

GOVERNMENT EXPENDITURE COMPONENTS
THAT AFFECTS ECONOMIC GROWTH

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DECLARATION

We hereby declare that:

- (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 institutes of learning.
- (3) Equal contribution has been made by each group member in completing the research project.
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PREFACE

We come across this study as we noticed some strange and noteworthy situation in Malaysia. Malaysia economic has been recognized as one of the strongest during 1980-s, but showing the trend of slow down, and being overtook by other nation in recent decade. Lots of researches has been conducted on the reason behind the stagnation of the economy of Malaysia, some say it is because the corruption problem, some argued it is because of other reasons, the concern we conducting this research is no longer trying to find out a reason that address to the problem stated. This research is concerning in one of the argument that has been proposed, which is arguing on the government expenditure doesn't really go into the right place that it should be. Therefore, it raised our concern and attention, firstly is government really affecting the economic growth? secondly which components of government expenditure is affecting the economic growth and which is not? Understanding this two questions may help in constructing a better policy that will better shaping our country towards the economic condition that we want.

ABSTRACT

This study attempts to investigate the relationship between government expenditure and the economic growth in Malaysia from 1970 to 2012. Year 1970 is an important transition period for Malaysia. After the May 13 incident in 1969, Tun Abdul Razak succeeded Tunku Abdul Rahman Putra as the Prime Minister of Malaysia, he has brought in new blood and new generation of politician into the parliament since then. The Malaysia New Economic Policy is also introduced by him during year 1970 time, since that Malaysia has striven its way to become a more developed country. Today Malaysia is a developing country with upper middle income status, and set its goal to enter the crowd of developed nation in year 2020. Since 1970, several policies has introduced and affected much of Malaysia Economic growth. These policies have also much influence in determining the trend of government expenditure.

In order to focus on the effectiveness of the policies towards economic growth and to avoid any bias from unproductive expenditure, this study employs only governmental development expenditure instead of government consumption. This study employs OLS regression for the empirical analysis. This study found that there is a significant and positive relationship between the government expenditure and economic growth. The total government spending towards the social and economic development also shows a positive relationship between these spending and the economic growth. The test is run on transportation sector, defence and securities sector, education sector and general administration. The results show only transportation and education sector are significant towards the economic growth.

The paper concludes that all the policies that have been introduced by the government starting with the NEP can be considered as reasonable, reliable and positive to obtain a balance economic growth for their peoples. However, there is a possibility of the existence of crowding out effect, rent-seeking activities, cronyism, corruption and skilled brain drain that lead to the negative relationship. Therefore some recommendations were made, such as working on strengthening the efficiency of the implementation of the policies. Fighting corruption suggestion is also included as one of the recommendation. Since it is proven that transportation expenditure and education expenditure is contributing to the economic growth,

therefore some recommendations were also made with the purpose on enhancing the current policy, generally in improving its efficiency.

CHAPTER 1: INTRODUCTION

1.1 Background of study

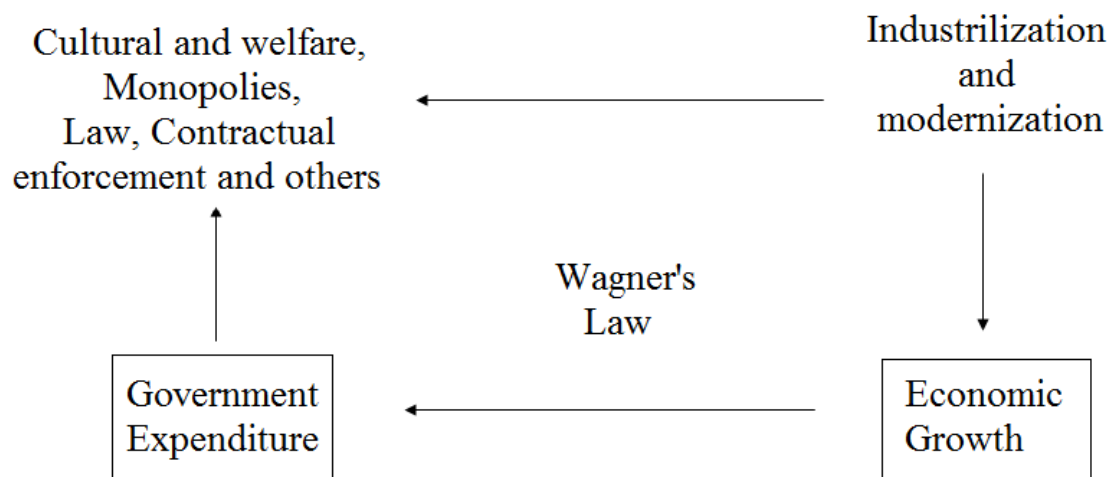
Economic growth is defined as “the steady process by which the productive capacity of the economy is increased over time to bring about rising levels of national output and income” while economic development is defined as “the process of improving the quality of all human life” (Smith, 2003). From these descriptions it shows that economic growth is primarily a quantitative measure based on the rate of change of GDP while economic development is a combination of quantitative and qualitative measures.

The question of the relationship between the government expenditure and economic growth has created a lot of interest and attention among the economist and policy makers. By understanding the relationship within it, may help in building a more goal orientated policy. Therefore, studies on this topic has been made and argued since decades ago. Furthermore, it has also stimulated controversy in macroeconomics studies. This interest has led to empirical studies to address several economic doubts, which related to the government expenditure and the economic growth of the country.

Gwartney, Holcombe and Lawson (1998) noticed that government expenditure has increased accordingly when the country has moved towards the economic freedom and open market .Many empirical studies were carried out to examine the effect of economic growth on government expenditure. However the results lead to different conclusion; where some countries show positive relationship and some countries not. Samudram, Nair and Vaithilingam (2009) state a similar finding based on several studies regarding the relationship of government expenditure and economic growth and the results are inconclusive. Landau (1983) studies the effect of government expenditure on economic growth in 96 countries and finds a negative relationship between government spending and economic growth. While on the other hand, Sinha(1998) found positive relationship between economic growth and government expenditure in Malaysia for the period of 1950-1992.

There are two schools of thought called Wagner's law, named after the nineteenth century German Professor Adolf Wagner, and the other one the Keynesian views which were suggested by the 20th century British economist John Maynard Keynes. There are also separated though like big government and small government. Wagner's law is the first thought that illustrated out the possible relationship between the economic growth and the growth of government activity (Sinha,1998) . Henrekson (1993) pointed out from Wagner's law three main reasons for the increase in the government's role. First, Industrialization and modernization would lead to a substitution of public for private activities and result in increasing government expenditures on law and order as well as on contractual enforcement. Secondly, an increase in real income would lead to an expansion of the income elastic "cultural and welfare" expenditures. Wagner cited two areas which are education and culture in which the government could be a better provider than the private sector. Thirdly, natural monopolies such as railroads had to be taken over by the government because the running cost of such kind of activities are too expensive and the private sector would be unable to obtain such huge investment to finance the development of these activities.

FIGURE 1.1: THE WANGER'S LAW



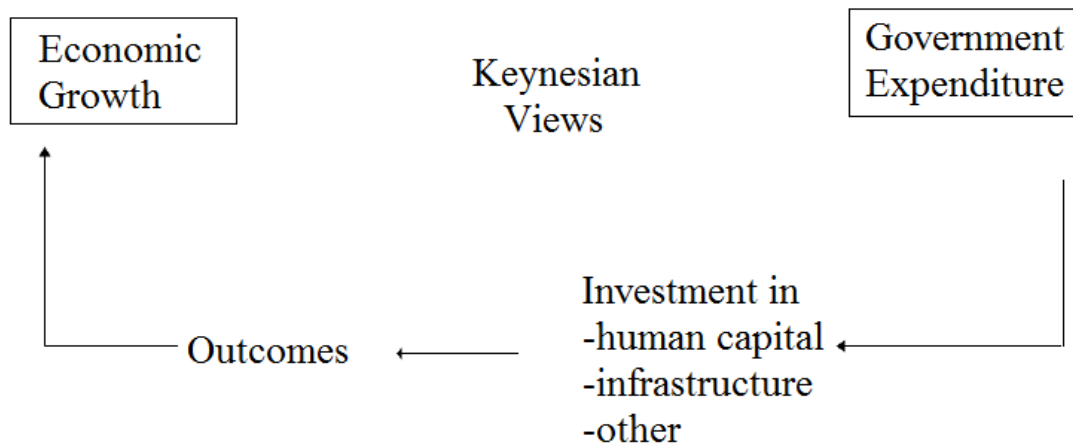
Source: Drawn by author

On the other hand, Keynesian view suggests that government expenditure contributes positively to the economic growth. The contribution will be based on the multiplier effects stated in the Keynesian model.

$$Y=C+I+G+Xn$$

Y is the aggregate output (GDP), C is the consumption, I is the investment, G is the government expenditure and Xn is the net exports (exports-imports). The following diagram is the circular flow of Keynesian view:

FIGURE 1.2: THE KEYNESIAN VIEWS



Source: Drawn by author

As we have mentioned earlier, this topic has created enormous attention among researchers with many extensive empirical works that have been carried out to test these theories but unfortunately the outcome of these studies has been of a mixed conclusion. The causation of economic growth and government expenditure can be unidirectional, bidirectional or no causality.

Unidirectional causality can be running from government expenditure to economic growth and vice versa. This paper is adapting the Keynesian view to examine the relationship between government expenditure and economic growth.

Pham(2009) has examined the economic performance of several Asian countries based on their government expenditure, In order to examine the exact factors in the government expenditure that may contribute to the economic growth, he has examined from the aspect of social development expenditure and general development expenditure. Social development expenditure may include education and general administration expenditure while general development expenditure may include transportation and military expenses. Immediately after independence, Malaysia has launched a costly and lengthy battle against communism (Pham,2009), this has increase the government spending on general development expenditure, particularly on the military expenditure. Therefore it may be noticed that it dominated a high proportion of government spending on defence and securities expenditure after independence during 1957 to 1960s. However when entering 1970 the battle against communism has ended and the government expenditure has been more focus on the social development part. During 1980s Malaysia has made a decisive shift towards greater outward-orientation of economic policy, and the accompanied results was the raising of the living standard of Malaysian (Athukorala & Menon,1999). The major expenditure during that period of time is the transportation expenditure, as it is crucial to have a good standard of infrastructure and road connection to attract foreign direct investment (FDI). Therefore it is logic to believe that the transportation expenditure will be one of the significant factors that will contribute to economic growth.

Furthermore, in order to shift from more labour-intensive nation to a more capital-intensive nation, central authority has also increasingly invest more in the education sector. Starting from the 1970s, in accordance to the national language policy, the government began to change English-medium primary and secondary national-type schools into Malay-medium national schools. Central government has dumped in more capital in building a more efficient and effective education environment since then. Therefore education expenses are believed to be another significant factor in the government expenditure of Malaysia.

