, the p-Value was equal to 0.1352 (ns). In addition, when considering the GDP per capita (Constant 2010), which has an average of 1208.132, and when further considering that the GDP per capita (Constant 2010) has its highest value equal to 2836.832 and its lowest at 260.572, there are no high numbers and no indication of economic recovery. Therefore, economic growth, as measured by real Gross Domestic Product of poor countries, does not affect the allocation of education expenditures.

This study is different from (Mallick et al., 2016) in Impact of educational expenditure on economic growth in major Asian countries: Evidence from econometric analysis, which discusses the effect that Gross Domestic Product has as a factor that causes increased demand for education and increases human capital development through the allocation of public education expenditures. Also, in the case of (Kaur et al., 2014), Linkages between education expenditure and economic growth: Evidence from 'CHINDIA'. The reason stated was that in the group comprising China-India, the gross domestic product affected the allocation of Chinese education expenditures in the long run.

Therefore, in the case of this study, the economic growth measured by true gross domestic product does not correlate with the government's policies regarding the allocation of public educational expenditures with the numbers indicated. Thus, the overall economy is not improving. Therefore, there is no decision-making effect in driving investment policies in the education sector.

2) Hypothesis: Exports affect primary education expenditures in low income countries and lower middle income countries with the same direction.

The results show that export does not affect education expenditures in the low income countries and lower middle income countries that do not conform to the research hypothesis. Discussing the result in Equation 1, when solving the error with Weighted Least Square (WLS) according to assumption 1, the researcher divided the independent variables into both equations using Government Revenue variables. But the export variable does not affect the expenditures on primary education with the p-Value of 0.8852 (ns). And when considering the average number of exports in poor countries being 26.710, with the highest at 73.427 and the lowest at 6.087, it does not correspond to the theories that explain the export factors affecting increases in education expenditures by allowing the state to have education investment measures in both resource allocation and an increase in primary education rates.

This study is different from (Berthelemy, 2006), Globalization and challenges for education in least developed countries on the basis of basic education, the reason being that states in Africa, in terms of the context of globalization with export factors as indicators, result in poorer countries paying more attention to education policy by allocating expenditures for human capital development in the country. It is also different from (Blanchardy & Olney, 2017), Globalization and Human Capital Investment: Export Composition Drives Educational Attainment, which states that it is important to determine the structure of the state's duty in the allocation of public expenditures for education in the country.

Therefore, the Export factor is not important for pushing the allocation of education expenditures in low income countries and lower middle income countries because the findings are inconsistent with the theory.

3) Hypothesis: Inequality affects primary education expenditures in low income countries and lower middle income countries with the opposite direction.

The research shows that inequality in income distribution does not affect education expenditures in the low income countries and lower middle income countries that do not conform to the research hypothesis. It can be concluded that when considering Equation 1: Solving the Problem of Discrepancy by Weighted Least Square

(WLS) in accordance with Fundamental Number 1, the use of independent variables to divide the whole equation by using Government Revenue variables found that, in this equation, we have significant variables. But the Inequality variable does not affect the expenditure variable in primary education, with the p-Value of 0.8547 (ns). Also in equation 2, Inequality does not affect secondary education expenditures, with the p-Value of 0.9338 (ns) when considering the Gini Index to measure inequality in income distribution. We found that, from the 1960s to the year 2017, Gini Index data was only available in certain years when it was analyzed and processed. The data does not show that income inequality in income distribution influences education expenditures in low income countries and lower middle income countries significantly. Therefore, it does not appear in the relationship between the variables Inequality in income distribution and Education Expenditures.

This study is different from (Shahabadi et al., 2018), The Effect of Education on Income Inequality in Selected Islamic Countries in the case of studying Islamic countries. Analysis of the data between 1990 and 2013 shows that the reasons for unequal income distribution were negatively correlated with enrollment rates in primary and secondary schools. (Grigoli, 2014), in A Hybrid Approach to Estimating the Efficiency of Public Spending on Education in Emerging and Developing Economies, measured the Gini coefficient and hypothesized that the conditions of inequality in income distribution were in the opposite direction to the allocation of education expenditures. The reason being that in low income countries, especially in Africa, if there is inequality in the distribution of income, it will result in a lower allocation of expenses according to the student-to-teacher ratio, which is different from this study's findings.

