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THE IMPACT OF INTERNET ACCESS AND EDUCATION TO THE NUMBER OF POOR POPULATION IN INDONESIA

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Abstrak

Penelitian ini bertujuan untuk mengetahui pengaruh akses internet dan pendidikan terhadap jumlah penduduk miskin di Indonesia. Menggunakan metode kuantitatif dan jenis data yang digunakan adalah data sekunder yang diperoleh dari Badan Pusat Statistik Republik Indonesia dan Asosiasi Penyelenggara Jasa Internet Indonesia berupa data time series tahun 1998-2022. Untuk teknik analisis menggunakan analisis regresi linier berganda dengan akses internet (X1), pendidikan (X2), dan kemiskinan (Y).

Kata Kunci : Teknologi, Pendidikan, Kemiskinan

Abstract

This study aims to determine the effect of internet accsess and education to the number of poor popolation in Indonesia. Using the quantitative method and types of data used are secondary data obtained from the Central Statistics Agency of the Republic of Indonesia and the Association of Internet Service Providers in the form of data from 1998-2022. For the analytical technique using multiple linear regression analysis with internet accsess (X1), education (X2), and poverty (Y).

Keywords: Technology, Education, Poverty

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INTRODUCTION

Poverty is a global problem in various countries (Suryadi, 2020) . Poverty is an indicator of the development of a country's level of social welfare . Matter This show that when poverty increases, so does social welfare in a country decrease (Refani Camelia, 2023) . Some approaches to poverty alleviation include direct actions such as providing food, jobs, and even income to poor people, and indirect actions such as providing education, health, and other services, which enable people to earn or increase their income and thereby escape the poverty trap. (Tilak, 2002) .

During the pandemic due to the Covid outbreak, the BPS survey recorded an increase from 2019 to 2020, an increase of 2.76 million people . Poverty will always be a topic of discussion, especially for developing countries, Indonesia is one that experiences poverty problems that cannot be ignored. The large number of human resources that Indonesia has does not guarantee that the number of poor people will be small. Indonesia's economic growth has been in good condition since the post-1998 economic crisis. Behind the good economy, there are still problems regarding the poverty rate in Indonesia tall. Although number poverty in Indonesia almost always experiences a decline during period This, but the rate seems to be decreasing No too significant, and the poverty rate in Indonesia is still relative high (Kurniawan, 2017) . Even though the poverty rate in Indonesia is experiencing a decline, but the reduction in poverty is relatively slow and the poverty alleviation target has not been achieved. Information Technology considered as a potential tool effective in fighting poverty (Rizky, 2014) .

Since the end of the last century, information and communications technology (ICT), especially the Internet, has been considered important in providing access to markets (Musthaq in García & Rivera, 2023) . The internet allows people to obtain a lot of information and interact and integrate new digital spaces that were not available before (Alderete, 2019) . Information received give opportunity to develop ideas, achieve new opportunities , and take them lessons from others. Equal development will be more effective if accompanied by equal distribution of information and communication (Widiastuti, 2010) .

People who are classified as poor have access limited For Quickly access information about topics that can improve the quality of life they. They usually find out too late about the availability of business opportunities, However actually they can take advantage of it If get information faster (Nisa & Budiarti, 2020) . Government assistance programs such as financial assistance and basic needs often ineffective _ Because limited information available from individuals itself and the government (Subhan in Nisa & Budiarti, 2020) . At the moment, The most effective dissemination of information and communication occurs via the Internet. The Internet allows the exchange of information quickly and efficiently (Bappenas in Nisa & Budiarti, 2020). Besides give opportunity business And income, the Internet can increase effectiveness service to public And improve quality of life. (Widiastuti, 2010) .

Poverty is not only an economic problem , but is a complex problem. Complex problems arising from poverty can result from various interrelated aspects, including education level, income earned, and other factors (Armoyu, 2013) . Education is an investment and opens up opportunities to compete in the world in order to have the opportunity to obtain a better life in the future and supports development (Ustama in Arsani et al., 2020) . Education is one indicator that influences the rise and fall of poverty levels

because low education is one of the causes of low quality resources. This situation is in line with the view that an individual can be more productive than another individual because he has a higher stock of knowledge. Education is propagated as the main weapon against the prevalence of poverty (Hayyan, 2021) . Education has a large role for children, education provides children with opportunities to develop mentally, physically and develop social awareness within them (ChildFund in Arsani et al., 2020) .