Several studies on causality have been carried out with several conclusions. Sinha (1998) using augmented Granger causality test finds no evidence of causality between GDP and government expenditure in Malaysia for the time period 1950-1992. Again later, Dogan and Tang (2006) find no empirical evidence to support either of the two theories for Malaysia when using data from 1960 to 2002. While Tang (2001) finds a short-run causality that runs

from national income to government expenditure using data from 1960-1998. In the other hand, Samudram, Nair and Vaithilingam (2009) using Auto-Regressive Distributed Lag (ADRL) with the bound test and Gregory-Hansen's cointegration found out that bidirectional causality holds in Malaysia in the long-run. The study covers data from 1970 to 2004. In all the studies that have been carried out so far, the outcomes are still open for debate. Therefore this paper will examine the relationship between government spending, particularly in economic development spending and general development spending, The study will cover from year 1970 to 2012, as year 1970 is the year that Malaysia welcome its new generation of power holder into the cabinet, limitation in obtaining the earlier data has also become one of the reason that the study starting from year 1970. The study covers until year 2012, which is the latest data that can be obtain, in order to find as exact result as we could.

1.2 Problem statement

Statistics from Economic Planning Unit of Malaysia and International Financial Statistics of International Monetary Fund prove that the Malaysian government expenditure's trend shows almost a consistent increase throughout the period of 1970 until 2007.

The politics of Malaysia takes place in the framework of a federal representative democratic constitutional monarchy, where the Yang di-Pertuan Agong is the head of state and the prime minister of Malaysia is the head of government. It is a federation of a central government and 13 states. At the national level, the federal government is responsible to a large degree for taxation and spending. Furthermore, the central authority responsible in transferring the funds to the lower levels of government in financing their operations and development budgets.

Starting with the New Economic Policy (NEP) in the 1970's with its objective to restore the ethnic balance of the Bumiputera population through investment in human capital, the Malaysian government was directly and heavily involved in economic activity.

This involvement or the so called government intervention in the economy has led the Malaysian federal government expenditure to increase steadily. The percentage of total

expenditure relative to GDP in 1970 to 1980 has increased about 25% to 33% (EPU,2013). In year 1981, statistics from Economic Planning Unit, Malaysia (EPU) also show that the total Malaysian federal government expenditure has jumped about 41% from previous year total expenditure while the development expenditure growth percentage of that year compared to the previous year hiked about 52%.

Looking into the ratio of development expenditure on total expenditure, it is about 1:3 in 1980. While in the next year,, the ratio has increase and achieved a new height at 1:2. In 1982, the total government expenditure showed about the same pattern as in year 1981. However the scenario changed in 1983.In year 1983 the Malaysian government focused its privatization policy as one of the national policies. This policy has brought more capitalization to the nation, shifted the government led growth to private sector led growth. This policy represents a new approach in policy development and at the same time complements other policies introduced by the government. This policy was developed to focus on enhancing the role of the private sector in economic development. Facilitate the development of county's economy and reducing financial and administrative burden of the government is also the purpose of this approach. Furthermore it attempts to reduce government intervention in the economy, lowering the level and scope of public spending and allowing market forces to determine economic activity in line with the National Development Policy.

During the implementation of this policy, the private sector was regarded as the engine of growth. As a result of this policy, the Malaysian government has successfully reduced its expenditure particularly in the development sector. In 1987, the percentage of development expenditure of total expenditure was marked lowest at about 20%. In general, it is believed that the Malaysian economic policies have had a big influence on the trend of the government expenditures for economic growth. However, this policy leads the policy makers to become divided as whether the expansion of government promotes or impedes economic growth.

As mentioned in the earlier section, there were several studies on the direction of causality between government expenditure and economic growth in Malaysia and the results are mixed. Some concludes that it has no relationship between the government expenditure and economic growth, while some argued there was some positive and significant relationship

lies within. However, we presume that the outcome of the same study will possibly lead to either one of the existing results. Furthermore the causality test was unable to identify the degree of change or effect from one variable to another; for this reason this study has no interest in testing for causality.

On the other hand, as highlighted in an earlier section regarding the two sides of arguments which are the proponents of big and small governments, at this point, the attention is given to identify the right side of these two arguments. In addition we would also like to identify the degree of association between the government expenditure particularly by its sectors and economic growth. To our knowledge, no such study exists for Malaysia so far. Thus this study attempts to investigate the association between government expenditure and economic growth in Malaysia from 1970 to 2012.

1.3 Research Objectives

The aim of this study is to evaluate empirically the association between the government expenditure and economic growth. Specifically, the objectives of this study are:

1.3.1 General Objective

- i. To identify the association between government development expenditures and economic growth, and its significance by the services and sector.
- ii. To discuss and interpret the effect of government development expenditure on economic growth in Malaysia.

1.3.2 Specific Objective

- i. To determine the relationship between the transportations expenditure and economic growth of Malaysia.
- ii. To determine the relationship between the educations expenditure and economic growth of Malaysia.
- iii. To determine the relationship between the general administration expenditure and economic growth of Malaysia.
- iv. To determine the relationship between the military expenditure and economic growth of Malaysia.

1.4. Research questions

To meet the above objectives, several research questions have been developed to meet the objectives. Answering the below research questions will fulfil the objectives of this study. The research questions are as follows:

1. What is the effect on government development expenditure on economic growth in Malaysia?
2. What is the relationship between the transportations expenditure and economic growth of Malaysia?
3. What is the relationship between the educations expenditure and economic growth of Malaysia?

4. What is the relationship between the general administration expenditure and economic growth of Malaysia?

5. What is the relationship between the military expenditure and economic growth of Malaysia?

1.5. General Hypothesis

The hypothesis is to determine the relationship between the government expenditure and economic growth in Malaysia.

H₁: There is no relationship between the transportations expenditure and economic growth of Malaysia.

H_{1a}: There is a relationship between the transportations expenditure and economic growth of Malaysia.

H₂: There is no relationship between the educations expenditure and economic growth of Malaysia.

H_{2a}: There is a relationship between the educations expenditure and economic growth of Malaysia.

H₃: There is no relationship between the general administration expenditure and economic growth of Malaysia.

H_{3a}: There is a relationship between the general administration expenditure and economic growth of Malaysia.

H₄: There is no relationship between the military expenditure and economic growth of Malaysia.

H_{4a}: There is a relationship between the military expenditure and economic growth of Malaysia.

In order to proceed with the interpretation of regression analysis, a significance level should be first considered. The significance level can be set at three different levels which are 1%, 5% and 10%. This paper will look at 5% and 10% significance levels. At each significance level, if the p value of variables indicates less than the significance level, it means that H_0 is rejected and H_1 is accepted. Thus, the independent variable has significant relationship with dependent variable at that significance level. For instance, at 10% significance level, only if the p value of variables indicates less than 0.10, then H_0 can be rejected and H_1 will be accepted. On top of the significance level, a strength and direction of relationship should also be considered. The direction of relationship can be interpreted by identifying the sign (+ or -) on the result of correlation test or coefficient of independent variable in the regression model. The sign (+) means that it has positive relationship while the sign (-) means it has negative relationship. The strength of relationship is determined by measuring the number indicated from correlation test result which ranges from 0 to 1. If the result indicates near to 1, it means that the correlation between variables is strong. If the result indicates near to 0, it means that the correlation between variables is weak.

1.6 Significant of study

Malaysia is a developing country that has excelled in economic performance during 1980s. However more and more factors are affecting the economic health of Malaysia and the economic performance has slowed down over the years. One of the argument found is on the misspending of the government budget. Government expenditure might have failed to address the real factor that may drive the economic growth; therefore this paper may be helpful in the sense of recognizing the real expenditure that may trigger economic growth. This does help in helping government to spend the right money at the right place.

Identifying the relationship within economic growth and government expenditure will also give some reference to the policy makers in shaping the country's future without unnecessary waste of resources. It may also helps policy makers to examine the current policy, weighting its strength of influence towards the results they may want to achieve.

Furthermore, this paper has also study the government expenditure by separating it into perfect bite-sized, easy to understand and digest. The paper has breakdown the economic expenditure to very small and specific components, and this will help in quantifying the right amount of expenditure in every aspect. This makes the economic analysis become much more easier and easier to forecast the economic growth by accessing the current expenditure that have invested in.

1.7. Outline of the study

The following chapters in this study will explain the research process in better details. The structure of this study starts with chapter one focusing on the introduction and research proposal.

Chapter two is about the literature review, this chapter will discuss on the relevant research that have been carried out by others researchers. This chapter will also discuss and explain in depth about the literatures relevant to the area of economic growth.

Chapter three focuses on model and methodology. This chapter will discuss the method that will be used in this research. It included the research design, research method, data analysis and others.

Chapter four conducts the empirical tests of a time series regression analysis from year 1970 to 2012 and describes the outcome of the regression analysis. The results of the research will then be analyzed to answer the relevant research question.

Chapter five focuses on a discussion of the empirical results and discuss conclusions and recommendations based on the study. This part will provide a summary of the findings, a discussion of the implications of the study and recommendation.

1.8 Conclusion

In a nutshell, this paper study on the significance of the relationship between government expenditure and economic growth, it is based on secondary data as the paper is accessing the past record of the economic performance to draw a conclusion. The paper will help in certain aspect, especially as a reference in helping policy makers to make a better policy, drive Malaysia towards a more competitive environment.

CHAPTER 2: LITERATURE REVIEW

2.1 Overview

First section will be the introduction on the theory that used which is Keynesian Theory. Next, section which subheading are other relevant theoretical model whereby it is to identify other model that also used to explain the government expenditure. On the following section is about the findings of past researchers. Lastly a conclusion will be concluded.

2.2 Keynesian Macroeconomics Theory

John Maynard Keynes is a famous economist. In this thesis, we are using Keynesian theory as our guide for the whole thesis. This theory defines the total spending in the economy which also known as aggregate demand and also the effects on the output and inflation.

The Keynesian believes that the aggregate demand is influenced by both public and private sector. The public sector action towards the economic is either using fiscal policy (e.g,

spending and tax) or monetary policy (e.g, money supply). In the past years, there are some researchers argues that fiscal policy and monetary policy is powerless in affecting the economic growth. As time passes, the researchers started to believe that actually fiscal policy and monetary policy does bring effects to the economic growth.