Therefore, inequality in income distribution does not affect education expenditures in low income countries and lower middle income countries. Therefore, it is not enough information for the government to make a decision about the allocation of expenditures in the education sector.

4) Hypothesis: Democracy affects primary education expenditures in low income countries and lower middle income countries with the same direction.

The results show that Democracy does not affect primary education expenditures in low income countries and lower middle income countries that do not conform to the research hypothesis. Discussion suggests that when considering Equation 1, the solution to the error by Weighted Least Square (WLS) according to Motto 1 is the division of independent variables to divide the whole equation using the Government Revenue variable, which found that in this equation significant variables were found. But the Inequality variable does not affect the expenditure variable for primary education, with a p-Value of 0.7371 (ns). In addition, considering the regime of the country, most of the poor countries were of non-democratic forms of government. In other words, considering the numbers, it can be seen as 1, which means democratic rule but a democratic republic. For this reason, it is not a country with true political freedom. Therefore, the governing of the country is not a factor that drives the state to implement policies regarding the allocation of education expenditures.

This is different from the study of (Brown & Hunter, 2004), Democracy and Human Capital Formation: Education Spending in Latin America, 1980 to 1997. Their conclusion was that, as a characteristic of education, democratic variables in Latin America have an impact on education expenditures. A democratic government will provide educational resources to basic levels to increase opportunities for human capital development.

It can be concluded that, from this study of low income countries and relatively lower middle income countries, the majority involve a democratic repositioning system which is governed by a totalitarian regime. Therefore, these conditions do not show differences and do not show the influence of government policies on education investment.

5) Hypothesis: Government revenue affects primary education expenditures in low income countries and lower middle income countries with the same direction.

The results show that government revenue affects low income countries' and lower middle income countries' primary education expenditures with statistical significance at the level of .01 and in the same direction ($\beta_5 = 0.584458$, $p < .01$), according to the research hypothesis. Discussions suggest that when considering Equation 1: Solving the Discrepancy Problem by Weighted Least Square (WLS) according to Fundamental 1, it is used to divide independent variables into both equations using Government Revenue variables. This affects the expenditure variables in primary education, with the p-Value 0.0000 and Coefficient 0.584458 in the same direction. But when considering Equation 2, government revenue does not have a significant impact on low income countries' and lower middle income countries' secondary education, since the p-Value value of the Government Revenue variable is 0.5733. Therefore, government revenue, if used to develop education in poor countries, especially basic education at the primary level, will benefit the country's capacity building. For example, the government will allocate to poor students who lack opportunities such as educational tools, teaching materials and educational funds.

This study is consistent with the research of (Omwami & Omwami, 2010), Public investment and the goal of providing universal access to primary education by 2015 in Kenya. Their research hypothesis was that the tax rate is a variable that influences the needs of education as an accelerating factor in the allocation of education expenditures, especially at the primary level. In the case of Kenya, the importance of policy implementation for education by using tax share was a factor to drive the government toward investment in the education sector.

In addition, the study's research is consistent with (Yuki, 2003), Distribution of Public Education Spending for the Poor: The Case of Yemen. The hypothesis was that an increase in state revenue is related to the allocation of educational investment to support poor students in practice, which is allocated to scholarships. In discussing the research findings, an increase in state revenue in Yemen affected the decision to

allocate educational expenditures and affected the allocation of funds to poor students so that the population could study at a basic level.

Therefore, government revenue affects low income countries, and lower middle income countries, primary education expenditures where the government allocates support for learning materials. The budget for the teaching and management of this poor student group resulted in a lack of education.

6) Hypothesis: Unemployment affects secondary education expenditures in low income countries and lower middle income countries in the same direction.

The research shows that unemployment affects low income countries, and lower middle income countries, secondary education with statistical significance at the level of .05 and in the same direction ($\beta_2 = 0.908276$, $p < .05$) according to the research hypothesis. Discussion can be made that when considering Equation 2, Unemployment variables had a significant relationship with secondary education expenditures, with the p-Value of 0.0355 and the Coefficient of 0.908276 being one-way relationships. Considering the unemployment rate, it was found that the average equaled 7.2004, which was quite high. Therefore, it is in line with the theory that unemployment is a factor that affects increases in government expenditures in education. An increase in unemployment leads to a process of negotiation on wages, causing the government to allocate educational expenses in order for the people to have an education.

