

NOT ALL INEQUALITIES ARE BORN EQUAL: THE  
IMPLICATIONS OF INCOME INEQUALITY AND  
GENDER INEQUALITY ON POVERTY ACROSS  
COUNTRIES

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A research project submitted in partial fulfilment of  
the requirement for the degree of

BACHELOR OF FINANCIAL ECONOMICS (HONS)

UNIVERSITI TUNKU ABDUL RAHMAN

FACULTY OF BUSINESS AND FINANCE  
DEPARTMENT OF ECONOMICS

APRIL 2018

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- 1) This undergraduate research project is the end result of our own work and that due acknowledgement has been given in the references to ALL sources of information be they printed, electronic, or personal.
- 2) No portion of this research project has been submitted in support of any application for any other degree or qualification of this or any other university, or other institutions of learning.
- 3) Equal contribution has been made by each group member in completing the research project.
- 4) The word count of this research report is 13886.

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## **ACKNOWLEDGEMENT**

First of all, we would like to express million thanks to our undergraduate project's supervisor, Dr Wong Chin Yoong, associate Professor for all the supervision and guidance in our research. With the guidance of him, we can smoothly finish this research on time. Besides, we would really appreciate to Dr Wong Chin Yoong for his patience and knowledge in motivating us to complete this research. Next, we would also want to appreciate to our course mate for their accompanied and support in mentally. Furthermore, we would like to take this opportunity to thanks the Universiti Tunku Abdul Rahman (UTAR) for giving us the chance to learn and carry out this research. UTAR also had provided us good environment and informational database to complete our research. Lastly, we would also want to thanks to each group members for their cooperation and suggestion in complete this research. Without anyone of them, we might unable to finish this research.

## TABLE OF CONTENTS

|                             | Page   |
|-----------------------------|--------|
| Copyright @ 2018 .....      | i      |
| Declaration .....           | ii     |
| Acknowledgment .....        | iii    |
| Table of Contents .....     | iv - v |
| List of Tables .....        | vi     |
| List of Figures .....       | vii    |
| List of Abbreviations ..... | viii   |
| Preface .....               | ix     |
| Abstract .....              | x      |

### CHAPTER 1: RESEARCH OVERVIEW

|                                 |         |
|---------------------------------|---------|
| 1.1 Research Background .....   | 1- 7    |
| 1.2 Problem Statement .....     | 8       |
| 1.3 Research Objective          |         |
| 1.3.1 General Objective .....   | 9       |
| 1.3.2 Specific Objective .....  | 9       |
| 1.4 Research Question .....     | 9       |
| 1.5 Significance of Study ..... | 10 - 11 |
| 1.6 Chapter Layout .....        | 11      |

### CHAPTER 2: LITERATURE REVIEW

|                                              |         |
|----------------------------------------------|---------|
| 2.1 Introduction .....                       | 12      |
| 2.2 Poverty VS Inequalities .....            | 12-16   |
| 2.3 Poverty VS Other Related Variables ..... | 17- 20  |
| 2.3 Research Gap .....                       | 20 - 21 |

## CHAPTER 3: METHODOLOGY

|                                                     |       |
|-----------------------------------------------------|-------|
| 3.1 Introduction .....                              | 22-23 |
| 3.2 Data Description .....                          | 23-24 |
| 3.3 Regression Model in Linear-Logarithm Form ..... | 24-28 |
| 3.4 Hypothesis .....                                | 28-34 |
| 3.5 Method .....                                    | 34    |

## CHAPTER 4: RESULT AND DISCUSSION

|                                                                 |         |
|-----------------------------------------------------------------|---------|
| 4.1 Overview .....                                              | 35-37   |
| 4.2 Econometric Problems .....                                  | 38 - 40 |
| 4.3 Baseline Results: Does Inequality Matter for Poverty? ..... | 41 - 43 |
| 4.4 The Role of Political System and Religion                   |         |
| 4.4.1 Revisiting The Implication of Income Inequalities .....   | 44 - 46 |
| 4.4.2 Revisiting The Implication of Gender Inequalities .....   | 46 - 51 |

## CHAPTER 5: DISCUSSION, CONCLUSION AND IMPLICATIONS

|                                               |         |
|-----------------------------------------------|---------|
| 5.0 Introduction .....                        | 52      |
| 5.1 Discussions of Major Findings .....       | 52 -53  |
| 5.2 Implications of the Study                 |         |
| 5.2.1 Policy Implications .....               | 53 -54  |
| 5.2.2 Literature Implications .....           | 54 -55  |
| 5.3 Limitations of the Study .....            | 55 -56  |
| 5.4 Recommendations for Future Research ..... | 56 - 57 |
| 5.5 Conclusion .....                          | 57 - 58 |
| References .....                              | 59 - 66 |



**LIST OF TABLES**

|                                                                                          | Page |
|------------------------------------------------------------------------------------------|------|
| Table 3.1: Indicator and Sources of Variables                                            | 24   |
| Table 3.2: List of Countries with Dummy Variables                                        | 27   |
| Table 4.1: Descriptive Statistic for The Year 2002                                       | 35   |
| Table 4.2: Descriptive Statistic for The Year 2011                                       | 36   |
| Table 4.3: Summary Results of Poverty and Its Independent Variables<br>in Year 2002      | 39   |
| Table 4.4: Summary Result of Poverty and Its Independent Variables<br>in Year 2011       | 40   |
| Table 4.5: Summary Result of Political and Religion on Income<br>Inequality in Year 2002 | 48   |
| Table 4.6: Summary Result of Political and Religion on Income<br>Inequality in Year 2011 | 49   |
| Table 4.7: Summary Result of Political and Religion on Gender<br>Inequality in Year 2002 | 50   |
| Table 4.8: Summary Result of Political and Religion on Gender<br>Inequality in Year 2011 | 51   |

**LIST OF FIGURES**

|                                                                                                 | Page |
|-------------------------------------------------------------------------------------------------|------|
| Figure 1.1: The Global Poverty Gap at \$1.90 Per Day (in million international-\$) in Year 2002 | 2    |
| Figure 1.2: The Global Poverty Gap at \$1.90 Per Day (in million international-\$) in Year 2011 | 3    |
| Figure 1.3: GINI Index in Year 2002                                                             | 5    |
| Figure 1.4: Seats in National Parliament Held by Women (% of total) in Year 2002                | 5    |
| Figure 1.5: GINI Index in year 2011                                                             | 6    |
| Figure 1.6: Seats in National Parliament Held by Women (% of total) in year 2011                | 7    |

### **LIST OF ABBREVIATIONS**

|      |                                                        |
|------|--------------------------------------------------------|
| UNDP | United Nations Development Programme                   |
| OECD | Organisation for Economic Co-operation and Development |
| GDP  | Gross Domestic Product                                 |
| UN   | United Nations                                         |
| OLS  | Ordinary Least Square                                  |

## PREFACE

*“Like slavery and apartheid, poverty is not natural. It is man-made and it can be overcome and eradicated by the actions of human beings”*

*-Nelson Mandela*

How does poverty a man-made issue? This inspired us to explore for the answer. We had studied many works from past researchers. Some of them discovered the mechanism of inequalities under a poverty environment. They proved that inequalities dampen the standard living of the poor. In other words, the poor become poorer. And it is a known fact that inequalities is one of the man-made issue; it is the behaviour of human beings which cause the happening of unequal society. Consequently, poverty is not natural. We aim to have a clearer understanding about the internal operation of inequalities on poverty. For instance, does the inequalities implications similar in all nations? Will inequalities always do its job in worsening poverty despite of the religious, political and status of the country? By this means, we hope poverty eradication could be done effectively and efficiently with the vision of poverty to become the history in future.

## **ABSTRACT**

Human beings has experienced the agriculture revolution, industrial revolution, until now, the post-industrial society. Hence, there revolution process are meant to improve their standard of living. In fact, poverty have been an issue for many centuries. It is still a concern for many countries and we suspect that inequalities are the obstacles. Our objective is to identify the role of gender inequality and income inequality as the driving force of poverty. Besides that, we also take into account of other environmental effects that influence the inequalities such as whether the country is a Muslim-majority country? A democratic country? Or a developing country? In this study, we use the cross sectional study on 60 countries in 2002 and 2011. We found inequalities do affect the poverty and the result will vary based on the environmental factors.

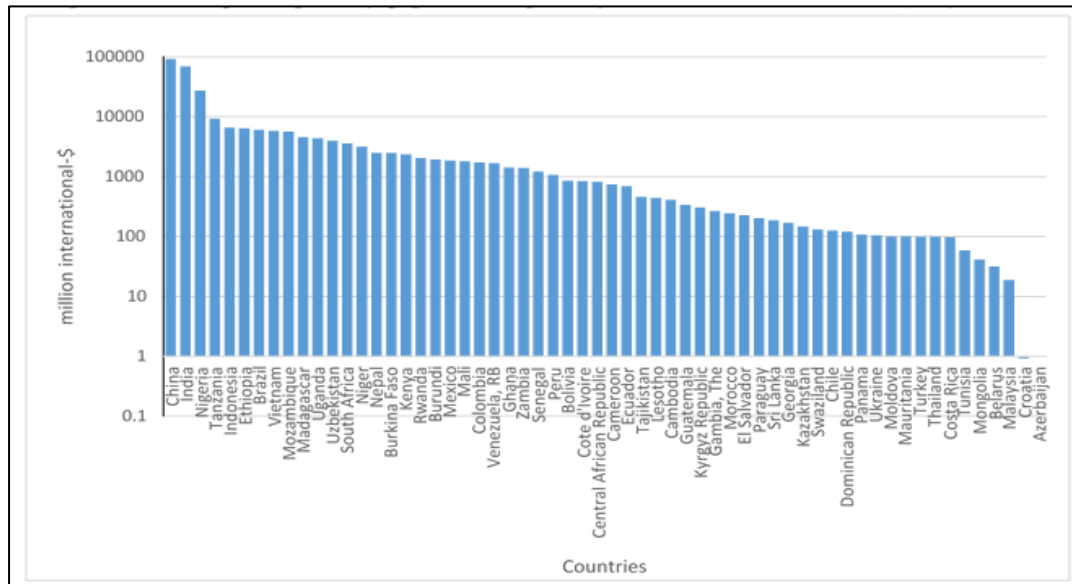
## **CHAPTER 1: RESEARCH OVERVIEW**

### **1.1 Research Background**

Poverty is one of the indicators to measure citizens' welfare in terms of their consumption. It compares basic income of the people with their necessary consumption level in daily life, hence, for those who have difficulty in fulfilling their needs would be said as living in poverty. Feeling gratitude to World Bank for its effort in publishing poverty data since the year of 1981, we able to see a clearer picture on how global poverty fluctuated these years. During the last two centuries, poverty rate had been shrinking, yet, it is still a concern for many countries. As quoted by President Jim Yong Kim of World Bank Group, although the number of people living under poverty line has declined remarkably in developing nations, however, there are still 1.2 billion of them living in extreme poverty, and countries which faced steadily growing number of poor people are mostly located in Sub-Saharan Africa regions (World Bank, 2013).

According to the data we found in World Bank, the countries whom were placed in the top 30 for their global poverty gap at \$1.90 per day in year 2002 were China, India, Nigeria, Tanzania, Indonesia, Ethiopia, Brazil, Vietnam, Mozambique, Madagascar, Uganda, Uzbekistan, South Africa, Niger, Nepal, Burkina Faso, Kenya, Rwanda, Burundi, Mexico, Mali, Colombia, Venezuela, Ghana, Zambia, Senegal, Peru, Bolivia, Cote d' Ivoire and Central African Republic as shown in Figure 1.1 (These countries were the top 30 out of our sample of 60 countries). Poverty gap at \$1.90 per day indicates the average shortfall in income and expenses from the poverty line of \$1.90 each day, thus, nonpoor would have zero shortfall and the higher the poverty gap of a country, the poorer the citizens are.