Based on the Keynesian theory, the changes in aggregate demand will have the highest effect on real output and employment in the short run. Keynesians have a phrase which is what is true about the short run cannot necessarily be inferred from what must happen in the long run, and we live in the short run. (Blinder, Alan S)

As in monetary policy, it can be resulted in real effects on output and employment only if the prices are fixed. If the nominal wages (wages in dollars, not in real purchasing power), do not adjust instantly then increase the money supply in the economy would change all prices by the same percentage. Therefore Keynesian models basically is assuming or trying to explain rigid prices or wages. It is hard to fix the prices because, according to standard microeconomic theory, the real supply and demands should not be changed if all the nominal prices rise or fall constantly.

According to the Keynesians, due to the fixed prices, changes in either spending component such as consumption, investment, and government spending will causes the output to change. For example, if the government spending is increased provided the other spending component is constant then the output will increase.

Keynes's view on the economy was unstable as the supply and demand could not achieve the equilibrium and thus did not reach full employment too. The reason is simply because there were insufficient of investment and over-saving. To solve this matter, Keynes suggested that using public investment. The government would borrow money to spend on economy and then this deficit would helps to create new jobs and also increase the purchasing power. Keynes treats the economy as a whole and focus on government's use of fiscal policy (e.g spending and tax). These fiscal policy could help to improve the aggregate demand and thus to make sure full employment is achieved.

Keynes saying that government would play a much larger role in the economy. His vision was one of the reformed capitalism, managed capitalism which is the capitalism that saved both from socialism and from itself. He had mentioned about a "somewhat comprehensive socialization of investment" and the state's taking "an ever greater responsibility for directly organizing investment." He also mentioned that fiscal policy would enable wise managers to stabilize the economy without resorting to actual controls. The decision making would be remained with the decentralized market rather than with the central planner.

2.3 Malaysia

In August 31, 1957 it is our independence day. In September 16, 1963 Malaysia was borned. Malaysia consists of 13 states such as Perlis Indera Kayangan, Kedah Darul Aman, Pulau Pinang, Perak Darul Ridzuan, Selangor Darul Ehsan, Negeri Sembilan Darul Khusus, Melaka Naim, Sabah, and Sarawak. The Malaysia flag has 14 stripes which represent Malaysia's states while there are moon and sun are drawn on the upper left of the flag. The Malaysia's flag designed is based on United States because this country is democratic ideals.

Malaysia is made up of different races such as Chinese, India, and Malay There are others race that live in Malaysia but those three races are the main. Although there are different types on races but they live with one another in harmony and peace. Due to the differences in the culture, each race is free to perform their own cultures without causing conflict to one another. Since there are different races, nonetheless many festivals is celebrating in a year such as Happy Chinese New Year, Happy Deepavali, Hari Raya Aidilfitri, and so on. Besides that, Malaysia is also a country which has the most public holidays in a year because of difference in races.

Malaysia first prime minister will be Tunku Abdul Rahman whereby he is also Father of Independence because of his contributions in making Malaysia from colonialism to independence. The second prime minister whom is Tun Abdul Razak. He is also be known as Father of Development because of his contributions in the area of national and rural development. He successfully formulate a development policy which know as New

Economic Policy (NEP) whereby this policy is formulated to eradicate poverty and reduce identification of economic function with race.

Tun Hussein Onn Malaysia third prime minister who succeeded from Tun Abdul Razak. He has been called as Father of Unity as he promoting goodwills among the various communities. The next prime minister who is after Tun Hussein Onn called Tun Dr. Mahathir bin Mohammad. He is the most longest person in Malaysia history who served as a prime minister starting from 16th July 1981 until 31st October 2003. As for the fifth prime minister in Malaysia is Tun Abdullah Ahmad Badawi and finally the present prime minister is Najib Tun Razak whereby he is son of Tun Abdul Razak.

2.4 Education in Malaysia

The government has the responsibility in education and it is committed to provide education to all the people. The Malaysian education system encompasses education beginning from pre-school to university. Pre-tertiary education which is referring to pre-school to secondary education is under the jurisdiction of the Ministry of Education (MOE). Meanwhile tertiary or higher education is the responsibility of the Ministry of Higher Education (MOHE). The Malaysia government has a vision of transforming Malaysia into a centre of educational excellence.

The primary education takes 6 years while secondary education takes 5 years to complete the studies. In these 11 years of education, government declared that it is free education. In order to start at first year primary education, the requirement of age is seven years old. Primary schooling is mandatory for all children between the ages of 7 and 12.

In Malaysia after the completion of secondary education, students are given an opportunity to pursue 1 to 2 years of post-secondary education whereby this is the university entrance preparatory course. Therefore, a student needs to study for a total of 13 years as the basic entry requirement into Year One of a bachelor's degree programme in higher educational institutions.

When reach the tertiary education, students are given a choice whether to further their studies in government funded or private funded institutions.

In terms of funding in education, the government has spend 95% on the primary and secondary education while 60% on the tertiary education. The remaining balance of 5% and 40% respectively is funded by the private sector.

For those who interested to study in Malaysia, you will have an opportunity to receive an internationally recognized qualification of your choice within affordable budgets. People in the worldwide are once studying in Malaysia graduates ranging from diplomas and degrees to Masters and PhDs at universities, colleges and foreign university branch campuses. The people choose Malaysia as a place to acquire a globally-recognized academic qualification which indicates that they have confidence in Malaysia education.

In the past, Malaysia has cooperation with famous universities from the United Kingdom, United States, Australia, New Zealand and Canada to develop its own internationally recognized education programmes. Besides that, Malaysia has also success in attracting world-class universities to set up branch campuses here. These universities offer undergraduate and post-graduate degree programmes that are identical to their main campuses overseas.

2.5 Defence and Security in Malaysia

The Ministry of Defence was established on 31 August 1957 which also on the day of independence is declared. It began operations in a building located in Brockman Road which is currently know as Jalan Dato' Onn, Kuala Lumpur. This building is the office of our first Defence Minister, who was the late Tun Abdul Razak bin Datuk Hussein, whom served from 31 August 1957 to 22 September 1970. The building was constructed by the Federal Government which incur a total cost of RM122,000.

After British army was retreat, the Malaysian Government improving the security of the country from any threat by entrusted this mission to the Ministry of Defence as well as the task of improving efficiency in the management of military needs from time to time.

The Ministry of Defence is incharged by the Minister of Defence and assisted by a Deputy Minister. The organization of the Ministry of Defence consists of two main services which is the Public Service whereby incharged by the Secretary Genera and the Malaysian Armed Forces (MAF) is headed by Chief of the Armed Forces.

Their vision is to become a big organization based on world class National Defence Security. Next thing to mention is their mission are such as improving the management of strategic importance to national defence, national sovereignty and integrity. Lastly, their objective is to manage the national defence effectively and efficiently.

2.6 Transportation in Malaysia

Malaysia as a high productive centres has been increasing the transportation service which cause the economy growing rapidly. Transport networks must be able to support the economic growth, growing populations and diverse expectations of urban activity (including tourism). There is a firm reasons to define that well performing transport system is an important enabler of sustained economic prosperity.

Traffic congestion is not only a constraint for passengers but also will be resulted in huge losses in terms of productivity and thus will affect the ability of cities to compete globally. In order to solve the traffic congestion, the government plans to build more roads. However, the cost that incur including financial, social and environmental responsibility such as pollution will increase rapidly when the urban development level has rose to a certain level.

The government also suggested that the citizen is encouraged to shift from using private cars to public transport. However, by using public transportation system in the Klang Valley, most people will face various problems such as high delay and cancellation rates, limited service network, lacks of continuity of public transport modes as well as serious congestion issues.

These problems will then cause the people to have less confidence to use public transportation because of the flaws. At last, it will lead to more serious overcrowding issues.

Therefore, if the problems of public transport in the Klang Valley, the roads would become too congested and will affect the productivity of surrounding major cities, quality of life and might affect Malaysia to become world status cities. Being aware of this problem leads to an understanding that transport is an important factor in achieving better employment, health services, education and social services, we are committed to improving the standard of public transport.

2.7 Other Relevant Theoretical Model

Rostow – Musgrave model (1999:46) done a research on growth of government spending and comes with a conclusion that, in the beginning of the economic development, the rate of government expenditure would be high as the budget is spent on the basic infrastructural facilities such as education, health, roads, electricity, water supply which all of these are the necessities that can cause the economy to move to a higher development.

Peacock – wise man's model (1999), this model views increasing public expenditure from the social-political perspective. Government expenditure will increase as income increases but because the leaders want reelection into political offices. As a result, more infrastructures should be provided in order to convince the electorate that their interests are being desired for by the people they voted into power.

2.8 Literature Review

Abdullah HA (2000) analyzed the relationship between the public spending and economic growth and reported that the size of government is essential in determining the performance of the economy. He suggested that the government should increase the spending on infrastructure, social and economic activities. Moreover, he also suggested that the

government should encourage and support private sector to help in boosting the economic growth. (doc 88 nigeria)

Glomm and Ravikumar (1997) found out that the government expenditure will leads to a long-term economic growth by focusing on two types of government expenditure which is goods and services and technology investment. He later provides an example which is the government expenditure on health which can help in extend the human life span may attract the private investor due to subsidy from government and subsequently leads to growth.

The government has a lot of sector to spend in order to improve it. Among the government expenditures, the educations sector is one of the sectors that can be justified by the social rate of return which shows the total value of all benefits received from the spending allocated to a certain area. (Gupta, Verhoeven, & Tiongson, 2002). The past researchers has displayed a positive impact of the government spending on the education whereby they had confirmed that the government spending will lead to the increase in rate of education attainment. (Gupta, Verhoeven, & Tiongson, 2002). They also strongly recommended that the government should focus more on the educations sector as it will helps to boost economic growth and promote well-being of the poor.

Heitger (2001) said that if the government spending is on the public goods, such as roads, thus it will leads to a positive economic growth but in vice versa which is the negative effects on economic growth will be result when the government spending has been spent on private goods.

Dalamagas (2000) clarified that some of the researchers have been doing research in the relationship between economic growth and government expenditure. According to Dalamagas (2000), the government expenditure can helps to boost the economic growth as the government acts is the determinants on the economic growth of the country. The acts are such as government expenditure in general public production will bring a positive effect on the economic.

Grossman (1988) and Dalamagas (2000) giving their opinion in the sense that in order to boost the economic growth then government should increasing their budget on military

defense, social security, property rights, regulations, infrastructure development, workforce productivity, community services, and economic infrastructure.

Samudram, Nair and Vaithilingam (2009), one of the researchers that study the relationship of government expenditure and economic growth but the conclusion is in positive or negative relationship.

Landau (1983) examines the effect of government expenditure towards the economic growth in 96 countries and found out that the government expenditure seems to have negative relationship with the economic growth.

Komain J. Brahmasrene (2007) studied the relationship between government expenditure and economic growth in Thailand. By using the Granger test, the results show that government expenditures does not cointegrated with economic growth and also indicate a unidirectional relationship.

