

CHAPTER I
INTRODUCTION

A. Research Background

The term “Industry 4.0” was officially born in Germany at the Hannover Fair held back in 2011 (Kagermann, Lukas, and Wahlster, 2011). Other countries also have a common goal to realize the idea of Industry 4.0 even though they used different names such as Advanced Manufacturing, Smart Factories, Smart Industry, or Industrial Internet of Things. Even if they go by various names, they all aim to increase each nation's industry's competitiveness in the face of a highly dynamic global market.

This condition is caused by the rapid development and utilization of digital technology in many fields. Table 1 shows Industry 4.0 against potential benefits. Most opinions on the potential benefits of Industry 4.0 are about improving production speed, production flexibility, improving service to customers, and increasing revenue. The realization of these potential benefits will have a positive impact on a country's economy.

Table 1. 1
The Potential Benefit of Industry Revolution 4.0

Writer	Potential Benefit
Lasi, Fettke, Kemper, Feld, and Hoffmann (2014)	Product development becomes faster, realizes individual demand (product customization), flexible and fast production in response to problems, and resource efficiency.
Russmann Lorenz, Gerbert, Waldner, Justus, Engel, and Harnisch (2015)	Productivity improvement, encouraging the growth of opinions, increasing the needs of skilled workers, and increasing investment.

Writer	Potential Benefit
Schmidt, Möhring, Härting, Reichstein, Neumaier, and Jozinović (2015)	Realization of mass customization of the product, utilization of idle data, and improvement of production time.
Kagermann Wahlster, Helbig, Hellinger, Stumpf, Treugut, Blasco, Galloway, and Findekleee (2013)	Able to meet individual customer needs, engineering and business processes become dynamic, decision returns become more optimal, and give birth to new business models and new ways of creating added value.
Neugebauer, Hippmann, Leis, and Landherr, (2016)	Realize an efficient, intelligent, and on-demand manufacturing process (which can be customized) at a decent cost.

As the name implies, a digital economy is an economy based on electronic goods and services produced by electronic businesses and traded through electronic commerce. That is, businesses with electronic production and process management who interact with partners and customers and conduct transactions through Internet and Web technologies. The concept of the digital economy emerged in the last decade of the 20th century. In Indonesia, digital transactions are growing.

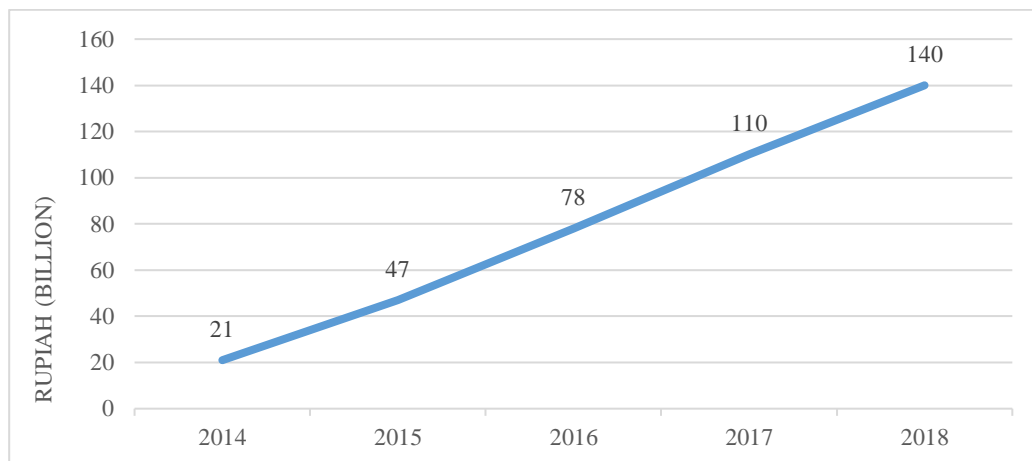
Digital transformation strategies are carried out to transform every process, competence, and business model with the application of digital technology, in accordance with the recommendations of various global research institutions that confirm digital transformation as the organization needs in winning global competition today. Innovation has become fully developed into all life lines amidst the increasingly dynamic of world transportation, one of which crosses digitization, which is characterized by characteristics such as

vertical networks, networks no longer have boundaries or hierarchies. Vertical networks follow horizontal integration as a form of real collaboration by prioritizing output, and innovation inherent in digitization, giving birth to new phenomena with increasingly powerful concepts of the Internet, e-commerce, artificial intelligence, sharing economy, and financial technology in various areas of life, especially economic competition. One of them is the opportunity to participate in the global economy more actively, especially in the trade sector that currently has used a digital base or commonly called e-commerce.

