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## ANALYSIS ON LABORERS INCOME IN MALANG CITY CASE STUDY: E-COMMERCE

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### ABSTRACT

The development of technology, especially the internet, has made great progress for society, It is supported with the government regulation of work from home (WFH) in pandemic time, which has increased the number of internet users. Trading is no exception. This forced the entire workforce with various backgrounds to conduct online-trading activities. The research objective was to determine the effect of digital trade (e-commerce) on laborers' income in Malang City. Researchers used a quantitative descriptive method to describe the workforce in Malang City. This research was a quantitative study using cross-sectional data collected by SAKERNAS in 2020 and it was estimated by using the multiple linear regression method. The characteristics of the workforce used in this study were education, the working age range of 15-64 years, male or female sex, and married status. The researcher has the implication that if the effect of e-commerce on labor income was very high, this can be an alternative for a new job.

**Key words:** E-commerce, income, workforce

### INTRODUCTION

East Java, which is one of the largest provinces in Indonesia, had population of 40 million people in 2020, while Malang City, the second largest city in East Java, has about 400 thousand inhabitants. Judging by the age of the population of Malang City, the proportional range of work age consisted of 15-25 year age: 22.65%; age 26-35 years was 13.84%; age 36-45 years was 19.61%; age 46-55 years was 20.28 %; age 56-65 years was 13.365%; and the rest 10.26% were old aged residents (65 years and over) who should have entered retirement age (Sakernas 2020, processed data). Compared to other age groups, the percentage of people aged 15-25 who work was the highest. The high number of people working at the age of 15-25 years was possible because at that age some people had got married and they were faced with the responsibility of supporting their families. There were still a portion of young population who also entered the labor force and actively work, even though in fact most of this age group were not ready to enter the world of work and should still be studying.

This also referred to the income of residents in Malang City in 2020 which decreased if it is compared to 2019. This decrease in population income was due to the large number of residents dropping out of work and they became unemployed due to the covid-19 pandemic. Income below IDR 1,000,000 in Malang City in 2020 was 69%, that was much lower than the city minimal wage of Malang City that was IDR. 2,970,502 (2020 SAKERNAS, processed data). This was very possible if the population aged 15-25 years who had the highest percentage of work with income below the city minimal wage in Malang City.

Based on the fact above, one can associate it with the industrial revolution 4.0, which has a significant impact on changes in human behavior. The most prominent thing is the increasingly widespread use of the internet. Malang City had a workforce that used the internet of 63.8%, while those who did not use the internet were 36.2% (Sakernas 2020, processed data). It illustrated that the Covid 19 pandemic was able to increase internet users simultaneously because all activities were carried out online. However, when viewed from internet transactions in Malang City, only 15% of the Malang City workforce transacted

using the internet, the remaining 85% did not transact using the internet (Sakernas 2020, data processed). This was possible because only a small portion of the public know and understand to transact using the internet; besides, it was still possible if there were still some people who did not trust internet transactions. This study aims to see how the influence of e-commerce on laborer income in Malang City, so that it can increase income and create new job trends in the current era.

## LITERATURE REVIEW

Adaptation to a new job is a breakthrough that must be faced by some people to increase their income. According to Suparmoko in (Ma'arif, 2013) income consists of three types, namely salary, owned-business income, and income from other businesses. In this case e-commerce can play a role in increasing the income of one's own business or side business. Cardona explained (Prastiwi, 2021) that e-commerce has two advantages; first, it minimizes costs, and the second, it is a broad change for the retail business. In other words, e-commerce can reduce the cost of cross-border trade and it increase people's consumption because they can buy something they want that cannot be reached directly. Regarding the workforce in the digital era, according to Chen (Prastiwi, 2021), the things that must be considered are connectivity, service, rules, regulations and workforce skills.

Chen (Prastiwi, 2021) also explains that work skills are a serious problem that must be faced in e-commerce. First, e-commerce uses high technology that is applied for business; laborers must have adequate skills and technical skills. Second, e-commerce is supported by the internet and information technology; and laborers must have skills in information technology so that they are able to operate and monitor e-commerce processes. Third, because of the rapid advancement of technology, they must be able to adapt to this and to see consumption patterns in society and the market. Continuously advancing innovation and competitiveness will increasingly pressure and demand the workforce to continue to develop in the current era.