**Figure 1.1: The Global Poverty Gap at \$1.90 Per Day (in million international-\$) in Year 2002**



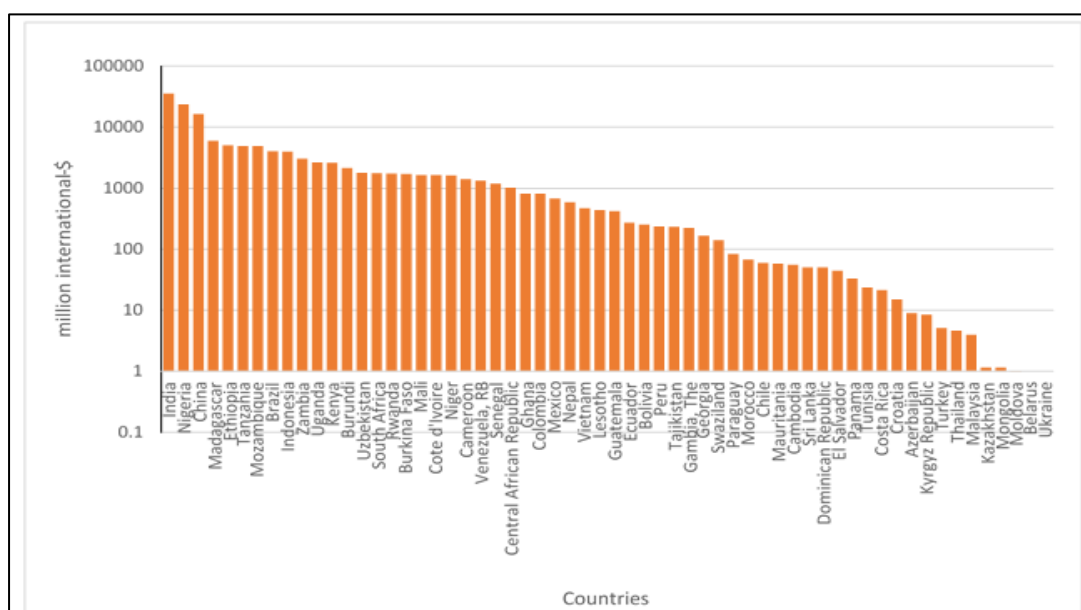
Source: World Bank

On the other hand, the top 30 countries with highest poverty gap in year 2011 were China, India, Nigeria, Tanzania, Indonesia, Ethiopia, Brazil, Vietnam, Mozambique, Madagascar, Uganda, Uzbekistan, South Africa, Niger, Nepal, Burkina Faso, Kenya, Rwanda, Burundi, Mexico, Mali, Colombia, Venezuela, Ghana, Zambia, Senegal, Cote d' Ivoire, Central African Republic, Cameroon and Lesotho as illustrated in Figure 1.2. In short, there was approximately 97% of the top 30 global poverty gap countries in 2002 still had their position in the ranking for the year 2011 according to the source of our data.

In between of 2002 until 2011, it is a fact that many countries have put many efforts in poverty alleviation. Still, there is 97% of countries in 2002 could not get off from the ranking of top 30 global poverty gaps in 2011. For instance, Brazil carried out a conditional cash transfer program, named as Bolsa Familia, involved parents who sent their children to school and health check-ups will receive fixed monthly remuneration. In this way, this program could raise citizens' social empowerment in order to get out of extreme poverty (Ceratti, 2014). Yet,

despite how much exertions the private and government segments forced into the society, poverty is still there. As observed in our Figure 1.1 and Figure 1.2, Brazil is still the top 30 countries in both year.

**Figure 1.2: The Global Poverty Gap at \$1.90 Per Day (in million international-\$) in Year 2011**



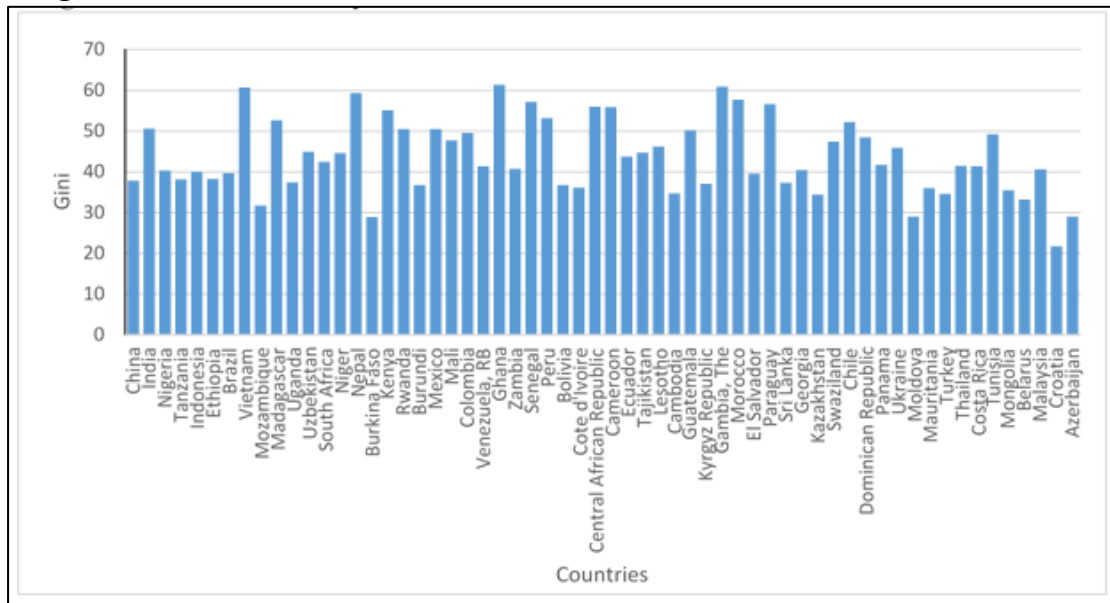
Source: World Bank

According to some researches, these hard works could not encountered poverty precisely are due to the existence of inequalities: income and gender inequality. Janjua and Kamal (2011) quoted that reduction in income inequality is vitals in the work of poverty alleviation. In addition, economic growth of a country could lead itself out of poverty is a known truth (Adams & Richard, 2004). However, Ravallion (2004) proved that income inequality is blocking the effect of economic growth on poverty reduction. This is due to the facts that high levels of inequality restricts the efficiency of any poverty reduction efforts and also raises poverty directly as well (Fosu, 2017). For instance, India's modest poverty alleviation was mainly because of its modest income growth since the mid-1990s (Fosu, 2017). Yet, when inequalities intervene, they altered the influence of growth on poverty reduction; causes the allocation of growth effect beneficial to mostly the non-poor, consequently, making the vulnerable groups expose to more

poverty risks (Dabla-Norris et al., 2015). Many studies also suggested that even if a country have similar level of growth with another nation, inequalities of that certain country still showed its critical role as the encumbrance for the conversion of growth to encounter the poverty rate (Adams & Richard, 2004; Bourguignon, 2003; Easterly, 2000; Epaulard, 2003; Fosu, 2009; Kalwij and Verschoor, 2007; Ravallion, 1997). Generally, lower level of inequalities indicates larger income elasticity, *ceteris paribus*, thus, greater poverty reduction would follow by a unit increase in growth (Richard & Adams, 2004). In addition, gender inequality is not only the issue for the females but it is also the matter for everyone in community as the abolition of gender gap would hike up household income and decline in poverty (Costa, Silva & Vaz, 2009). Therefore, from our point of view, the poverty's data trend should follow as much as how the pattern of the inequalities data moved.

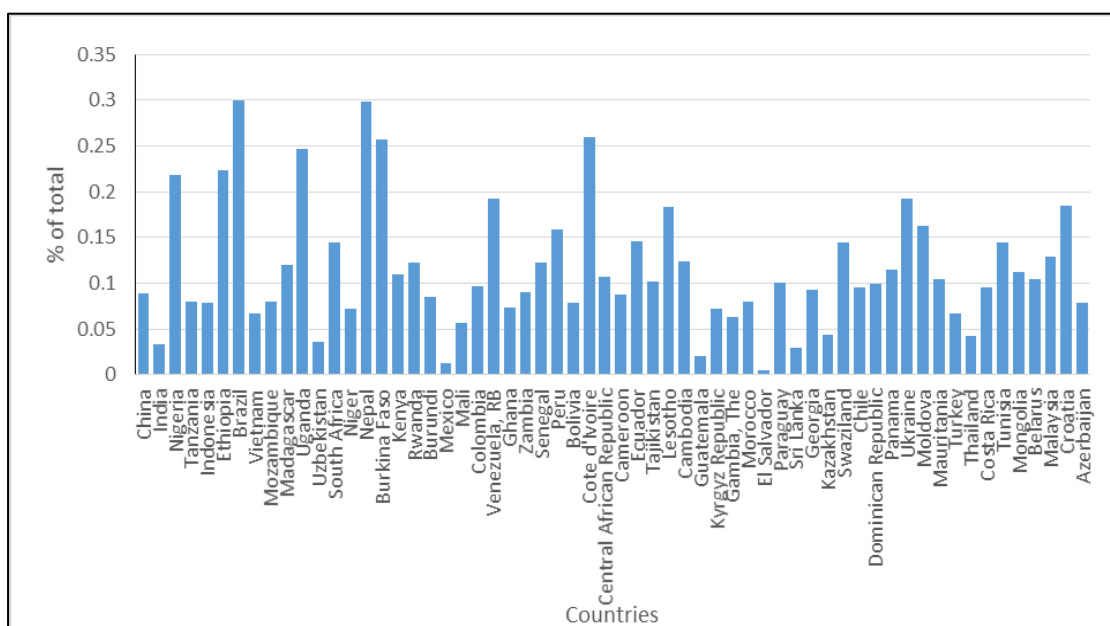
Hence, this leads us to observe the data of income inequality and gender inequality for the year of 2002 and 2011 in pursuance to examine the relationship between inequalities and poverty. For the Figure 1.3, GINI index played as the proxy for income inequality; as in Figure 1.4, percentage of women occupied seats in national parliament determined as the proxy for gender inequality. To show a clearer picture of the correlation between poverty and inequalities, the sequences of countries in both of the figures are arranged by referring to nation arrangement in Figure 1.1. From the Figure 1.3 and Figure 1.4 in comparison with Figure 1.1, we can see that countries who has higher global poverty gap not necessary have higher rate of income inequality nor gender inequality. For example, Vietnam and India were one of the top 30 poverty countries in the 2002, yet, Vietnam's GINI index was as high as Gambia—the non-top 30; India's gender inequality proxy was as low as Sri Lanka—the non-top 30 as well. If inequalities has connection with poverty inconsistent as what we expected, the bar chart of Figure 1.3 and Figure 1.4 should have the shape of decreasing trend from China to Azerbaijan similar to Figure 1.1.

**Figure 1.3: GINI Index in Year 2002**



Source: United Nations Development Programme (UNDP)

**Figure 1.4: Seats in National Parliament Held by Women (% of total) in Year 2002**

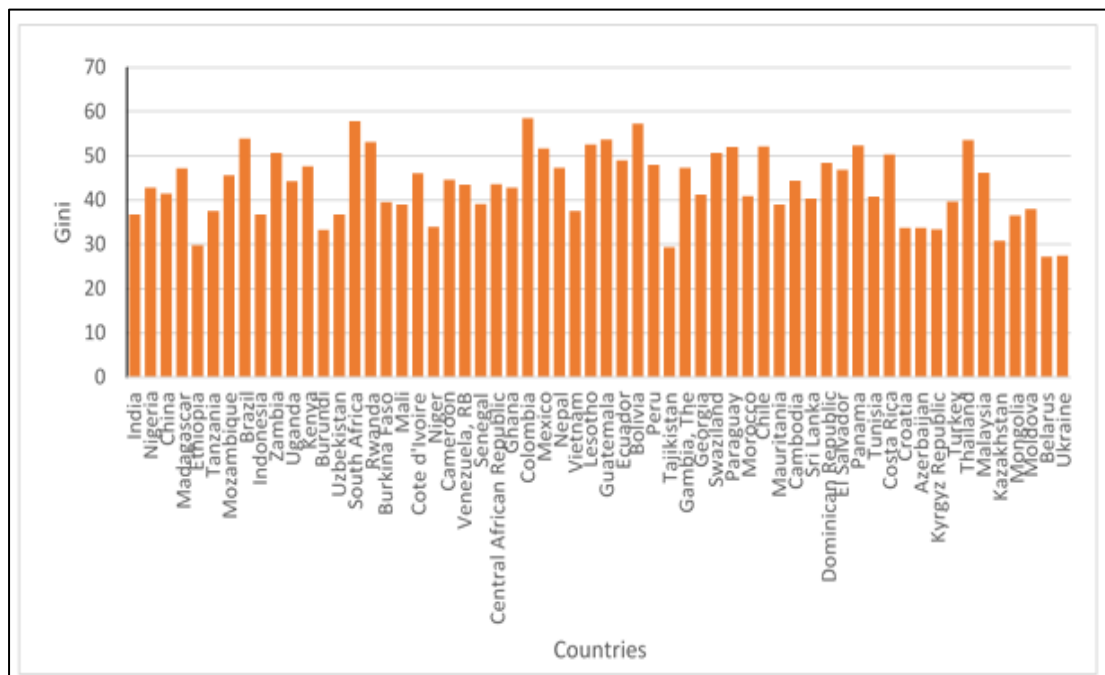


Source: World Bank

Likewise, we studied those inequalities' data for the year 2011, Figure 1.5 and Figure 1.6 in conjunction to Figure 1.2 global poverty gap. Unfortunately, there are still no trace of associations between poverty and inequalities, no definite characteristic which shows that high global poverty gap nation would encompass with serious inequalities. This reflection is consistent with the inference obtained from the year of 2002 data.

