CHAPTER I

INTRODUCTION

1.1. Background

Indonesia is the fourth largest population in the world after China, India and the United States, with the population almost a quarter billion according to the 2010 population census. Being a country with a large population can bring problem for economic and social life, for example, are high unemployment and scarcity of food stocks. Therefore, Indonesia needs to experience a demographic transition.

The demographic transition is a changing condition from high fertility and mortality rates becoming lower fertility and mortality rates (Bloom & Finlay, 2009). Usually, the beginning of the demographic transition process started with a decrease in mortality rate after that followed by a decrease in fertility rates.

To carry out the demographic transition, Indonesian government took several actions to reduce population growth within decline the fertility rates through family planning programs in the late 1970s with a better campaign of two children (Goeltom & Juhro, 2013). This campaign is a quiet success to push the total fertility rate in Indonesia and it proves from the data of World Bank which is Indonesia's total fertility rate in Indonesia in the year of 1970 is 5.5 per women and declining every year so in 2016 the total fertility rate is 2.3 per women.

If talking about the demographic transition, it's not only talking about fertility rate but also mortality rate. According to (Reher, 2011) the demographic transition begins with the declining mortality rate. The declining of child mortality rates due to the decrease in the epidemic of diseases with vaccination, better hygiene, treatments and diagnosis, the reduce on hunger levels, the increase in living standards and also the reduction in the level of violence and civil war. So that it can be concluded the declining in mortality because of improvement in material welfare (Kirk, 1996).

The declining of death rate at the same time increase the family size and the family burden which is dependency ratio, furthermore, it also induces a parent to have fewer children (Kirk, 1996). Indonesia infant mortality rate in 2016 is 22.2 per thousand live births if we compare to the year 1970 the total infant mortality rate is 112.7 per thousand births, its declines around 5 times. Hence, you could say the mortality rate have an impact on the fertility rate.

Besides the total infant fertility rate, education also has an impact on birth rates. The declining of fertility based on F.W. Nonstein 1945 is because of education became an important part for peoples in consequence of pace development of new technology which make the new opportunity for new skills. Related to Nonstein work, Garry S. Beaker explain education as a way of accumulating human capital will bring transition of demographic and push economic growth because education encourages people to expect high wages and as a consequence parents expect their children to have better quality.

In term education, Indonesia's school enrolment rate still dominated by primary education and secondary education enrollment rate, but the tertiary education enrolment is lower compared to primary education and secondary education. According to World Bank data, the gross tertiary schooling enrolment in 2016 is 27% if we compare to primary and secondary school enrolment are 103% and 86%.

Furthermore, Income per capita also has an effect on total fertility rate, in the Malthusian theory of fertility, income per capita explain the positive effect on fertility rate, which is when low-income people tend to delay marriage so that in consequences they have fewer children. Furthermore, Malthus explains paupers are likely to have a high death rate compare to the rich because they can afford the health services (Sharp, Strulik, & Weisdorf, 2012). Income per capita in Indonesia increase every year, in 1970 the GDP per capita with constant USD 2010 is 771.85 USD but in 2016 is about 3.974 USD.

Based on the explanation above in order to reduce the total fertility rate, the Indonesia government can use several way namely infant mortality rates, education and income per capita. But is it true that infant mortality rate, education and income per capita can influence the fertility rate? Do the effect are the same as what was described by some theories? So in response, the author would like to found the answer to what is the effect of infant mortality rate, education and income per capita on the total fertility rate in Indonesia by employing the data from 1970 until 2016 and use multivariate time series analysis namely VECM to answer the model of the equation from this research

1.2. Research Problem

Since infant mortality rate, education and income per capita can influence total fertility rate so the research questions are:

1. Is there any short run and long-run effect of infant mortality rate, education and income per capita on total fertility rate in Indonesia?

2. What is the effect of infant mortality rate, education and income per capita on total fertility rate in Indonesia? Whether it positive or negative?

