Contribution of E-Commerce Performance to Employment and Per Capita Income In Indonesia's Big Cities

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Keywords	Abstract
	The presence of e-commerce not only creates export-import market liberalization and contributes to changing consumer patterns and lifestyles, but also creates new economic opportunities for individuals to become entrepreneurs whose future is expected to expand employment. E-commerce performance in Indonesia, seen through the value of e-money transactions over the past five years from 2016 to 2020, continues to increase. Changes in consumption as a result of digitalization result in changes in labor market demand and also in cooling skills. The vacancy trend of the last few years will still be dominant in the digital field. Workers in the digital field, especially e-commerce and start-ups, are much sought after in line with the growth of the digital industry in Indonesia. Another impact of the rise in e-commerce use in Indonesia is the increase in the per capita income of the Indonesian population. The role of e-commerce in boosting the economy is undeniable, even though its contribution is small. The e-commerce industry is believed to bring significant changes to Indonesian per capita income and the economy

1. Introduction

As we enter the fourth industrial revolution, digital technology has become one of the primary capital requirements for industrial players looking to expand their business lines. The emergence of Industry 4.0 demonstrates that industrial progress cannot be divorced from technical developments at this time. The development of the industrial sector in parallel with technological breakthroughs can undoubtedly have a good impact on a country, one of which is the improvement of the country's economy. A country's economy can be pushed towards a digital economy by using digital technologies.

In truth, the digital economic era has been ongoing since the 1980s, with personal computers (PCs) and the internet serving as important technology for company productivity. The usage of technology such as PCs and the internet also marks the birth of e-commerce or electronic business. The old digital economy era has ultimately given way to the new digital economy age, which is distinguished by the presence of mobile technology, unlimited internet access, and the employment of cloud technology in the digital economic process (Śledziewska & Włoch, 2021)

Business transactions over the internet are now a common occurrence in Indonesia, leading to increased internet usage. Aside from the commercial sector, the increase in internet users has an impact on people's purchasing habits, both for goods and services (Kim, Galliers, Shin, Ryoo, & Kim, 2012). E-commerce is the practice of purchasing and selling things online by businesses or individuals using electronic devices such as mobile phones and computers to

conduct business transactions. E-commerce can be defined as an electronic platform that connects two parties, typically marketers and customers, to facilitate business transactions.

E-commerce has at least six positive effects on the business operations of a company. These six consequences are as follows: increased efficiency, cost savings, improved control over goods, improved distribution chain (supply chain), assisting firms in maintaining better relationships with customers, and assisting companies in maintaining better relationships with suppliers (Irawan, Kestrilia Rega Prilianti, & Melany, 2020)

In the middle of the Covid-19 pandemic, the existence of e-commerce facilitates the buying and selling of things and generates new business opportunities. According to the Central Statistics Agency (BPS), there will be 2.36 million e-commerce enterprises in Indonesia by 2020. Java Island had 1.77 million firms, accounting for 75.15 percent of all e-commerce businesses. This is because Java is the economic core and has more robust digital infrastructure. (BPS, 2020).

The value of electronic money (e-money) transactions is proxied by e-commerce performance. Electronic money is a payment instrument in electronic form in which the monetary value is kept in specific electronic media in order for electronic money to be handled into an electronic payment medium in the future (Arifin & Oktavilia, 2020).

The performance of e-commerce in Indonesia as measured by the value of electronic money transactions from 2016 to 2020 continues to improve, rising from IDR 7.06 trillion in 2016 to IDR 204.91 trillion in 2020, or increasing by 121.06 percent per year on average. Meanwhile, the highest year-to-year (y-to-y) growth rate was 281.39 percent in 2018 and the lowest was 41.16 percent in 2020. During the Covid-19 pandemic in 2020, the value of electronic money transactions in Indonesia slowed compared to rise of 207.56 percent in 2019. However, this sort of money is still in demand for transactions by Indonesians.

According to the We Are Social study results as of April 2021, 88.1 percent of internet users in Indonesia have utilized e-commerce platforms to buy a variety of products. According to the poll, Indonesia is the top user of e-commerce services. In 2021, 175 million Indonesians, or 65.3 percent of the population, will have access to the internet. In 2020, there will be 129 million Indonesians using e-commerce services. E-commerce transactions alone reached IDR. 266 trillion. According to Google, Indonesia is expected to be the number one digital economy in Southeast Asia in 2025, with a digital transaction contribution of US$124 billion or Rp. 1,736 trillion.

