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Digital Economy Analysis and Openness to City GDP Growth in East Java

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Abstract
The East Java Economic Community was formed to achieve perfect economic integration in the East Java region which is believed to provide real benefits to all social elements. Developed economic opportunities and the openness of each city/district are important for the success of a prosperous East Java goal. This study uses 1 quantitative method with 1 secondary data on board for the 2015-2019 period by combining 10 cities/districts in East Java (Surabaya, Gresik, Sidoarjo, Mojokerto, Banyuwangi, Pasuruan, Probolinggo, Kediiri, Malang, Jember). Partial t-test results are obtained; namely the influence of computerized variables on the GDP of the City / Regency of East Java; that is, the probability-statistical value obtained is 0.0420. Then the statistical probability <α = 5% is 0.0420 <0.05. So it can be concluded that the advanced variable partially has a significant positive effect on the GDP variable. Meanwhile, openness affects the growth of city GDP.
Keywords*: Economy, Digital, Openness, GDP, East Java*

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I. INTRODUCTION

The East Java Economic Community is a city/district program in East Java to transform East Java into a strong economic area that is reckoned with in the national and international economic area. The East Java Economic Community was formed to realize perfect economic integration in the East Java region which is believed to provide real benefits to all social elements. According to 1Abdurofiq (2015), there are often no 4 (four) things that focus on community economic formation, first, cities/regencies in areas where markets and production areas are united. Second, the East Java Economic Community will serve as an area with a very high competition level. Third, the East Java Economic Community1 will be used as an area with equitable economic development.

Worries and countless audience questions about the Society East Java's economy is a natural thing. Right attention can caring reflection of all elements Public. Other cities/regencies in East Java on various opportunities have also been shown concern for the community's economy East Java. Of course, it cannot be denied that various economic and political conditions in every city/district in East Java have been created complexity and challenges in itself to implement the economy of the people of East Java. Public The East Java economy was formed with the aim to achieving perfect economic integration in the East Java region which is believed to be giving tangible benefits for all elements of society. Reaching benefits is not unconditional. Since formulation, three of the four pillars of society The East Java economy clearly needs it competitiveness as the key to success. East Java economic community as a single market area and production-based, as a competitive area, and integrated with the global economy can be realized if each member and as a competitive area. The bottom line The East Java economic community was designed to increase the competitiveness of East Java responding to increasingly fierce global competition.

Increased variety existing products in the domestic market Currently cannot be separated from the increasingly open roles of local, national and international trade. When the stumbling blocks are reduced, the market will be more open, and the goods' traffic will increase. In its disclosure, a party can consume goods or services that are not produced. Also, in openness, resources will be allocated to sectors whose regions have

comparative and competitive advantages, according to Dariah (2005). The world economy is currently increasingly open, where each region is trying to increase its competitiveness to gain trade advantages.

To encourage competitiveness in global value chains, the use of technology and increased innovation is inevitable. East Java already has the 2020 East Java ICT Master Plan to create a digitally integrated East Java community. The digital economy (e-commerce) industry can be viewed as both an opportunity and a challenge. As an opportunity, because it provides wider space for the business world, thus encouraging the emergence of new start-ups and job opportunities.

II. THEORETICAL FRAMEWORK

Setiawan (2017) explains that the digital world does not only offer great opportunities and benefits for the public and business interests. However, it also provides challenges in all areas of life to improve life quality and efficiency. The use of various technologies makes life very easy, but the digital lifestyle will increasingly depend on cell phones and computers. Either way, we should be grateful that all these technologies are making it easier; it's just that every user needs it to control and control it. Because if we use this technology too much, we ourselves will be at a disadvantage, and maybe we can't maximize it.

