



Digital Economy in Industrial 4.0

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Abstract:

The purpose of this study is to find out the economic development in Indonesia which has developed towards a promising digital economy on industrial 4.0. The presence of a digital economy and easy access to the internet has increased people's interest to shop online. This research used a descriptive method, which collects research data by surveys, observations, and interviews several respondents related to this research. The results of this research show the conclusion on economic growth that influenced by the consumptive behavior of Indonesian people in online buying and selling transactions as well as factors that influence the progress of e-commerce in the industrial revolution 4.0. Hence, e-commerce in Indonesia has good potential for economic growth such as small businesses in Indonesia.

Keyword: *Economic Development, Industrial 4.0, E-commerce, Digital Economic*

INTRODUCTION

Nowadays, the internet has devolved not only for social media, but also to reach active consumers who use devices for their daily activities. On the other hand, industrial revolution 4.0 is a trend in the industrial world that combines automation technology with cyber technology that changes the way of life and the way it works in a system (Chung, et al., 2016). With a population of more than 269 million, 133 million people connected to the internet and more than 70 million smartphone users in Indonesia become the largest market share in Southeast Asia for e-commerce players. The development of Information Technology (IT) in Indonesia until 2013 based on BPS (the Indonesian Central Statistics Agency) shows that the total population of Indonesia that has accessed the internet is 30.66% and the number of residents who own devices is 83.52% of the total population of Indonesia (Soegoto, 2014). It is undeniable that billions of people use the Internet to search for everything from researching purchasing products online.

From the previous statements, it could be an opportunity to increase economic growth

especially in developing countries, a lot of things that make shopping online this popular. Many benefits are given for online shopping. For example, the internet offers a different kind of easiness to consumers. Consumers do not need to go out looking for product information as the internet can help them to search from online sites, and it also helps to evaluate between each site to get the cheapest price for purchase (Hjort & Lantz, 2016). People began to develop ideas to continue their business following technological advances. Currently, e-commerce has reached the 4.0 phase which requires various technological developments. E-commerce 4.0 allows integration between offline and online stores as O2O or online-to-offline.

Previous research revealed that e-commerce has come to take on two important roles; first, as a more effective and efficient conduit and aggregator of information and second, as a potential mechanism for the replacement of many economic activities once performed within a business enterprise by those that can be done by outside suppliers that compete with each other to execute these activities (Oliveira, et al., 2017). The business infrastructure is becoming digital with increasing connections between products, processes, and services. Many companies covering the industrial sector and digital technology, where information, communication, and computerization are connected that change business strategies and processes, company's potential, products and services, and extended company relationships (Zhu, et al., 2017). A feature that supports the reason e-commerce has become a trend lately is that investments are claimed to increase productivity and also increase economic growth effectively (Wu, et al., 2014).

The factors that influence e-commerce and business on the internet that depend on technology are first, scientific factors that describe managerial knowledge, employee expertise and customer impressions; second, environmental factors that explain factors outside the scope of technology such as target markets, government regulations, customers, and producers; third, humanistic factors related to the accessibility and application of internal resources and the number of expert staff; and fourth, technical factors that describe the technology, cost, and safety (Lin & Lekhawipat, 2014).

This study aims to determine the consumer's activeness purchase using internet shopping and its effect on economic growth towards the fourth industrial revolution. The methods used in this study were a literature study by interviewing several respondents related to the study.

RESEARCH METHOD

This research used a descriptive method to represent the effect of using Information Technology (IT) in the use of internet shopping and its influence on economic progress. To deepen this research, we also used sampling methods such as interviews and surveys as well as collecting from literature sources. The respondents on the interviews were 22 people aged under 18 until 24 years who have done internet shopping and asked some questions to each interviewee. The procedure in this study has questions that show the results of how and why respondents use e-commerce applications or online shopping and the effect on economic growth, especially in Indonesia.

