

# CHAPTER I

## INTRODUCTION

### 1.1. Background

The growth theories explain that there are some factors which determine the pace of economic growth, it includes labor force, and technological development. When we discuss about the two factors, we have to make an assessment to the term “demographic dividend” and Information and Communication Technology (ICT) development. Demographic dividend provides a country a bulge in working age population which supply the labor force, while ICT development is now becoming a phenomena with its rapid use in this globe and the impact to economic behavior of population.

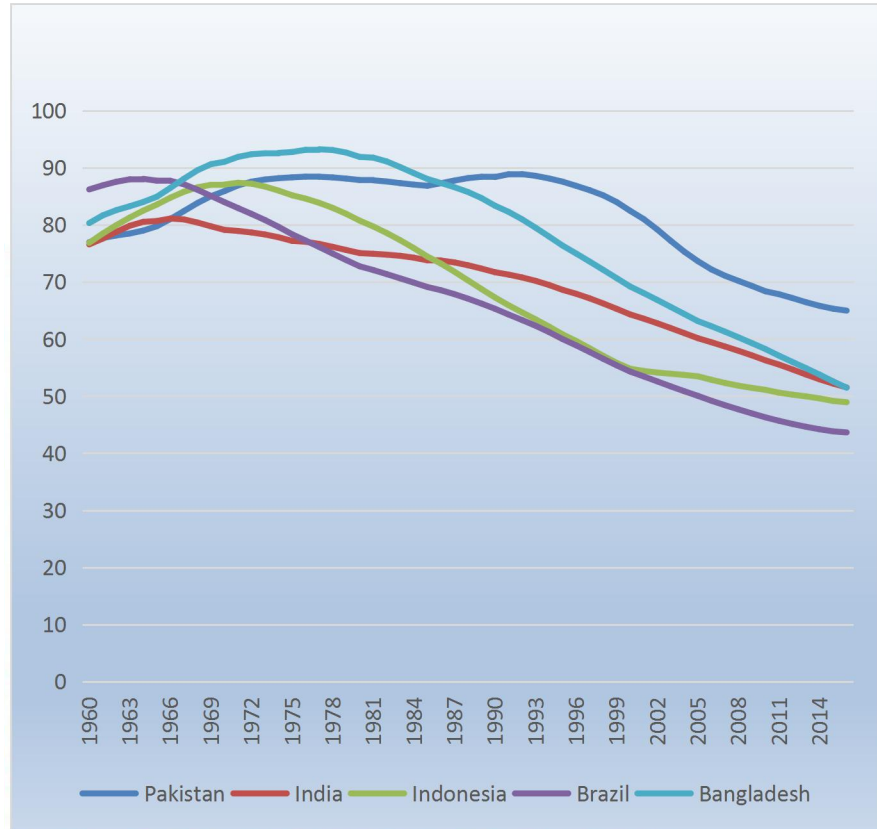
Looking more closely at “Demographic Dividend”, it has driving a long debate about whether or not, the dynamic in population structure contributes to boost economic performance of a country. Most of research and study define demographic dividend as stemming from decline in dependency ratios, which are in turn defined as the proportion of populations that are of working age (Bloom and Williamson. 1998; Bloom and Canning. 2005a. 2007; Bloom et al., 2002; Bloom et al., 2000; and Cai and Wang, 2005). The initial of demographic dividend is a demographic transition as explained by Gribble and Bremner (2012) the demographic dividend refers to the accelerated economic growth that begins with changing in the age structure of a country’s population as its transition from high to low birth and death rates. It creates a longevity or longer life

expectancy, lower number of infant, and more working-age population as children are entering productive age. It becomes one of the major concern because the change of population age structure where the productive age is dominant, will decrease dependency ratio since children (0-14) years old and aging (65+) years old who are considered as dependent, their proportions are getting much lower. The two groups are dependent since they are not yet productive and already in retire age. Moreover, each age-group has different economic behavior, the children demand for investment in education and health while the elder require pension, and health care. As a channel to economic growth, the rapid growth of working-age population increases labor supply as one of the production factor. A study conducted by Bloom and Williamson (1998), Bloom et al. (2002) show a positive correlation between share of working age population and the growth of economic.

The pace of demographic dividend is vary across the countries, the developed countries have gone through this, and coming to the situation of aging population, where the old dependency ratio is getting higher, while most of developing countries are now facing demographic dividend. In these countries, the population structure are dominated by working age population. The graph below capture the demographic dividend in five most populous developing countries, India, Indonesia, Brazil, Pakistan, and Bangladesh.