The Unesco report states that education is very important to become focus on achieving sustainable development . (Unesco in Arsani et al., 2020) . A study conducted by Blankenau & Camera in 2009 confirmed that government investment in public education has greater social benefits compared to the benefits obtained at the individual level, so that at the national level, eradicating the vicious circle of poverty can be overcome by improving the quality of public education (Casse & Jensen in Arsani et al., 2020) .

Education is the only path that can be taken by poor people who want to enter the upper class labor market, with all the economic benefits that accompany it. Therefore , education has an important influence (Van Der Berg et al., 2011) . The relationship between education and poverty occurs through three mechanisms: first, the more educated people are, the higher their income; second, higher quality education will increase economic opportunities and income; and third, education brings broader social benefits that promote economic development, improved health services for children, and greater participation of women in the workforce (Sirait, 2022) .

Due to dropping out of school early or receiving low-quality education, most children from poor households are at the back of the job queue and less likely to find stable and gainful employment (Van Der Berg et al., 2011) . In Indonesia, every person has the right and obligation to obtain education, In 2013, the central government introduced a 12-year compulsory education program called the General Secondary Education Program as a continuation of the nine-year compulsory education program. (Miftahudin, 2023) , however , not everyone carries out this obligation for several reasons.

METHODS

This research uses a quantitative descriptive approach sourced from BPS-RI and APJII publications. The data used are the number of poor people in Indonesia (Y), the number of internet users in Indonesia (X1), and the number of high school graduates in Indonesia (X2) in 1998-2022.

This research model was formulated into multiple linear regression analysis (Multiple Regression) to find relationships between variables, in testing the effect of internet access (X1) and education (X2) on the number of poor people (Y) in Indonesia:

$$KM = \beta 0 + \beta 1\ Ai + \beta 2\ Pk + e$$

Description :

β0	: Constant
KM	: Poverty
Ai	: Internet access
Mr	: Education
β1, β2	: X regression coefficients
e	: Error term

RESULTS AND DISCUSSION

A. Research Results

1. Classic Assumption Test

a) Normality Test

the Jarque Bera test method, provided that the significance value was > 0.05 .

Table 1. Normality Test

Series : Residuals	
Sample 1998 2022	
Observations 25	
Mean	8.11e-12
Median	736.9316
Maximum	6473,467
Minimum	2081,859
Std. Dev.	2202.168
Skewness1.	425974
Kurtosis	4.321939
Jarque-Bera	10.29282
Probability	0.05820

Source: Data processed by researchers, 2023

The results of normality testing can be concluded that the variables internet access (X1) and education (X2) show that the data test results are normally distributed with a significance value above 0.05.

b) Multicollinearity Test

Variance inflation factor (VIF) is used to determine whether or not there is multicollinearity in the regression model. The multicollinearity test has been fulfilled if the centered VIF value is < 10.00 .

Table 2 . Multicollinearity Testing

Variables	Coefficient of Variance	Uncentered VIF	Centered VIF
C	8816856	41.66434	NA
INTERNET	75040.90	59.42562	2,500730
EDUCATION	14292.15	104.0215	2,500730

Source: Data processed by researchers, 2023

From these results it can be concluded that there is no multicollinearity problem in the prediction model in the data used.

c) Autocorrelation Test

This test uses the Breush-Godfrey LM test, if the probability value is > 0.05 , then there is no autocorrelation.

Table 3 . Autocorrelation Testing

F-statistic	0.207986	Prob. F(2.20)	0.8140
Obs *R-squared	0.509371	Prob. Chi-Square(2)	0.7752

Source: Data processed by researchers, 2023

It shows a probability value above 0.05, namely with a value of 0.7752, this shows that in this test the regression model has no symptoms of autocorrelation.

d) Heteroscedasticity Test

In the heteroscedasticity test the author uses the White test type, which is fulfilled if the value of Prob. Chi Square > 0.05.