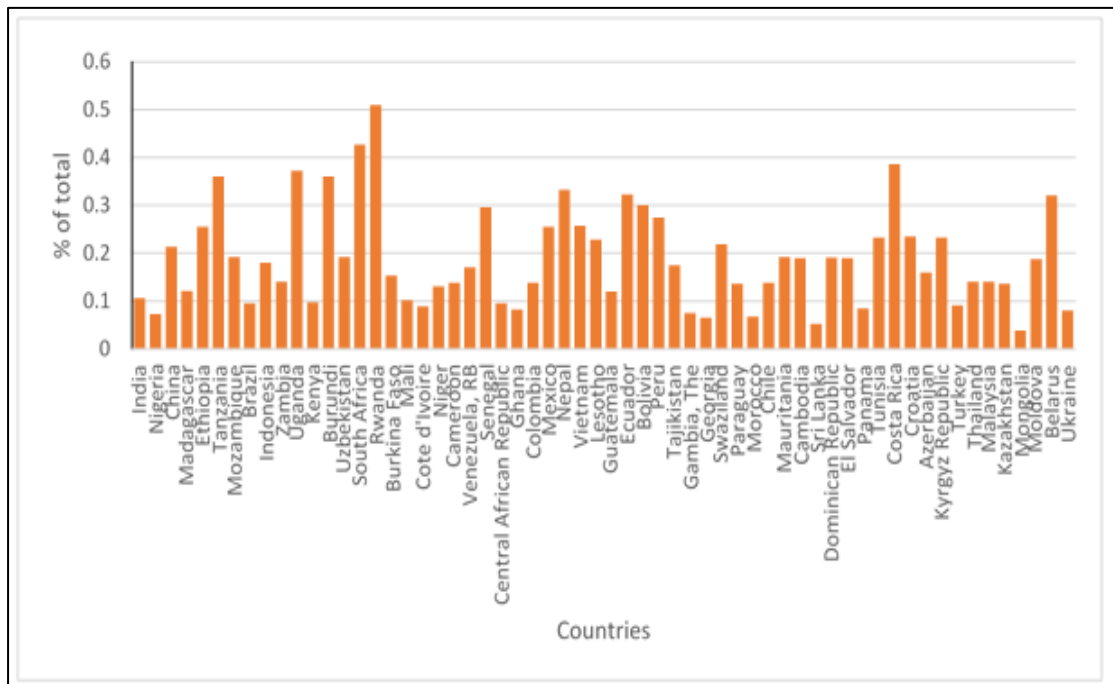
All in all, does this meant that inequalities did not have any relation with poverty? Even with the interference of inequalities, poverty can decrease and increase on its own? If they did have connection, is it the same effect across different regimes? These will be the focus of our research.

**Figure 1.5: GINI Index in year 2011**



Source: United Nations Development Programme (UNDP)

**Figure 1.6: Seats in National Parliament Held by Women (% of total) in year 2011**



Source: World Bank

## 1.2 Problem Statement

Many researchers and policy-makers have continuously struggled to develop ways of reducing poverty. Through their efforts, a significant amount of research and Federal Government funding has been directed toward the poverty issue. For example, there is an organization of donors named Development Assistance Committee of the OECD which formed to reduce the poverty of poor countries by providing foreign aid. Although poverty reduction efforts have started since the last decades, yet, it is still a multi-dimensional occurrence issue which is difficult to unravel until now.

Although previous research focused on key poverty issues applicable to formulating poverty reduction policies, none explicitly considered both the temporal and spatial dynamics of government effort on poverty. Thus, we analyze the effects of local government efforts such as health expenditure, GDP and equal education for both sexes on poverty and also how this relationship changes over space and time. Besides that, there were a good deal of previous research showing that gender and income inequality are key elements that cause poverty problems to occur. Since there is existence of finding, and to verify the finding that had been done by previous researchers, so we re-examined the issue of poverty by collecting our own data in the context of the cross-national economy. So, the problem statement is to analyze the issue of poverty in cross-national by comparing the data of year 2002 and 2011.

## **1.2 Research Objective**

### **1.2.1 General Objective**

The general objective of this study is to identify the role of inequalities as the driving force of poverty. We aim to investigate further the causes of poverty. This research may provide some useful information for understanding the sources of poverty.

### **1.2.2 Specific Objective**

In particular, the study aims to

- 1) To examine the impact of gender inequality on poverty.
- 2) To examine the impact of income inequality on poverty.
- 3) To examine whether the effect of gender inequality and income equality on poverty are conditional in political and religious regime.

## **1.4 Research Question**

This study focus on the following research questions:

- i. Does the gender inequality significantly influence the level of poverty?
- ii. Does the income inequality significantly influence the level of poverty?
- iii. Does the gender inequality and income inequality significantly influence the level of poverty are conditional on political regime and religious?

## 1.5 Significance of Study

Poverty as the term implies that the living standard of one person in each country. This study provides analytical and theoretical statement of the inequalities on poverty. It is undeniably true that poverty is an obstacle for countries' development, employment and basic needs. Therefore, the data from different inequalities on the aspect of gender inequality, income inequalities, Gross Domestic Product (GDP), health and education on 2002 and 2011 are essential to show the poverty gap in each country. It may be said without fear of contradiction that poverty and inequalities is mission impossible to solve for decades, and it is believed that it could not be solved even until the end of the world. Policymakers should set the specified policy to tackle down the each and every inequality eventually can reduce the poverty gap in each country.

This is essential to understand the impact of income and gender inequality towards the poverty. Therefore, the policy-maker should set the policy that benefit from the view of lower income group, for example like encourage the poor children to focus on education that can change their income level in the future. In fact, most of the children need to support the family for daily expenses, education is a luxury and affordable expenses for them. In order to overcome this education inequalities, policy maker should set a "win-win" policy which will benefit the lower income group and provide the chances for children at the same time. Besides, policy-maker should provide the basic needs for the society, for instance, education, medical, training, basic facilities which will enhance our human resources that can provide a better job opportunities for them.

On the other hand, policy-maker must strengthen the supervision of the financial system that would benefit for both men and women. The fairness of financial system that provides same subsidy and services for all that can help to support daily expenses. Subsequently, it will reduce the inequalities among the society and in turn boost the economy. In short, policy is an effective and the only

way to alleviate the poverty. Economists should continue focus on the data analysis for poverty and inequalities. While, policy-maker need to focus on the policy that can benefit the whole society rather than just focus on the data analysis. This is because what cause the poverty and inequalities is human not data.

## **1.6 Chapter Layout**

This study comprises 5 sections. Chapter 1 presents the introduction of our research, which involved the background of study, problem statement, research objectives, research questions, and significance of our study. Chapter 2 exhibited the literature review of past researchers in regard to the study of interaction between inequalities and other controlled variables on poverty. Chapter 3 showed the proposed methodology, data description and hypothesis of the research. Chapter 4 essentially consists of the data analysis concerning the result and discussion of our major findings. Last of all, Chapter 5 presented a conclusion, policy implication, limitation and also recommendation for future researchers.

## **CHAPTER 2: LITERATURE REVIEW**

### **2.1 Introduction**

In this chapter, we review past studies related to our topic. This is to summarize their findings on how the number of poor responded to the inequalities as reported in their research. Furthermore, we also comprise a swift past reviews on how other elements linked to nation poverty rate. By this means, we can have a better understanding on their interconnection and be prepared for what we might expect in our following chapters.

### **2.2 Poverty VS Inequalities**

Poverty, a widely concern issue by many countries. There were many researches had carried out concerning this matter (For example, Bisogno & Chong, 2001; Matteis, 2013; Briggs, 2017; etc.). For the sake of solving this dispute, many scholars wanted to find out the elements which worsen the poverty, and the way which could ease this world wide issue. For instance, they studied the relationship between trade and poverty. There were many comments on these affiliation, some said there is positive relationship between trade openness and poverty (Sachs & Warner, 1995; Edwards, 1997; Frankel & Romer, 1999; Dollar & Kraay, 2001; Lee et al., 2004). And some argued that the higher level of trade openness tends to worsen poverty (Jeanneney & Kpodar, 2011; Singh & Huang, 2011). Furthermore, there were also exploration completed about the effect of social protection on poverty alleviation. As studied by Fiszbein, et al. (2014), there was negative correlation between social protection and poverty. This findings was supported by Dhanani and Islam (2002) and Kiendrebeogo et al. (2017), they found that countries who has higher degree of social spending can

speed up their effort in poverty reduction. In addition, there were also investigation that show precisely positive relationship for the correlation between natural disaster and poverty (Mahanta & Das, 2017; Zhou et al., 2017; Sawada & Takasaki, 2016). Moreover, some of the past researchers emphasis on the the economic effects of foreign aid on countries. They exposed the increase in foreign aid have a tendency to encourage poverty reduction directly and indirectly (Moreira & Bayraktar, 2008; Agénor, Bayraktar & Aynaoui, 2008; Matteis, 2013; Heltburg, 2004). These are some of the examples for researches that focus on poverty on other variables. In our study, we inclines to carry out a study on relationship between inequalities as the exogenous variable and poverty as the endogenous variable.

*Income inequality hypothesis: cross-national differences in poverty can be partly explained by country level of income inequality.*

In the past , some authors argued that economic growth expected to reduce poverty, while income inequality bring less effect to poverty as Gini coefficients in the world changed by only 0.28 percentage points per year over the same period in 1985-1995 (Deininger & Squire 1996; Adams & Richard, 2004). However, sheer amount of growth did not appeared to be sufficient for intense poverty reduction (Loayza & Raddatz , 2010). This is due to the involvement of income inequality. For instance, Ravallion, (1997), Bourguignon (2003), and Adams and Richard (2004) proved growing income inequality deteriorates the magnitude of economic growth have influence on poverty reduction.

As demonstrated by Bourguignon (2003), when the initial income inequality raises by one standard deviation, economic growth influence on poverty will shrinkage by less than 1 percentage point. This comment is supported by Adams (2004), who carried on the similar research by evaluating poverty, economic growth and income inequality data from 50 low and middle income countries. From his findings, he determined growth and poverty sustain a strong

negative affiliation. By dividing his data into major and minor income inequality regions, Adams revealed that at a given growth rate with minor inequality countries, these nations would be twice effective in eradicating poverty in comparison of countries with major income inequality. Hence, the degree of poverty alleviation not only depends on greater economic growth, but also the initial level of income inequality as well (Ravallion, 1997). Ravallion clarified the growth elasticity of poverty is perfectly inelastic when income inequality is at its maximum level. He explained that, when the economic growth encompasses with rising income inequality, the benefits from the growth flowing more to rich people than poor people. In this manner, growing income inequality diminished the economic growth influence on poverty reduction, whereby, the rich becomes richer and the poor becomes poorer.

Additionally, this hypothesis also supported by recent study carried out by Nasir and Mridha (2017). From their analysis of the United States data, they affirmed rising growth enable to eradicate poverty by 1.3% for every 1% of economic growth while income inequality remained constant. Yet, when income inequality is taken into account, their result is consistent with past research. In a growing nation, increasing 1% of income gap tends to dampen about 0.28% of the magnitude of economic growth effect on poverty reduction. After separated this total dampening effect, Nasir and Mridha reported every 1% rise in income inequality inclines to raise the poverty directly by 0.24% and indirectly by 0.04%.

All cited studies found positive relationship between income inequality and poverty, high initial levels of inequality affects growth's transformation to poverty reduction while growing inequality increase poverty directly (Besley & Burgess, 2003; Adams & Richard, 2004; Fosu 2017; Oberdabernig, 2013). Thus, Fosu (2017) suggested policymakers to seek the optimal mix of emphasis on economic growth and easing of income inequality in hopes to maximize poverty reduction.

*Gender inequality hypothesis: cross-national differences in poverty can be partly explained by country level of gender inequality.*

According to Bastos et al. (2009), the ratios of women in poverty are higher than men and it also last longer compare to the rest of the individuals. They also found that old isolated women and lone-parent families headed by women are the group that affected the most by income poverty and deprivation. Divorce women, ageing and lone motherhood are also the event that companion with poverty among women. However, some claims that single women are less poor compare than single men as single women are often economic successful and live longer in parental house, whereas single men are often belong to less economically successful group and live alone. Divorce women are often out of poverty as they receive payment of alimentation from their ex-husband (Wiepking & Mass, 2005).

Bastos et al. (2009) also did a research in Portugal and found that lone parenthood's women are involuntary to take over the children. Around 80% of the families were female headed and these women are often receiving and financial support from the fathers, creating financial problems to them. but there's a weak evidence to say that female headed household overrepresented the poor as it only account a small proportion of the population. Their contribution toward the overall poverty is small, only Ghana and Bangladesh shows both female and female-headed household are worsen off in the 10 developing countries based on their research. There is more women living in poverty under male-headed households and lesser men living in poverty under female-headed household. Female-headed households are also highly dependent and without a steady source of income. Thus, this lead to female-headed household have a slightly higher poverty ratio (Quisumbing et al., 2001). Moreover, women are also found having less opportunity to participate in labour as the labour market is gender conditioned, this might due to the discrimination perception that are still implanted in the Portuguese social system. Thus, this lead to the income poverty and deprivation for female is higher. The statistic also shows that families headed by female in poverty had doubled from 1995 to 2001 (Bastos et al., 2009).