Grier and Tullock (1989), the actual relationship between government spending and economic growth is not well defined and therefore there is a need for more empirical research.

Ventelou & Xavier (2006) mentions that the advantages which gained from the government spending are generally "... overlooked at the time of evaluation" (p.404). Therefore, in the conclusion both of them saying that in short run the inefficiency that been observed when investigating the outcomes of government spending should not be misdirect whereby the social well-being would have the possibility with high potential be created through the government spending in the long run which can adjust the potential for macroeconomic growth. (Ventelou & Xavier, 2006)

According to Al-Yousif (2001), he mentioned that the government spending in social sector plays an important role in the boosting economic of a country by maintaining law and order, providing economic infrastructure, harmonizing conflicts between private and social interests, increasing labor productivity through education and health and enhancing export industries.

Chandra (2010) conduct a study about the relationship between government spending on education economic growth and found out that the spending on the education will not have any immediate effect to the economic growth as the effect education is expected to have effect on economic growth after a certain period.

A study is made by Deger and Sen (1995) which comparing between the direct and indirect costs of military activities and its indirect benefits. When the share of military burden is small with respect to the whole economy, it is possible to have benefits greater cost and to obtain a positive impact on growth rate.

Lin (1994) has pointed out some important opinion in which government should spend on in order to promote economic growth. He suggested that government spend on public goods and infrastructure, and social services (e.g. education) can help to boost the economic growth.

Military expenditure has an effect on economic growth either positively as per the finding of Hassan, Waheeduzzaman, and Rahman (2003), through an expansion of aggregate demand or through increase security, and negatively (Deger, 1986) through a crowding out of investment.

Deger (1986) found an inverse relationship between military expenditure and growth in the less developed countries (LDCs). The result shows that the spending on military will tends to take resources away from productive investments and fails to mobilize and create an additional savings.

Landau (1986) found out that government expenditure on consumption, education, defense, transfers, and capital expenditure will had either significant negative or insignificant positive impact on the economic growth. There is also a similar negative relationship result between government consumption spending and economic growth that was found by Barro (1991) for 98 countries during the period 1960-1985.

Easterly and Rebelo (1993) said that government expenditures on transport in developing countries will brings to a higher economic growth. A units increased in transport spending has to be consistent by a unit decrease in some other expenses.

Kormendi and Meguire (1985), Grier and Tullock (1987), and Summers and Heston (1988) mentioned that government spending on military and educations is consider unproductive expenditure. However Barro (1991), labels them as productive expenditure as spending on education similarly investing in human capitals whereas spending military helps to protect property rights which increase the chance of investor getting their profit.

Garcia-Mila and McGuire (1992), said that higher expenditures on highway increased the output of state economies. Carlino and Voith (1992) note that as the highway is build longer then the productivity is increased.

Mattoon (2004) clarified that investment in infrastructure can help stimulate the economic growth. For example the constructions of railway system provided economic benefits.

The researchers point out that delivery of services like transportation directly brings advantages to the household and thus increase their welfare and contribute to their productivity. Infrastructure through services that has lower productions costs such as transportation will expands market opportunities especially transport sub-sectors that positively affect the productions and subsequently lead to economic growth. (Macdonald, 2008)

Straub (2008) argues that with better transport infrastructure will brings to a lower cost on transportations and leads to economies of scale and better management.

Panjan KD , Sharma C, (2008) studied the linkage between government spending and economic growth and discovered that there is significant positive relationship and cointegration between this two variables. (doc88 nigeria)

Ram (1995) who reviewed 29 studies, concluding that there is a small positive effect of military affects growth, but that it was also difficult to say that the evidence supported a negative effect. Dunne (1996) covering 54 studies saying that military spending had no relationship between growth and was likely to have a negative effect. Smith (2000) concluded that the large literature did not clearly mentioned that the military spending had either

positive or negative results although he suggested there is a small negative effect in the long run, but one that requires considerably more sophistication to discover.

Some people argues that the impact of government spending will results in positive effect in theory but there is also some others argues that in practice there is no such results exists. Adam Smith (1776) emphasize that the relationship between the education expenditure and economic growth and also argues that government spending in different sector such as infrastructure, safety, security, justice, and education has generated a wide range of advantages not only just for the specific individual but it is for the whole society.

Selowsky (1979) had used country-wide survey of 4019 households to do a survey for finding out the beneficiaries of one-third of total government expenditure on education. The results of the survey showed that the government is subsidies to the education and health sector and the investment in electricity, water, and sewerage. He also found out that the total subsidy spent by the government on the education was distributed evenly income quintiles but the subsidy on the primary education was highly increased whereas the subsidy on the higher education was highly decrease.

The government has a lot of sector to spend in order to improve it. Among the government expenditures, the educations sector is one of the sectors that can be justified by the social rate of return which shows the total value of all benefits received from the spending allocated to a certain area. (Gupta, Verhoeven, & Tiongson, 2002). The past researchers has displayed a positive impact of the government spending on the education whereby they had confirmed that the government spending will lead to the increase in rate of education attainment. (Gupta, Verhoeven, & Tiongson, 2002). They also strongly recommended that the government should focus more on the educations sector as it will helps to boost economic growth and promote well-being of the poor.

Pritchett (2001) have been questioned about whether there is a positive effect of education spending on the economic growth. Sylwester (2000) shows simultaneously education expenditure will brings a negative impact on the economic growth. Temple (2001) revise the empirical evidence and shows with alternative statistic procedures that the relationship between the education expenditure and growth is known as 'clouded with uncertainty'.

Bosworth and Collins (2003) verify that the effect of education expenditure on growth is depending on the option of the sample.

Rajkumar and Vinaya (2008) found that in order for the education spending to give a positive outcomes then the government must first be efficient. Efficient governance is one of the determinants of acquiring a positive outcome from the public spending. This also means that the governance which has a high corruption and ineffective bureaucracy is less likely to shows a positive outcome no matter how well they plan to allocate the resources and how well they tend to spend on certain project because of the unstable government.

Krueger & Lindahl (2001) from their research, they found out those countries with the low education level show a significant positive link between education and economic growth. Later, they conduct a new research to find the relationship between economic growth and years of education. They found that education contributes positively to growth if for the low levels of education but growth will depress if for high levels of education.

Edward .B Sennoga and John Mary Matovu (2010) prescribe that government should spend less on unproductive sectors such as general administration and military and spend more on the productive sector such as agriculture, energy, and health because it wills lead to economic growth.

Ighodaro and Okiakhi (2010) using cointegration test and Granger causality test to examine the relationship between government expenditure general administration and community and social services in Nigeria. In this test, the results shown that both has negative impact on the economic growth.

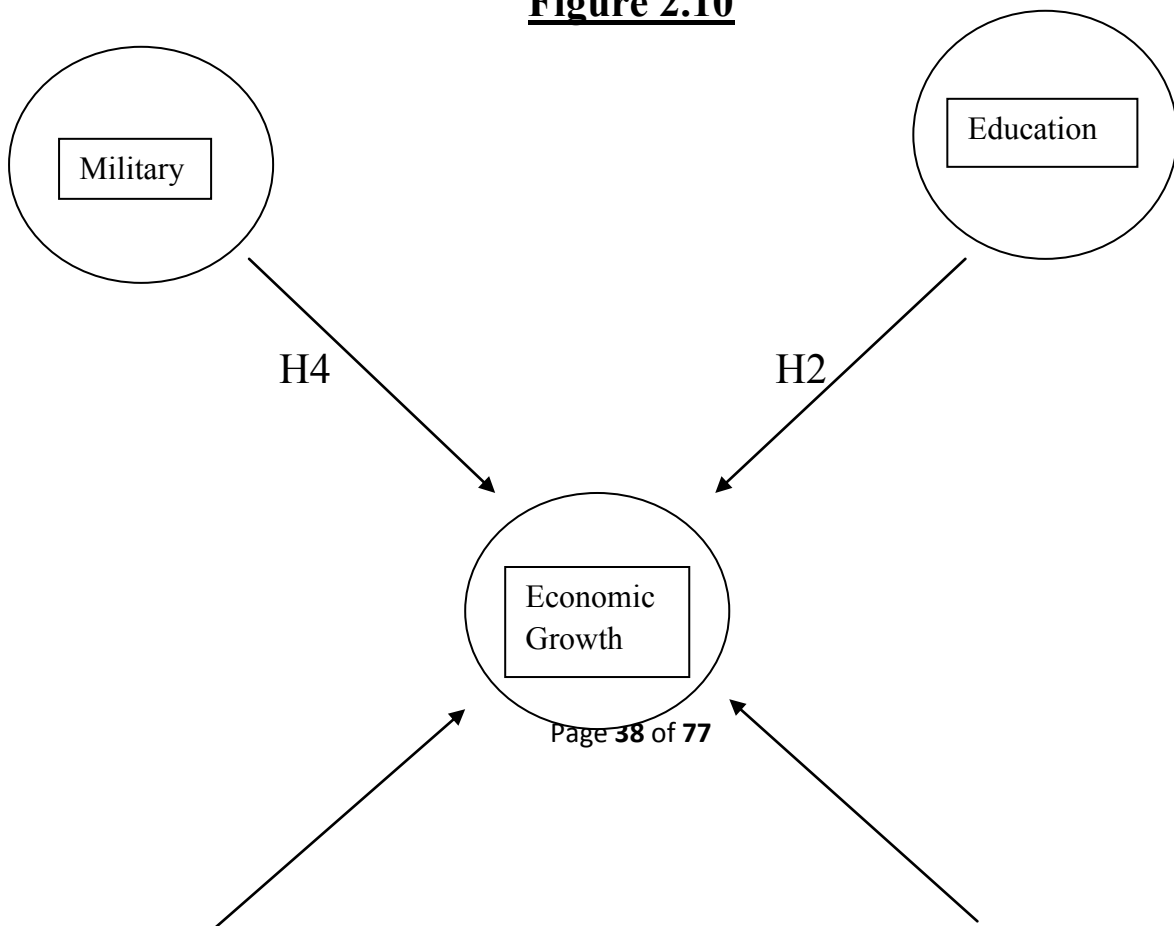
2.9 Conclusion

In this chapter, information relevant with this research topic is gathered. The past researchers were being presented their views and findings results that each of the independent variables was being explained to show how the variables might affect the dependent variable of this

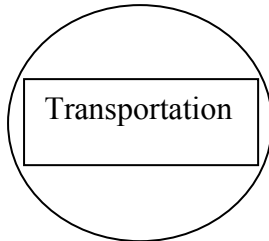
research. The comparison of the variables in between different countries has also been done by the past researchers in order to show how the trend differs from country to country.