Increasing e-commerce performance might also absorb workers. E-commerce has comparatively low labor absorption in the digital business sector. Changes in consumption as a result of digitization have influenced labor market demand as well as needed skills. The digital sector will continue to dominate job vacancy trends in recent years. Workers in the digital sector, particularly e-commerce and start-ups, are in high demand as Indonesia's digital industry expands. Workers in digital areas such as e-commerce are still in high demand as the market continues to become competitive, with a growth rate of up to 50%. Despite the fact that the need for workers in this area is increasing, the supply of professionals with these skills is limited. Head of digital, head of product, e-commerce manager, social media manager, and user interface manager are some of the professions that are still in high demand. Companies are looking for talent or professional personnel with data science and analytics skills. Especially professionals who can manipulate large data and forecast client behavior (BPS, 2020)

Looking at the recent developments in the realm of e-commerce in Indonesia, it is impossible to deny that the popularity of e-commerce in Indonesia has also played a part in extending job prospects there. Aside from excellent commercial opportunities, e-commerce in Indonesia provides various advantages to anyone interested in working in this field. Working in e-commerce entails allowing oneself to be innovative. E-commerce businesses require high levels of inventiveness to compete with other competitors in an increasingly competitive market. Working in e-commerce requires allowing oneself to be innovative (Purnama, Ariastita, Handayeni, & Nugroho, 2019)

Another effect of the extensive use of e-commerce in Indonesia is an increase in Indonesian per capita income. Even though its contribution is currently minor, the role of e-commerce in driving the economy cannot be questioned. According to Indef research findings from 2018, e-commerce boosted economic growth by 0.71%. To improve e-commerce's contribution, a greater proportion of local items are required, as is equal Internet access and quality, as well as the strengthening of the national logistics system.

The development of per capita income in Indonesia during the period from 2016 to 2020 continues to increase, namely from a total income per capita of Rp. 47.96 million in 2016, increasing to Rp. 54.58 million in 2020 or an average growth of 2 .80 percent per year. Meanwhile, the highest year-to-year (y-to-y) growth rate occurred in 2017 at 8.19 percent and the lowest was in 2020, experiencing a contraction of -7.65 percent. The Covid-19 pandemic caused the growth rate of per capita income in 2020 to contract compared to the growth rate in 2019 which grew by 5.54 percent (Publikasi BPS, 2020).

E- Commerce

E-commerce, often known as electronic commerce, is the sale and purchase of goods or services, as well as the transmission of payments or data over an electronic network, such as the internet. (Kawa & Wałęsiak, 2019)

E-commerce is a transaction process in which buyers and sellers buy and sell various things electronically from one company to another utilizing a computer as a middleman for the commercial transactions. (Laudon & Traver, 2016).

E-commerce is an online channel that a person can access through a computer, which is used by a businessman to carry out his business activities and used by consumers to obtain information using the help of a computer, which begins with providing information services to consumers in determining choices (Kotler & Keller, 2019).

Employment

The acceptance of workers to do tasks (work) or a condition that indicates the availability of positions ready to be filled by job seekers is referred to as labor absorption (Amadeo, 2020)

Secara umum, penyerapan tenaga kerja tersebut menunjukkan seberapa besar suatu perusahaan dalam menyerap tenaga kerja untuk menghasilkan suatu produk. Kemampuan untuk menyerap tenaga kerja berbeda dari satu sektor dengan sektor lainnya (Todaro & Smith, 2014).

Per capita income

The acceptance Per capita income is the average income of a country's or region's population over a given time period, which is usually one year. Per capita income is computed by dividing regional income by population. Per capita income is frequently used to assess a country's or region's prosperity and level of development (Sukirno, 2018)

Per capita income is the average amount of income of a country's population for a certain period, calculated by dividing total national income (typically expressed in GDP) by the number of citizens (Nursiah & Haris, 2019)

2. Materials and Methods

The descriptive and verification approaches were employed in this study. The descriptive approach is used to determine the value of variables independently, either one or more variables, without drawing comparisons or linking one variable to another. Meanwhile, the verification approach is used to establish a link (cause and effect) between two or more variables (Sugiyono, 2016).