Some also claims that demographic is an important factor that lead to different level of gender inequality and gender-poverty ratio. Women with same age, different education level and marital status also will result in different outcome of poverty rate. For an example, in United State, women are common in being single parenthood, thus it associated with the highest poverty rate. However, single parenthood is not common in other country such as Netherland, and Italy with similar poverty rate between men and women (Casper, McLanahan & Garfinkel, 1994). Besides that, Wiepking and Mass (2005) claim that women living in poverty in Sweden, Finland, Switzerland, Ireland, Denmark and Belgium have a lower rate compare to men living in poverty. However, employment status is more significant compare to marital status on poverty. Different demographic composition also a factor toward the gender-poverty ratio. Thus, it could be said that marital status has a moderate effect, and difference between gender in employment status have a larger effects on the gender-poverty ratio across the country (Casper et al., 1994).

Wiepking and Mass (2005) also support that reason women are often in poverty are due to the composition effect of demographic, education, participation in labour and marital status. As men and women with higher education and having a paid job are less likely to be poor. They also stated that in a country with strong economic growth, emancipated population and having a history of socio-democratic governments have less disadvantage toward women. It is also found that level of social security has not much impact on the gender-poverty rate.

A classical thought that mothers should sacrifice for their family and willing to fulfil all their children's need such as preparing food for the family and tidying the house. Thus, women have limited time to engage in paid labour. As there are lesser women in the parliament, hence, seldom people would voice out or represent for them. It is also found that when the men of the household migrated, housewife and children in the household will vulnerable to poverty as they have no access to community and could not voice out in the community effectively (Bessell,2015).

## 2.3 Poverty VS Other Related Variables

*Education hypothesis: cross-national differences in poverty can be partly explained by country education level.*

According to Tarabini (2010), they discovered the plight of the poor would have been worsening if people have no chance to accept education. Investing in education is a key strategy to eliminate poverty because it always brings the social and economic benefits to individuals and society (Harper, Marcus & Moore, 2003; Omoniyi, 2013). Enhancing the education level is an effective way for poverty reduction. The more the years of schooling, the higher opportunities in terms of social mobility and get out of poverty. This is because that deeper involvement in education would enhance the individual' skills, consequently making workers more productive and valuable to employer (Janjua & Kamal, 2011; Moller et al, 2003). Moreover, it will also increase the productivity of others with whom they interact. Thus, quality education system able to broaden the horizons and enhance the opportunities for future employment. Higher quality employees with low income able to seek out more economic opportunities in order to get greater income equality. As a result, this would reduce the income gap between the poor and rich, poor people could have higher income, which will improved their standard of living.

In general, there are three approaches to show the education development which are basic need approach, human capital approach and human development approach (Tilak, 2002). For the basic need approach, it indicates that the education is a basic need, which helps the fulfilment of other basic needs. The achievement of other basic needs able to improve the productivity of people and raise the wages. Secondly, the human capital approach believes that education is an important tool in reducing poverty. Through the knowledge and skills gained from education, this can raise the productivity of people and their wages. Thirdly,

the human development approach reasons that education can greatly affect the income poverty from the viewpoint of the capability to be out of poverty.

*GDP hypothesis: cross-national differences in poverty can be partly explained by country GDP level.*

Fosu (2017) investigated the relationship between gross domestic products (GDP), poverty and income growth for different regions of the world which included 80 countries. He revealed increases in GDP have led to substantial poverty reduction for majority of the countries. For instance, Mulok et al. (2011) stated that Malaysia has generally acknowledged as one of the successful country that fight poverty. Its poverty has decline from 52.4% to 3.6% between 1970s and 2009. The decrease in poverty was related to many factors, included economic growth of the country (Adams & Richard, 2004). It is undeniable that the economic growth in 2009 compare to the 1970s is higher, Mulok et al. (2011) exposed this was one of the elements for Malaysia successful in poverty mitigation. Nevertheless, the degree of poverty alleviation need to depends on the size of growth. This was shown in Fosu (2017) research as there was moderate poverty reduction for several countries of his study.

On the contrary, Donaldson (2008) found out two types of exceptional cases in regards to economic growth and poverty, which are positive exception and negative exception. A positive exception is the income growth of the poor has risen much faster than expected when nation undergoing slow economic growth. Whereas, negative exception is income growth of poor is much lower than expected when the countries has booming of economic growth. Furthermore, Loayza and Raddatz (2010) had proposed two-sector theoretical models to explain the relationship between income expansion, labour intensity and sectoral economic. They argued that the impact of production growth on poverty reduction varies by industry and this change has a systematic pattern. For example, a growth

with labour intensive sectors tend to have a stronger impact on the poverty alleviation.

*Health expenditure hypothesis: cross-national differences in poverty can be partly explained by country health expenditure level.*

Ill health is one of the factor cause poverty in two ways. This was exhibited in some studies (Bloom & Canning, 2003; Alam & Mahal, 2014). Firstly, it is in terms of medical payments. According to study conducted by Damme et al. (2004), they said disease not only cause death, but it also creates out-of-pocket medical expenditure for the patient. Despite of how costly the expenses, people will find different ways to pay the expenditure, such as use their own saving, sell their assets, borrow money from friends or relatives, moneylenders and others, in order to relief their fear and anxiety of the disease or the deceased of their loved ones. This expensive medical expenditure could cause any households have greater financial burden and even be debt-ridden (Alam & Mahal, 2014). Worst of all, Damme et al. (2004) mentioned some of the household still have the outstanding debt because of the monthly interest rates after one year. This may leads households to reduce their spending by cutting down expenses for living necessities, use credit service, sell their assets and others. In addition, Rashad and Sharaf (2015) concluded out-of-pocket health payments has seriously worsened the standard of living for households in Egypt , 20% of the population fall into financial burden, subsequently, raise the proportion of population falls into extreme poverty substantially.

Secondly, health expenditure affects poverty in terms of labour force. Study performed that improvement in health has a positive impact on individual's income and economic growth (Bloom & Canning, 2003). This is due to the fact that improved in health result in enhanced social development, consequently, improve the standard of living. From the other way around, poor health condition has a negative impact on household's income (World Health Organization, 2004).

This is because that poor health condition limits people's ability to work. Due to the limited work condition, the ability of people to earn for living will deteriorated. Therefore, poor health status result in poverty. In overall, ill health forms a continuous poverty cycle through these two means on households.

## 2.4 Research Gap

Based on the literature reviews, all the researchers focused their study about the relation between poverty and either income inequality or gender inequality only. There was minor of them whom explore the combination of both inequalities effect on poverty. However, both inequalities has exhibited their significance in explaining their association with poverty rate of a country from the past researches (Ravallion, 1997; Bourguignon, 2003; Adams, 2004; Mridha, 2017; Quisumbing et al., 2001; Wiepking & Mass, 2005; Basto et al., 2009).

Thusly, we aim to fill the gap by conducting a research which pools income inequality and gender inequality under one study in hopes to obtain a clearer picture of the relation between them. Also, we enrich the story by incorporating the features of countries environment into our model, such as Muslim-majority nation, democratic nation and developing nation. By that, we could identify how inequalities interact poverty variedly in different situation of countries. For illustration, we wanted to know whether democratic and developing countries tends to be more insulated from the inequalities-caused poverty, or the outcome will be worsen. How if Muslim-majority and non-developed nation is the case of the event? This will be studied by us with other several combination of countries environment.

Besides that, most of the researchers did not involve many countries in their studies regarding of inequalities and poverty topic. For example,

Quisumbing et al. (2001) only comprised of 10 countries, Wiepking and Mass (2005) consisted 22 countries and Casper et al. (1994) contained 17 industrialized countries in their study. Complementary, we included higher number of sample size, which is total of 60 countries in order to enhance the accuracy of our model. In addition, we also add in other poverty related factors into our research, such as education, income level and health expenditure. This is to find out how those elements influence poverty when there are all taken into account.

## **CHAPTER 3: METHODOLOGY**

### **3.1 Introduction**

This chapter discusses the model and method used in the study. In this study, it investigates the relationship of poverty with six independent variables. The six independent variables that include the gross domestic product (GDP), health expenditure, gross enrolment for primary education, Gini index and women sitting in parliament. This study was used secondary data and all the data for this study was collected from World Bank, UNDP and UN data. We have used cross-sectional data for the estimation. Due to the available data is limited, the study period is the year 2002 and 2011 with 60 countries.

In order to carry out this study, we appropriate chosen the ordinary least square (OLS) to estimate. The reason why we chose Ordinary Least Square is to estimate a parameter for a linear regression model from the given data. In addition, it is to investigate the relationship between poverty and other six independent variables in different countries. Since the unit measurement of the gross domestic product is current US dollar and Gini index is in percentage form, the figure of these two variables is larger than other variables. Therefore, we had applied the natural logarithmic form to these two independent variables. For this study, we have formed the hypothesis in the model. Reject null hypothesis when there is no relationship between the dependent variable and other independent variables. In addition, do not reject the null hypothesis when there is a relationship between the dependent variable and other independent variables.

We also add in dummy variables for the inequalities as the degree of inequalities may vary based on whether the country is Muslim-majority country, a developing country or a democratic country.

### **3.2 Data Description**

In this study, we had used the global poverty gap is \$ 1.90 as the indicator of the dependent variable. According to World Bank, it has determined that the extreme poverty is daily living costs less than \$1.90. When people are poor, they are unable to meet the basic needs such as clothing, food, shelter and so on. Therefore, it was defined as the material concept.

Independent variable that we used is gross domestic product (GDP) to represent how the countries' average income level will affect the poverty level. As GDP measures the market value of all goods and service over a specific time period, and it is a primary indicator to evaluate the economic performance of a country. It calculated without deduct any depreciation of fabricated asset or deplete and degrade natural resources. Education is one of the important factors to influence the poverty level in each country. Therefore, gross enrolment ratio for primary education as an indicator to indicate the ability of education system at all levels. A high ratio reflects the failure of education system due to the reason of repetition. The differences between gross enrolment ratio and the net enrolment rate show the incidence of overage and underage enrolment. We take into account of health expenditure as an indicator of independent variables as a good health condition will improve the ability to earn income and get rid of poverty. It is defined as the total expenditure that spends by people for improve their health or carries out the activities related to health care services, nursing knowledge, emergency aid and others. The total expenditure on health is calculated in percentage of gross domestic product (GDP). Besides, we used income inequality

and gender inequality to identify the impact towards poverty. To measure the income distribution of individuals or household, GINI index as an indicator of income inequality. These data are adjusted based on the size of a family in order to provide a more consistent measure of income or consumption, where GINI index that closer to hundred indicate a higher income inequality, whereas GINI index that closer to zero indicate a lower income inequality. We also focus on the gender inequality which represents by the seats in national parliament held by women. It will measure the extent which women enjoy the equal rights in parliamentary decision-making. We examine the rights of women in unicameral parliaments and bicameral parliaments have the influence on poverty level in each country.

**Table 3.1: Indicator and Sources of Variables**

| Types of Variables | Indicators                                  | Unit measurement                           | Sources                                     |
|--------------------|---------------------------------------------|--------------------------------------------|---------------------------------------------|
| Poverty            | Poverty gap at \$1.90 per day               | International dollar                       | World Bank                                  |
| Economic growth    | Gross Domestic Product (GDP)                | US Dollar                                  | World Bank                                  |
| Education          | Gross enrolment ratio for primary education | Percentage                                 | World Bank                                  |
| Health             | Health expenditure                          | Percentage of gross domestic product (GDP) | World Bank                                  |
| Income inequality  | GINI index                                  | Percentage                                 | United Nations Development Programme (UNDP) |
| Gender inequality  | National parliament held by women           | Percentage                                 | World Bank                                  |

### 3.3 Regression Model in Linear-Logarithm Form

We would like to see how the independent variables influence the poverty. Health expenditure, GDP per capita, education are the variables for us to represent the civilization. However, we are also concern about inequality as we think when civilization accommodates with inequalities, the impact on poverty may vary.

The regression model is constructed as below:

$$LOGY = \beta_0 + \beta_1 LOGX_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 LOGX_5 \quad (3.1)$$

where

$Y$  = Poverty

$X_1$  = GINI

$X_2$  = Women Representative

$X_3$  = Education

$X_4$  = Health Expenditure

$X_5$  = Economic growth

Nevertheless, we think that the degree of inequalities may vary according to different factor such as if the nation is Muslim- majority country? If the nation is a democratic country? If the nation is a developing country?