2.10 Theoretical Framework

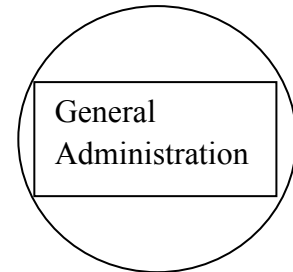
Figure 2.10



H1



H3



CHAPTER 3: RESEARCH METHODOLOGY

3.1 Overview

This chapter will present the methods used in this research. This chapter will describe how the research was carried out in terms of research design, data collection methods, and methods of data analysis.

3.2 Research Design

Research design is the blueprint for fulfilling objectives and answering questions (Cooper and Schindler, 2008). A clearly defined of methods used in collecting, understanding, and

analysing the data will help to provide a framework for the study, Objectives of the study should be included as well to obtain the appropriate information when solving the problem. (Zikmund, Babin, Carr, and Griffin, 2010). Thus it is important to select an appropriate research design.

Research can be categorized into three different types which are exploratory research, descriptive research and causal research. Exploratory research is conducted to clarify and define the nature of a problem but it does not provide conclusive evidence and expected to carry out a further research. Descriptive research is a research that conducted to better understand the characteristics of a population or phenomenon when a problem is aware. Causal research is conducted to identify relationship among the variables. Causal research is used to express the prediction of the future.

This research is a quantitative research. Causal research is chosen as the type of research based upon the purpose of this research is to find out the relationship between the independent variables and dependent variable.

3.3 Data Collection

Researcher can collect the data needed through primary or secondary sources or by both sources. It can be collected through different ways such as surveys, experiments, observation, secondary data, journals, and interviews. This research will be using the secondary data collected.

3.3.1 Secondary Data

This study utilizes data from secondary resources. Pannerselvam (2006) states that secondary data is data collected from sources that have already been created for the purpose of first time use and future uses. The quantitative data are displays in the form of absolute real GDP for the economic growth and absolute value of government

expenditure. The data are structured annually from a period of 1970 to 2012 (43 years). The sample was chosen mainly on the basis of data availability. All of the quantitative data were collected from various reliable sources mainly from the Economic Planning Unit of Malaysia, Ministry of Finance Malaysia, World Bank, Penn World Table and International Monetary Fund. Generally, quantitative data is used in the regression process.

3.4 Data processing

Before proceed to analyze the data collected, this step is needed to process the data. Data processing consists of determination of variables and transformation of the variable.

3.4.1 Determination of variables

Determination of variables is an important subsequent step after the data collection process has been carried out. This step will help to determine and to define the most suitable form of variables to be used in the regression analysis from the numerous variables that collected. As mentioned earlier, this study will utilize two major variables for the model construction. The two main variables are economic growth as dependent variable and government expenditure as independent variable. For easier definition, economic growth is described as a value increment of goods and services that are produced by an economy. Most of literatures employed GDP as a proxy of economic growth. This study will also use the GDP as a proxy of economic growth. For government expenditure variables, this study employs the government development expenditure in Ringgit Malaysia as a proxy. There are several justifications why this study uses the government development expenditure instead of using other forms of expenditure while most previous literatures used government consumption expenditure and others. Government consumption expenditure is defined as a final general government consumption expenditure which includes all government current expenditures for purchases of goods and services. As this study

only focuses on development expenditure therefore using government consumption will lead to an irrelevant study. In addition, the limitation of available time series data on government development expenditure from online databases also contributes to this matter. The selection of these variables is based on the formulation of GDP and the Keynesian view.

3.4.2 Transformation of Variable

Instead of using the original unit which is in Million of Ringgit Malaysia for one unit, all the variables in this research will be transform in to natural logarithms form. This is to create a clearer picture and better understanding of the changes of the variables in percentage form.

3.5 The Model

As this study is concerned with the government expenditure towards economic growth, equation (1) shows the function for economic growth and is expressed as:

$$\Delta Y = F(\text{TRANS}, \text{EDU}, \text{DEEFSEC}, \text{GENADMIN}) \quad (1)$$

The Malaysia government development expenditure consists of two main services which are economic services and social services.

Economic services consist of agriculture and rural development, trade and industry, transport, public utilities, and others, while social services consist of education, health, housing, social community services. Since transport and education is the two highest expenses that government has spent (See Appendix 1), so these two variables will be use in this research to examine the relationship of it with the economic growth.

In addition, there are two more other variable that is fall neither under economic services nor social services but will also be counted in this examination. These variables are the military expenditure and general administration expenditure.

3.6 Data Analysis

There are a lot of types of tests that can be use to conduct analysis. Some of the analysis tests that available are like linear regression, correlation test, normality test, cointegration test, and unit root test. Data analysis software, EViews 5.1 is used to analyze the data collected in this study. EViews is the analysis software that suitable to examine time series data compare to the Statistical Package for Social Science (SPSS).

3.6.1 Ordinary Least Square Method

This study conducts a time series regression analysis by employing the Ordinary Least Square (OLS) method. OLS regression test is to explain the behavior of the dependent variables ΔY by changes in the explanatory variables. For easier understanding, it is a method to estimate the relationship between the variables. Mason (1996) states that regression analysis is a technique for developing or modeling several variables into a linear equation and later used for prediction or forecasting. In this case the OLS regression is to estimate the association between government expenditure and economic growth in Malaysia. The estimates obtained for each coefficient show how percent the independent variable increase will affect the how many percent of changes in the dependent variable.

3.6.2 Unit Root Test

Prior to the regression process, this study will conduct unit root test on the data. While the unit root test is a test to determine the existence of unit root in the data and clarify

the stationary status of the data. The unit root test, Granger and Newbold (1974) state that a spurious regression could exist with the presence of non-stationary variables. If the series are non-stationary, the OLS model will lead to spurious estimates. For easier understanding, a spurious regression has a high R2 and its t-statistic shows as significant; however, this result is meaningless.

The existence of stationary in a time series data indicate that the series have constant variance, constant mean and constant covariance, so the results obtained implied that the existence of a meaningful economic relationship in the regression model.

3.6.2.1 Augmented Dickey Fuller Test (ADF)

The ADF Test is introduced by Dickey and Fuller (1981). An ADF test is one of the unit root test. An ADF test is a version of the Dickey-Fuller test for a larger and more complicated set of time series models. The smaller the number of t-test statistic, the stronger the rejections of the hypothesis that there is a unit root in the series at some level of confidence. In the equation, the change of dependent variable is regressed by the independent variables that include the lagged level of the variables and a sum of the lagged changes in the variables. Therefore, the equation for ADF can include a constant and trend as given below:

$$\Delta Y_t = \beta_1 + \beta_2 t + \gamma Y_{t-1} + \alpha \sum \Delta Y_{t-1} + \varepsilon_t$$

Where Y_t is our variable of interest while Δ is the differencing operator, t is the time trend and ε is the residual of zero mean and constant variable. Both of the null hypotheses are as follow:

$H_0: \gamma = 0$ (Y_t is a unit root/non-stationary)

$H_1: \gamma \neq 0$ (Y_t is stationary)

Gujarati (2009) mentioned that the unit root hypothesis of the ADF can be rejected if the t-test statistic is less than critical value but in another way to be said that reject the null hypothesis when it is stationary.

3.6.2.2 Phillip and Perron Test (PP)

Phillip and Perron (1988) unit root test will be carried out to examine the data. Augmented Dickey Fuller test and PP test also will be used for a series with high degree of auto regression. This is to ensure that the serially uncorrelated residuals are decided accordingly to Newey-West's suggestions, Newey & West (1987). In PP test, the null hypothesis of non stationary is tested by the t-statistic with critical value. By rejecting the null hypothesis based on this calculation, it is suggested that the series is stationary. The hypothesis is as follows:

H_0 : Series contains a unit root

H_1 : Series is stationary

Gujarati (2009) mentioned that the unit root hypothesis of the PP can be rejected if the t-test statistic is less than critical value.

3.6.3 Cointegration Tests

The cointegration test simply tests whether a long run relationship exists between the non-stationary series. Cointegration is used as a tool in time series analysis. If there are two non-stationary random variables, when the variables are cointegrated, which also meaning that they have a long run relationship. This cointegrating vector approach is found by Granger and Eagle (1987) where they suggested that linear regression on non-stationary time series data could bring spurious regressions in time series model. If spurious regression happened the empirical results will show a high

R-square but the Durbin-Watson statistic is low .In this test, the null hypothesis is “No Cointegration”. If the null hypothesis is rejected, then the two series are cointegrated.

3.6.4 Diagnostic Testing

The OLS regression test will be conducted only after the non-stationary data is differentiating into stationary. According to Gujarati (2009), in order to have a good econometric model for OLS regression, the model must meet up with certain econometric assumptions such as: the variables must be linear, the residuals must be normally distributed, there must be no multicollinearity among the variables, there is no correlation between the variables, and the disturbance must be constant.

Therefore, owing to the need of the econometric assumption, this study conducts the normality test, multicollinearity test, autocorrelation test and heteroskedasticity test, respectively. In addition, all these tests are also conducted to ensure this study will gain the finest results and conclusions. Explanations of the importance of these tests are as follows:

3.6.4.1 Normality Test

Normality tests are used to determine whether a data set is well-modeled by a normal distribution or not, or to compute how likely an underlying random variable is to be normally distributed. More precisely, they are a form of model selection, and can be interpreted several ways, depending on one's interpretations of probability.

In descriptive statistics terms, one measures a goodness of fit of a normal model to the data .If the fit is poor then the data are not well modeled in that respect by a normal distribution, without making a judgment on any underlying variable.

3.6.4.2 Multicollinearity Test

Multicollinearity is a statistical phenomenon in which two or more independent variables in a regression model are highly correlated. In this case, the coefficient estimates may change erratically in response to small changes in the model or the data. Multicollinearity may give an invalid result for any individual independent variables which will lead to invalid explanation. The independent variables should not linear relationship between each other.

Agresti and Finlay (2007) state that the estimates for a regression model cannot be uniquely computed if there is a perfect linear relationship between the predictors or independent variables. This is because as the degree of multicollinearity increases, the regression model estimates of the coefficients become unstable and the standard errors for the coefficients can get wildly inflated. Gujarati (2009) highlights several statistical consequences due to multicollinearity problems.

The consequences are as follows:

- i. Even though BLUE (Best Linear Unbiased Estimator), the OLS estimator has large variances and covariances that will lead to difficulty in making precise estimation.
- ii. Owing to the above consequence, the confident intervals tend to be much wider. This will lead to the acceptance of the “zero null hypothesis” more readily.
- iii. Also due to the first consequence, the t ratio of one or more coefficients tends to be statistically insignificant.

- iv. At the same time, even though the t ratio of one or more coefficients is statistically insignificant, the indicator measure for goodness of fit, R² can be very high.
- v. The OLS estimators and their standard errors can be very sensitive to small changes in the data.