**FIGURE 1.1**

**Age Dependency Ratio (% of Working Age Population) in Five Most Populous Developing Countries from 1960 to 2016**

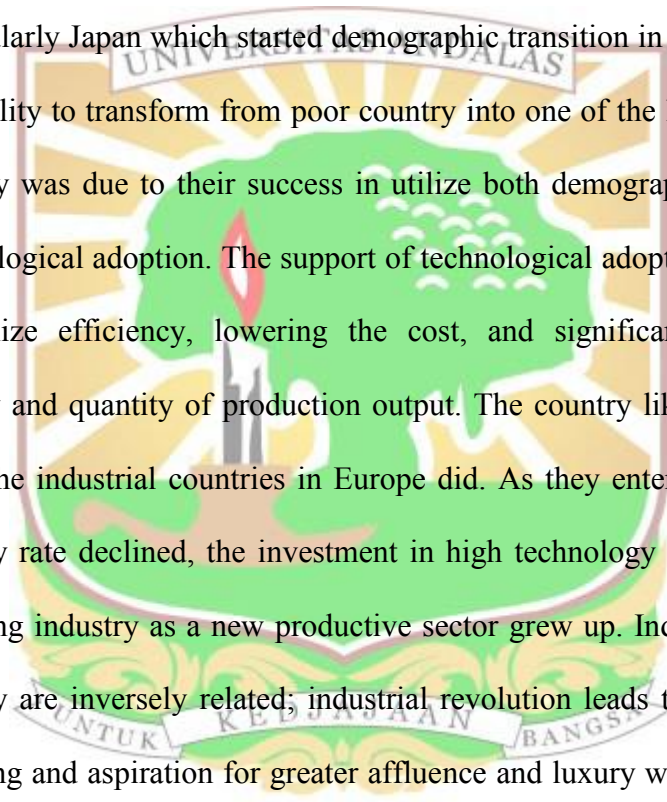


Source: World Bank Data

The graph shows that the dependency ratio started to decrease in late 80's and the decline was sharper between the period of 90's and 20's. It implies that these countries are in the phase of demographic dividend, where the population of working age are growing faster. This situation can be a benefit for their country's economic since they have more labor force.

But on the other hand, demographic dividend also come along with economic consequences. Demographic dividend alone will not generate

benefit for economic. Although it provides huge labor supply, Archarya (2004) notes that this represents only one side of the story, the supply side. The other aspect is the demand side which is the ability to provide additional gainful jobs. In contrast to Bloom and Canning explanation, logically, if the rapid growth of working age population is not absorbed by workforce, it will press down saving rate. Looking back, reflecting from East Asian miracle, particularly Japan which started demographic transition in 1800s's to 1900's, the ability to transform from poor country into one of the leading developed country was due to their success in utilize both demographic dividend and technological adoption. The support of technological adoption allow them to maximize efficiency, lowering the cost, and significantly improve the quality and quantity of production output. The country like Japan followed what the industrial countries in Europe did. As they enter the phase where fertility rate declined, the investment in high technology rose significantly, allowing industry as a new productive sector grew up. Industrialization and fertility are inversely related; industrial revolution leads to a high standard of living and aspiration for greater affluence and luxury which in turn limits the reproduction process (Chesnais, 1992). At the same time, human resources were prepared to quickly learn the new technology and adopt it to be used in domestic production. Learning from history, the two factors, demographic and technology were together determine the growth of a country's economic.