Thus, we come out with equation that includes these dummy variables.

$$LOGY = \alpha_0 + \alpha_1 LOGX_1 + \alpha_2 X_2 + \alpha_3 X_3 + \alpha_4 X_4 + \alpha_5 LOGX_5 + \alpha_6 (LOGX_1 \times D_1) + \alpha_7 (LOGX_1 \times D_a) + \alpha_8 (LOGX_1 \times D_i) \quad (3.2)$$

$$LOGY = \gamma_0 + \gamma_1 LOGX_1 + \gamma_2 X_2 + \gamma_3 X_3 + \gamma_4 X_4 + \gamma_5 LOGX_5 + \gamma_6 (X_2 \times D_1) + \gamma_7 (X_2 \times D_a) + \gamma_8 (X_2 \times D_i) \quad (3.3)$$

where

$$D_1 = \begin{cases} 0 & \text{if an observation belongs to Muslim-majority country} \\ 1 & \text{if an observation belongs to a non Muslim-majority country} \end{cases}$$

$$D_a = \begin{cases} 0 & \text{if an observation belongs to democratic country} \\ 1 & \text{if an observation belongs to a non democratic country} \end{cases}$$

$$D_i = \begin{cases} 0 & \text{if an observation belongs to developing country} \\ 1 & \text{if an observation belongs to a non developing country} \end{cases}$$

Religion often plays a vital role in how the society works, it tangled with politic, socio-economics and also cultural in every country (Dormekpor, 2015). According to Brown (2010), Muslim are least likely to be active in the economic compared to other religion. This lead to the income differential between Muslim and non- Muslim. It is also found that Muslim women are highly economically inactive compared to men as they always have the thought of women should be looking after the home. There are also some of the sources of legislation, Islam are mismatched with the human right that lead to gender inequality (Gouda & Potrafke, 2016). *Hence, we use Muslim-majority country as one of our dummy variables as we would like to see if majority of the Muslim in a country are treated equally.*

Reuveny and Li (2003) claim that democracy increase opportunities for participation, as the government has the intention to help out the lower and middle-income groups by adopting redistributive policies. Women will also have more freedom to voice out their needs as they have the opportunities to participate in politics too (Democracy and gender equality, 2011). Democracy, level of gender equality and level of economic development are closely linked, thus, changes on one of the factor will affect the others too (Inglehart, Norris & Welzel, 2002). *Hence, we would like to prove that more democratic nations are more equal.*

Developing countries are often observed with more advanced technology, thus, the government will invest in education to train skilled workers. When the poor are also able to receive education, job opportunities will also increase so those poor are able to earn money to support themselves. This also benefits the women, as they started to get what they deserve such as education, a job with a steady salary, training in professions and earn a living. Government, politicians, man and women will start to take some action to achieve for gender equality for justice *So, we would like to show developing country have higher ability to help the poor and women to alleviate from poverty*

To know our country better, we categorized our list of countries according to their region and indicate if there is a Muslim-majority country, a democratic country and a democratic country.

**Table 3.2: List of Countries with Dummy Variables**

| <b>Africa</b>                       | <b>Asia</b>             | <b>North and Central<br/>America</b> | <b>South America</b> | <b>Europe</b>      |
|-------------------------------------|-------------------------|--------------------------------------|----------------------|--------------------|
| Morocco (1,0,0)                     | China (0,0,0)           | Dominican<br>Republic (0,0,0)        | Brazil (0,1,0)       | Croatia<br>(0,0,0) |
| Tunisia(1,0,0)                      | Mongolia (0,1,0)        | Costa Rica (0,1,0)                   | Colombia (0,0,0)     |                    |
| Burkina Faso (1,0,1)                | Belarus (0,0,0)         | El Salvador (0,1,0)                  | Paraguay (0,1,0)     |                    |
| Burundi (0,0,1)                     | Moldova (0,0,0)         | Guatemala (0,1,0)                    | Peru (0,1,0)         |                    |
| Cameroon (0,0,0)                    | Ukraine (0,0,0)         | Mexico (0,1,0)                       | Bolivia (0,1,0)      |                    |
| Central African<br>Republic (0,0,1) | Azerbaijan (1,0,0)      | Panama (0,1,0)                       | Chile (0,1,0)        |                    |
| Ethiopia (1,0,1)                    | Georgia (0,0,0)         |                                      | Ecuador (0,1,0)      |                    |
| Ghana (0,1,0)                       | Kazakhstan (1,0,0)      |                                      | Venezuela (0,0,0)    |                    |
| Kenya (0,1,0)                       | Tajikistan (1,0,0)      |                                      |                      |                    |
| Lesotho (0,0,1)                     | Turkey (1,0,0)          |                                      |                      |                    |
| Madagascar (0,1,1)                  | Uzbekistan (1,0,0)      |                                      |                      |                    |
| Mali (1,0,1)                        | Cambodia (0,0,1)        |                                      |                      |                    |
| Mauritania (1,0,1)                  | Indonesia (1,1,0)       |                                      |                      |                    |
| Mozambique (0,0,1)                  | Malaysia (1,0,0)        |                                      |                      |                    |
| Niger (1,1,1)                       | Nepal (0,1,1)           |                                      |                      |                    |
| Nigeria (1,1,0)                     | Sri Lanka (0,1,0)       |                                      |                      |                    |
| Rwanda (0,0,1)                      | Thailand (0,0,0)        |                                      |                      |                    |
| Senegal (1,1,1)                     | India (0,1,0)           |                                      |                      |                    |
| Swaziland (0,0,0)                   | Vietnam (0,0,0)         |                                      |                      |                    |
| Uganda (0,0,1)                      | Kyrgyz Republic (0,0,0) |                                      |                      |                    |
| Zambia (0,1,1)                      |                         |                                      |                      |                    |
| Gambia (1,0,1)                      |                         |                                      |                      |                    |
| South Africa (0,1,0)                |                         |                                      |                      |                    |
| Tanzania (1,1,1)                    |                         |                                      |                      |                    |
| Cote d'Ivoire (0,0,0)               |                         |                                      |                      |                    |

Source: Mapping The Global Muslim Population (2009), Country classification (2014) & Aghekyan et al. (2017)

Note: In sequential order,

Religion Dummy: 1: Muslim, 0: otherwise

Democratic Dummy: 1: Democratic Country, 0: otherwise

Developing Dummy: 1: Developing Country, 0: otherwise

We found that most of the country we use in our sample data are from Africa and the least is from Europe. As for the dummy variables we used, most of the country are democratic country, followed by developing country and the last is Muslim-majority country.

Based on the data, we formed the table and according to the region and we used  $(1,a,i)$  to represent dummy variables. Eg: **Country (1,a i)** ;  $a$  is to indicate whether the country is a Muslim majority country,  $i$  is to indicate whether the country is democratic and 1 is to indicate whether the country is developing. Eg: **Tanzania (1,1,1)** indicate that Tanzania is a Muslim majority, democratic and developing country.

### 3.4 Hypothesis

We derived the model from equation (3.1) to test the effect of income inequality on poverty.

***Hypothesis 1: Increased in income inequality will increase poverty***

$$\frac{dLOGy}{dLOGx_1} = \beta_1 \quad (3.4)$$

where  $\beta_1 > 0$

Increase in income inequality will affect the pace of economic growth. When the economic growth is affected, there may have some problems happen in a country such as financial crisis, global imbalance, unemployment and other. Therefore, the living standard of people also will be influenced. An increase in income inequality will lead to increase in the poverty level.

We derived the model from equation (3.1) to test the effect of women participation in parliament on poverty.

***Hypothesis 2: Increased in women participation in parliament will reduce poverty***

$$\frac{dLOGy}{dx_2} = \beta_2 \quad (3.5)$$

where  $\beta_2 < 0$

Female-headed household is more likely to be poor as they are highly dependent and does not have a steady source of income compare to male headed household (Quisumbing, Haddad & Pena , 2001). As more women sitting in the parliament, there'll more people to voice out women's right and what they deserve. Women will get the education and this will ease them to get a job with the steady income to make a living.

We derived the model from equation (3.2) to test the joint effect between income inequality and Muslim-majority on poverty.

***Hypothesis 3 : The higher the combination of income inequality and Muslim-majority country, the higher the poverty***

$$\frac{dLOGy}{dLOGx_1} = \alpha_1 + (\alpha_6 \times D_1) \quad (3.6)$$

where  $\alpha_1 > 0$  ;  $\alpha_6 > 0$

This is due to the reason that Islam adopts a *zakat* principle to reduce the poverty. However, transferring the wealth from high-income group to lower income group could make people increase the laziness and loss motivation to earn income for themselves. Therefore, we use model 3.6 to show the effect on income inequality on poverty which depends on if the country is Muslim-majority.

We derived the model from equation (3.2) to test the joint effect between income inequality and democratic country on poverty.

***Hypothesis 4: The higher the combination of income inequality and democratic country, the higher the poverty***

$$\frac{dLOGy}{dLOGx_1} = \alpha_1 + (\alpha_7 \times D_a) \quad (3.7)$$

where  $\alpha_1 > 0$  ;  $\alpha_8 < 0$

The expected positive sign of income inequality will dominate the expected negative effect of democracy on poverty which has a comparatively smaller effect on poverty as compared to income inequality. As democratic countries are considered a country that the citizens have a right to participate in the political system, it indicates that everyone has a chance to influence the government decision. Therefore, citizens can fight for their own benefit in different aspects such as education and employment benefits or rights. Thus, we use model 3.7 to show the effect on income inequality on poverty which depends on if the country is a democratic country.

We derived the model from equation (3.2) to test the joint effect between income inequality and developing country on poverty.

***Hypothesis 5: The higher the combination of income inequality and developing country, the higher the poverty***

$$\frac{dLOGy}{dLOGx_1} = \alpha_1 + (\alpha_8 \times D_i) \quad (3.8)$$

where  $\alpha_1 > 0$  ;  $\alpha_8 > 0$

A developing country with advanced technology and full of employment competition, it will eliminate the job opportunity for the pool people with lower professional skills. This will cause some proportion of people higher and other proportion of people's income lower. It will increase the income inequalities

implicitly. Hence, we use model 3.8 to show the effect on income inequality on poverty which depends on if the country is a developing country.

We derived the model from equation (3.3) to test the joint effect between women participation in the parliament and Muslim-majority country on poverty.

***Hypothesis 6 : The higher the combination of women participation in parliament and Muslim-majority country, the lower the poverty***

$$\frac{dLOGy}{dx_2} = \gamma_2 + (\gamma_6 \times D_1) \quad (3.9)$$

where  $\gamma_2 < 0$  ;  $\gamma_6 > 0$

The expected negative sign of women participation in parliament will dominate the expected positive effect of Muslim-majority country on poverty which has a comparatively smaller effect on poverty as compared to women participation in parliament. As Muslim have the mindset of women should look after the home, thus they are less likely to participate in the parliament. Therefore, we use model 3.8 to indicate the effect on gender inequality on poverty which depends on if the country is Muslim-majority.

We derived the model from equation (3.3) to test the joint effect between women participation in the parliament and democratic country on poverty.

***Hypothesis 7 : The higher the combination of women participation in parliament and democracy country, the lower the poverty***

$$\frac{dLOGy}{dx_2} = \gamma_2 + (\gamma_7 \times D_a) \quad (3.10)$$

where  $\gamma_2 < 0$  ;  $\gamma_7 < 0$

A democratic country would give equal opportunities to women and men to accept education and to participate in parliament (Beer, 2009). Thus, they have higher opportunities to get a job. Therefore, we use model 3.10 to indicate the

effect on gender inequality on poverty which depend on if the country is democratic.

We derived the model from equation (3.3) to test the joint effect between women participation in the parliament and developing country on poverty.

***Hypothesis 8 : The higher the combination of women participation in parliament and developing country, the lower the poverty***

$$\frac{dLOGy}{dx_2} = \gamma_2 + (\gamma_8 \times D_i) \quad (3.11)$$

where  $\gamma_2 < 0$  ;  $\gamma_8 < 0$

Developing countries are full of employment competition, thus education had become a necessity for everyone in order to increase the standard of living. More job opportunities are offered as women are able to receive education equally as men, thus this helps them to make an earning. Therefore, we use model 3.11 to indicate the effect on gender inequality on poverty which depends on if the country is developing.

We derived the model from equation (3.1) to test the effect of education on poverty.

***Hypothesis 9: Increased in education will reduce poverty***

$$\frac{dLOGy}{dx_3} = \beta_3 \quad (3.12)$$

where  $\beta_3 < 0$

Education is an important factor in reducing poverty. Investing in education are able to increase the knowledge and skills. The people can fully utilize the knowledge and skill that they have learned before in order to increase their income. The higher the level of education received, the higher the income

level. When the people have the higher income, they can easily fulfilment the basic needs such as food, clothing and others. In addition, education can also improve many social problems. For example, improve the problem of gender inequality, improve food security and others. When these social problems are improved, it indicates that the people's living standard is gradually improving. The improvement of living standard means that reducing poverty.

We derived the model from equation (3.1) to test the effect of health expenditure on poverty.

***Hypothesis 10: Increased in health expenditure will reduce poverty.***

$$\frac{dLOGy}{dx_4} = \beta_4 \quad (3.13)$$

$$where \beta_4 < 0$$

It may be said without fear of contradiction that the improvement of health expenditure can increase the life expectancy of people, in turn people can earn more income to enhance their standard of living. Among epidemiological samples, Atun et al(2015)found that improvements in health systems and universal health can improve the health outcomes for women and children. Subsequently, the regulation for efficiency of health insurers and health-care providers for poor will reduce poverty in long run.