Thus to detect the multicollinearity problem, this study employs Variance Inflation Factor (VIF) as an indicator for the existence status of multicollinearity. The VIF suggests that if the values are greater than 10, they may require further investigation. For checking the degree of multicollinearity, many researchers have adopted 1/VIF as tolerance value. If the tolerance value is lower than 0.1 compared to a VIF of 10, it means that the variable could be considered as a linear combination of other independent variables. In addition, this study also employs the pair wise correlation test to ensure the VIF suggestion.

Gujarati (2009) also suggests that to address the multicollinearity problems successfully, one should first understand the most severe problems of multicollinearity. The following are several conditions that can lead to severe multicollinearity problems that require attention and consideration.

- i. A priori information
- ii. Combining cross-sectional and time series data
- iii. Dropping a variable(s) and specification bias
- iv. Transformation of variables
- v. Additional or new data
- vi. Reducing multicollinearity in polynomial regressions
- vii. Employing multivariate statistical techniques such as factor analysis principal components or techniques such as ridge regression.

3.6.4.3 Autocorrelation Test

Autocorrelation is common when using time series data in regression. It occurs when the residual does not form a random trend around the regression line. The positive autocorrelation exists when the trend of the residuals is formed systematically above or below the line. One of the ways to eliminate autocorrelation is by identifying the factors responsible for the autocorrelation and extending the regression accordingly. This study conducts the ARCH LM test and Breusch-Goldfrey Serial correlation LM test to detect the autocorrelation problem.

3.6.4.4 Heteroskedasticity Test

One of the classical assumptions of the ordinary regression model is that the disturbance variance is constant across observations. If this term is violated, it means that the error terms are heteroskedastic. Heteroskedasticity often arises in the analysis of cross sectional data. If heteroskedasticity is present it is said that the inferences from the standard errors are likely to be misleading. This study uses White Heteroskedasticity Test to determine the present of heteroskedasticity. If the p value is high at a chosen level of significance then the null-hypothesis is accepted.

3.6.5 Autoregressive conditional heteroskedasticity (ARCH) Method

The ARCH model was first suggested by Engle (1982). The main feature of this model is that its conditional variance varies over time. By following his idea, a lot of models with this feature have been proposed. In the time series modeling context, it is desirable to have a parsimonious model for easy interpretation. Thus, if the model has suspected that heteroscedasticity and autocorrelation problem existed, ARCH can use to solve these two problems as well.

3.7 Conclusion

This chapter described the method use in this study by providing the information about the research design, data collection method, data processing, the model, and data analysis. From the research design, appropriate data collection and analyze methods can be identified. Through causal research the relationship between the independent variable and dependent variable can be determined. Secondary data collection provides researcher the important information to carry out the study.

After the all the relevant data are collected, EViews is used to run test on the data and the results of the test will then be analyzed. First, will run the unit root test to confirm whether the series is stationary. Then, will run the cointegration test to examine the long run relationship between the independent variable and dependent. Finally, run regression analysis follows with the diagnostic test to test the autocorrelation problem, heteroskedasticity test, and multicollinearity problem.

CHAPTER 4: RESULTS AND INTERPRETATION

4.1 Overview

This chapter will present the findings of the empirical results of the relationship between the economic growth and government expenditure in Malaysia from year 1970 to year 2012 that explained in Chapter 3. The tests that present in this chapter included the Unit Root Test, Cointegration Test, and Diagnostic Test.

4.2 Unit Root Test

It is a kind of test that applies to examine whether the set of time series data is stationary. There are various ways to examine the stationary problem. The most commonly used ways are conducted through either the Augmented Dickey-Fuller (ADF) Unit Root Test or the Phillips-Perron (PP) Unit Root Test. In this study, the ADF and PP unit root test are used. This study conducted ADF and PP test by EViews version 5.1.

4.2.1 Augmented Dickey-Fuller (ADF) Unit Root Test

The hypothesis of ADF Unit Root Test is suggested as follow:

H_0 : The series of data contain a unit root.

H_1 : The series of data do not contain a unit root.

In this study, confident level was set at 95% or significance value of 5%. If the result from ADF test shows the p-value is lesser than the significance value of 0.05, which mean it will reject the null hypothesis and accept the alternative hypothesis. All the variables are tested in level and in first difference form with intercept in the equation and also trend and intercept in the equation.

TABLE 4.01: Results of Augmented Dickey-Fuller (ADF) Unit Root Test on LGDP, LTRANS, LEDU, LGA, and LMIL for the period of year 1970 to year 2012

Variable	P-Value			
	Level		First Differences	
	Intercept	Trend and Intercept	Intercept	Trend and Intercept
LGDP	0.4460	0.2016	0.0000	0.0000
LTRANS	0.0798	0.1070	0.0000	0.0000
LEDU	0.4932	0.1200	0.0003	0.0037
LGA	0.3113	0.8104	0.0000	0.0000
LMIL	0.0911	0.0261	0.0107	---

Source: Developed for the research

Table 4.01 shows the p-value of all of the variables (LGDP, LTRANS, LEDU, LGA, and LMIL) in level and first difference form and with trend and without trend. The result shows all the variables are not significance in level with intercept when significance level is at 5%. The p-values of all variables are shown larger than the significance value of 0.05. Therefore do not reject the null hypothesis that the series data has a unit root or it is non stationary. When the variables are tested in level with trend and intercept, all the variables are still shown contain unit root except for the variable LMIL, the variable p-value is only 0.0261 which is lesser than the significance value of 0.05, thus it should reject the null hypothesis and accept the alternative hypothesis that there is no unit root or it is stationary data. Since the variable LMIL has rejected the null hypothesis at 95% of confidence level, a higher order of differencing is not needed to execute.

In the first difference form with trend or without trend, all of the variables' p-value is shown significance at 95% of confidence level. All of the p-value is lesser than the significance value of 0.05. Therefore all the series is stationary data as it rejects the null hypothesis to accept the alternative hypothesis that the series do not contain a unit root.

4.2.2 Phillips-Perron (PP) Unit Root Test

The hypothesis of PP Unit Root Test is suggested as follow:

H0: The series of data contain a unit root.

H1: The series of data do not contain a unit root test.

All variables are tested in the same way with ADF test and the confident level set will remained to 95% in this PP test. If the p-value resulted from the PP test shown lower than the significance value of 0.05, it should reject the null hypothesis.

TABLE 4.02: Results of Phillips-Perron (PP) Unit Root Test on LGDP, LTRANS, LEDU, LGA, and LMIL for the period of year 1970 to year 2012

Variable	P-Value			
	Level		First Differences	
	Intercept	Trend and Intercept	Intercept	Trend and Intercept
LGDP	0.4460	0.4675	0.0000	0.0000
LTRANS	0.0384	0.0133	0.0000	0.0000
LEDU	0.1086	0.1988	0.0002	0.0006
LGA	0.4776	0.3738	0.0000	0.0000
LMIL	0.3820	0.3269	0.0000	0.0000

Source: Developed for the research.

Table 4.02 show the p-value results from the PP test for the same variables run in ADF test. The result show most of the variables (LGDP, LEDU, LGA, LMI) are not significance at 5% in level form with or without trend. Thus do not reject the null hypothesis and it has a unit root in the series. The only variable that shows significance p-value is the LTRANS. The p-value 0.0384 (without trend) and 0.0133 (with trend) are both lesser than 0.05. Therefore should reject the null hypothesis and accept alternative hypothesis that the series data is stationary.

In the first difference level, the study found that all the series data come with the significant p-values. Almost all of the p-values after first differencing shown are 0.0000, therefore reject the null hypothesis. Now all the series are in stationary data.

4.3 Cointegration Test

It is a kind of analysis that used to examine the long run relationship between the variable.

The Johansen Cointegration Test hypothesis is as follow:

H₀: There is no long run equilibrium relationship between government expenditure and economic growth

H₁: There is long run equilibrium relationship between government expenditure and economic growth

In Cointegration test, at least 1 cointegrating relation which represented by the number of (*) exist among government expenditure variables (general administrative, transport, military and education) and economic growth (GDP) in order to fulfill the requirement in this test. A relation among government expenditure and economic growth means there is one cointegrating equation at the 0.05 level.

If there is one cointegrating equation at the 0.05 level, Johansen Cointegration Test (Trace and Maximum Eigenvalue) will show a (*) in the table at None. If there are two cointegrating equation at the 0.05 level, Johansen Cointegration Test (Trace and Maximum Eigenvalue) will show two (*) at none and at most 1.

TABLE 4.03: Johansen Cointegration Test (Trace)

Unrestricted Cointegration Rank Test (Trace)				
Hypothesized		Trace	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**

None *	0.658035	111.6368	88.80380	0.0005
At most 1 *	0.510686	67.64185	63.87610	0.0233
At most 2	0.452615	38.33706	42.91525	0.1332
At most 3	0.199143	13.63031	25.87211	0.6880
At most 4	0.104501	4.525321	12.51798	0.6654

Trace test indicates 2 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Source: Developed for the research.

Table 4.03 show the relation among the government expenditure variables (transports, education, general administrative, and military) and economic growth (GDP) in Trace statistic. If the Trace statistic is larger than the critical value, then the null hypothesis has to be rejected. In the Trace Test, at first the null hypothesis at none was rejected which mean there is a relationship exist, hence will proceed to the next null hypothesis where there is one relationship exist and the alternative hypothesis of there is two relationship exist. Again, it reject the null hypothesis of there is one relationship exist. The further test thus needed to carry out at null hypothesis is there is two relationship exist. After the hypothesis of there is at most 1 cointegration equation, the results shown is insignificance. The Trace test indicates 2 cointegrating equations at the 0.05 level.

TABLE 4.04: Johansen Cointegration Test (Maximum Eigenvalue)

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)				
Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.658035	43.99495	38.33101	0.0101
At most 1	0.510686	29.30480	32.11832	0.1062
At most 2	0.452615	24.70675	25.82321	0.0697
At most 3	0.199143	9.104984	19.38704	0.7136

At most 4	0.104501	4.525321	12.51798	0.6654
Max-eigenvalue test indicates 1 cointegrating eqn(s) at the 0.05 level * denotes rejection of the hypothesis at the 0.05 level **MacKinnon-Haug-Michelis (1999) p-values				

Source: Developed for the research.

Table 4.04 show the relation among the government expenditure variables (transports, education, general administrative, and military) and economic growth (GDP) in Maximum Eigenvalue statistic. If the Maximum Eigenvalue statistic is larger than critical value, the null hypothesis has to be rejected. The Maximum Eigenvalue test result show that the hypothesis of no relation exists was rejected, there is a long run equilibrium relationship between government expenditure and economic growth. This test indicates 1 cointegration equation at the 0.05 level.