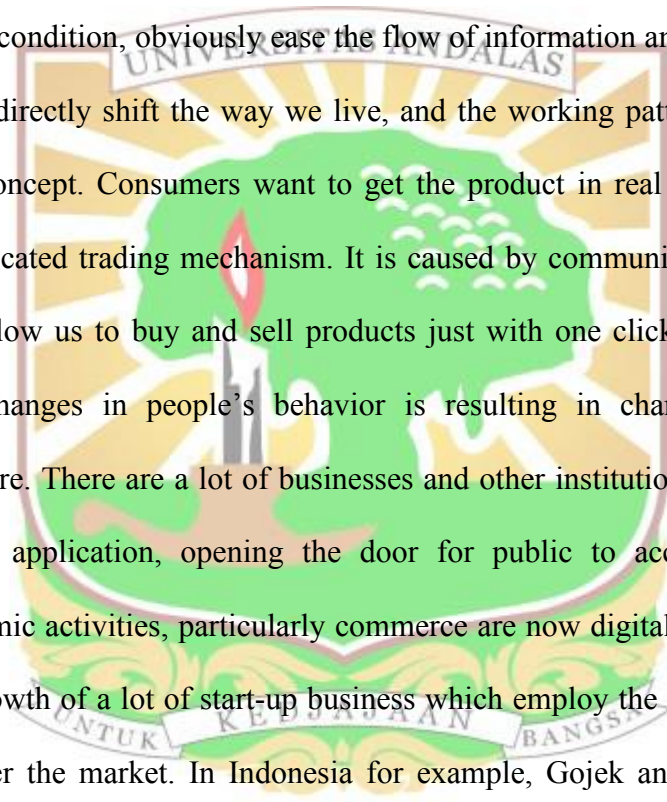


For this reason, technology has becoming one of the major concern. Huge number of studies have been assessing the impact of technological invention in driving higher GDP. Entering the era of 2000's , Information and communication technology (ICT) penetration as a new technological development began to rise, If during 80's and 90's, the industrial technology was central, today, the ICT particularly digital technology has taken a significant place in economics, while industrial technology is now seen as environmental unfriendly. There are a lot of digital based economy grow and shift the economic behavior of people. According to Oxford Economics, ICT embraces telecommunications (telephone lines and wireless signals), management systems, and audio-visual systems. ICT consists of all technical means to handle information and aid communication, including computer and network hardware, middleware and software. The European countries are now doing an intensive research on how big the return gained from ICT investment, and how big the contribution of ICT used in economy to generate higher GDP.

Generally, in developing countries, although the utilization of ICT is not as big as in developed countries, but the increase of ICT use is very massive. It is mostly driven by the young population. The term “millennial generation” rises due to the massive use of digital technology by the youth. In the report of International Telecommunication Union (ITU) is mentioned that the gap between developed and developing countries in terms of ICT indicators is relatively small-especially compared to that for other