The development of technology that is so fast that it penetrates all social lifelines has changed social life, community culture, and political life. The sophistication of technology developed by humans is actually used by politicians who want to get sympathy and empathy from the wider community. To increase electability and popularity, digital facilities such as smartphones are now equipped with sophisticated features/applications that connect directly to social networks that can connect individuals, from one group to another, and even countries with impact. Big in modern politics. Electronic mechanisms have also changed elections, such as internet-based campaigns, websites, e-mail and broadcasts. It provides a facility for candidates and political parties to send messages quickly and cheaply to audiences, enabling them to recruit campaign volunteers and raise campaign funds; The use of smartphone digital media in conjunction with social networks is very effective. Especially in reaching young people, who are often the most difficult segments of society to engage with conventional strategies.

Openness

The increasing variety of products in the domestic market today cannot be separated from international trade's increasingly open role. When the stumbling blocks are reduced, the market will be more open, and the goods' traffic will increase. In its disclosure, a party can consume goods or services that are not produced. Also, in openness, resources will be allocated to sectors where the country has a comparative and competitive advantage, according to Dariah (2005). Today's world economy is increasingly open; for this reason, every country tries to increase its competitiveness to gain trade profits.

According to Novitasari (2015), in theory, economic openness promises challenges and opportunities; This means that more open trade between one country and another can provide opportunities to increase market access for domestic products in international markets and challenge the competitiveness of domestic industries against foreign products. However, the benefits received by each country from economic openness do not show the same pattern and magnitude. For some developing countries, openness is detrimental to economic growth but will positively impact developed countries that have optimized their openness to trade.

GDP

The success of development programs in developing countries is often judged by the high and low levels `` and/or the speed with which national output and income are generated. However, the main concern of development is through accelerating the growth rate of national income or economic growth; On the other hand, the distribution of income growth is still very limited in scope, the power between regions/regions in developing countries is not balanced, so it tends to widen. gap or inequality between rich regions/regions and poor regions/regions. In the early stages of economic growth, income distribution tends to get worse , and at a later stage, income distribution will increase, but at some point, there will be an increase in disparity in the end decreased again. In the short term, there is a correlation positive growth in per capita income with the difference in income. But in the long run, the relationship between the two becomes a negative correlation.

Growth economy is the development of economic activity which causes goods and services to be produced increase in society so that it will increase welfare community (Sukirno, 1994) in Suparyati (2015). Still in Suparyati (2015), according to Budiono that economic growth is a process of improvement per capita output in the long run.

Economy of Globalization

Zarono (2015) explains economic globalization can be interpreted as a process by which more and more countries involved in world economic activities. So, if in the period since the second world war ended up in the 1970s the world economy dominated by the United States (US) economy, although the US gross domestic product (GDP) is still large, namely about 45% of world GDP, a role economies of the European Union, Japan, and other countries state-owned new industries (NICs), such as South Korea, Taiwan, and Singapore, and China is much stronger as a driving force world economy. It's getting global a country in the world economy can be seen from, for example, increased trade international (exports and imports) which are reflected among others, increasing its export share in global markets and an increase in the ratio of imports to GDP; increasingly actively involved in the process production involving many countries (for example in the manufacture of Boeing aircraft in more than 50 countries involved who each make a specific part of the plane or in Airbus aircraft manufacture, several European countries are involved in the manufacturing process), and the greater the flow of foreign investment into the country or the greater the investment from country to another country.

Globalization process from an economic point of view is economic change fundamental or structural world and will continue an increasingly rapid rate following the advancement of technology, which also processes faster. Development this has increased the interdependence relationship and sharpens competition between countries, not only in international trade but also in investment, financial and production activities. Involves many countries. In level globalization of product flows and optimal factors cross-country or regional production will surf across cities in a country or a village within a district. At this level, an entrepreneur who have a factory in West Kalimantan at any time can move their business to Sarawak or Philippines without any obstacles, be it logistical constraints as well as bureaucratic obstacles from the government of Malaysia or the Philippines or the Indonesian government in administrative matters such as licensing and so on.