4.4 Ordinary Least Square (OLS) Regression Estimation

Before proceed to the diagnostic test, the model was estimated using the least square method. The result of the OLS model was as follow:

TABLE 4.05: The result from Ordinary Least Square (OLS) Regression Estimation

Independent Variable	Coefficient	P-Value
LTRANS	0.6189	0.0006
LEDU	0.2126	0.0776
LGA	0.1297	0.0931
LMIL	-0.0346	0.7404
C	5.0796	0.0000

R²=0.9616
Probability F-Statistic = 0.0000

Dependent variable is LGDP.

Source: Developed for the research.

The model:

$$\text{LGDP} = 0.6189\text{LTRANS} + 0.2126\text{LEDU} + 0.1297\text{LGA} - 0.0346\text{LMIL} + 5.0796$$

From the results, at 90% of confident level, almost all of the variables (LTRANS, LEDU, and LGA) are shown significant except the variable LMIL has an insignificant p-value which is more than 0.10. The goodness of fit (R^2) has a high value of 0.9616 nearly to 1, this mean that the model is strong. The GDP is 96.16% explained by the independent variables (LTRANS, LEDU, LGA, and LMIL). The probability F-statistic value 0.0000 shows that the model is significant.

For the interpretation, the coefficient may be interpreted in percentage form because all the variables are expressed in the form of natural logarithms. From the results, it shows that for every 1% increase in transportation expenses, the economic growth will also increase by 61.89%. For every 1% increase in education expenditure, the economic growth will increase by 21.26%. While for every 1% increase in the government general administrative expenditures, the economic growth will increase by 12.97%.

However, the result shows that for every 1% increase in the military expenses, the economic growth will decrease by 3.46%. Yet there is not enough evidence to conclude the expenses at military will decrease the economic growth since the p-value of variable LMIL is far larger than significant level at 0.10. At the same time, it also makes no sense that by increase the expenses in military can lead to increase in the economic growth. This is because expenses spend in military in other word mean buying new ammunition, it is a money outflow process, and logically it will not boost the country's economy.

4.5 Diagnostic Test

From the model estimated, now should proceed to residual checking whether there is any problems exist in the model like autocorrelation problem, heteroskedasticity problem, multicollinerity problem, and whether the residual is normally distributed. To examine the

autocorrelation problem, the Breusch-Godfrey Serial Correlation LM Test and ARCH LM Test will be used. White Heteroskedasticity Test will be used for examine the heteroskedasticity problem while Normality Test used to check whether the residual is normally distributed. Variance Inflation Factor will be used to determine whether the multicollinearity problem exists.

Autocorrelation is a problem that associated with time series data, which is the correlation between observations ordered in time. The existence of autocorrelation problem could cause less efficiency in the model (overestimate R^2), and the variances are biased. Therefore use of the t and F test of significance are not reliable. (Gujarati 2009)

The hypothesis made for autocorrelation problem is:

H_0 : There is no autocorrelation problem exist.

H_1 : There is autocorrelation problem exist.

The rejection or no rejection of null hypothesis is based on the significance level selected for example 1%, 5%, or 10%.

4.5.1 Breusch-Godfrey Serial Correlation LM Test (BG Test or LM Test)

Instead of using Durbin-Watson d Test, this study applied BG Test or known as LM Test to avoid some of the pitfall of the Durbin-Watson d Test.

TABLE 4.06: The result from Breusch-Godfrey Serial Correlation LM Test

Breusch-Godfrey Serial Correlation LM Test:			
F-statistic	4.557916	Probability	0.004691
Obs*R-squared	15.00932	Probability Chi Square	0.004682

Source: Developed for the research

From the result above, the p-value is less than 5%, thus can reject null hypothesis that there is autocorrelation problem exist.

4.5.2 ARCH LM Test

TABLE 4.07: The result from ARCH LM Test

ARCH Test:			
F-statistic	1.765118	Probability	0.158699
Obs*R-squared	6.706167	Probability Chi Square	0.152255

Source: Developed for the research

From the result above, since the p-value is more than 5%, even if set at 10% of significance level, the p-value still shows insignificance. Therefore, the null hypothesis cannot be rejected that there is no autocorrelation problem exist. This result is contradicted with the conclusion from BG test.

4.5.3 White Heteroskedasticity Test

Heteroskedasticity is a problem that the disturbance term has unequal variance. It can arise as a result of the presence of outliers (Gujarati 2009). The existence of heteroskedasticity may cause the model overestimated, the t statistic become smaller thus cause incorrect conclusion. Other than that, if heteroskedasticity problem happened, the variance will become standard error then cause the T test and F test to be not correct.

The hypothesis made for the heteroskedasticity problem is:

H_0 : There is no heteroskedasticity problem.

H₁: There is heteroskedasticity problem.

White Heteroskedasticity test is used in this study.

TABLE 4.08: The result from White Heteroskedasticity Test

White Heteroskedasticity Test:			
F-statistic	2.340360	Probability	0.040231
Obs*R-squared	15.27011	Probability Chi-Square	0.054101

Source: Developed for the research

From the result, the p-value is lesser than the 5% significance level. So should reject the null hypothesis that there is a heteroskedasticity problem exist.

4.5.4 Normality Test

Normality assumptions are made due to the central limit theorem and common distribution. Normality is used to inference for the hypothesis testing and thus estimates for the true coefficients. The error term is assumed to follow the normal distribution with zero mean and constant variance, so it can be a best linear unbiased estimator.

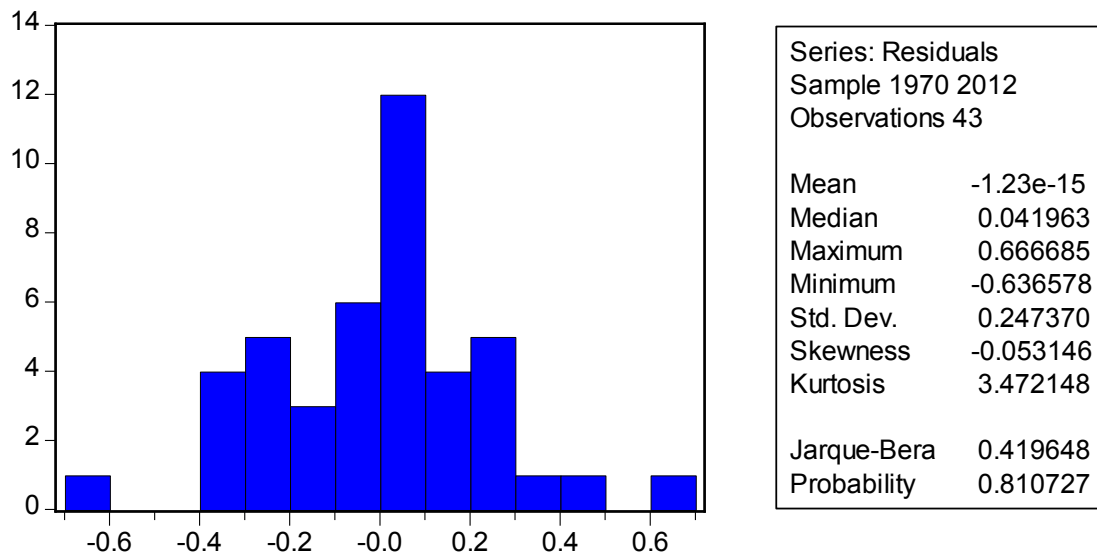
The hypothesis for normality test is as follow:

H₀: The residuals are normally distributed.

H₁: The residuals are not normally distributed.

To interpret whether the residuals is normally distributed, there are few way to examine it, either by using histogram of residual or the Jarque-Bera test. The Jarque-Bera test is suitable only for large sample size. For this reason, this study will use the histogram normality test.

FIGURE 4.1: The result from the Histogram Normality Test



Source: Developed for the research

From the histogram, it seems that the residuals are normally distributed. Since the probability is 0.810727 and it is larger than the critical value which is 5% significant level. The probability of obtain this statistic under the normality assumption is about 81%. Thus, do not reject the null hypothesis and which also means that, the error terms are normally distributed. The Kurtosis value shows 3.472148 which is higher than 3, this indicate that the shape of probability distribution is slim. The negative skewness value indicates the score clustering at more to the right hand side.

4.5.5 Multicollinearity Test

Multicollinearity is the problem that there is existence of linear relationship among the explanatory variable or the independent variable. Present of multicollinearity problem could cause the overall measure of goodness of fit to be very high (high value in R^2) but the estimates will still be unbiased. It will be difficult to explain or to do estimation if there is the existence of perfect multicollinearity, all explanatory variables are linear to each others. This study will conduct pair-wise correlation test and variance inflation factor (VIF) from the auxiliary regression to determine whether

there are multicollinearity problem. If the pair-wise correlation of the two regressors is high, in other words, is excess of 0.8, then there will suggest a multicollinearity problem exists.

Table 4.09: The result from Pair-Wise Correlation Test

	LTRANS	LEDU	LGA	LMIL
LTRANS	1	0.969595	0.929938	0.938705
LEDU	0.969595	1	0.931259	0.904121
LGA	0.929938	0.931259	1	0.893482
LMIL	0.938705	0.904121	0.893482	1

Source: Developed for the research

From the result above, the correlation among each variable have high pair-wise, excess of 0.8, this indicate there is high interdependent relationship among explanatory variable. Thus, suggesting that there is multicollinearity problem. The lowest correlation is 89.34% between variable LMIL and LGA, it was very high.

After suspecting the existence of multicollinearity problem, now should proceed to carry out variance inflation factor (VIF) from auxiliary regression to confirm the problem.

TABLE 4.10: The R Square Results from Auxiliary Regression

Variable	R2	VIF
LTRANS	0.961980	26.3019
LEDU	0.947553	19.0668
LGA	0.884094	8.6276
LMIL	0.886368	8.8003

Source: Developed for the research

If the VIF is equal to 1, there will be no collinearity at all between the independent variables. If it is more than 10, there will be multicollinearity problem exist. From the R² results from auxiliary regression, the VIF for LTRANS and LEDU are 26.3019

and 19.0668 respectively which are more than 10. Hence, these 2 variables have the multicollinearity problem. But for the variable LGA and LMIL, both VIF are less than 10 at 8.6276 and 8.8003, so there are no multicollinearity problem in these 2 variables.

Since the data used in this study yearly data and the sample size is relatively small due to limited access to the data, so it is normal for multicollinearity problem to present. Other than that, the variables itself share a common trend also lead to the existence of this problem. Therefore, the remedy in this study is to do nothing, it is a data deficiency problem.

4.6 Autoregressive Conditional Heteroskedasticity Estimator

This method is used in this study to overcome the autocorrelation and heteroskedasticity problems. In this study, this model is set with ARCH degree of 1 and GARCH degree of 0.