## METHODS OF RESEARCH

This research was done in Malang City area in 2019-2020. Malang City was chosen as the research location because it was the second largest city in East Java which grew through innovation in its young workforce. According to Sugiyono (2016) population is a generalized area consisting of objects and subjects that have certain qualities and characteristics that was determined by the researchers to be studied, and then conclusion can be drawn. The population used in this study was the entire workforce of Malang City. Meanwhile, the sample was part of the number and characteristics of the population (Sugiyono, 2016). The research sample was a part of the population taken from data sources, and they can represent the entire population. The number of Malang city workers who served as sample was 1,647 people. In determining the type of sample used in this study, the researcher used a purposive sampling technique, namely a probability sampling carried out with certain criteria. The sample criteria in this study were "Malang City workers who use the internet".

The data used in this study were secondary data, which came from the 2020 SAKERNAS survey obtained from BPS. Some of the data used includes, first, E-commerce, (X1); this variable is a dummy variable where (1) workers who transact using the internet (0) workers who do not transact using the internet. Second, education, (X2), this variable is an ordinal variable consisting of workers who do not attend school (1), elementary school (2), secondary school (3), high school (4), vocational school (5), DIPLOMA I/II/III (6), DIPLOMA IV (7), S1/S2/S3 (8). The third, age, (X3); this variable is an ordinal variable consisting of workers aged 15-25 years, 26-35 years, 36-45 years, 46-55 years, 56-65 years, >65 years. The fourth, genders, (X4), this variable is a dummy variable where (1) female (0) male. The fifth, marital status (X5), this variable is a dummy variable where (1) is married (0) is not married. The sixth, incomes, (Y), in rupiahs (log).

The applied data analysis method was multiple linear regression with the equation:

$$Y = \alpha + b_1 X_1 + b_2 X_2 + b_3 X_3 + b_4 X_4 + b_5 X_5 + e$$

Y = income,  $\alpha$  = constant value;  $X_1$  = e-commerce variable;  $X_2$  = education variable;  $X_3$  = age variable;  $X_4$  = gender variable;  $X_5$  = marital status variable;  $b_1$  = internet regression coefficient;  $b_2$  = education regression coefficient;  $b_3$  = age regression coefficient;  $b_4$  = gender regression coefficient;  $b_5$  = marital status regression coefficient;  $e$  = disturbing factor. To get a good regression, statistical tests was carried out including the t test, F test, test of the coefficient of determination, and the classical assumption test (multicollinearity test and heteroscedasticity test).

Hypothesis of Multicollinearity test

Ho: tolerance value > 0.1 (no multicollinearity)

Ha: tolerance value < 0.1 (multicollinearity occurs)

Heteroscedasticity test hypothesis

Ho: significance value > 0.05 (heteroscedasticity does not occur)

Ha: significance value < 0.05 (heteroscedasticity occurs)

## RESULTS

Result of the analysis of multi linear regression is as follows:

**Table 1.** Estimate Coefficient

Independent Variable	Coefficient	Standard Error	t	P >  t
E-commerce	.0413218	.0662645	0.62	0.533
Education	.1667437	.0130209	12.81	0.000
Age	.0020141	.0022636	0.89	0.374
Gender	.40259	.0564349	7.13	0.000
Marital Status	.1426836	.0628249	2.27	0.023
Const	13.06052	.1258395	103.79	0.000

Source: data processed, 2022

From the regression test above, the obtained equation is as follows:

$$Y = 13.06052 + 0.0413218 X_1 + 0.1667437 X_2 + 0.0020141 X_3 + 0.40259 X_4 + 0.1426836 X_5$$

### t Partial test:

Based on Table 1, the test results for the t test are as follows:

#### **E-commerce variable ( $X_1$ ) to income variable (Y).**

The E-commerce variable ( $X_1$ ) has a calculated t value of 0.62 and a P > |t| of 0.533. The conditions for taking whether the hypothesis are accepted or not based on the value of P > |t|, then the results of the study are 0.533 > 0.05. It can be interpreted that the first hypothesis or  $H_1$  is rejected, so there is no partial effect of the E-commerce variable on the income variable.

#### **Education variable ( $X_2$ ) to income variable (Y).**

The education variable ( $X_2$ ) has a calculated t value of 12.81 and a P > |t| of 0.000. The condition for taking whether the hypothesis is accepted or not based on the value of P > |t|, then the research results are obtained 0.000 < 0.05. It can be interpreted that the second hypothesis or  $H_2$  is accepted, so there is a partial effect of the education variable on the income variable.