This is in line with (Fredriksen & Fossberg, 2014), the Case for investing in secondary education in sub-Saharan Africa (SSA): challenges and opportunities. A government under such pressure influences the need to accelerate the allocation of education expenditures for the development of secondary human capital in order to support the country in a global context.

Moreover, it is consistent with (Singh, 2003), Skill, Education and Employment: A Dissenting Essay. This study showed the reason why high unemployment is caused by a shortage of skilled labor and education. Therefore, when planning manpower in India regarding labor skills, they found that in the Indian labor market unskilled and

low-skilled labor prevailed. For this reason, the policy must be accelerated by allocating education expenditures at the secondary level because it is the class that enters the labor market after graduation. By using the money for educational investment to provide training and develop skills for the potential of the population, it is good for the country.

But, it's different from the results of (Cristescu, 2017), whose study The Impact of Education on the Unemployment Rate in the Southern European Model showed results that the unemployment rate is in the opposite direction to the allocation of education expenditures, which is not in accordance with the research hypothesis. The reason is that the higher the unemployment, the lower the level of education expenditure.

Considering the results of this study, the researchers concluded that unemployment affects low income countries' and lower middle income countries' secondary education because high unemployment is a factor driving the state to allocate secondary education expenditures for higher education and vocational skills in response to the interests of employers.

7) Hypothesis: Corruption affects secondary education expenditures in low income countries and lower middle income countries in the same direction and opposite direction.

From the results of the study, the hypothesis was not considered ($\beta_4 = 8.151520$, $p < .10$). It can be argued that, based on the findings of Equation 2, the Corruption variable measured by Control of Corruption had a significant relationship with secondary education expenditures, with the p-Value equal to 0.0711 and the Coefficient of 8.151520 in a positive relationship. According to the theory of Kaufmann et al. (CESifo DICE, 2011), the benchmarks are set between -2.5 to 2.5. If it is a negative value, it indicates controlling of corruption (low corruption), and if there is a positive value for controlling corruption it indicates high corruption. Therefore, the research results are in a positive direction, which means that there is low corruption and it does not conform to the hypothesis set by the researcher.

The study of this researcher is different from the study of (Suryadarma, 2012), on how corruption diminishes the effectiveness of public spending on education in Indonesia. Suryadarma suggests that corruption in Indonesia makes it one of the most corrupt countries in the world. The research hypothesis is that corruption has a positive impact on the allocation of education expenditures covering the secondary level. The reasons that support the study suggest that the effects of corruption have an influence on the effectiveness of the expenditure allocation of education in Indonesia. Therefore, it can be concluded that, especially if the country has a high level of corruption, it will cause the state to accelerate the allocation of secondary education expenses for the benefit of the country's development potential. In (Coco & Lagravinese, 2010) study, Incentive Effects on Efficiency in Education Systems' Performance, their research hypothesis was that corruption influences the performance of the school. It discussed the effect that corruption has on work in educational institutions, especially at the secondary level, which, if further corrupting, will reduce the effectiveness of the secondary education system. The researcher suggests that the more corruption there is, the more secondary education expenditures are needed for work effectiveness. For this reason, corruption is a factor that influences education spending.

Therefore, low corruption affects low income countries and lower middle income countries in secondary education.

5.3 Contribution to Theory

5.3.1 Government Revenue and Education Expenditures

In the context of poor countries, the social status of the majority of the population has insufficient income for adequate sustenance. Therefore, government revenue is a factor that is related to basic education expenditure. According to the study, the researchers have theoretical suggestions as follows:

1) The government should collect tax from the rich, such as inheritance taxes or various donations, to be used as part of the national development budget, and invest it in education for those with low incomes to support primary education.

2) Various taxes that the state can collect include both direct taxes such as personal and corporate income taxes, and indirect taxes from VAT on consumer products. For this part of the income, the state should provide the collected revenue as a budget allocation to the primary education level.

3) Money from government lotteries that can be distributed in each draw should be allocated to the basic education sector. That is, among money circulated in the form of government lottery sales, a portion of the profits are deducted as a share of the allocation for educational investment policies.

5.3.2 Unemployment and Educational Expenditures

Supporting the theory that higher unemployment leads to more government investment approval in education, especially at the high school level, the researcher makes the following theoretical suggestions:

1) Those in the unemployment group have instability in their quality of life. Therefore, if a country with a high unemployment group is a reflection of the low quality of life of the population in that state, the government should invest in the secondary education sector so that the higher educated population will receive employment and receive labor benefits.