We derived the model from equation (3.1) to test the effect of economic growth on poverty.

***Hypothesis 11: Increased in economic growth will reduce poverty***

$$\frac{dLOGy}{dLOGx_5} = \beta_5 \quad (3.14)$$

$$where \beta_5 < 0$$

According to Biggs, King, Basu and Stuckler(2010),the most important part of the research process is the poverty and GDP are moderately strongly correlated. Based on our assumption, we suggest that as GDP increases, it will cause poverty decreases. This is in light of the fact that the increasing GDP can in turn boost the economic growth in a country. On the other hand, we believe that government can use the fund to provide anti-poverty program and it would enhance the standard of living of people, therefore, it will reduce poverty explicitly. We believe that poverty is negatively related to GDP, it is expected that when GDP increase can reduce the poverty of a country.

### **3.5 Method**

We use a cross-sectional data set which categorized under causal research study on 60 countries. In order to understand the relationship between poverty and inequalities in the World, we observed the data from different regions in 2002 and 2011 on 5 causal variables: income, education expenditure, health expenditure, gender inequality, and income inequality. Some of the examples which are worth mentioning here are from Latin America, Europe, Africa and Asia. In the beginning, we write the regression where different inequalities have the impact on poverty. However, we expect that there is other reason that will affect the income inequalities and gender inequality. We believed that the factors such as religion, democracy and development of each country are essential to determine the impact of income and gender inequality towards poverty. Therefore, we use ordinary least square (OLS) method to identify the relationship between dependent variables and independent variables, and also the relationship between inequalities and dummy variables. This is in light of the fact that the OLS objective function penalizes large errors more than small errors due to the reason that the objectives of OLS is to alleviate the sum of squared residuals. Because of this characteristic, for a given set of dependent and independent variables, one will also gain the same approximations using OLS. OLS that can produce estimates similar to methods more suited to our research and easier to interpret (Wicks-Lim & Arno, 2015).

## **CHAPTER 4: RESULT AND DISCUSSION**

### **4.1 Overview**

The empirical discuss of the result in this study starts with the summary of descriptive statistic of data among 60 countries in year 2002 and year 2011. We analyse the variables in terms of measures of variability and central tendency. The measure of central tendency include mean, mode and median. In addition, the measure of variability includes standard deviation, variance, kurtosis, skewness and minimum and maximum values of the variables. The summary of descriptive analysis for these two years are showed on Table 4.1 and Table 4.2.

**Table 4.1: Descriptive Statistic for The Year 2002**

| Variables                                       | Obs | Mean   | Median | Max     | Min     | Standard deviation |
|-------------------------------------------------|-----|--------|--------|---------|---------|--------------------|
| Global Poverty Gap (natural logarithm)          | 60  | 6.4121 | 6.6601 | 11.4168 | -0.0793 | 2.1997             |
| GINI ( natural logarithm)                       | 60  | 3.7566 | 3.7281 | 4.1158  | 3.0773  | 0.2161             |
| Women Representative<br>(% of total population) | 60  | 0.1155 | 0.1000 | 0.3000  | 0.0050  | 0.0676             |
| Education (% of total<br>population)            | 60  | 0.9977 | 1.0212 | 1.4683  | 0.4012  | 0.1994             |
| Health expenditure ( % of<br>GDP)               | 60  | 0.0549 | 0.0532 | 0.0872  | 0.0227  | 0.0146             |
| Economic Growth<br>(natural logarithm)          | 60  | 6.7041 | 6.6020 | 8.8687  | 4.7128  | 1.0725             |

**Table 4.2: Descriptive Statistic for The Year 2011**

| Variables                                    | Obs | Mean   | Median | Max     | Min     | Standard deviation |
|----------------------------------------------|-----|--------|--------|---------|---------|--------------------|
| Global Poverty Gap (natural logarithm)       | 60  | 5.4864 | 6.0569 | 10.4861 | -0.0125 | 2.7323             |
| GINI ( natural logarithm)                    | 60  | 3.7518 | 3.7739 | 4.0690  | 3.3032  | 0.1899             |
| Women Representative (% of total population) | 60  | 0.1891 | 0.1725 | 0.5090  | 0.0390  | 0.1031             |
| Education (% of total population)            | 60  | 1.0574 | 1.0587 | 1.4541  | 0.6727  | 0.1524             |
| Health expenditure ( % of GDP)               | 60  | 0.0610 | 0.0599 | 0.1179  | 0.0271  | 0.0193             |
| Economic Growth (natural logarithm)          | 60  | 7.7769 | 7.9274 | 9.5960  | 5.5625  | 1.1109             |

Table 4.1 and Table 4.2 report the descriptive statistic for 60 countries in year 2002 and year 2011 respectively. We use natural logarithm method on the data of global poverty gap is in the international millions of US \$ dollar in year 2002 and year 2011. The maximum and minimum value of global poverty gap is from the range of negative value to positive value. In year 2002, China with the highest global poverty gap of 11.4168 while Croatia with the lowest global poverty of -0.0793. However, India has the highest global gap with 10.4861 and Moldova has the lowest global gap with -0.0125 in year 2011. Poverty gap is estimates the depth of poverty by considering how far the poor of a country from global poverty line. It means the highest the gap, the highest incidence of poverty that the country is under poverty line.

As for the income inequality, Gini index in natural logarithm representing income inequality of a country. Central African Republic and Colombia are the country with most serious income inequality of 4.1158 and 4.0690 in year 2002 and year 2011 respectively. From the result, we found that Belarus has the least income inequality of 3.0773 and 3.3032 in both year 2002 and year 2011. Furthermore, to examine the gender inequality situation of a country, we had collected the data of total national seat parliament held by women nation. Based

on our assumption, the more the women take part in parliament, the lower the gender inequality of a country. Country with more women take part in parliament is Mozambique which is with 0.3000 percentage point and Morocco has the lowest value with 0.0050 percentage point in year 2002. In year 2011, Rwanda has the maximum 0.5090 percentage point whereas Mongolia has the minimum 0.0309 percentage point. The country with higher percentage point indicates that the higher number of women took part in parliament lowered the gender inequality.

Besides that, the highest education level in year 2002 is Brazil but Niger with the lowest education at the same year. In year 2011, Nepal has the higher education percentage point which is 1.4541. Niger still has the lowest education after 9 years. Based on Table 4.1 and Table 4.2, we also found that the standard deviation of health expenditure in these two years also remain low compare with other variables. We can say that a standard deviation close to 0 indicates that the data points tend to be very close to its expected value of the set. Next, the higher the number of GDP indicates that the higher the income of a country. Mexico and Chile have the higher GDP whereas Ethiopia and Burundi have the lowest GDP in year 2002 and year 2011 respectively. Based on the result above, we can conclude that Americas country is a higher income country compared with Africa country.

## 4.2 Econometric Problems

Based on the Table 4.3 and Table 4.4, there are four different diagnostic check to test the model which are Durbin-Watson test, Jarque-Bera test, White's heteroscedasticity test and Ramsey RESET test. The result of Durbin-Watson statistic suggested that the null of hypothesis cannot be rejected in both year 2002 and 2011. We found that the test statistic in model 6 for both years are fall in the no autocorrelation region, so we conclude that there are free autocorrelation problems at 1% significant level.

In Jarque-Bera test, the null of hypothesis is rejected in year 2002 since the p-value (0.0017) smaller than the significant level at 0.01. Thus, the Model 6 in year 2002 does not meet the normality assumptions on the error term. However, there has an opposite result compare to year 2011. Model 6 in year 2011 meets the normality assumptions since its p-value (0.5907) is greater than the significant level at 0.01. In order to test whether consist of heteroscedasticity problem in Model 6 or not, we apply White's heteroscedasticity test. The test statistic in year 2002 with value 8.6019 and year 2011 with value 15.0967 are smaller than the critical value, 48.2780. The result shows that we cannot reject null of hypothesis and the model is free from heteroscedasticity problem.

Last but not least, Ramsey RESET test is the very important to test the model specification. The F-statistic in year 2002 and 2011 are 0.2660 and 0.0990 respectively as shown in Table 4.3 and Table 4.4. Under the decision rule, we do not reject  $H_0$  since F-statistics for both years are greater than 5% significant level. We have sufficient evidence to conclude that the model specification is correct for both years at 5% significant level. Thus, the model for year 2002 and year 2011 are model specification and free from autocorrelation and heteroscedasticity problem at the same time.

The following table describes the summary result of dependent and independent variables by using OLS.

**Table 4.3: Summary Results of Poverty and Its Independent Variables in Year 2002**

| Dependent Variable: The Global Poverty Gap |                    |                    |                     |                       |                        |                         |
|--------------------------------------------|--------------------|--------------------|---------------------|-----------------------|------------------------|-------------------------|
| Variables                                  | Model 1            | Model 2            | Model 3             | Model 4               | Model 5                | Model 6                 |
| Gini                                       | 2.0871<br>(1.3080) |                    |                     |                       |                        | 4.4440***<br>(1.1509)   |
| Women                                      |                    | 5.3175<br>(4.2138) |                     |                       |                        | 9.2532**<br>(3.5389)    |
| Representative<br>Education                |                    |                    | -1.3859<br>(1.4372) |                       |                        | 2.2353<br>(1.3643)      |
| Health<br>expenditure                      |                    |                    |                     | -29.0831<br>(19.3984) |                        | -38.1571**<br>(16.6586) |
| Economic Growth                            |                    |                    |                     |                       | -0.8836***<br>(0.2430) | -1.2050***<br>(0.2544)  |
| Adjusted R2                                | 0.0255             | 0.0099             | -0.0012             | 0.0207                | 0.1716                 | 0.3583                  |
| F-statistic                                | 2.5460             | 1.5925             | 0.9230              | 2.2477                | 13.2184                | 7.5878                  |
| DW-test                                    |                    |                    |                     |                       |                        | 1.7552                  |
| JB-test                                    |                    |                    |                     |                       |                        | 0.0017                  |
| (p-value)                                  |                    |                    |                     |                       |                        |                         |
| White                                      |                    |                    |                     |                       |                        | 8.6019                  |
| hetero-test                                |                    |                    |                     |                       |                        |                         |
| Ramsey RESET<br>(F-statistic)              |                    |                    |                     |                       |                        | 0.2660                  |

Note: \* 0.1 significant level, \*\* 0.05 significant level, \*\*\* 0.01 significant level, the number in parenthesis is refer to robust standard error

**Table 4.4: Summary Result of Poverty and Its Independent Variables in  
Year 2011**

| Dependent Variable: The Global Poverty Gap |                     |                    |                    |                       |                        |                        |
|--------------------------------------------|---------------------|--------------------|--------------------|-----------------------|------------------------|------------------------|
| Variables                                  | Model 1             | Model 2            | Model 3            | Model 4               | Model 5                | Model 6                |
| Gini                                       | 3.6138*<br>(1.8285) |                    |                    |                       |                        | 5.7880***<br>(1.6634)  |
| Women<br>Representative<br>Education       |                     | 3.3491<br>(3.4523) |                    |                       |                        | 2.4056<br>(3.0816)     |
| Health<br>expenditure                      |                     |                    | 0.8868<br>(2.3508) |                       |                        | -0.6148<br>(2.0524)    |
| Economic Growth                            |                     |                    |                    | -10.2050<br>(18.5165) |                        | -24.5995<br>(16.2687)  |
|                                            |                     |                    |                    |                       | -1.1697***<br>(0.2841) | -1.3441***<br>(0.2716) |
| Adjusted R2                                | 0.0469              | -0.0010            | -0.0148            | -0.0119               | 0.2128                 | 0.3262                 |
| F-statistic                                | 3.9059              | 0.9411             | 0.1423             | 0.3037                | 16.9533                | 6.7122                 |
| DW-test                                    |                     |                    |                    |                       |                        | 2.0559                 |
| JB-test<br>(p-value)                       |                     |                    |                    |                       |                        | 0.5907                 |
| White<br>hetero-test                       |                     |                    |                    |                       |                        | 15.0967                |
| Ramsey RESET<br>(F-statistic)              |                     |                    |                    |                       |                        | 0.0990                 |

Note: \* 0.1 significant level, \*\* 0.05 significant level, \*\*\* 0.01 significant level, the number in parenthesis is refer to robust standard error

### 4.3 Baseline Results: Does Inequality Matter For Poverty?

*Reduction in income inequality closing the poverty gap.*

Gini is a crucial variable to investigate the impact on poverty in our research. We expect the higher the index of Gini, the higher the level of income inequality, the poorer the country. From Table 4.3 and Table 4.4, it shows a positive Gini coefficient in Model 1 which is 2.0871 and 3.6138 in year 2002 and year 2011 respectively. In Model 6, the result also show a positive Gini coefficient and it is significant at significant level 1% for both years by adding other independent variables. We can conclude that the higher the income inequality, the higher the global poverty gap of a country. As both of them are positive related, thus this result matched with our expectation. Gini affect the economic growth and directly affect the economics problem of a country especially poverty.