#### **Age variable ( $X_3$ ) to income variable (Y).**

The age variable ( $X_3$ ) has a calculated t value of 0.89 and a P > |t| value of 0.374. The conditions for taking whether the hypothesis are accepted or not based on the value of P > |t|, then the results of the study are 0.374 > 0.05. It can be interpreted that the third

hypothesis or  $H_3$  is rejected, so there is no partial effect of the age variable on the income variable

**Gender variable ( $X_4$ ) to income variable ( $Y$ ).**

Gender variable ( $X_4$ ) has a t value of 7.13 and a P value  $> |t|$  of 0.000. The condition for taking whether the hypothesis is accepted or not based on the value of  $P > |t|$ , then the research results are obtained  $0.000 < 0.05$ . It can be interpreted that the fourth hypothesis or  $H_4$  is accepted, so there is a partial effect of the gender variable on the income variable.

**Marital status variable ( $X_5$ ) to income variable ( $Y$ ).**

The marital status variable ( $X_5$ ) has a calculated t value of 2.27 and a  $P > |t|$  value of 0.023. The conditions for taking whether the hypothesis are accepted or not based on the value of  $P > |t|$ , then the research results are obtained  $0.023 < 0.05$ . It can be interpreted that the fifth hypothesis or  $H_5$  is accepted, so there is a partial effect of the married status variable on the income variable.

**F Test and Determinant Coefficient ( $R^2$ )**

**Table 2.** Output of F Test and  $R^2$

Number of obs	=	765
F(5, 759)	=	46.88
Prob > F	=	0.0000
R-squared	=	0.2360
Adj R-squared	=	0.2309
Root MSE	=	.76201

Source: data processed, 2022

The results of the F test can be seen from Table 2 through the Prob > F value; the Prob > F value from the table above is 0.000. So to determine the effect of variable X simultaneously on variable Y, namely  $0.000 < 0.05$ , one can conclude that  $H_6$  is accepted. This means that the variables E-commerce, education, age, gender and marital status simultaneously influence the income variable.

Based on Table 2, it is known that the  $R^2$  value is 0.2360; therefore it can be explained that the variables E-commerce, education, age, gender and marital status are able to explain the income variable by 23.6%, and the remaining 76.4% is explained by other variables outside the model. In general, time series data has  $R^2$  or Adjusted  $R^2$  more than (0.5), while cross-sectional data has lower  $R^2$  and Adjusted  $R^2$  (0.5), but it does not rule out the possibility that cross data has a fairly high  $R^2$  (Nugroho, 2005).

**Multicollinearity Test**

**Table 3.** Result of Multicollinearity Test

Variable	VIF	1/VIF
Age	1.21	0.824611
Education	1.13	0.884863
Marital Status	1.12	0.889194
E-commerce	1.10	0.910137
Gender	1.01	0.988803
Mean VIF	1.12	

Source: data processed, 2022

The results of the multicollinearity test show that the multiple linear regression model is free from multicollinearity symptoms where the value is  $1/vif$  or tolerance  $> 0.1$ .

**Heteroscedastity Test**

A good regression model should not show symptoms of heteroscedasticity. One way to detect whether there are symptoms of heteroscedasticity is to do a hettest test.

**Table 4.** Result of Hettest Test

chi2 (1)	7.51
Prob > chi2	0.0061

Source: data processed, 2022

To see heteroscedasticity, one can see in the prob > chi<sup>2</sup> table, where the prob > chi<sup>2</sup> value is 0.0061 < 0.05, then there is heteroscedasticity. To overcome heteroscedasticity in this study, standard error correction was carried out using the heteroscedasticity robust variance-covariance estimator obtain vce (robust) (Prastiwi, 2016).

**Table 5.** Result of Heteroscedasticity Correction

	Coefficient	Robust Std Error	t	P> t
E-commerce	.0413218	.0669556	0.62	0.537
Education	.1667437	.0135871	12.27	0.000
Age	.0020141	.0021548	0.93	0.350
Gender	.40259	.0571418	7.05	0.000
Marital status	.1426836	.0591432	2.41	0.016
_cons	13.06052	.1228145	106.34	0.000

Source: data processed, 2022

## DISCUSSION

### The Influence of E-commerce towards Income

E-commerce has a positive effect on income but it is not significant. This is in accordance with research conducted by (Habiba, 2022) where e-commerce has no significant effect. It can be interpreted that e-commerce can increase income, but because many workers do not understand the usefulness, functions and workings of e-commerce, it causes problems in increasing income. Challenges in using e-commerce include low digital literacy, expensive technology, low quality internet services and online criminals (Kusumawardani, 2022). Most of the proportion of e-commerce use is only carried out by rich households in urban areas compared to poor households (Prastiwi, 2021). This goes back to the lack of education for the workforce regarding e-commerce which should be able to assist the workforce in increasing income.