2) A state with a high unemployment rate reflects entrepreneurs when considering employment because the population has insufficient education, knowledge, skills and potential for their careers. Therefore, the government should support the allocation of secondary education expenditures and focus on investing in the development of curriculums that enhance various professional skills to support confidence in the career potential of the population.

5.3.3 Corruption and Educational Expenditures

From the study, it can be observed that corruption instigates a theoretical suggestion as follows:

1) The state should have high measures to control corruption, showing that when the country has low corruption, it affects the budget and accesses the education sector more fully because the state does not use the money in a wrongful way. For this reason, when the budget reaches the education sector, there is greater investment in teaching and curriculum development. Schools are more reliable and are motivated to increase enrollment rates at the secondary level.

5.3.4 Suggestions for Further Research

1) Further research should study rich countries in order to get the results of that study in a new context regarding variables that influence the allocation of education expenses.

2) Further research should study a comparison between poor countries and rich countries in order to analyze which variables are significant, in which countries, and how they influence education expenditures.

3) Further research should study the unemployment variable and corruption, and their influence of the expenditure allocation of secondary education in Thailand.

BIBLIOGRAPHY

Alhanaqtah, O. J. M., & Alhanaqtah, V. V. A. (2018). Governance indicators for strategic business decisions: Diversity of western asian countries in terms of democracy. *Asian Economic and Financial Review,* 8(3), 378–393.

Arnon Thepsumroeng. (2019). The study of income distribution in Thailand: A case of gini coefficient of household in 2009–2017. *Journal of Social Development,* 21(1), 41–58.

Atkinson, A. B., & Stiglitz, J. E. (1987). *Lectures on public economics*. Singapore: McGraw-Hill.

Avelino, G., Brown, D. S., & Hunter, W. (2005). The effects of capital mobility, trade openness, and democracy on social spending in Latin America, 1980–1999. *American Journal of Political Science,* 49(3), 625–641. doi:10.2307/3647736

Balatsky, E. (2012). Wagner's law, the armey-rahn curve, and the paradox of wealth. *Problems of Economic Transition,* 54(12), 40–54. doi:10.2753/PET1061-1991541203

Basu, K. (2006). Globalization, poverty and inequality: What is the relationship? what can be done? *World Development,* 34(8), 1361–1373. doi:10.1016/j.worlddev.2005.10.009

Berthelemy, J. C. (2006). Globalization and challenges for education in least developed countries. *Globalization and Education Pontifical Academy of Social Sciences, Extra Series* 7(2008), 166–190.

Blanchardy, E., & Olney, W. W. (2017). *Globalization and human capital investment: Export composition drives educational attainment*. Paper presented at the Seminar participants at the NBER.

Brown, D. S., & Hunter, W. (2004). Democracy and human capital formation: Education spending in Latin America, 1980 to 1997. *Compaeative Political Studies,* 37(7), 842–864. doi:10.1177/0010414004266870

Burnett, N., & Felsman, C. (2012). Post-2015 Education MDGS. Retrieved from https://www.odi.org/sites/odi.org.uk/files/odi-assets/publications-opinion-files/7776.pdf

Busemeyer, M. R. (2007). Determinants of public education spending in 21 OECD democracies, 1980-2001. *Journal of European Public Policy*, 14(4), 582-610.

Campbell, N. D. (2003). Do lottery funds increase educational expenditure? evidence from georgia's lottery for education. *Journal of Education Finance*, 28(3), 383-401.

CESifo DICE. (2011). *The worldwide governance indicators (WGI)*. Retrieved from https://www.cesifo-group.de/DocDL/dicereport411-db4.pdf.

Coady, D. (2018). Enhancing domestic tax capacity is essential for strengthening social protection and developing human capital. *Finance and Development*, 55, 24-27.

Coco, G., & Lagravinese, R. (2010). Incentive effects on efficiency in education systems' performance. *ECINE Society for the Study of Economic Inequality, Working Paper Series* 2012-270(October 2012), 1-21.

Cristescu, A. (2017). The impact of education on the unemployment rate in the Southern European model. *Romanian Journal of Regional Science*, 11(1), 62-75.