Indonesia is the country with the highest e-commerce growth in the world. The e-commerce industry in Indonesia for the last 10 years is up about 17% and more businesses, both large companies and retail companies are moving to develop their businesses towards digital. The shift towards digital has boosted economic growth to US\$150 billion by 2025. The massive use and purchase of mobile phones are one of the supporting e-commerce growth in Indonesia. With 73% of internet users in Indonesia accessing the internet using mobile phones and predicted to continue to increase. It's just that there are some factors that affect the villagers who are still having difficult accessing the internet. Therefore, the government should reach internet facilities in the corners so that the villagers can also participate in participating in internet-based transactions or e-commerce.

Indonesia's digital trade transactions are growing rapidly. E-Marketer data shows that Indonesia's e-commerce transactions reached Rp 25.1 trillion in 2014 and will increase to Rp 69.8 trillion in 2016, at a rate of Rp 13,200 per US

dollar. Similarly, in 2018, the value of Indonesia's digital trade will continue to rise to Rp 144.1 trillion. The population of 250 million makes the potential development of Indonesia's e-commerce very large. It is supported by the growing penetration of internet users, the increasingly affordable price of internet connection, and the enthusiasm of the public in using the internet to support daily life.



Source: DataBooks.co.id

Figure 1. 1
Transaction of E-Commerce in Indonesia (2014-2018)

Shopping online has also become one of the interesting activities because it provides a new experience in shopping for consumers. This is one of the reasons consumers started to switch from previously having to go to the market to buy an item (offline), and are now starting to switch digitally by simply visiting shopping sites. No wonder now e-commerce is expected to be a channel for MSMEs to expand market access, both at home and abroad, as well as access to information with government records to expand broadband so that MSMEs in rural or remote areas can also participate. Deloitte survey of 437

MSMEs in Indonesia-2015. MSMEs that are included in advanced online groups are able to boost profits by up to 80% from before the adoption of technology. Digital development with economic growth in Indonesia. Where it is a positive impact on economic growth in Indonesia as well.

The concept of Islam teaches about this topic as explained in the QS. Ar-Ra'd verse 11. Which explains how human effort in changing and improves things.

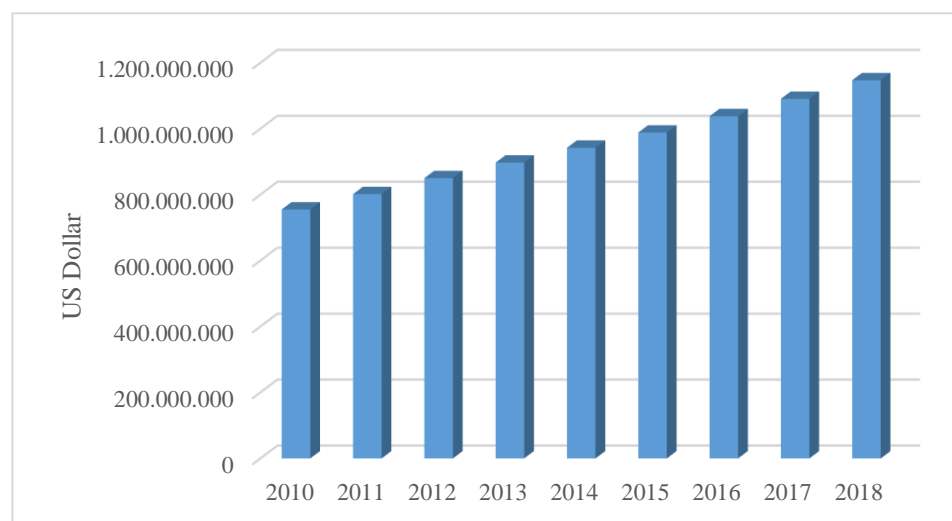
لَهُ مُعَقَّبَاتٌ مِّنْ بَيْنِ يَدَيْهِ وَمِنْ خَلْفِهِ يَحْفَظُونَهُ مِنْ أَمْرِ اللَّهِ إِنَّ اللَّهَ لَا يُغَيِّرُ مَا بِقَوْمٍ حَتَّىٰ يُغَيِّرُوا
مَا بِأَنفُسِهِمْ وَإِذَا أَرَادَ اللَّهُ بِقَوْمٍ سُوءًا فَلَا مَرَدَّ لَهُ وَمَا لَهُمْ مِنْ دُونِهِ مِنْ وَالٍ

“For him are angels in succession, from before him and behind him. And they guarded it by Allah's leave. God does not change the like of people until they change their circumstances. And if Allah desires evil for a people, there is none who can a guardian over them, and they have no protector or protector besides Him.” (QS. Ar-Ra'd verse 11)

growth theory explains that the investigation of physical capital and human capital plays a role in determining long-term economic growth. The government's contribution to economic growth can be explained by its influence in making changes in consumption or spending on public investment and receipts from taxes. Like economic goods to its inhabitants. The increase in the capacity itself occurs through the advancement or adjustment of technological, institutional, and ideological adjustments to the various demands of the existing situation.