III. METHOD

Population which becomes the object of this research comes from the data secondary was obtained from the Knoema company, one of them digital economy data provider. method Sampling using purposive sampling method, namely determining the sample with certain considerations. In this study, sampling using panel data obtained time series data for 5 years and cross-sectional data of 10 cities/regencies in Java Island East namely Surabaya, Gresik, Sidoarjo, Mojokerto, Banyuwangi, Pasuruan, Probolinggo, Kediiri, Malang, Jember.

Variable Identification

Research variable in independent and dependent form. For variables independent in this research is economics diginal (X1), Openness (X2), while the dependent variable is growth Economic GDP (Y).

Data analysis

Method of analysis The technique used in this research is quantitative which uses mathematical and statistical models classified in certain categories for easy analysis by using the Eviews program. Simultaneously, an analytical technique The technique used is multiple linear regression analysis to see the relationship between variables independent with the dependent variable. The data used are panel data; three kinds of panel data estimation techniques, namely pooled the least square, fixed-effect models, and random-effects models. Test model fit to determine the most appropriate model is to use the Chow test and Hausman test. After that, test the classical assumptions Namely the normality test, multicollinearity test, test heteroscedasticity, autocorrelation test, and hypothesis testing, namely partial t-test, simultaneous F test, coefficient of determination test.

A. Classic Assumption Testing.

Before testing hypothesis is complete, must first go through the classical assumption test. This test is done for get valid and reliable parameters. Therefore, testing and cleaning are required against violations of basic assumptions if they do occur. The examiner of classical regression's basic assumptions consists of the Normality Test, the Multicollinearity Test, and the Autocorrelation Test.

1. Data Normality Test

The normality test aims to test whether the regression model's data is normally distributed or not (Ghozali, 2005, p. 110). To test whether the data is normally distributed or not, it can be determined using the Jarque Bera (JB) histogram method.

2. Multicollinearity Test
Multicollinearity test aims to test whether the regression model found a correlation between independent variables. A good regression model should not be correlated with independent variables. To determine the presence or absence of multicollinearity, a correlation test is used using a correlation matrix.
3. Autocorrelation test
The autocorrelation test aims to test whether the regression model finds a correlation between one observation's residuals and other observations arranged according to time series. A good regression model does not require autocorrelation problems. To detect the presence or absence of autocorrelation. The method used to test autocorrelation is using the Lagrange Multiplier (LM) method or the BG test (Breusch Godfrey).
b. Multiple Linear Regression Analysis
Multiple regression analysis is a statistical method used to determine possible forms of relationships between variables. The main purpose of using this method is to predict and estimate the value of one other variable being studied
c. Hypothesis testing
In analyzing the significant value of the resulting model, various statistical tests were used, namely; Customized F-Test, t-Test, R-Square
F Test or Concurrent Effect
The F statistical test is used to test the certainty of all independent variables' influence together on the dependent variable.
T-test or partial effects
Perform a t-test (t-test) on the regression coefficient to explain how the independent variable is partially related to the dependent variable statistically.
Analysis of the Coefficient of Determination (R2)
The coefficient of determination (R2) is used to measure the model's ability to explain variations in the independent variable. The coefficient of determination ranges from zero to one. This means that if R2 = 0 indicates that there is no influence of the independent variable (independent variable) on the dependent variable (dependent variable) if R2 is getting closer to 1, this indicates the stronger influence of the independent variable (independent variable).) on the dependent variable (dependent variable), on the other hand, if R2 approaches 0, the smaller the effect of the independent variable (independent variable) on the dependent (dependent variable).
Econometric Model
For the digital economy, data is obtained from internet users in each country. Meanwhile, the degree of economic openness of each country can be seen from the size of the openness index, namely the ratio of the total value of exports (X) and imports (M) to gross domestic product (GDP). The larger the index number obtained, the more open the country's economy is. That is:
Openness = (X + M) / GDP x 100
Where:
X = Exports, M = Imports, GDP = Growth
The analysis technique in this study is panel data regression analysis, while the log regression model can be written as follows: $\ln Yit = \beta 0 + \beta 1 \ln X1it + \beta 2 \ln X2it + it$ where:
Y = GDP; X1 = Digital; X2 = Openness; i = city / regency; and t = time.