Dahlum, S., & Knutsen, C. H. (2017). Do democracies provide better education? revisiting the democracy-human capital link. *World Development*, 94, 186-199.

Easton, D. (1965). *A systems analysis of political life*. New York: Wiley.

Education Policy and Data Center (EPDC.), & UNESCO. (2009). *Estimating the costs of achieving education for all in low-income countries*: United Nations Educational, Scientific and Cultural Organization.

Forte, F. (2010). *Principles of public economics* (4th ed.). United Kingdom: Edward Elgar.

Frank, N. (2017). Making the grade: The contribution of education expenditure to economic growth. *Undergraduate Economic Review*, 14(1), 1-15.

Fredriksen, B., & Fossberg, C. H. (2014). The case for investing in secondary education in sub-Saharan Africa (SSA): Challenges and opportunities. *International Review of Education,* 60(2), 235–259. doi:10.1007/s11159-014-9407-3

Grigoli, F. (2014). A hybrid approach to the estimating the efficiency of public spending on education in emerging and developing economies. *IMF Working Paper,* 14(19), 1–22.

Gujarati, D. N. (2003). *Basic econometrics* (4th ed.). Singapore: McGraw Hill.

Gylfason, T., & Gylfi Zoega, G. (2002). Education, Social equality and Economic growth: A view of the landscape. *CESifo Economic Studies,* 49(4), 557–579. doi:10.1093/cesifo/49.4.557

Hakhverdian, H. (2012). Institutional trust, education, and corruption: A micro-macro interactive approach. *The Journal of Politics,* 74(3), 739–750. doi:10.1017/s0022381612000412

Hecock, R. D. (2006). Electoral competition,globalization, and subnational education spending in Mexico, 1999–2004. *American Journa and Political Science,* 50(4), 950–961.

Heyneman, S. P. (2015). The history and problems in the making of education policy at the World Bank, 1960–2000. *International Perspectives on Education and Society,* 6, 23–58.

Jajkowiczm, O., & Drobiszova, A. (2015). The effect ofcorruption ongovernment expenditure allocation in OECD countries. *Acta Universitatis Agriculturae et Silviculturae Mendelianae Brunensis,* 63(4), 1251–1259.

Kaufmann, D., Kraay, A., & Mastruzzi, M. (2003). Worldwide Governance Indicators. Retrieved from http://www.govindicators.org/

Kaur, H., Baharom, A. H., & Habibullah, M. S. (2014). Linkages between education expenditure and economic growth: Evidence from 'CHINDIA'. *Journal of Business Management and Economics,* 5(5), 109–119.

Kirati Yosyingyong. (2006). *Social administration: Concept & process*. Bangkok: Misterkopy.

Krejcie, R. V., & Morgan, D. W. (1970). Determining sample size for research activities. *Educational and Psychological Measurement*, 30(3), 607-610.

Kuckuck, J. (2012). *Testing wagners's law at different stages of economic development: A historical analysis of five Western European Countries*. Osnabrueck: Institute of Empirical Economic Research.

Lindert, P. H. (2004). *Growing public: Social spending and economic growth since the eighteenth century* (Vol. 2). Cambridge: Cambridge University Press.

Lovell, M. C. (1978). Spending for education: The exercise of public choice. *The Review of Economics and Statistics*, 60(4), 487-495.

Maertens, M., & Verhofstadt, E. (2013). Horticultural exports, female wage employment and primary school enrolment: Theory and evidence from Senegal. *Food Policy*, 43, 118-131. doi:10.1016/j.foodpol.2013.07.006

Mallick, L., Das, P. K., & Prashan, K. (2016). Impact of educational expenditure on economic growth in major Asian countries: Evidence from econometric analysis. *Theoretical and Applied Economics*, 2(607), 173-186.

Natchada Kongsri. (2017). From the MDGs to the SDGs, development goals change for sustainability. Retrieved from https://sdgmove.com/2017/08/13/mdgstosdgs/

OECD. (2010). Counter-cyclical economic policy. Retrieved from http://www.oecd.org/economy/public-finance/45105376.pdf

Omojimite, B. U. (2010). Education and economic growth in Nigeria: A granger causality analysis. *An International Multi-Disciplinary Journal, Ethiopia*, 4(3a), 90-108.