### Influence of Education towards Income

Education has a positive and significant effect on income. According to the theory of labor force participation, someone who has a higher level of education is assumed to have high ability or expertise as well, so that the resulting work ethic between lower education and higher education is different. This also affects the wages or income received. So that it can be interpreted that the higher the level of education, the higher the level of income will be earned. This opinion is in accordance with research conducted by (FAZRIE, 2017) where the higher the education, the higher a person's ability to sell and manage finances, so that the opportunity for someone who is highly educated in selling, especially through e-commerce is very large and this is of course very capable to increase earning.

### The Influence of Age towards Income

Age has a positive effect on income but it is not significant. The older the workforce tends to have a better income. However, it is possible that young workers who use e-commerce will also have sufficient income because of their proficiency in using social media and using

the internet to run their business so that their income increase. This means that workers both young and older are able to earn quite a good income by using the internet through e-commerce.

#### **The Influence of Gender towards Income**

Gender has a positive and significant influence on income. This is consistent with the research of (Prastiwi, 2016) where male workers have a higher income than women. Even though women's emancipation has progressed rapidly, there are still many women out there who choose to carry out their obligations as housewives. This fact narrows the space for women and affects the difference in income between men and women. With e-commerce, it can help housewives increase their income by selling in a online way.

#### **The Influence of Marital Status towards Income**

Marital status has a positive and significant effect on income. It can be interpreted that someone who is married has a higher income than someone who is not married. This is because someone who is married has an obligation to meet household needs. In addition, the allowance received for someone who is married is also a factor in differences in income levels.

### **CONCLUSION**

This study found that e-commerce has a positive effect on income, but it is not significant. This is due to the lack of e-commerce education for the Malang City workforce, which causes the workforce to be unable to overcome challenges in using e-commerce. Regulations are needed so that workers who want to get involved in e-commerce are not worried about digital criminals. Thus, e-commerce can be improved in Malang City and it is able to help increase people income.

In addition, age has a positive effect on income, but it is not significant. This means that the older the workforce tends to have a better income, but it does not rule out the possibility of young workers who are proficient in technology using e-commerce to increase their income. Today's young people are very up to date with the development including technology. It is possible that young people are more capable of facing challenges in using e-commerce, and in general young people have better and more innovative innovations than old age.

As for education, gender and marital status have a positive and significant effect on income. This can be interpreted that education has a very high effect on income. Workers who have higher education are more knowledgeable and have specific skills in a field. This allows them to keep up with the times and challenges of e-commerce; the skills needed in e-commerce commerce is not difficult for those with higher education. The relationships and the environment they get is certainly very different from people who are not educated.

Male gender has greater income than women, even though women's emancipation has been activated but women's income is still below men's. However, it does not rule out the possibility that with e-commerce, women's income can be more than men's income. Especially for housewives, they are able to increase their income with e-commerce without disturbing their household chores.

### **REFERENCES**

- Badan Pusat Statistik. 2022. *Statistik Indonesia*. Badan Pusat Statistik, Jakarta.
- Bank Indonesia. 2020. *Laporan Perekonomian Indonesia: Bersinergi Membangun Optimisme Pemulihan Ekonomi*. Bank Indonesia, Jakarta
- Bank Indonesia. 2021. *Laporan Perekonomian Indonesia: Bangkit dan Optimis: Sinergi dan Inovasi untuk Pemulihan Ekonomi*. Bank Indonesia, Jakarta

