Impact COVID-19 Pandemic towards E-Commerce Sales Value and E-Grocery Sales Value in Indonesia

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Abstract. The positive case of COVID-19 in Indonesia was first detected on March 2, 2020, when two people were confirmed positive infected. It is impossible to avoid the economic slowdown when COVID-19 come about, apart from that there has been a shift in people's spending patterns online to adapt to the situation. After 3 year this study aims to determine impact of the COVID-19 pandemic towards e-commerce sales value and e-grocery sales value in Indonesia. This study is using an event study method (long horizon event study). The event period is divided into 2 specifically 12 and 24 month before-after the event period starting from first year COVID-19 pandemic in Indonesia. The sample was selected by using the purposive sampling method and obtained from Statista premium statistic database. The first results of this study is in 12 month before and after the event, there was no significant difference in e-commerce sales value but the opposite result was obtained from the 24 month, there were significant differences between e-commerce sales value before and after the event. The second results of this study is in 12 month before and after the event, there was no significant difference in e-grocery sales value but the opposite result was obtained from the 24 month, there were significant differences between e-grocery sales value before and after the event. The conclusion is the COVID-19 pandemic doesnt have significant effect on both variable in 12 month event but have significant effect after 24 month. The authors hope that the results of this research can be useful for the public interest, especially for accelerating economic development appropriately after COVID-19.

Keyword: COVID-19 Pandemic, E-Commerce Sales Value, E-Grocery Sales Value

1. Introduction

At the start of the spread of the COVID-19 outbreak in the city of Wuhan, China, the impact on the economy is expected to follow the pattern of SARS in 2003. Countries affected by the outbreak will experience a sharp decline in growth in one quarter, but will recover quickly in the following quarter, forming a pattern of the letter V [1]. However, conditions change very quickly when the spread of the COVID-19 outbreak began to spread to various countries outside of China in late February 2020, before being declared a global pandemic. The first world economy is expected to still grow positively, will experience the biggest recession since World War II [2].

For preventing the wider spread of the COVID-19 outbreak (flattening the curve) requires policies physical distancing and social restrictions. This policy move had an impact significant reduction in community and business activities. Output will experience contraction, pushing the economy toward a recession [3].

The COVID-19 pandemic has prompted people to change their consumption patterns. Based on Indonesian BPS (*Badan Pusat Statistik*) data (2020), consumption of health products, groceries, and pulses/data packages has increased by more than of 50 percent during the pandemic. This trend is expected to persist in the future. Consumption of pulses/data packages will continue to increase along with the increase in the digital economy. Consumption of health products will increase along with increasing public awareness of health aspect [4].

In addition to different consumption patterns, the purchasing method used by the public has also changed. People prefer to shop through digital platforms. Based on BPS data (2020), average transaction value in the digital ecosystem (include e-commerce and e-grocery) throughout 2020 to June, showing higher values compared to the transaction value in 2019. In June 2020, the digital transaction value reached IDR 464 thousand, while in June 2019, the digital transaction value was only IDR 297 thousand. Along with the increasing trend of online shopping carried out by the public, even companies make adjustments to be able to facilitate consumer needs. By 54 percent the company stated that they made adjustments during the pandemic with utilizing technology (36.4 percent), producing new products (3.4 percent) and doing both this (5.80 percent). Large scale companies tend to be easier to do digital sales adjustments. While micro companies only amounted to 30 percent companies that adjust sales through digital. This is due to low mastery of the internet and computers by the Human Resources of Micro, Small & Medium Enterprises companies [5].
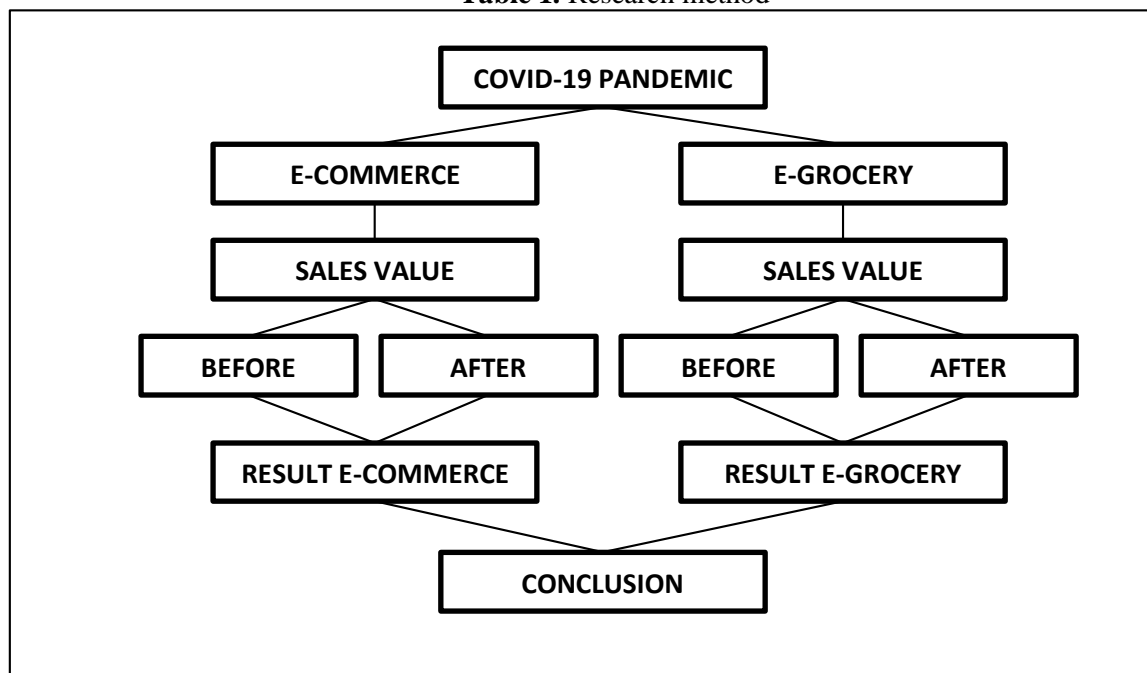
A number of studies that linked to the impact of COVID-19 to sales value (economic or marketing related) have been done by [6], [7], [8], [9], [10], and [11]. We found that previous study results were not fully consistent. So from the all information above author will make this study aims to determine impact of the COVID-19 pandemic towards e-commerce sales value and e-grocery sales value in Indonesia to learn market reaction or market response because of specific event, so we could using event study method (long-horizon event study).