Omotor, D. G. (2004). An analysis of federal government expenditure in the education sector of Nigeria: Implications for national development. *Journal of Social Sciences*, 9(2), 105-110. doi:10.1080/09718923.2004.11892438

Omwami, E. M., & Omwami, R. K. (2010). Public investment and the goal of providing universal access to primary education by 2015 in Kenya. *International Journal of Educational Development,* 30(3), 243–253.

Orapin Sopchokchai. (1998). *Good governance*. Bangkok: Thailand Development Research Institute.

Pantuosco, L., Seyfried, W., & Stonebraker, R. (2007). The impact of lotteries on state education expenditures: Does earmarking matter? *The Review of Regional Studies,* 37(2), 169–185.

Phichak Phutrakhul. (2018). Public expenditures in dimension of human capital development. *Nakhon Lampang Buddhist College's Journal,* 7(1), 352–367.

Prasad, K. V. E. (1979). Education and unemployment of professional manpower in India. *Economic and Political Weekly,* 14(20), 881–888.

Pritchett, L., & Filmer, D. (1999). What education production functions really show: A positive theory of education expenditures. *Economics of Education Review,* 18(2), 223–239.

Priya, K., Devi, M. K., & Nagarajan, S. (2015). Spending on education determinant of economic growth using structural equation modeling. *International Journal of Applied Engineering Research,* 10(7), 17991–18005.

Rao, H., & Lili Jin, L. (2012). *An empirical analysis on the relationship between education expenditure and economic growth in China.* Paper presented at the Proceedings of 2012 2nd International Conference on Social Sciences and Society (ICSSS 2012).

Roser, M., & Ortiz-Ospina, E. (2016). Democracy. Retrieved from https://ourworld indata.org/democracy

Ross, J. (2017). Key trends in globalisation. Retrieved from http://ablog.typepad.com/ keytrendsinglobalisation/2017/09/index.html

Shahabadi, A., Nemati, M., & Hosseinidoust, S. E. (2018). The effect of education on income inequality in selected Islamic countries. *IJAPS*, 14(2), 61–78.

Singh, C. S. K. (2003). Skill, education and employment: A dissenting essay. *Economic and Political Weekly*, 38(31), 3271–3276.

Stasavage, D. (2005). Democracy and education spending in Africa. *American Journal of Political Science*, 49(2), 343–358. doi:10.2307/3647681

Sukhothai Thammathirat Open University. (2011). Keynesian economics. Retrieved from https://www.stou.ac.th/Schools/Sec/Services/e-Learning2/02-01.html

Suryadarma, D. (2012). How corruption diminishes the effectiveness of public spending on education in Indonesia. *Bulletin of Indonesian Economic Studies*, 48(1), 85–100. doi:10.1080/00074918.2012.654485

Theera Nuchpiam. (2017). Human development. In *Human development in global context*. Nonthaburi: Sukhothai Thammathirat Open University.

Timofeyev, Y. (2011). How corruption affects social expenditures: Evidence from Russia. *Global Journal of Business Research*, 5(4), 39–51.

Ulu, M. I. (2018). The effect of government social spending on income inequality in oecd: A panel data analysis. *International Journal of Economics Politics Humanities and Social Sciences*, 1(3), 184–202.

UNESCO. (2014). Education for All 2000-2015: Only a third of countries reached global education goals. Retrieved from https://en.unesco.org/news/education-all-2000-2015-only-third-countries-reached-global-education-goals

UNESCO. (2018). Measuring household expenditure on education. Retrieved from http://uis.unesco.org/sites/default/files/documents/measuring-household-expenditure-education-2018-en.pdf

West, A., Pennell, H., & West, R. (2000). New labour and education spending: The Need to reform the funding of schools. *New Economy*, 7(2), 92–97. doi:10.1111/1468-0041.00133

Wils, A. (2015). *Reaching education targets in low and lower middle income countries: Costs and finance gaps to* 2030 *for pre-primary, primary, lower- and upper secondary schooling*. Retrieved from https://en.unesco.org/gem-report/sites/gem-report/files/background%20paper%20-%20costing%20education.pdf

World Bank. (2013). Poverty headcount ratio at $1.90 a day (2011 PPP) (% of population). Retrieved from https://data.worldbank.org/indicator/ SI.POV .DDAY?locations=ZJ-8S-Z4-Z7-ZQ-ZG&start=2013&end=2013&view=bar