IV. RESULTS AND DISCUSSION

There are three tests of panel data regression estimates, namely the common effect (OLS), the fixed-effect model (FEM), or the Random Effect (REM) model. In determining the panel model to be used in this research, several tests must be carried out. The Chow test and the Hausman test are tests that can be used in determining whether the panel data model can be regressed with the common effect model (OLS), the fixed-effect model (FEM), or the Random Effect (REM) model. The Chow test is used to determine whether the panel data model regresses with the Common Effect model or the Fixed Effect model.
H0: The best model is Common
Effect
H1: The best model is Fixed
Effect

Chow test

Table 1. Chow test

Redundant Fixed Effects Tests
Equation: Untitled
Test cross-section fixed effects

Effects Test	Statistic	d.f.	Prob.
Cross-section F	226.542173	(9,38)	0.0000
Cross-section Chi-square	200.051784	9	0.0000

Table 1 above shows that the best model is a fixed effect because the Chi-square probability value is below 0.05; this means H0 is accepted.

Hausman test

Table 2. Hausman Test

Correlated Random Effects - Hausman Test
Equation: Untitled
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	25.205822	2	0.0000

Table 2. Above shows the result that the Cross-section is Random is worth 0.0000, which means that H0 is accepted. The most appropriate model to use in this study is the Fixed Effect Model.

Table 3. Fixed Effect Model

Dependent Variable: GDP
Method: Panel Least Squares
Date: 28/07/18 Time: 15:50
Sample: 2012 2016
Periods included: 5
Cross-sections included: 10
Total panel (balanced) observations: 50

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DIGITAL	0.092704	0.044054	2.104349	0.0420
OPENES	-0.096295	0.203382	-0.473471	0.6386
C	1.424997	0.301538	4.725762	0.0000

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.996031	Mean dependent var	2.056289
Adjusted R-squared	0.994882	S.D. dependent var	0.647655
S.E. of regression	0.046335	Akaike info criterion	-3.100265
Sum squared resid	0.081584	Schwarz criterion	-2.641379
Log likelihood	89.50662	Hannan-Quinn criter.	-2.925519
F-statistic	866.8446	Durbin-Watson stat	0.681343
Prob(F-statistic)	0.000000		

From the regression results panel data with the selected model is a model *Fixed Effect*. The regression model equation is obtained as follows:

PDB = 0.092704 (Digital) - 0.096295 (Open) + e

Normality test

From the output already performed, the test states that the histogram shape distributed symmetrically so that the residuals distributed normally. Based on the test For JB statistics, the value is 1.739813, whereas the chi-square value with significance (α = 5%) is 5.991, so that JB> Chi-Square, then H0 is rejected and H1 is accepted, meaning that the residues are normally distributed.

Multicollinearity Test

Based on Ghozali (2013), the multicollinearity test aims to test both in the established regression model there is a high or perfect correlation between independent variables or not. The presence of multicollinearity or can be a high correlation between the independent variables detected in several ways; one of them is the correlation between the independent variables, not more than 0.90. All of the outputs in this

study The correlation of the independent variables does not exceed 0.90, indicating that the model is used Multicollinearity problems do not occur.

Autocorrelation test

Autocorrelation test can be seen from the Chi-Square probability value, if greater than 0.05, the data is not contains autocorrelation problems if the chi-square probability is smaller than 0.05 then the data is contains autocorrelation problems.

The results of the research show that there is an autocorrelation problem. For this reason, researchers used Cochrane Orcutt, which is used to fix the problem. autocorrelation.

From the Cochrane Orcutt method output, the DW is 1.760831, where This DW value passed the test on autocorrelation problems. With DL value 1.4625 and DU 1.6283, DW value 1.760831 if DL <DW> DU (1.4625 <1.760831> 1.6283) can concluded that there was no autocorrelation problem.