Table 4 . Heteroscedasticity Testing

F-statistic	2.653345	Prob. F(5.19)	0.0555
Obs *R-squared	10.27895	Prob. Chi-Square(5)	0.0677
Scaled explained SS	13.22135	Prob. Chi-Square(5)	0.0214

Source: Data processed by researchers, 2023

The Prob>chi2 value is 0.0677, meaning it is greater than 0.05, so this data is free from heteroscedasticity problems.

e) Linearity Test

In the Linearity Test the author uses the Ramsey RISET Test, where the probability value (p value) is shown in the probability value of the F-statistic > 0.05 .

Table 5 . Linearity Testing

	Value	df	Probability
t-statistic	0.043581	21	0.9657
F-statistic	0.001899	(1, 21)	0.9657
Likelihood ratio	0.002261	1	0.9621

Source: Data processed by researchers, 2023

The result is 0.9657 which means that the regression model has met the linearity assumption.

2. Multiple Linear Regression

When testing the Multiple Linear Regression Test, 25 data samples are used for each variable as shown by the "Included Observation" value, namely 25 sample 1998-2022.

Table 6 . Multiple linear regression

Variables	Coefficient	Std. Error	t-Statistics	Prob.
C	69574.88	2969.319	23.43126	0.0000
INTERNET	-1192.403	273.9359	-4.352854	0.0003
PENDIDIKAN	-565.8065	119.5498	-4.732811	0.0001
R-squared	0.892796	Mean dependent var		32972.80
Adjusted R-squared	0.883050	S.D. dependent var		6725.820
S>E> of regression	2300.089	Akaike info criterion		18.43145
Sum squared resid	1.16E+08	Schwatz criteria		18.57771
Log likelihood	1227.3931	Hannan-Quinn Criter.		18.47202
F-statistic	91.60289	Durbin-Watson stat		1.664366
Prob (F-statistic)	0.000000			

Source: Data processed by researchers, 2023

The multiple linear regression model equation can be written as follows.

KM = 69574.88 - 1192.403 log Ai - 5658065 Pk + e

The model can be interpreted as follows:

1. The constant α = 69574.88 which shows that if the variables internet access (X1) and education (X2) are constant then the number of poor people will increase by 69574.88 units.
2. The coefficient β1 = - 1192.403 shows that if the internet access variable (X1) increases by 1%, the number of poor people will decrease by 1192.403.
3. The coefficient β2 = - 5658065 shows that if the education variable (X2) increases by 1%, the number of poor people will decrease by 5658065.

a) T test
T Test Results as. following .
a. Variable
b. Variable

b) F test
From the results of the F Test, the value of the F-statistical probability (Prob (F-Statistics)) is 0.0000 < 0.05, so the independent variable has a significant negative effect simultaneously on the dependent variable, H1 is accepted.

c) Coefficient of Determination
From these results, the R-squared value is 0.892796, which means that the independent variables selected simultaneously influence the dependent variable by 89.27% so that the remainder (100%-89.27 % =10.73%) is influenced by variables outside this research.

B. Discussion

1) The Effect of Internet Access on the Number of Poor People

Based on the results of the eviews output , internet access has a negative and significant impact on poverty with a coefficient value of -1192.403, which means that if the internet access variable changes by 1% it can cause a change in the variable number of poor people of 1192.403 units. This is in accordance with the marginal theory proposed by Lewis . He said that one of the factors that makes people in the world poor is the culture of living just as they are, as if they don't care about the progress of the times.

This research supports research findings (Nisa & Budiarti, 2020) which show that information technology has a negative impact on poverty in Indonesia. Therefore, improvements are needed both in terms of physical telecommunications infrastructure and the use of ICT, as well as outreach and support to ensure that poor people are willing to use ICT to increase community productivity.

Looking at the causes of poverty from various aspects, access to information via the internet is also one of the causes of poverty which is also important to review (Christiani & Nainupu, 2021). Internet access allows you to develop ideas, take advantage of new opportunities, and learn from others. Equal development is only effective if it is accompanied by equal distribution of information and communication (Widiastuti, 2010).

