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The Impact of Family Poverty on Low Access to Technology in Education: Evidence in Surabaya

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ABSTRACT

The current era of globalization has shown that technology is increasingly sophisticated, and development is becoming easier to optimize so that it is easier to distribute resources to remote and rural areas, but in reality, currently, the resources that have been entered are still experiencing inequality. One of them is the city of Surabaya. The number of poor people in the city of Surabaya has increased to 15 thousand people in 2020. As of 2021, the number of people in poverty increased to 152,490 thousand people. Final education is the most important capital to get a job and fulfill daily needs. This research uses a quantitative approach with a simple random sampling technique which is then analyzed using descriptive discussions. Data collection techniques were obtained from distributing questionnaires, interviews, and direct observation of 85 respondents/samples from a population of 575. Data testing was carried out using validity, reliability, classical assumption tests, and multiple linear regression analysis using SPSS 26. The results show that partial variables education (0.018), and access to technology (0.000) have a significant influence, while the number of families (0.369) does not have a significant influence on poor households. This research impacts government policy, especially in family poverty alleviation. Further studies could observe more about technology access in education on poverty alleviation.

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Introduction

One of the goals of a country's national development is to improve economic performance so that it can create many jobs to create a prosperous life for all levels of society. The main target of national development is to eradicate poverty because poverty is the most important indicator of economic development and is a very complex problem for a country (Fauziana et al., 2022). If a country's poverty level is high, it will impede the socio-economic and economic development. So the problem of poverty is a root cause of problems and a benchmark for low development in a country (Ghifara et al., 2022). Poverty is defined as a condition where an individual cannot fulfill basic needs including clothing, food, and shelter.

In the globalization era when technology has become increasingly sophisticated, human development has become easier to optimize. Technology allows resource distribution from the city into remote and rural areas. But in reality, the resources that have gone to villages are not evenly distributed and there is still inequality between cities and villages. The more inequality found, the higher the percentage of poverty (Pratiwi et al., 2022). The level of inequality in Indonesian population expenditure as measured using Gini Ratio is on average 0.388 with inequality in cities at 0.41 which is higher than in villages at 0.31 (BPS: 2023). The higher Gini Ratio leads to a bigger gap in inequality. In a result, Indonesia's poverty rate reach 9.36% in 2023. The high rate of poverty can also be seen from backwardness as follows.

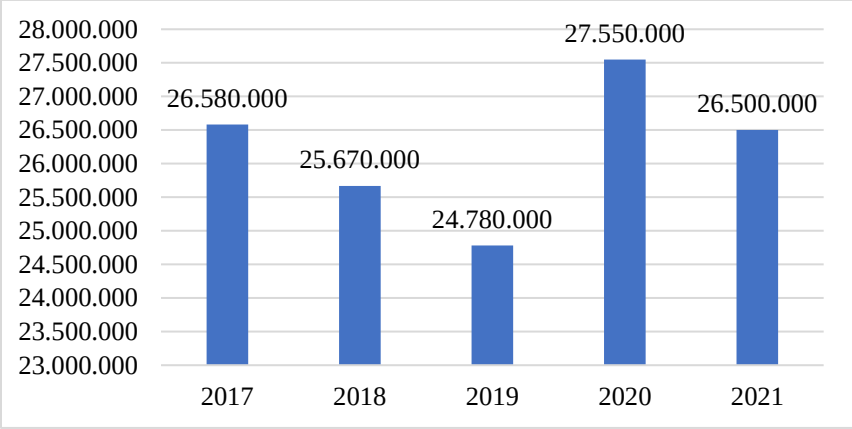

Figure 1. Number of Poor People (Millions) in Indonesia 2017-2021

Source: BPS, Indonesian Statistics (2022)

If we look at the graph of the number of poor people in Indonesia over the past five years, there tends to be an increase (Yalina et al., 2020). In 2020 the number of poor people increased greatly to reach 27.55 million people, this condition was due to the COVID-19 virus and the implementation of the Large-Scale Social Restrictions (PSBB) policy (Adiningsih et al., 2022; Izzuddin et al., 2022). Due to the establishment of this government policy, there is a significant influence on company income which tends to decline. In these conditions, inevitably many companies are unable to provide wages to employees, so many employees are laid off (termination of employment) and this impacts the income of affected households because it is difficult to meet basic needs due to loss of livelihood (Muneer & Khan, 2019). The city of Surabaya is the second largest city after Jakarta. Various programs and developments in the city of Surabaya continue to be pursued intensively (Ivantri et al., 2024; Rifa'i, 2019), but up to now the problem of poverty has not been resolved, in fact it is increasing.