2.   Methodology

The method that use in this study is event study method (long-horizon event study). As the event methodology can be used to elicit the effects of any type of event on the direction and magnitude of value changes, it is very versatile. Event studies are thus common to various research areas, such as accounting and finance, management, economics, marketing, information technology, law, political science, operations and supply chain management. An event study methodology will assess the impact of an event on that value which will produce a conclusion like whether there is or not the differences before and after the event period which has been tested [12]. The sample was selected by using the purposive sampling method. The purposive sampling is non-probability sampling method that a researcher uses to choose a sample of subjects or units from a population [13]. This study used Paired Sample T-test for normally distributed data. The paired sample t-test is used to compare difference between two population means in the matched sample. The basic assumption of this test is that the observations are normally distributed and uncontaminated [14].

This study aims to determine impact of the COVID-19 pandemic towards e-commerce sales value and e-grocery sales value in Indonesia The event period is divided into 2 specifically 12 and 24 month before-after the event period starting from first year COVID-19 pandemic in Indonesia. The primary sample data is obtained from Statista premium statistic database.

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Table 1. Research method

3. Result and Discussion

Kolmogorov-Smirnov was used in this study to test normality distribution. From the Kolmogorov-Smirnov output below the data from Statista premium statistic database its looks like has been normalized before. Based on Table 1, test results showed 12 month e-commerce sales value and e-grocery sales value obtained p-value > 0.05. This means that the data are normally distributed and later to test for these variables will use Paired Sample T-test.

Table 1. Normality test results for 12 month period.

Variable	Data Period	p	Result
E-commerce	Before	0. 7327	Normally
sales value	After	0. 7327	distributed
E-grocery	Before	0. 7327	Normally
sales value	After	0. 7327	distributed

Based on Table 2, test results showed 24 month e-commerce sales value and e-grocery sales value obtained p-value > 0.05. This means that the data are normally distributed and later to test for these variables will use Paired Sample T-test.

Table 2. Normality test results for 24 month period.

Variable	Data Period	p	Result
E-commerce	Before	0. 7327	Normally
sales value	After	0. 7327	distributed
E-grocery	Before	0. 7327	Normally
sales value	After	0. 7327	distributed

The first test was done with Paired Sample T-test. Based on Table 3, the 12 period before and after the event showed p-value > 0.05 so there not significant difference between e-commerce sales value before-

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after COVID-19 pandemic in Indonesia but 24 period before and after the event showed p-value < 0.05 so there significant difference between e-commerce sales value before-after COVID-19 pandemic in Indonesia.

Table 3. Result for e-commerce sales value toward COVID-19.

Data Pair	12 Month Period		24 Month Period	
	Mean	*p-value*	Mean	*p-value*
E-commerce sales value	1764	0.06795	2499	0.01553

The second test was done with Paired Sample T-test. Based on Table 4, the 12 period before and after the event showed p-value > 0.05 so there not significant difference between e-grocery sales value before-after COVID-19 pandemic in Indonesia but 24 period before and after the event showed p-value < 0.05 so there significant difference between e-grocery sales value before-after COVID-19 pandemic in Indonesia.

Table 4. Result for e-grocery sales value toward COVID-19.

Data Pair	12 Month Period		24 Month Period	
	Mean	*p-value*	Mean	*p-value*
E-grocery sales value	26304	0.114	147093	0.04109

4.   Conclussion

Based on the final of research on impact COVID-19 pandemic towards e-commerce sales value and e-grocery sales value in Indonesia can be concluded as follow the first results of this study is in 12 month before and after the event, there was no significant difference in e-commerce sales value but the opposite result was obtained from the 24 month, there were significant differences between e-commerce sales value before and after the event. The second results of this study is in 12 month before and after the event, there was no significant difference in e-grocery sales value but the opposite result was obtained from the 24 month, there were significant differences between e-grocery sales value before and after the event. The conclusion is the COVID-19 pandemic doesnt have significant effect on both variable in 12 month event but have significant effect after 24 month. The last is author would like to super thank for the supervisors who have helped in conducting this research.

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