In the digital era, access to information and communication plays an important role in improving people's quality of life, including reducing poverty rates (Ruhyana & Essa in Christiani & Nainupu, 2021) . Internet access is an additional mechanism that contributes to reducing poverty levels (García & Rivera, 2023) . Poor people have difficulty finding things that can improve their quality of life quickly , they usually find out too late about the availability of business opportunities that they could actually implement if they got the information more quickly and in the end this will cause the individual to be unemployed and unable to meet their daily needs.

In the economic field, internet facilities have changed the market paradigm. Starting from product promotions to marketing as well as orders that can be accessed directly. Banking, stock transactions, publishing, and advertising are also done via the Internet. Buying and selling transactions can be carried out to increase people's *income* through the internet network, because it can be used as a very effective and efficient online business medium due to speed of access and cost savings (Mughni, 2020) .

2) The effect of education on the number of poor people

Based on the results of the eviews output , education has a negative and significant effect on poverty with a coefficient value of – 5658065, which means that changes that occur in the education variable by 1% can also cause changes in the number of poor people variable by 5658065 units. This is in accordance with the marginal theory put forward by Lewis, he said that one of the factors that makes people in the world poor is caused by a lack of education.

The higher the level of education, the greater the knowledge and skills, which has an impact on increasing a person's productivity. Companies will be willing to pay higher wages/salaries to these workers because their performance will be better if they employ more productive workers. Ultimately, those who are more productive will achieve better welfare, which is indicated by increased income and consumption. Therefore, the poverty rate can be said to be low (Adriana, 2020).

Education will have a long-term impact in improving the family's economic life. One of the outputs in the world of education is producing graduates who are more qualified and in line with the needs of the world of work. Investment in education can improve the quality of human resources which is reflected in the expansion of a person's knowledge and skills. The higher a person's level of education, the more knowledge and skills they have, which has an impact on higher labor productivity (Zaqiah et al., 2023).

This is also in line with research by Hasanah and Widowati (2011) which identified the influence of education level on labor productivity. Education provides knowledge to do a job. The higher the level of education, the higher the labor productivity . Conversely, the lower the level of education , the lower labor productivity will be (Ukkas, 2017). Low levels of education mean limited career choices to meet life's needs (Syamsuri et al., 2015) .

3) The Effect of Internet Access and Education on the Number of Poor People

Based on the results of the F test which is used to determine the influence of independent variables simultaneously or together on the dependent variable, internet access and education have a probability value of F-statistics (Prob (F-Statistics)) of 0.0000 < 0.05, which means that the variables internet access and Education together has a significant negative effect on variable Y, namely the number of poor people.

These results show that increasing education and internet access can reduce the number of people living in poverty.

Apart from that, based on the R-squared test results, a value of 0.892796 was obtained. This means that internet access and selected education simultaneously influence the number of poor people by 89.27 % .

According to Lewis's marginal theory, every society becomes poor because of a culture of low living as if it doesn't care about the progress of the times, which in this case the author links to the existence of internet access, thus causing an individual to want to live as he pleases without any desire for a better life, also due to lack of education and knowledge, as well as lack of desire to build the future (Jayadi, 2022) .

access is an additional mechanism that contributes to reducing poverty levels (García & Rivera, 2023) . Information obtained from the internet allows you to take advantage of new opportunities, develop ideas, and learn from other people (Widiastuti, 2010). The internet can provide business and income opportunities, increase the effectiveness of services and improve the quality of life (Widiastuti, 2010).

Education also plays an important role in shaping a country's capacity to absorb modern technology and develop capacity for sustainable growth and development (Adriana, 2020).

Education aims to improve the quality of the Indonesian population and increase competitiveness in facing global challenges. Increasing the relevance of education aims to produce graduates who meet needs. Quality education also produces quality human resources who are able to develop scientific and technological thinking abilities (IPTEK) and are able to follow and utilize developments (Hadi, 2020).

CONCLUSION

Based on the results of research carried out in this study to test the influence between variables, it can be concluded that based on the test results the variables internet access and education have a significant negative influence on the number of poor people in Indonesia. This is in accordance with the theory put forward by Lewis, that every society becomes poor because of a culture of low life as if they don't care about the progress of the times, so they want to live as they please without any desire for a better life, are resigned to the conditions they are experiencing, lack of education and knowledge, and lack of desire to build the future.

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