World Bank. (2016). Population, total. Retrieved from https://data.worldbank.org /indicator/SP.POP.TOTL

World Bank. (2017a). GDP (current US$). Retrieved from https://data.worldbank. org/indicator/ny.gdp.mktp.cd

World Bank. (2017b). Low Income Countries. Retrieved from https://www.espa.ac.uk/ files/espa/AO-ESPA-2016-Annex%201-Low-income-countries.pdf

World Bank. (2018a). Countries and economies. Retrieved from https://data.worldbank .org/country

World Bank. (2018b). In Richer Countries, Human Capital is a Larger Share of Total Wealth. Retrieved from http://www.worldbank.org/en/news/feature/2017/12/15 /year-in-review-2017-in-12-charts

World Bankc. (2017). New country classifications by income level: 2017–2018. Retrieved from https://blogs.worldbank.org/opendata/new-country-classifications-income-level-2017-2018

Yingxiu, Y. (2006). An inspection on the gini coefficient of the budget education public expenditure per student for China's basic education. *Frontiers of Education in China*, 1(2), 258–269. doi:10.1007/s11516-006-0006-3

Yuki, T. (2003). Distribution of public education spending for the poor: The case of Yemen. *Asia Pacific Education Review*, 4(2), 129–139. doi:10.1007/BF03025355

Zhang, X. (2018). Structural change with public educational expenditure: Evidence from the people's republic of China. *ADBI Working, Paper* 831, 1–30.

APPENDIX

Table 1 Research Instrument

Country Name	Real GDP	Export	Inequality	Democracy	Government Revenue	Unemployment	Corruption	Pri Edu Exp	Sec Edu Exp
Benin_average	644.8467	17.9114	43.26667	1	16.0862717	1.430925935	-0.615169	10.89751	17.8150
Burkina Faso_average	391.3572	10.6957	43.2	0	14.92338439	3.770740703	-0.228634116	20.9331	19.2337
Burundi_average	260.5725	9.62764	36.9	1	15.42142379	1.628374476	-1.079625	12.3949	44.1733
Cabo Verde_average	1990.015	27.8073	49.85	1	26.82505357	11.13111111	0.592943611	16.4141	17.757
Cote D'ivoire_average	1548.637	39.3808	40.59	1	15.77538005	3.817296293	-0.828966632	14.16967929	33.75957613
Central African Republic_average	489.869	20.6595	53.7	0	10.91421145	6.222814825	-1.137562453	5.486062532	16.27006912
Congo,Dem.Rep. _average	682.0034	27.6641	42.15	1	6.735346904	3.67170367	-1.412719737	5.14566493	7.40585017
Egypt, Arab Rep._average	1502.308	19.8222	31.3625	1	30.7682705	10.47774082	-0.606996321	9.974599838	13.97834015
Eswatini_average	2616.996	62.9583	55.03333	1	23.62327624	24.18396286	-0.297745858	11.78638002	30.56768408
Ethiopia_average	262.6939	11.3756	35.4	1	11.22599679	5.453629635	-0.612951195	9.549388681	20.86686974
Gambia, The_average	511.5925	33.4635	43.825	1	11.20257497	9.342407403	-0.600079332	9.144467762	13.14973672
Ghana_average	1046.505	23.3241	39.16667	1	17.45518639	5.449925944	-0.156504489	14.00806907	29.35405731
Kenya_average	832.205	26.3247	46.8	1	21.021376	10.8005926	-0.993925247	17.98763517	18.90679207
Lesotho_average	709.2398	23.4814	56.25	1	47.60830912	32.33607412	0.044986468	23.30657205	63.53378016
Madagascar_ average	530.0654	19.9049	42.875	1	33.00369445	3.892592598	-0.489576868	8.142534953	13.33175689
Malawi_average	367.1398	24.2959	50.66667	1	16.25211663	7.185629562	-0.569801095	8.923507849	21.54442332
Mali_average	527.8467	18.224	40.5	1	14.10238251	6.569074074	-0.667380921	11.04824605	33.26635403
Morocco_average	1856.926	24.5038	39.78333	1	24.67472021	12.71022217	-0.243569163	17.09716861	38.98516666
Mozambique_average	282.2421	18.703	50.05	1	23.72416646	22.71103689	-0.571295642	12.81285318	56.97714345
Rwanda_average	400.9161	10.5694	48.2	1	13.00184985	1.393740737	0.028338274	7.540823981	35.21777365
Senegal_average	1188.642	24.796	43.24	1	18.78815917	7.042370355	-0.203131821	18.06071734	28.18451257
Sierra Leone_average	417.0956	21.6627	37.1	1	9.432568066	3.818666688	-0.874196853	6.431898022	10.70699205
Tanzania_average	599.0092	17.4426	37.675	1	17.01976358	3.669370325	-0.602123942	11.09218799	12.43457985
Togo_average	548.1564	39.1952	43.76667	1	18.27564109	1.874666664	-0.893821695	11.20457624	22.02608752
Tunisia_average	2575.197	37.4976	41.5	0	29.20930191	15.23499994	-0.126686289	16.26911355	26.98726097