*Larger proportion of seats held by women in parliaments did not improve poverty.*

Based on our baseline result, despite how many women representatives in the council, their participation did not improvise poverty rate of a country, yet, it tends to exacerbate the vulnerability of the poor. From Table 4.3 and Table 4.4, the proxy for gender empowerment has presented with a positive coefficient as shown in Model 1 and Model 6. Although there is only 1 significant model out of the 4 models we have tested, but the results is noticeable interesting. All our models in regards to gender issue revealed that high sharing of women in national parliaments have a tendency of raising the number of poor. This finding contrasted with most of the past researchers, which demonstrated that the higher involvement of female in parliament will likely to lower down the poverty rate as women over represented as most of the poor. Hence, the end result of Model 1 and Model 6 leave a confusing answer.

However, there are reasons for this positive association. Firstly, we found evidence from the research of Ballington and Karam (2005), they claim that traditional role of female as a mother or housewife restricted the confidence of themselves and others to believe in their ability as a politician, especially in a masculine model society. Accordingly, they will bribe those female politicians or even threaten them of losing family members if they act against their will. Secondly, from the report of Gender Development Network (2015), it stated that high involvement from the females in political environment does not mean they will necessary have a higher chance to voice out their opinions and be listened by others. From the words of the Head of Voluntary Service Overseas partner women's association, she justified that women whom was placed in the parliament normally were those believed to behave as how the male leaders desired. Thus, female will only be spared a quota at the table and received a thin layer of participation.

*This evidence highlights that variables are move in our expectation direction.*

We also expect the higher the health expenditure, the lower the poverty in a country. Increasing in a health expenditure has a positive impact on individual's income and economic growth, consequently, improve the standard of living and reduce poverty. Based on Table 4.3 and Table 4.4, the research tell us health expenditure negative related to poverty independently in Model 4. By adding other variables, health expenditure also move in a similar direction as our expectation which shows a negative coefficient in Model 6 for both years.

Under our prediction, we also expect economic growth is the most powerful instrument for reducing poverty and improve the quality of life in a country. Economic growth can generate virtuous circle of prosperity to a country. Strong economic growth enhances the human development by attracting foreign direct investment and provide many job opportunity. The result of Model 5 and Model 6 in Table 4.3 and Table 4.4 show a negative coefficient which indicate

that economic growth move in our expectation direction. Economic growth also significant at significant level 1% in Model 5 and Model 6 for both years. Thus, the higher the economic growth, the lower the poverty.

*Will education tackle the problem of poverty?*

According to our Model 3 in year 2002, it indicates that the higher the education, the lower the poverty. However, when we take other variables into account, the result is against the universal thought. We found that most our countries are in low-income and lower-middle economies, which is 39 out of 60 of our data sample. GDP provides an indirect effect on education to influence poverty. Low GDP country could not provide a high paid occupation even though the education qualification is high. Thus, when we take GDP into account, it shows a positive relationship between education and poverty. As the years go by, education are easier to get, but living cost become high too. In order to support the family, most of the children in poverty spend their time in working part- time and could not focus on study. Hence, dropout rate is high, and they are not qualified to get a job with steady income. Gender inequality is reducing as well in 2011, those more women are able receive education and could get a job with steady income. As women over represented the poor, decreasing the number of women in poverty, reduce the overall poverty.

## 4.4 The Role of Political System and Religion

### 4.4.1 Revisiting the implication of income inequalities

We tested the interacting effect of income inequality by adding three dummy variables which are religious, democratic and developing countries for year 2002 and year 2011.

*Muslim countries: A contradicting connection between income gap and poverty.*

Based on the result of Model 1 in Table 4.5 and Table 4.6, income inequality is positive when is not yet add in any dummy variables. After we combine the Muslim-majority dummy variable with income inequality in Model 2 and Model 5, we found two perspectives which is a negative effect to poverty in year 2002 and positive effect to poverty in year 2011. According to our expectation, we would expect a higher income inequality in a Muslim-majority country. Hence, a stronger positive relationship between the income inequality and the poverty is expected. However, the result in year 2002 stated that it would decrease the income inequality in Muslim-majority country. We found the evidence from the research of Bello (2009), Islam stands for complete eradication of poverty through the system of *Zakat* and *Waqaf*. Besides that, Michalopoulos, Naghavi and Prarolo(2016) also stated that Zakat was collected and distributed to alleviate poverty in a country. It is a religious obligation and it requires Muslim donates 2.5% of their wealth to help the poor. On the other hand, *Waqaf* has been used to provide social welfare which can enhance the community (Bello, 2009).

In the year of 2011, the effect of *Zakat* and *Waqaf* diminished. Under a Muslim regime, larger income gap tends to raise poverty as what we hypothesized. Adopting zakat principle did induce the laziness of *Zakat*-receivers discourage them to go for work. Besides that, some academics also relate this to the inability and corrupted of a nation government, subsequently, inefficiencies in distributing *Zakat* for those needy (Mohsin & Ismail, 2013). Still, we could also describe this relation with the higher number of Muslim neglecting the teaching of Islam in that era. As a result, *Zakat* has failed to achieve its mean of eradicating the poverty in societies.

#### *Less inequality problem in democratic country?*

According to our main objective, income inequality in democratic country has a positive impact on poverty. Model 3 in Table 4.5 and Table 4.6, we found that income inequality increase in democratic country has a positive effect to poverty in year 2002 and year 2011. By holding other variables constant, the result in Model 5, Table 4.5 and Table 4.6 for both years also same as the result we expected. This indicate that there has a higher income inequality level in a democratic country which will cause poverty increase due to the corruption problems. Income inequality in democratic country cause the poverty increase because we predict the income inequality dominate the effect of Muslim-majority country on poverty.

#### *The consequences of income inequality in developing country.*

According to the Table 4.5 and Table 4.6 of the Model 4 and Model 5, income inequality deteriorate poverty rate under a developing country. But, this result is inconsistent with our hypothesis. This might be due to what Gutierrez-Sourdis (2006) reasoned in their study, the relatively high public education expenditure for both sexes in developing countries supported the reduction of long

run income inequality problem. When citizens have higher education level, their employment qualities is improvised, subsequently, better chances in finding job and enhanced their income level (Boccanfuso, Larouche and Trandafir) .Therefore, bringing them out of poverty.

#### **4.4.2 Revisiting the implication of gender inequalities**

*Discrimination of women is stronger across time in Muslim-majority country.*

As our expectation, poverty is reduced in 2002, the impact of women participation in parliament dominate the effect of Muslim-majority country on poverty. More women participate in parliament, lower the poverty. As more women can stand out to voice out what they deserve and influence in the government decision on policy. However, referring to Table 4.8, the effect of Muslim-majority country dominates the impact of women participation in parliament on poverty. This could be explained by the challenges of women faced in the Muslim world that are often enshrined in the archaic laws and practices. Women does not get education and job opportunities as they deserve as Muslim culture do not support women's empowerment (Akeel, 2017). Discrimination against women are still high in Muslim-majority countries (Gouda& Potrafke, 2016). They are unable to get a job with steady income due to the discrimination and low education level received. The traditional thoughts of Muslim women should be stayed and home and become a housewife lead them to become economic inactive (Brown, 2000).

*In a democracy country, higher number of female politicians worsen poverty.*

It is believed that there is a reduction of poverty with a democratic system country. But, based on the result of Table 4.7 and Table 4.8, it stated that the

higher democratic system that represent by the increasing number of women participation in parliament, it tends to cause a high poverty. A democratic country encourages women to enter into labour force participation. However, gender inequality still exists in most of the countries. Women are assigned for the unproductive work, and they usually get lower paid than men. Also, women are more likely to work for informal employment. Society has the general perspective that women should take care of children and household. Therefore, women will spend more time for unpaid housework instead of improving themselves through the seminal, reading or building working network. Educational attainment is a key factor of better employment outcomes for women in developed and democratic country. Therefore, women with lower education and non-competitive skill compared to men will reduce the reservation wage and changes the preferences of job seekers (Verick, 2014). Subsequently, women will remain poor and poor, while men are getting richer in democracy country.

*Standard of living of people increases in developing country.*

On the hand, the result shown on model 5 Table 4.7 and Table 4.8, the negative coefficient -3.1590 and -0.3208 in both years concluded that when more women take part in parliament of developing countries, the poverty level decrease. The results for both years have meet our expectation. This indicate an intensive employment competition environment does help to improve standard of living as peoples emphasize the importance of education. This help them increase their qualification and get a job with higher salary.

**Table 4.5: Summary Result of Political and Religion on Income Inequality in  
Year 2002**

| Variables               | Obs | Model 1                 | Model 2                 | Model 3                 | Model 4                 | Model 5                 |
|-------------------------|-----|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
| Gini                    | 60  | 4.4440***<br>(1.1509)   | 4.4013***<br>(1.1581)   | 3.7115***<br>(1.1257)   | 4.7913***<br>(1.1983)   | 3.9976***<br>(1.1936)   |
| Women<br>Representative | 60  | 9.2532**<br>(3.5389)    | 8.8122**<br>(3.6127)    | 9.4706 ***<br>(3.3568)  | 10.1492***<br>(3.6415)  | 10.0560***<br>(3.5881)  |
| Education               | 60  | 2.2353<br>(1.3643)      | 1.8725<br>(1.4678)      | 1.8767<br>(1.3008)      | 1.9610<br>(1.3891)      | 1.5908<br>(1.4109)      |
| Health Expenditure      | 60  | -38.1571**<br>(16.6586) | -42.0576**<br>(17.6635) | -39.4669**<br>(15.8046) | -35.9098**<br>(16.7898) | -38.5903**<br>(17.1803) |
| Economic Growth         | 60  | -1.2050***<br>(0.2544)  | -1.1940 ***<br>(0.2561) | -1.2338***<br>(0.2415)  | -1.4238***<br>(0.3309)  | -1.4003***<br>(0.3231)  |
| Gini × Religion         | 60  |                         | -0.1107<br>(0.1600)     |                         |                         | -0.0260<br>(0.1576)     |
| Gini× Democratic        | 60  |                         |                         | 0.3198**<br>(0.1204)    |                         | 0.3085**<br>(0.1234)    |
| Gini× Developing        | 60  |                         |                         |                         | -0.2019<br>(0.1954)     | -0.1570<br>(0.1920)     |

Notes: Dummy variables: Religion, Democratic, Developing Countries, \*0.1 significant level, \*\* 0.05 significant level, \*\*\* 0.01 significant level, the number in parenthesis is refer to robust standard error

**Table 4.6: Summary Result of Political and Religion on Income Inequality in  
Year 2011**

| Variables               | Obs | Model 1                | Model 2                | Model 3                | Model 4                | Model 5                |
|-------------------------|-----|------------------------|------------------------|------------------------|------------------------|------------------------|
| Gini                    | 60  | 5.7880***<br>(1.6634)  | 6.0254***<br>(1.7423)  | 4.7133***<br>(1.7502)  | 5.9851***<br>(1.7129)  | 5.2917***<br>(1.9096)  |
| Women<br>Representative | 60  | 2.4056<br>(3.0816)     | 2.3703<br>(3.1041)     | 2.2170<br>(3.0296)     | 2.8065<br>(3.1877)     | 2.5812<br>(3.1590)     |
| Education               | 60  | -0.6148<br>(2.0524)    | -0.1604<br>(2.2612)    | -0.9124<br>(2.0239)    | -0.6791<br>(2.0692)    | -0.2761<br>(2.2415)    |
| Health Expenditure      | 60  | -24.5995<br>(16.2687)  | -22.6917<br>(16.8300)  | -19.2650<br>(16.2833)  | -24.8941<br>(16.3845)  | -16.6606<br>(16.9754)  |
| Economic Growth         | 60  | -1.3441***<br>(0.2716) | -1.3319***<br>(0.2746) | -1.3769***<br>(0.2675) | -1.5200***<br>(0.4228) | -1.5411***<br>(0.4231) |
| Gini × Religion         | 60  |                        | 0.1083<br>(0.2186)     |                        |                        | 0.1672<br>(0.2246)     |
| Gini× Democratic        | 60  |                        |                        | 0.2856*<br>(0.1665)    |                        | 0.2838<br>(0.1698)     |
| Gini× Developing        | 60  |                        |                        |                        | -0.1483<br>(0.2718)    | -0.1544<br>(0.2805)    |

Notes: Dummy variables: Religion, Democratic, Developing Countries, \*0.1 significant level, \*\* 0.05 significant level, \*\*\* 0.01 significant level, the number in parenthesis is refer to robust standard error