TABLE 4.11: The Result from Autoregressive Conditional Heteroskedasticity (ARCH) Model

Independent Variable	Coefficient	P-Value
LTRANS	0.5792	0.0001
LEDU	0.2873	0.0100
LGA	0.0553	0.3936
LMIL	0.0756	0.3541
C	4.5112	0.0000

R²=0.9564
Probability F-Statistic = 0.0000

Dependent variable is LGDP.

Source: Developed for the research

The Model:

$$LGDP = 0.5792LTRANS + 0.2873LEDU + 0.0553LGA + 0.0756LMIL + 4.5112$$

From the results, at 95% of confident level, two of the variables (LTRANS, and LEDU) are shown significant while the variable LGA and LMIL has an insignificant p-value which is more than 0.05. The goodness of fit (R^2) has a high value of 0.9564 nearly to 1, this mean that the model is strong. The GDP is 95.64% explained by the independent variables (LTRANS, LEDU, LGA, and LMIL). The probability F-statistic value 0.0000 shows that the model is significant.

For the interpretation, the coefficient may be interpreted in percentage form because all the variables are expressed in the form of natural logarithms. From the results, it shows that for every 1% increase in transportation expenses, the economic growth will also increase by 57.92%. This is due to the reason that the transportation expenses can increase the conveniency for the tourist when travel in Malaysia. For every 1% increase in education expenditure, the economic growth will increase by 28.73%. This is because the education system can create or train more human capital in the future. It is an asset for the country's future.

However, for every 1% increase in the government general administrative expenditures, the economic growth will increase by 5.53% but it is not significant in the p-value. Hence cannot conclude that the positive relationship between economic growth and government's general administrative is true and there is no affect of government's general administration expenses on the economic growth. This is due to the reason that the general administration expenses included few other expenses. It is not the main component of the factor that affects the economy. That is why it is not significant to show a relationship with economic growth. The result shows that for every 1% increase in the military expenses, the economic growth will increase by 7.56%. Yet there is not enough evidence to conclude the expenses at military has positive relationship with the economic growth since the p-value of variable LMIL is far larger than significant level at 0.05. The variable LMIL will not cause any effect on the economic growth. This is because that the economy of a country is based on the country stability. Military spending is used to ensure the stability of the country and will not directly affect the country's economy. It is an indirect effect to the economic growth. Thus it is reasonable to show an insignificant relationship between the variable LMIL with the economic growth.

4.7 Conclusion

In conclusion, this study found that the government spending is related to the economic growth but not all type of the expenses. This research support that the expenses on transportation and expenses on education have significant relationship with economic growth. Both expenses are statistically significant at 0.05 level. However, the general administrative expenses and military expenses show insignificant relationship with the economic growth.

In Chapter 5, it will present the summary of the results obtained in this chapter and also the implications from this research.

CHAPTER 5: DISCUSSION, CONCLUSION AND IMPLICATIONS

5.1 Overview

This chapter will present the summary of this study to examine whether the findings can meet the objective in the earlier chapter. The economic growth model in this study has highlighted the relationship of the four selected government spending variables (transportation, education, general administration, and military, see Appendix 1) with the economic growth of Malaysia based on the empirical evidence found in this study. Besides, this study also suggests few policy implications and recommendations.

5.2 Summary

Unit root test results in this study whether by using Augmented Dickey-Fuller (ADF) test or Phillips-Perron (PP) Test shows the entire variables are stationary data in first difference with or without trend. In other words, these series is said to be integrated of order one which is I(1). In the Johansen Cointegration Test, it shown that there is at least 1 relationship exists between the five variables (LGDP, LTRANS, LEDU, LGA, LMIL).

The ordinary least square model shows the variables transport, education and general administrative expenses are all having positive relation with the economic growth. The variable military is negative relation with economic growth without enough evident. However, there is presence of autocorrelation problem, heteroskedasticity problem and multicollinearity problem in the model. Autoregressive conditional heteroskedasticity model is then further tested to counter the autocorrelation and heteroskedasticity problem. Due to the data deficiency problem, the remedy for multicollinearity problem is to do nothing.

5.3 Discussion of Major Findings

To answer the hypothesis in Chapter 1, the results were summarized in Table 5.1.

TABLE 5.01: Summary of the Results Obtained for the Hypothesis

Research Questions	Hypothesis	Conclusion
What is the relationship between the transportations expenditure and economic growth of Malaysia?	H1: There is no relationship between the transportations expenditure and economic growth of Malaysia.	Rejected
	H1a: There is a relationship between the transportations expenditure and economic growth of Malaysia.	Do not reject
What is the relationship between the educations expenditure and economic	H2: There is no relationship between the educations expenditure and economic	Rejected.

growth of Malaysia?	growth of Malaysia.	
	H2a: There is a relationship between the educations expenditure and economic growth of Malaysia.	Do not reject
What is the relationship between the general administration expenditure and the economic growth of Malaysia?	H3: There is no relationship between the general administration expenditure and economic growth of Malaysia.	Do not reject
	H3a: There is a relationship between the general administration expenditure and economic growth of Malaysia.	Rejected.
What is the relationship between the military expenditure and economic growth of Malaysia?	H4: There is no relationship between the military expenditure and economic growth of Malaysia.	Do not reject
	H4a: There is a relationship between the military expenditure and economic growth of Malaysia.	Rejected.

Source: Developed for the research

5.4 Implications of Study

Through the research, it has indicated that transport and education has significant relationship on economic growth whereas military and general administrative has no significant relationship to economic growth. Therefore, we suggested that government need not to increase the budget allocation towards military and general administrative.

Various types of government spending will have different impacts on economic growth. Thus, this implied that it has greater potential to improve efficiency of government spending by reallocation among sectors.

Based on the findings of this study, the following policy recommendations were being proposed:

There should be effective channeling of public funds to productive activities, which will have a significant impact on economic growth such as transportation and education.

A collaboration between the government and the private sector is needed in providing essential infrastructural services that will help to promote economic growth and development.

Government consumption spending should be well coordinated at all arms of government, to prevent “crowding out” effect on government investment. Likewise, there should be high degree of transparency and accountability of government spending in various sectors of the economy in order to prevent the channeling of public funds into private accounts of government officials and workers.

Government should monitor the contract awarding process of capital projects closely, to guard against over estimation of project execution cost. This will bring about significant impact of public investment spending on economic growth.

Lastly, there should be autonomy of the anti-graft or anti-corruption agencies like: the Economic and Financial Crimes Commission (EFCC), Independent Corrupt Practices Commission (ICPC), and the Code of Conduct Bureau; in order to effectively police the activities of public funds custodians.

Capital and recurrent expenditures on economic services should be directed mainly to productive economic activities. This will stimulate activities in the economic sectors and, perhaps, reverse the negative effect of on economic growth.

The proportion of government total expenditure that goes into capital and recurrent expenditure financing should be increased since these components exert significant positive effect on economic. Similarly, the share of recurrent expenditure on transfers should be increased since it exerts positive effect on economic growth.

Since the analysis showed that transport and education expenditure have more positive effect than general administrative and military therefore its require more favourable attention in the allocation of government expenditures.

The existence of a relationship between government expenditure and economic growth necessitates the continued use of fiscal policy instruments to pursue macroeconomic objectives in Malaysia

Thus, for the budget allocation to transportation. There is a need for an increase in the budgetary allocation to the transport in promoting output growth of the sector. There are few ways of improving the transportation in terms of traffic congestion. First of all there is a need in expansions of the road and public transit network. Traffic levels do not help to predict which cities build roads. Therefore, new roads allocated to metropolitan areas on the basis of current rules are probably not built where they are most needed, which suggests that more careful reviews of highway expansion projects be required. Furthermore, reductions in travel time caused by an average highway expansion are not sufficient to justify the expense of such an expansion. In any case, expansions of the railway network are more likely to pass a cost–benefit test than expansions of the highway network.

Long run development impacts also suggest that focusing in land development objectives, instead of congestion reduction. This type of justification is normally avoided by transportation agencies. An assessment of transportation projects based upon their land development impacts obviously creates more political tension in the promotion of transportation projects. The business community and developers are generally very active in many localities in promoting projects that increase access to undeveloped land and resulting economic development on that land. A more detailed analysis of how transportation projects interact with land development is essential information that is needed to improve decision-making and the environmental outcomes of specific projects.

In terms of education, the government should occasionally provide training to the teachers as this will help in enhancing their teaching skill and upgrading their knowledge because a knowledgeable teacher is consider criteria in becoming a teacher. Results from this training, the teachers will have the skill to help the students in improving their academic as well as their moral value. Teaching the students to have a good moral value is also part of teacher's responsibility besides the parents.

The government should also allocate a certain amount of budget to improve the school facilities such as sports field, science lab, workshop, and so on as the school facilities is important for the students. A well sports field can help the students to release their stress as their daily homework and studies has been increasing their stress. By having activities such as co curricular and sports day, students can released their tension and also improve the relationship among the students and also the teachers.

5.5 Limitation of Studies

The research in this study occurred a few limitations. For the general administration and military, this research shows a insignificant relationship towards economic growth but there has very little literature that supports the finding. Without the literature support, the results from the analysis are not strong enough to explain the growth and it lacks of credibility.

In this research, the problems of multicollinearity could not be solved. We had used some of the remedies to reduce the problem of multicollinearity but failed. The existence of multicollinearity may cause the data difficult to estimate. This problem will also lead to the acceptance of null hypothesis which means that there is multicollinearity.

The data that used for research are insufficient as the sample size is 42. We are using secondary data as a source to the conduct the statistical analysis. Due to insufficient of data, there are few diagnosis problems encountered.

5.6 Recommendations for Future Research

In this research, the theoretical of general administration is less. There are only few researchers in the past that uses general administration as a determinant of economic growth. So the future researchers might considered of omitting this variable. You may also continue to use this variable provided that the general administration shows a significant positive relationship with the economic growth since this research shows a negative relationship and so the literature is getting harder to obtain.

Future researchers shall conducted using more data such as semiannual data or quarterly data instead yearly data since adding data is a remedies for multicollinearity problem. In this research, the sample size is only 42 and results from the statistical findings shows that multicollinearity existed. Thus, recommendation for using semiannual or quarterly data can be considered as it might help reduce the multicollinearity problem although sometimes it not be effective.

5.7 Conclusion

As a conclusion, this research has fulfilling the objectives of determining government expenditures relationship with economic growth. On the other hand, the impact of the independent variables which consists of education, military, transportation, and general administration is identified. Besides that, the recommendation for future research has been suggested based on the limitations that discovered throughout this research. Lastly, this research can be used as a guideline for future researchers in the sense that the credibility of this research can be considered.

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