Country Name	Real GDP	Export	Inequality	Democracy	Government Revenue	Unemployment	Corruption	Pri Edu Exp	Sec Edu Exp
Zimbabwe_average	1205.542	27.6144	43.2	1	20.6503343	5.219481468	-1.215396084	19.1960001	30.43348026
Bangladesh_average	497.6295	10.0839	30.35556	1	9.620592276	3.562333345	-1.070659574	8.214522476	11.40225146
Bhutan_average	1332.639	30.8313	38.8	1	18.23770023	2.279999989	0.985898284	9.354725079	33.58957454
Georgia_average	2802.611	34.0582	38.35238	1	19.03067325	12.96329629	-0.133821247	11.36980693	14.24339008
India_average	693.9776	10.5503	35.1	1	12.19364521	3.891000024	-0.393656005	10.67948898	18.7216335
Indonesia_average	1810.142	23.7818	39.5	1	18.06271937	5.19222226	-0.7448486	11.92780268	9.865803719
Lao PDR_average	819.0736	25.4668	34.72	0	12.19399799	1.491740715	-1.056711837	6.941216578	10.61384892
Mongolia_average	2142.68	43.6861	33.03333	1	24.12207261	5.971111139	-0.438176189	13.42892005	18.38266627
Myanmar_average	410.2004	6.08778	38.1	0	11.3251805	0.84351852	-1.315765553	7.606170177	11.29636955
Nepal_average	397.4451	12.6153	37.26667	1	12.6978394	2.747000019	-0.692364305	12.13093141	11.22609307
Pakistan_average	712.5917	12.8113	31.55455	1	14.72480353	4.988851881	-0.947193084	8.336752415	12.41420746
Sri Lanka_average	1521.788	27.9462	37.125	1	16.23576612	7.966629682	-0.261831563	6.71674988	7.979226589
Timor-Leste_average	2836.832	73.4277	30.8	1	54.25368284	7.024740714	-0.567672788	5.79580754	4.173362613
Vanuatu_average	2653.658	43.8267	37.6	1	20.6827318	5.476148146	0.099438968	13.55267429	60.45236731
Bolivia_average	1585.247	25.9037	52.26111	0	16.73488969	3.837148137	-0.627561932	17.50437007	15.33786096
El Salvador_average	2661.644	25.6126	47.26818	1	19.93963508	6.270037033	-0.446744547	11.08361995	11.2829507
Honduras_average	1573.643	37.6386	54.83333	1	18.10073845	4.060777744	-0.860160242	20.29131508	20.01650047
Nicaragua_average	1663.02	26.8849	50.6	1	14.84283428	9.059444392	-0.729333453	8.252669803	4.578706689
Moldova_average	1449.244	47.3243	33.665	1	29.3108246	7.203592592	-0.724580011	39.10953119	37.5242104
Ukraine_average	2814.236	44.5428	27.92632	1	32.64370195	8.150814922	-0.971083226	35.21405983	27.96232414

BIOGRAPHY

NAME	Miss Wisaruta Thongkamkaew
ACADEMIC BACKGROUND	Public Administration Mahidol University 2009, year of graduation. Political Science Ramkhamhaeng University 2013, year of graduation. History Prince of Songkla University 2007, year of graduation. English for Specific Careers (Tourism) Sukhothai Thammathirat Open University 2013, year of graduation.
EXPERIENCES	Year 2009 - current Lecturer of Public Administration Program Songkhla Rajabhat University, Songkhla 90000