RESULTS AND DISCUSSION

We have entered the industrial revolution of 4.0, which is very influential in technology and information. In daily life, we use technology such as smartphones owned by everyone, as well as social networks that have become daily needs for the community. Technology makes it easy for humans to complete a job by saving time and energy, no exception on social media, especially in e-commerce. The economists state that Indonesia's economic growth is projected to reach 6-7% by 2030 if the development of the 4.0 industrial revolution is carried out properly. As was mentioned in the previous chapter, it can be used as a challenge for the development of small businesses targeting the internet as a potential market to increase revenue and encourage overall economic growth.

The factors which are leading to internet shopping business success such as emphasizing customer value creation, web-based customer management, e-businesses service quality improvement, customer retention, e-business strategy, and website quality (Kooti, et al., 2016). Some of these statements relate to the results of the interview with several responses as mentioned previously. In the first question, respondents were asked their respective age questions. The result is 2 out of 22 people are under the age of 18 years and 20 people are in the age range of 18 to 24 years. This is following the target market in e-commerce in which the age range is called the millennial generation where technology products will follow the lifestyle of the millennial community (can be seen in the Figure below).

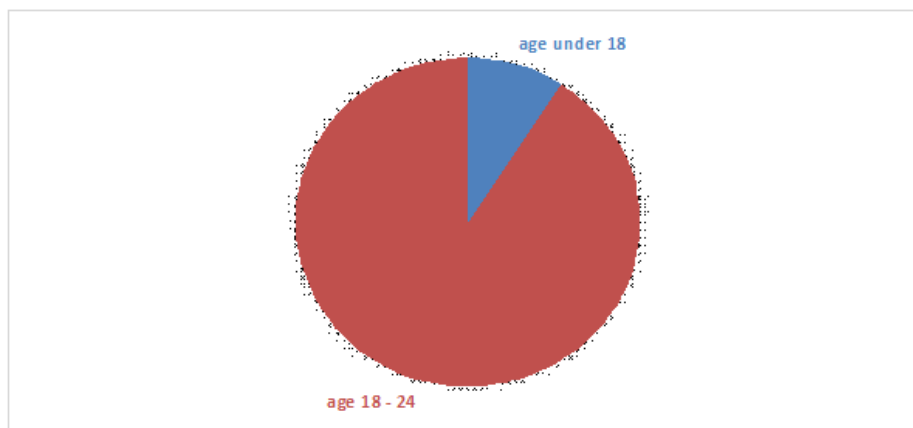


Figure 1. Age ratio of E-Commerce Users

For the second question, respondents were asked about monthly income from each respondent. The results were 11 out of 22 respondents had income less than Rp 500.000, 5 out of 22 respondents had income ranges from Rp 500.000 to 1.000.000, 1 person out of 22 respondents had ranges Rp 1.000.000 to 1.500.000, 3 out of 22 people have an income of more than Rp 1,500,000, and 2 out of 22 respondents not have fixed income that can be seen in the following figure.



Figure 2. Monthly Income Ratio of E-Commerce Users

In the third question, respondents were asked about the frequency of respondents doing internet shopping in one month. The result is 4 out of 22 people answered once a month, 14 respondents answered 2 to 4 times a month, 1 person answered 4 to 6 times a month. Other respondents responded with some reviews such as there is no specific time to shop online for example they only shop online if there are certain promos (can be seen in the following figure)