Of course, the development of technology, especially in the economic sector, greatly affects economic growth. By facilitating transactions due to technological factors, there is a process of increasing output over time that can

be an important indicator to measure the success of a country's development (Todaro and Smith, 2008). According to the basic theory of Neoclassical economic growth of Solow (1970) and Swan (1956), there is no influence of the role of government on growth in both expenditures and taxes (Kneller, Bleaney, and Gemmell, 1999). Economic growth is only influenced by capital stocks, labor, and technology that are exogenous. The government can predict population growth that will affect the availability of labor but have no impact on economic growth.



Source: World Bank

Figure 1. 2

Growth Domestic Product in Indonesia (Constant 2010)

Figure 1.2 shows Growth Domestic Product (GDP) data in Indonesia from 2010-2018. Where the country's GDP is an indicator of the success of its economy. Therefore, Indonesia's economy experienced rapid economic growth in 2000 compared to the previous year. From 2000-2015 the value of GDP still rose and fell but again increased in 2016 to its peak in 2018 which is quite a

fantastic figure for the Indonesian economy at 1,042,000,000,000, which is explained by figure 1.2 which shows the increase in GDP in Indonesia.

Referring to previous studies, Gross Fixed Capital Market, Labor Force Participation rate, mobile cellular subscriptions, and fixed broadband subscriptions has a positive and significant effect on economic growth (Duasa and Ramadhan, 2019). In his research, Ngatono (2016) said that with every 1% growth of Information Communication Technology (ICT), teledensity will increase by 3% economic growth. Based on research conducted with the results that there is a causality relationship between broadband users, internet users, and economic growth in the G-20 Countries (Pradhan, et al; 2018), a one-way causality relationship between mobile phone users and economic growth in high-income countries (Saidi and Mongi, 2018) there is a one-way relationship between fixed phone users and economic growth in Latin American and Asian countries (Cordeiro, 2008).

Based on the background described above, the authors see that there are various kinds of relationships between digital development such as Mobile Cellular Subscriptions, Telephone Subscriptions, Gross Fixed Capital Formation (K), and Labor Force Participation Rate in Indonesia that are different in nature. Therefore, researchers are interested in conducting research on the topic "AN ANALYSIS OF THE RELATIONSHIP BETWEEN MOBILE CELLULAR SUBSCRIPTIONS, FIXED TELEPHONE SUBSCRIPTIONS, GFCF, AND LFPR TOWARD GDP IN INDONESIA

USING THE ECM APPROACH". By using Error Correction Model (ECM) Methodology and using data from the year 2000-2018 in Indonesia.

B. Limitation of Problems

In this study, the researcher limits their research:

1. Case studies conducted in Indonesia.
2. The variables studied are as follows:
 - a. The dependent variable is the Gross Domestic Product Per capita (Y)
 - b. For independent variables are Gross Fixed Capital Formation (K) (X1), Labor Force Participation Rate (X2), Mobile Cellular Subscriptions (X3), and Fixed Telephone Subscriptions (X4).

C. Problem Formulation

Based on the description in the background above, the following problem formulation will be proposed in this study:

1. How does gross fixed capital formation affect the economic growth in Indonesia?
2. How does labor force participation rate affect the economic growth in Indonesia?
3. How does mobile cellular subscriptions affect the economic growth in Indonesia?
4. How does fixed telephone subscriptions affect the economic growth in Indonesia?
5. How does the impact of the long run or short run on the economic growth in Indonesia?

D. Purpose

Based on the problems formulated, the objectives to be achieved in this study are as follows:

1. To analyze the effect of gross fixed capital formation on the economic growth in Indonesia.
2. To analyze the effect of labor force participation rate on the economic growth in Indonesia.
3. To analyze the effect of mobile cellular subscriptions on the economic growth in Indonesia.
4. To analyze the effect of fixed telephone subscriptions on the economic growth in Indonesia.
6. To analyze the impact in the long run and short run on the economic growth in Indonesia.

E. Benefit

The benefits of this research are as follows:

1. For the public, the results of their research are expected to contribute to and benefit the community.
2. For researchers, it is hoped that this research can be a reference or consideration for research.
3. Writers, can increase knowledge about digital development and economic growth in Indonesia that has been studied and get an understanding of existing information based on data that has been available at the World Bank as a source of authors.