Panel data regression analysis was utilized to examine the influence of e-commerce performance on labor absorption and per capita income in this study. Panel data is a hybrid of time series and cross-section data. Panel data can be used to validate, construct, and learn complicated behavioral models (Basuki & Prawoto, 2015)

3. Results and Discussions

a. The Influence of E-Commerce Performance on employment in Big Indonesian Cities.

The Hausman test is used to determine whether the fixed effect model or the random effect model should be utilized. If the Chi-Square probability is (0.05), then the random effect is accepted; if the Chi-Square probability is (0.05), then the fixed effect is accepted. In this study, the Hausman test yielded the following results:

Table 1. *Hausman Test* 1 Results

Correlated Random Effects - Hausman Test			
Pool: DATAPOL			
Test cross-section random effects			
Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	7.366285	1	**0.0066**

The Hausman test results in Table 1 reveal that the Random cross section probability value is $0.0066 < 0.05$, indicating that H_o is rejected and H_1 is accepted, indicating that the right fixed effect model is employed to estimate panel data rather than random effects.

Table 2. Fixed Effect Estimation Test Results 1

Variabel Dependent : Ln_Employment			
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	**6.169035**	**0.277883**	**22.20015**	**0.0000**
Ln_E-Commerce	**0.324269**	**0.017670**	**18.35140**	**0.0000**
R-Squared	0.798606			
Adjusted R-squared	0.795937			

According to Table 2, the statistical t value for E-Commerce performance is 18.35140, with a P-value of 0.0000. Because this number is less than the specified significance level, 0.05, H0 (insignificant influence) is rejected, but H1 (significant influence) is allowed. A positive statistical t value implies that the relationship is skewed. As a result, it has been demonstrated that E-Commerce Performance has a considerable and favorable effect on job chances in major Indonesian cities.

The R-Squared value = 0.798606 indicates the magnitude of the influence of E-Commerce performance on employment opportunities in large cities in Indonesia, with the remaining 20.14 percent influenced by factors outside the model under study.

b. The Influence of E-Commerce Performance on per capita income in Big Indonesian Cities.

The Hausman test is used to determine whether the fixed effect model or the random effect model should be utilized. If the Chi-Square probability is (0.05), then the random effect is accepted; if the Chi-Square probability is (0.05), then the fixed effect is accepted. In this study, the Hausman test yielded the following results:

Table 3. *Hausman Test* 2 Results

Correlated Random Effects - Hausman Test			
Pool: DATAPOL			
Test cross-section random effects			
Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	39.702868	1	**0.0000**

Table 3 shows that the random cross section probability value is 0.0000 < 0.05, so Ho is rejected and H_1 is allowed, indicating that the fixed effect model is preferable than random effects for estimating panel data.

Table 4. Fixed Effect Estimation Test Results 2

Variabel Dependent : Ln_per capita Income				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	**3.659350**	**1.028166**	**3.559105**	**0.0010**
Ln_E-Commerce	**0.773777**	**0.065379**	**11.83524**	**0.0000**
R-Squared	0.786604			
Adjusted R-squared	0.780989			

According to Table 4, the statistical t value for E-Commerce performance is 11.835524, with a P-value of 0.0000. Because this number is less than the specified significance level, 0.05, H0 (insignificant influence) is rejected, but H1 (significant influence) is allowed. A positive statistical t value implies that the relationship is skewed. Thus, it has been demonstrated that e-commerce success has a considerable and favorable effect on per capita income in Indonesia's major cities.

The magnitude of the influence of E-Commerce performance on per capita income is shown by the R-Squared value = 0.786604, which means that the magnitude of the influence of E-Commerce performance on per capita income in large cities in Indonesia is 78.66 percent, with the remaining 20.14 percent influenced by factors other than those studied in the model

4. Conclusion

Based on the findings of the study, it is possible to conclude that E-Commerce performance has a considerable and beneficial impact on job chances in Indonesia's major cities. Similarly, E-Commerce Performance has a considerable and beneficial effect on per capita income in Indonesia's major cities. This demonstrates how important E-Commerce and digitization are in Indonesia's economic operations, particularly in Indonesia's major cities.

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