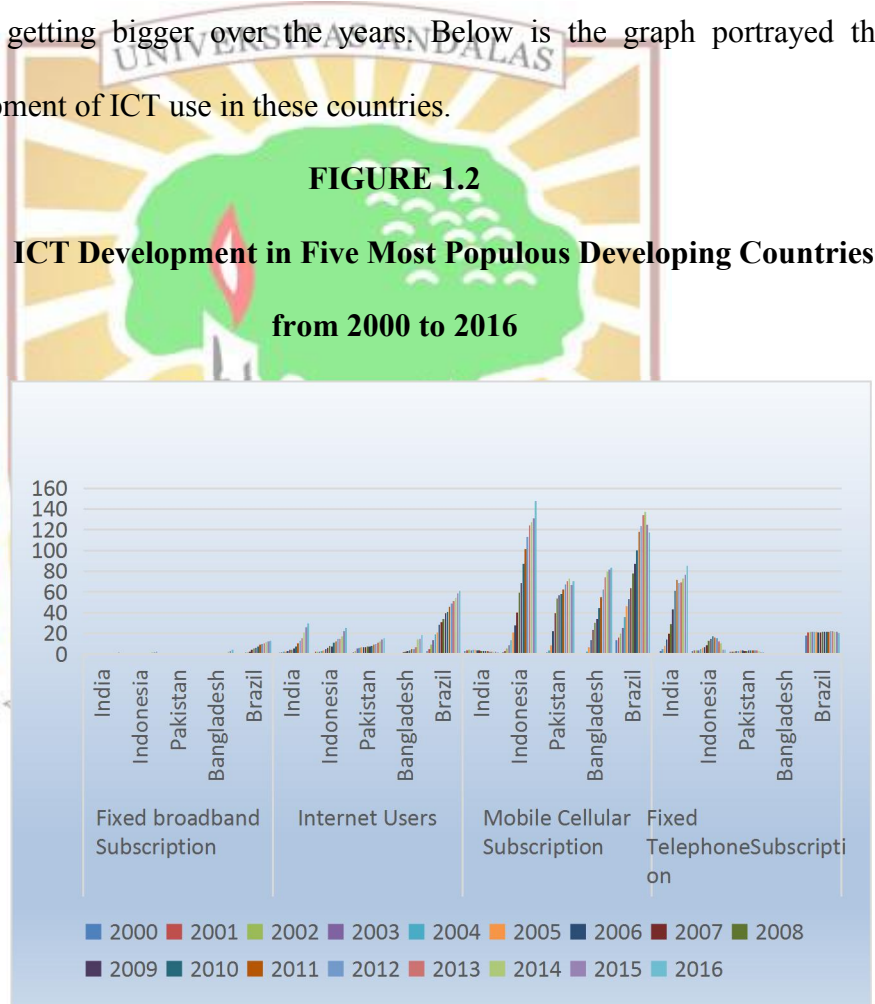


development indicators, such as life expectancy or infant mortality rates. Today, ICT affects all sectors including economic, where the rapid use of digital technology has reorganized the structure of our economic. As we are moving from analog to digital era, the world is now integrated. In every corner of the city, people keep holding their electronic gadget. Internet and mobile phone seems to be the things we can not separate from human life. These condition, obviously ease the flow of information and communication, and indirectly shift the way we live, and the working pattern as we learn a new concept. Consumers want to get the product in real time without any complicated trading mechanism. It is caused by communication technology that allow us to buy and sell products just with one click in smart gadget. The changes in people's behavior is resulting in change of economic structure. There are a lot of businesses and other institutions have their own digital application, opening the door for public to access them. Many economic activities, particularly commerce are now digitalized. It stimulates the growth of a lot of start-up business which employ the digital application to enter the market. In Indonesia for example, Gojek and Ruangguru that provide online services are two start-up which receive big funding and growing very fast in recent years. Besides that, transaction is becoming much easier with the present of e-money, and e-banking. Even music industry is dominated by digital music rather than disk, particularly young people listen to music from digital apps, and in turn the singer and musician received royalty based on the number of people who listen and download



their songs. ICT, particularly through internet and smart phone also allow people to find job opportunities, say for example LinkedIn that connect professional from around the world, and provide job information for the users.

In case of the 5 most populous developing countries that are facing demographic dividend, the growth of ICT use is also huge. The access to ICT is getting bigger over the years. Below is the graph portrayed the development of ICT use in these countries.



Source : International Telecommunication Union (ITU)

Since these five countries are facing both the increase of labor supply due to demographic dividend and the rise of ICT use, it is important to

assess the effect generate by these two factors on economic performance. Demographic dividend can be a bane for a country, if the bulge in productive age do not give contribution to economic improvement, and although the rapid use of technology is actually a beneficial factor, if it is not utilized for the good, and only to follow world's trend, the effect to economic will be minor.

Based on this explanation, through this study, we want to examine whether or not the two resources generate higher GDP, and which factor gives bigger contribution to economic performance. The title of this study is

Comparing Giants: Demographic Dividend Vs ICT Development In Five Most Populous Developing Countries.

## **1.2 Research Problem**

Since the five most populous developing countries (India, Indonesia, Brazil, Pakistan, Bangladesh) are facing demographic dividend and rapid use of ICT, and these two factors influence economic structure and performance, it is important to examine the contribution of both factors to economic performance which is measured by the value of Gross Domestic Product (GDP). The Research questions are as follows,

1. Do demographic dividend and the ICT development stimulate higher GDP?
2. Which factor gives greater impact to economic performance?
3. Do the impact of both factors align or giving reverse sign?



### **1.3. Research Objective**

Based on the research problem, the writer set the objectives of this research as follows:

1. To analyze the contribution of demographic dividend and ICT development to Gross Domestic Product (GDP)
2. To analyze which factor gives greater contribution to economic.
3. To analyze whether the two factors have an align or reverse sign
4. To propose policies as recommendation to optimize the effect of demographic dividend and ICT development.

### **1.4. Research Advantages**

In this research, we can see the outlook of demographic dividend and ICT development effect on economic performance in all five counties and to suggest alternative policies to utilize the phase of both factors.

1. The results of this study are expected to be useful as an input to the Central Local Government in formulating policy development planning.
2. As a reference for further research.

### **1.5. The Structure of Writing**

This research paper is divided into six chapters as follows:

Chapter I: Introduction

There are six parts in this chapter, the first is background which give an introduction about the topic discussed in this research paper and general description about the theory and current condition of demographic and ICT development in five selected developing countries.

The next parts are research problem, research objective, research advantage, and systematic writing.

## Chapter II: Theoretical Framework and Literature Review

This chapter discuss about the theoretical approach and literature review which have relation with demographic dividend and ICT development, and their impact to economic.

## Chapter III: Research Methodology

This chapter describe about the model used in this research paper, the source of the data and tools used in collecting the data, variables definition, and development of variables correlation.

## Chapter IV: Analysis of Determinant Variables of Demographic Dividend and ICT Development.

This chapter provides analysis about the determinant variables based on the data available. From this chapter the outlook of current and past situation of related variables can be seen.

## Chapter V : Empirical Result and Discussion

Explain about the output of the research and the analysis from the processed of data.

## Chapter V : Conclusion and Recommendation