- Bank Indonesia. 2021. Dampak Pandemi Covid-19 terhadap Ketenagakerjaan di Indonesia. *Laporan Kajian*. Kementerian Koordinator Bidang Perekonomian Republik Indonesia, Asisten Deputi Perekonomian Daerah dan Sektor Riil Deputi Bidang Koordinasi Ekonomi Mikro dan Keuangan. Februari 2021.
- Gujarati, Damodar. 2009. *Basic Econometrics*<sup>5th</sup>. The Mc-Graw Hill Company
- Kashni, Tarun. Vishal Thakur. 2021. A Critical Analysis of Impact on Employment During and After Covid-19 Lockdown on India. *International Research Journal of Business Studies* Vol. 14 No. 3. ISSN: 2089-6271. E-ISSN: 2338-4565, <https://doi.org/10.21632/irjbs>.
- Lubis, A. R. (2021). *Analisis pengaruh penggunaan E-commerce terhadap Peningkatan Penerimaan Penjualan Usaha Mikro di Kota Medan*. Retrieved from Repositori Institusi Universitas Sumatra Selatan: [repositori.usu.ac.id](http://repositori.usu.ac.id)
- Maidiana, A. (2013). Faktor-Faktor yang Mempengaruhi Lama Menganggur bagi Pekerja di Industri Perkebunan Kelapa Sawit Ogan Gomiring Ulu. *Jurnal Ilmiah STIE MDP*, NO.2.
- Muslihatiningsih, Fivien. Miftahul Walid. I Wayan Subagiarta. 2020. Penyerapan Tenaga Kerja di Provinsi Jawa Timur. *E-Jurnal Ekonomi Bisnis dan Akuntansi*. Vol. 7, No. 1 Maret 2020. ISSN 2685-3523, doi:10.19184/ejeba.v.7.1.12742.
- Nasri, A. F. (2020). *Pengaruh Penerapan E-Commerce Terhadap Perkembangan Usaha Mikro Kecil dan Menengah (Studi Pada Usaha Mikro Kecil Dan Menengah Di Kota Bengkulu)*. Retrieved from REPOSITORY IAIN BENGKULU: <http://repository.iainbengkulu.ac.id/4704/>
- O'Sullivan, Arthur. 2006. *Urban Economics*. Mc.Graw-Hill International Edition
- Prastiwi, L. F. (2016). Analisis Pekerja Migran Dan Nonmigran Perkotaan Pada Sektor Formal Dan Sektor Informal Di Indonesia. *Ekonomi*, 14.
- Prastiwi, L. F. (2021). Labor characteristic and welfare of internet users for e-commerce in Indonesia. *BESS*, 143.
- Rahman, Muhammad Adi, Ahmad Zuhdi Dwi Kusuma, Hafiz Arfyanto. 2020. Employment Situations of Economic Sectors Impacted by The Covid-19 Pandemic. *Smeru Issue Brief*. No. 1/June/2020. Smeru Research Institute.
- Ridhwan, Masagus M., Asep Suryahadi, Jehen F. Rezki, Immanuel Satya Pekerti. 2021. The Labor Market Impact of Covid-19 and The Role of E-Commerce Development: Evidence from Indonesia. *Working Paper Bank Indonesia* WP/10/2021
- Sasana, H. (2015). Pengaruh Faktor Pendapatan Pedagang, Pendapatan Suami, Umur, Tingkat Pendidikan Dan Jumlah Tanggungan Keluarga Terhadap Curahan Jam Kerja Pedagang Bumbon Wanita. *Fakultas Ekonomika dan Bisnis Universitas Diponegoro*, Vol 2, No 3.
- Saad, W. N. (2017). *Pengaruh E-Commerce Terhadap Peningkatan Pendapatan Sentra Industri Keripik Pisang Bandarlampung Ditinjau Dari Etika Bisnis Islam (Studi pada Sentra Industri Keripik Pisang di Kota Bandarlampung)*. Retrieved from Repository Uin Raden Intan Lampung: [Http://Repository.Radenintan.Ac.Id/2609/](http://Repository.Radenintan.Ac.Id/2609/)
- Sakernas. (2020). *Keadaan Angkatan Kerja Provinsi Jawa Timur Agustus 2020*. Retrieved from [jatim.bps.go.id](https://jatim.bps.go.id): <https://jatim.bps.go.id/publication/2021/06/07/224b55e9a4931b2cbd2b1eab/keadaan-angkatan-kerja-provinsi-jawa-timur-agustus-2020.html>
- Tran, Toan Khanh Pham. 2021. Unemployment and Shadow Economy in ASEAN Countries. *Journal of Asian Finance, Economics and Business*, Vol. 8 No. 11. E-ISSN: 2288-4645, doi:10.13 106/jafeb.2021.vol8.no.11.0041.



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