**Table 4.7: Summary Result of Political and Religion on Gender Inequality in  
Year 2002**

| Variables                               | Obs | Model 1                 | Model 2                 | Model 3                 | Model 4                 | Model 5                  |
|-----------------------------------------|-----|-------------------------|-------------------------|-------------------------|-------------------------|--------------------------|
| Gini                                    | 60  | 4.4440***<br>(1.1509)   | 4.3954***<br>(1.1419)   | 3.9110***<br>(1.1625)   | 4.5662***<br>(1.1721)   | 3.8172***<br>(1.1774)    |
| Women<br>Representative<br>Education    | 60  | 9.2532**<br>(3.5389)    | 10.3326***<br>(3.5957)  | 6.7370*<br>(3.7213)     | 11.1360**<br>(4.5787)   | 8.1231*<br>(4.6817)      |
| Health Expenditure                      | 60  | 2.2353<br>(1.3643)      | 1.6532<br>(1.4172)      | 2.2384*<br>(1.3349)     | 2.2455<br>(1.3717)      | 1.5543<br>(1.3936)       |
| Economic Growth                         | 60  | -38.1571**<br>(16.6586) | -46.5436**<br>(17.6028) | -39.1747**<br>(16.3087) | -37.7473**<br>(16.7595) | -49.1002***<br>(17.4263) |
|                                         |     | -1.2050***<br>(0.2544)  | -1.1839***<br>(0.2528)  | -1.2831***<br>(0.2525)  | -1.3369***<br>(0.3258)  | -1.2963***<br>(0.3214)   |
| Women<br>Representative×<br>Religion    | 60  |                         | --6.8174<br>(4.9395)    |                         |                         | -8.0431<br>(5.0400)      |
| Women<br>Representative ×<br>Democratic | 60  |                         |                         | 6.7703*<br>(3.6684)     |                         | 7.5748**<br>(3.6935)     |
| Women<br>Representative×<br>Developing  | 60  |                         |                         |                         | -3.1590<br>(4.8356)     | -0.6908<br>(4.8302)      |

Notes: Dummy variables: Religion, Democratic, Developing Countries, \*0.1 significant level, \*\* 0.05 significant level, \*\*\* 0.01 significant level, the number in parenthesis is refer to robust standard error

**Table 4.8: Summary Result of Political and Religion on Gender Inequality in  
Year 2011**

| Variables                              | Obs | Model 1                | Model 2                | Model 3                | Model 4                | Model 5                |
|----------------------------------------|-----|------------------------|------------------------|------------------------|------------------------|------------------------|
| Gini                                   | 60  | 5.7880***<br>(1.6634)  | 6.2966***<br>(1.7539)  | 4.9721***<br>(1.7904)  | 5.7937***<br>(1.6805)  | 5.5721***<br>(2.0034)  |
| Women                                  | 60  | 2.4056<br>(3.0816)     | 1.5847<br>(3.2105)     | 0.2782<br>(3.5431)     | 2.5713<br>(3.7715)     | 0.3392<br>(4.3694)     |
| Representative<br>Education            | 60  | -0.6148<br>(2.0524)    | 0.2017<br>(2.2363)     | -0.3302<br>(2.0577)    | -0.5816<br>(2.1153)    | 0.4667<br>(2.4014)     |
| Health Expenditure                     | 60  | -24.5995<br>(16.2687)  | -20.5856<br>(16.8572)  | -20.8828<br>(16.4949)  | -24.5842<br>(16.4217)  | -17.7486<br>(17.2286)  |
| Economic Growth                        | 60  | -1.3441***<br>(0.2716) | -1.3129***<br>(0.2740) | -1.3906***<br>(0.2733) | -1.3661***<br>(0.3948) | -1.4204***<br>(0.4033) |
| Women<br>Representative×<br>Religion   | 60  |                        | 3.8819<br>(4.1925)     |                        |                        | 3.5238<br>(4.7032)     |
| Women<br>Representative×<br>Democratic | 60  |                        |                        | 3.6226<br>(3.0149)     |                        | 3.08216<br>(3.1954)    |
| Women<br>Representative×<br>Developing | 60  |                        |                        |                        | -0.3208<br>(4.1313)    | -0.9466<br>(4.5895)    |

Notes: Dummy variables: Religion, Democratic, Developing Countries, \*0.1 significant level, \*\* 0.05 significant level, \*\*\* 0.01 significant level, the number in parenthesis is refer to robust standard error

## **CHAPTER 5: DISCUSSION, CONCLUSION AND IMPLICATIONS**

### **5.0 Introduction**

In the previous chapter, we have focused on the interpretation of the empirical results. Therefore, we will further discuss the major finding in this chapter. Afterward, we provide practical implications for literature and policymakers. Follow by, a section to discuss the limitations and recommendations from our study. Lastly, we will make an overall conclusion for this study as our ending part.

### **5.1 Discussions of Major Findings**

For many years, poverty had been a concern for many countries. We found that increasing GDP would reduce the poverty. GDP is the average income level of the citizens, reducing in poverty doesn't necessary means people in poor are alleviated from poverty. Hence, we would like to investigate what are the factors that trap them in the poverty. We think that inequalities are the major obstacle for the poor to enhance their standard of living. Our study also shows that inequalities and poverty have an inalienable relationship.

Equal income distribution is one of the key factors to assist a person to escape from poverty. As serious income inequality will lead to higher poverty. One of the findings in our studies, income inequality is significant and it has a positive coefficient. Besides that, we found that increase in women participation in parliament, will not reduce the poverty. As the result is not consistent with our expectation, we revisit the inequalities with dummy variables.

In developing country, our results stated that it has lower inequalities, which is a positive impact in reducing poverty. When we explore the other environmental aspect, the restriction of religion will sprout both gender and income inequalities. As they have traditional thought of women should become a housewife and take care of the children, while the men should be working and earn money to support the family. In the early stage, education is not treated as an important instrument to improve their lifestyles.

On the other hand, discrimination on women still exists in a democratic country as they believe that women are not competent for the job. However, human rights had been improved, both gender also received the equal opportunities in education. Therefore, employment competition is high, people with lower education level would not get a job with high salary. Subsequently, the income gap is high as shown in our result; the democratic country will have high-income inequality and lead to higher poverty.

According to our result, health expenditure plays a very important role in reducing poverty, which is out of our expectation. Our result shows that health expenditure is significant and has a strong negative relationship with poverty. Improving health status indicate that the person is healthy enough to work for long-term and would not spend unexpected expenses on illness.

*“Equality may be a right, but there is no power to make it a reality”*

*–Honoré de Balzac*

## **5.2 Implications of the Study**

### **5.2.1 Policy Implications**

Income inequality is the key to mitigate poverty problem. There are many ways to encounter the issue of income inequality, such as education and well-planned labor market policies. For instance, those countries could emphasis policy

which raise the attainment rates from upper secondary to tertiary schooling, subsequently, encourage equal chances of admission to education for everyone. Due to the facts that wages usually varies according to education level. Thus, higher education will narrow down the income distribution and alleviated income inequality. Moreover, labor market must contain a well-designed policy. Policymakers could increase the minimum wage for all and tightens labor's income distribution, yet, setting this minimum wage must be done cautiously as overly high minimum wage will backfire the effort to reduce inequality and poverty. This is because that overly high labor cost will cause employers to reduce the employment in hopes to relief their production cost, consequently, income inequality and poverty could not be tackled.

Furthermore, the healthiness of citizens shows a high degree of impact in assisting poverty alleviation, thus, policies directed to the well-being is essential. For example, the government could provide subsidies for medical centers to lower down their incurred cost on patients, promote healthy lifestyle campaign all over the nation and so on. With healthier citizens, they can avoid the expensive cost of treating severe disease, like the case for kidney failure patients who tend to suffer a high amount of fees in dialysis treatment or a kidney transplant for the sake of survival.

### **5.2.2 Literature Implications**

Our research can acts as the driving force for future researchers to continue work on our topics in more detailed and timely manners. In our study, we have considered the political and religious environment of a country in the event of the association between inequalities with poverty. When all is said and done, our findings revealed serious inequalities incline to have higher chance in mitigating the number of poor, however, this circumstances only appeared in a developing countries for both of our observation years. This takes a little step forward for scholars to further explore regards to this matter. Did the higher degree of physical and intellectual investment in developing countries is the key for them to

eliminate poverty? Or it may due to other means that we have unnoticed, such as the type of growth programs established by developing countries government.

In addition, our findings disclose Muslim countries capability in encountering poverty even if there is a presence of rising inequalities in the year of 2002. Yet, the year of 2011 did not convey the same message. The incidents throughout the years which has altered Muslim-majority countries' strength in converting the forces of inequalities to pro-poor growth, is vital understanding for Islamic countries as most of the individual who living below national poverty line were found in those countries (Mohsin & Ismail, 2013). Therefore, the second literature implication will be to concentrate in Muslim-majority countries by using time series analysis from the year of 2002 to 2011, such as Indonesia, Malaysia, Bangladesh, Pakistan, Afghanistan, Uzbekistan, Iran, Iraq, Syria, Turkey, Egypt, Sudan, Morocco, Tunisia, and Algeria. In this way, the answer for the puzzling result will be known.

### **5.3 Limitations of the Study**

First and foremost, our research concentrated on cross-sectional study. Consequently, this had limited the scope of our exploration as cross-sectional research only enable us to observe the samples on different key features at one specific time. Hence, cross-sectional research normally applied to explain a characteristic existed in a society, but it is incapable to explain the cause-and effect association between variables (Cherry, 2018). Usually, researchers utilize cross-sectional analysis in their study for the purpose of constructing an inference about the possible correlation that may occur. This is to support their future research and testing. Additionally, cross-sectional study cannot perform much testing on the model as most of the empirical tests required panel data. For instance, Granger Causality Test measures the direction of cause and outcome of a set of variables (Granger, 1969). The knowledge for the establishment of this test is to provide a checking whether the endogenous variable has causal link with its own past data and the exogenous past data. Therefore, timely data is needed in

order to run this test. In other words, cross-sectional themed of our research is our main encumbrance for further investigation on this topic.

Further, our study has its drawback as the datasets of geographical region for our sample countries did not spread evenly across The World. As we know The World has divided into 5 regions, however, for our dataset, we only manage to include one Europe country, which is Croatia. Besides that, our sample countries merely contain 18 developing countries over 60 of the sample countries, this ratio of developing countries simply just around 0.3. It was way too less of developing countries to become the baseline comparison of other countries. This is because finding participants who is available of all our variables data from the year 2002 and 2011 is tough. For example, some countries tends to have incomplete health expenditure data, causing the elimination of them from our list of sample countries. We could not include more number of countries as many of them could not fulfill our dataset requirement. For our dataset constraint, those countries compulsory to have their data for poverty gap, GINI index, percentage of seats held by women, education, health expenditure and GDP in year 2002 and 2011.

## **5.4 Recommendations for Future Research**

The major limitation of our study is due to data constraints. Data constraints is the reason for our failure in carrying out panel features of our study. We aim to carry out panel study is due to the richer information we can obtained from it. However, the unavailability and costly of data force us to conduct a cross sectional study instead. Still, we hopes to provide future researchers the potential of our topics--the possible relation between inequalities and poverty in different regimes, which could support future research and testing for those whom interested with this subject.

As time goes by, the data available will be more sufficient in future. Thus, we highly recommend future researchers to use panel data to enhance this cross sectional study. By this means, we can compare the changes in the values of

different nations in different point of time. Hence, we can forecast the behavior of inequalities on poverty which is vital for policymakers. Besides that, larger sample size use in research will provide a better and more reliable findings. Thus, we encourage that future researchers to increase the frequency of the data, such as quarterly, monthly or daily data in their future panel study. In this way, they will have larger sample size to improve their study. Since data has higher availability in future, we suggest them to include higher number of developing countries and compute a sample of countries which uniformly distributed across 5 regions of The World in order to achieve a more robust discoveries. Additionally, when the data are available in the future, future scholars are recommended to search for a better proxy in representing gender inequality, this is because national parliament held by women only can represent the elite female, it did not symbolize the lower class women. Therefore, a better proxy to denote all women is needed.

## **5.5 Conclusion**

The idea of doing this topic is due to the concern of the Millennium Development Goal (MDGs) which include zero poverty, gender equality and reduced inequalities .In summary, poverty is a serious world problem no matter in Muslim-majority country, democratic country or developing country. From the past research, many studies did not include two important variables together which is the income inequality and gender inequality. Thus, we highlighted these two variables as the main factor that cause a serious poverty problem in our research.

One of our main objective is to examine the impact of gender inequality on poverty, however the index of women participant in parliament that we use in our research are not significant to reduce the poverty. The reason is maybe women have the chance to participate in the parliament, but they do not have any right to speak. Nevertheless, we reach our objective of income inequality has a significant impact in increasing poverty because the coefficient for income inequality is positive related to poverty which shown in Chapter 4.

Last but not least, the effect of gender inequality and income equality on poverty are conditional in political and religious regime. We found that the result vary based on political and religious regime. For example, in developing country, inequality are mostly low and this will lead to a lower poverty but inequalities increase in Muslim-majority and democratic country.

In our opinion, our research cannot represent the whole as not all countries are included in our study. We wish that more people are aware of the problem as many people are still being treated unequally and many people are still unable to alleviate from poverty. Hence, we hope the future researcher may do a deeper research on this area.

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