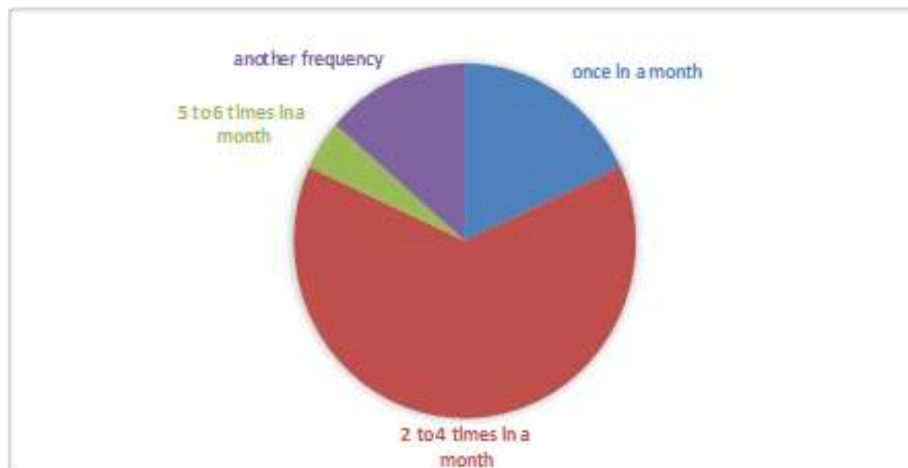


Figure 3. The Frequency of Respondents do Online Shopping

In the fourth question, respondents are asked about the budget spent on one online purchase transaction. The result shows 7 out of 22 people answered spending less than Rp 100,000 for one time shopping online, 13 people answered spending Rp 100,000 to 250,000 for one time shopping online, and 5 people answered Rp 251,000 to 500,000 (can be seen in the following figure).

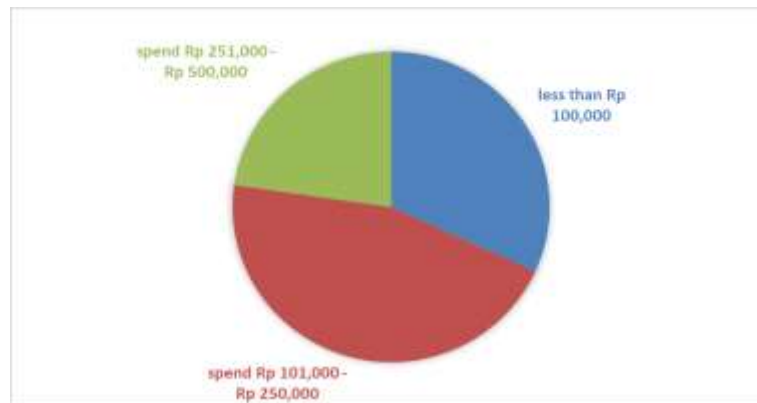


Figure 4. Budget Spend for One Online Purchase Transaction

For the last question, respondents are asked about one of the factors that encourage people to do internet shopping. The results show 5 out of 22 people chose because of the flash sale on certain items, 7 out of 22 people chose a discount, and 10 people chose to do online shopping because of free shipping to various regions (can be seen in the following figure).



Figure 5. The Factors that Encourage People to do Internet Shopping

There are many reasons why people choose to shop online. For example, consumers can buy anything at any time without going to the store. We can find cheaper products where we can compare the price from different websites at the same time because customers sometimes do not want to directly meet the seller. Besides, for some reason, customers do not want to go to a crowded mall. The factors described earlier can be included in a list of 4 categories, such as convenience, products, service information, time, and cost-efficiency (Zhang, et al., 2014).

The main reasons that discourage consumers from shopping online are slow shipping, unsafe payments, product error, viruses or spam, unnecessary email, and the maintenance of technology. Businesses must be cautious of such a big problem that causing disaffection with e-shopping. As the value of e-commerce continues to grow, competition among internet vendors is also getting tighter. Since the value of e-commerce is increasing sharply, competition from internet entrepreneurs is getting tighter. Internet entrepreneurs compete to increase or specify their target market. Internet entrepreneurs should understand consumer choice (Dobre & Milovan-Ciuta, 2015).

The e-Conomy SEA 2019 report reveals that the average digital economic growth has been in the range of 20-30 percent since 2015. Countries in the Southeast Asian region have

been able to survive amid global competition. Indonesia and Vietnam are the two countries with the greatest digital economic value. Although other countries followed suit, it also showed strong performance.

CONCLUSION

We can conclude that young people in Indonesia like to shop online because it is easier and supported by consumptive behavior. As a developing country with the largest population and internet users in Southeast Asia, Indonesia is a promising market for online shopping activities. Indonesia is predicted to have an internet economy of US \$ 11 and 12 billion respectively in 2019. This is supported by significant developments in the e-commerce sector. This rapid development is due to intense competition and accompanied by investments and the development of digital payments. Many opinions suggest that online stores can provide online payment method facilities to customers where customers can transfer balances to the store payment system in online transactions, this can help increase online sales and full service but don't want to use credit cards in online shopping with security and supervision integrated to maintain customer satisfaction.

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