The T-test (partial)

Table 4 t-test (partial)

Dependent Variable: GDP
Method: Panel Least Squares
Date: 28/07/18 Time: 15:50
Sample: 2012 2016
Periods included: 5
Cross-sections included: 10
Total panel (balanced) observations: 50

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DIGITAL	0.092704	0.044054	2.104349	0.0420
OPENES	-0.096295	0.203382	-0.473471	0.6386
C	1.424997	0.301538	4.725762	0.0000

Based on the results above as follows:

Digital Influence on GDP

Probability value The t-statistic obtained was 0.0420. Then probability statistic <α = 5% that is 0.0420 <0.05. So it can concluded that the digital variables are partially has a significant positive effect on the GDP variable.

User role The internet has been good at driving growth economy in the city/district of Java East. Still, it should be further improved maximizing the use of the internet to be a consumer and further a star (entrepreneur) can increase economic growth every city/district in East Java.

The Effect of Openness on GDP

The t-statistic probability value obtained is 0.6386, then the statistical probability <α = 5% is 0.6386> 0.005. So it can be concluded that the variable is openness significance has no effect partially GDP variable.

Barro (2003) in Amala (2015) explains that economic growth is closely related to economic openness a country where international trade will have a positive and significant impact against economic growth.

F Test (Simultaneous)

Table 5 F test

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.996031	Mean dependent var	2.056289
Adjusted R-squared	0.994882	S.D. dependent var	0.647655
S.E. of regression	0.046335	Akaike info criterion	-3.100265
Sum squared resid	0.081584	Schwarz criterion	-2.641379
Log likelihood	89.50662	Hannan-Quinn criter.	-2.925519
F-statistic	866.8446	Durbin-Watson stat	0.681343
Prob(F-statistic)	0.000000		

From the results of the calculation of the value of F, it is known that F count> F table (866,844> 3.69) then H0 is rejected and H1 is accepted (F count enters the acceptance area H1). Then also the probability (prob.) From the table above, which is equal to 0.000> 0.005, then H0 is rejected, and H1 is accepted. So that simultaneously or together, the independent variable has a significant effect on the dependent variable.

Coefficient of Determination

Based on the table above, the Adjusted R-Square value is 0.994. This shows that the model can explain 99.4% of the dependent variable, while other factors outside the regression model affect the remaining 0.52.

V. CONCLUSION

This study analyzes the relationship between Digital Economic Growth, Openness, and GRDP in cities/regencies in East Java for 2015-2019 using panel data regression analysis techniques. Based on the results of statistical testing, the following conclusions can be drawn:

1. A partial t-test is obtained; namely, the effect of digital variables on the GDP of cities/regencies in East Java, namely the probability value of t-statistics obtained is 0.0420. Then the statistical probability $<\alpha = 5\%$ is 0.0420 <0.05. So it can be concluded that the digital variable partially has a significant positive effect on the GDP variable. While the effect of openness on the growth of city / regency GDP in East Java, the probability value of t-statistic is 0.6386, so the statistical probability $<\alpha = 5\%$ is 0.6386> 0.005. So it can be concluded that the openness variable partially has no significant effect on the GDP variable.

2. Simultaneous F test results show that the effect of digital variables and openness on city/regency GDP growth in East Java is obtained by an Adjusted R-Square value of 0.994. This shows that the model can explain 99.4% of the dependent variable, while other factors outside the regression model affect the remaining 0.52.

The digital influence on the GDP growth of cities/regencies in East Java is good, so it needs to be improved to manage internet users. Internet users are expected to be consumers and create business opportunities to become start-ups (entrepreneurs) so that economic growth in each country can increase. Meanwhile, the effect of openness on urban / regency GDP growth in East Java needs to be increased, especially in producing products that can be exported and reducing imports of goods; Export-import tariffs must also be rearranged encourage the export climate in each country.

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