3. What is the policy implication can be taken by the government?

1.3. Research Objective

Based on the research problems above, the objective of the research are:

1. To analyze long-run and short-run effect of infant mortality rate, education and income per capita on total fertility rate in Indonesia

2. To analyze whether infant mortality rate, education and income per capita affect total fertility rate negatively or positively

3. To analyze the policy implication can be implied by government

1.4. Research Advantages

This research will give advantages to:

1. **In theoretical terms:**

   1.1. Promote the development and knowledge particularly study about total fertility rate, infant mortality rate, education and income per capita.

   1.2. As additional literature relates to total fertility rate, infant mortality rate, education and income per capita.

2. **In practical terms:**

   1.1. For author – improves research ability and also improve the writing skills

   1.2. For government – this research is expected to be useful as the material for government consideration in making related regulations

   1.3. For future researchers – can be used as consideration, reference, information and stimulus them to conduct further research.

1.5. Limitation of Study

This study will take a specific topic about the effect of infant mortality rate, education and income per capita on total fertility rate with Indonesia as a case study. The research period is from 1970 – 2016 by considering the availability of the data and also the research data are taken from the World Bank.

Moreover, this study used multivariate time series analysis to formulate the equation model and used *Stata 14.2* program as a data processor. Moreover, this study put total fertility rate as the dependent variable and infant mortality rate, education and income per capita as independent variables.

1.6.   Structure of Writing

This research paper is divided into six chapters as follows:

Chapter I: Introduction

The first chapter contains the background, research problem, research objective, research advantage, limitation of the study and systematic of research writing.

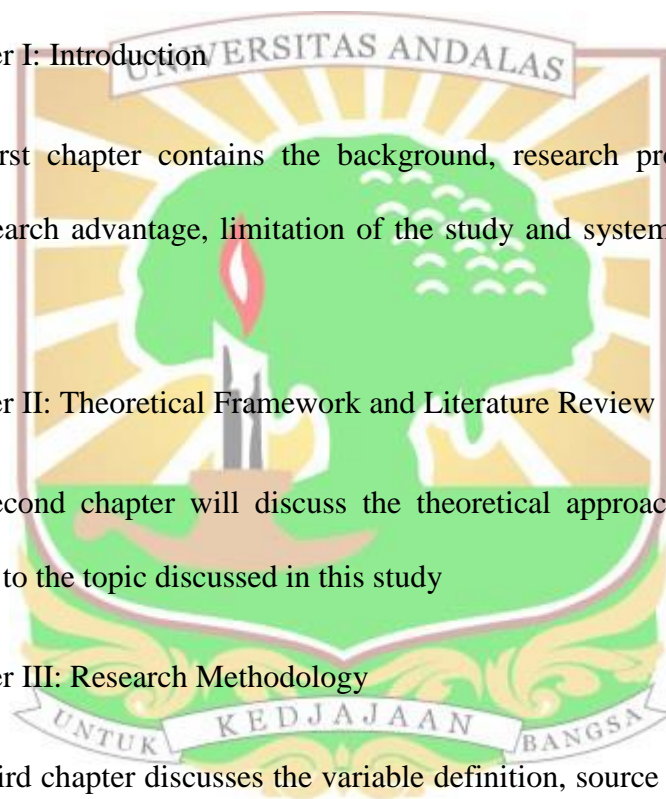Chapter II: Theoretical Framework and Literature Review

The second chapter will discuss the theoretical approach and literature review relates to the topic discussed in this study

Chapter III: Research Methodology

The third chapter discusses the variable definition, source of data and also model analysis to be used in this research.

Chapter IV: The Analysis of Determinant Variables of Demographic Transition, Education and Economic Growth

The fourth chapter discusses the outlook and the recent development of the determinant variable of this study in Indonesia which taken data from 1970 until 2016.

Chapter V: Empirical Results and Discussion

The fifth chapter will discuss the output result from the processing data and will explain the analysis and discuss the result of the related theories and previous literature.

Chapter VI: Conclusion and Recommendation

This chapter will explain the conclusion and recommendation related to the results of the research.