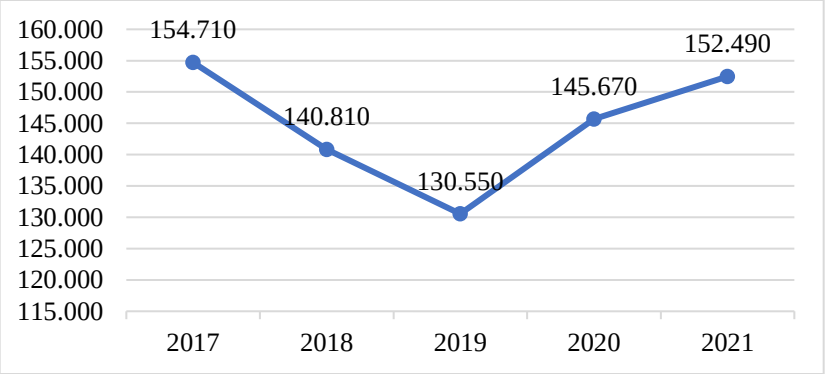

Figure 2. Number of Poor People (Thousands) in Surabaya 2017-2021

Source: BPS, Indonesian Statistics (2022)

However, there are still areas or areas that have not been reached and receive more attention. One of the less livable residential areas in Surabaya is Kampung Pemulung Makam Rangkah Surabaya, because the majority of residential buildings were only built using makeshift materials, and residential locations were mixed with burial grounds so that many residents took advantage of the opportunity to earn money by becoming grave cleaners. and Scavenger. Apart from the slum condition of the residential location, the economic condition of the residents is relatively low so many of the communities (Alysia et al., 2022; Noviyani & Ratnasari, 2021).

From the description of the thoughts above, the authors are interested in exploring and researching the causes of poverty in areas that have not been reached by the Surabaya City Government, one of which is in the Makam Rangkah Scavenger Village. It is hoped that this research can help the Surabaya City Government as a follow-up or consideration of solutions to poverty problems which is still high in Surabaya. The research questions of this study were as follows:

1. Did the Level of education partially or simultaneously affect citizens' poverty| in the Rangkah Public Cemetery Scavenger Village in Surabaya?
2. Did the number of families partially or simultaneously affect citizens' poverty| in the Rangkah Public Cemetery Scavenger Village in Surabaya?
3. Did the Access to technology partially or simultaneously affect citizens' poverty| in the Rangkah Public Cemetery Scavenger Village in Surabaya?

Literature Review

Poverty and Education

According to the Central Statistics Agency (BPS), poverty is a situation where a person is unable to fulfill basic food and non-food needs. However, it can also be seen from the individual's total monthly shopping expenditure (Badan Pusat Statistik (BPS), 2023). The Central Statistics Agency has determined that the total food needs of each individual were equivalent to 2100 calories/day and the fulfillment of non-food needs consists of clothing (Mafruchati et al., 2024), various goods, transport, housing, education, health, and others. Regarding the measure of poverty, the Directorate of Land Use states that the measure of poverty occurs if the percentage of a person's per capita income is less than 75% of the total expenditure on 9 basic needs or if nominally <Rp. 1,682,775 (Febriyanti et al., 2022).

The Indonesian government suggested that citizens have a maximum of two children by blood. It was established in Law Number 10 of 1992 Article 1 Paragraph 10. Central Statistics Agency (BPS), classifies family size into three, namely: small families (<4 members), medium families (5-6 members), and large families (>7 members). However, the number of citizens still grows bigger every year. To improve the education level of citizens, access technology to citizens was highly used. According to

Walter Buckingham, access to technology is an application of knowledge that is implemented in industry by moving or even creating more efficient tools. In another sense, technology is applied science to provide solutions to problems by creating sophisticated tools (Iman et al., 2022). Technology could enhance education activity faster to reach citizens.

Educational activities are a system, where if there is a system there are certainly components in it. The components in the system are of course interconnected with each other, if there is damage to one of the components then the system will not function optimally. Components of education include: the presence of learning participants; environment; tools; and also goals (Fauziana et al., 2022).

Previous Research

Several studies relevant to poverty in society and lack of technological access \have been conducted by several researchers. In 2022 (Rahmatullah et al., 2022) analyzing poverty factors in Sumberbrantas Village. The results show that the influence of the gender of the head of the household, the number of household members (Asfarina et al., 2019), floor area per capita (Suryanto et al., 2022), wall type, is significantly positive. Furthermore, defecation facilities, building status, water sources (Santoso & Kusuma, 2023), lighting sources do not have a significant effect on poor households in Sumberbrantas Village. Research conducted by (Fadilah & Basuki, 2020) using binary logistic regression, education, number of family dependents, and households that live in a place that is not their own are increasingly vulnerable to being categorized as poor households. Meanwhile, the age of the head of the household hurts relative poverty. Research on absolute poverty levels was conducted in Latuhalat in 2020 by (Joseph, 2020) with the research object being fishermen. The result is absolute poverty caused by capital ownership that is difficult to obtain, high family responsibilities, and weak levels of education. It also showed that the income of someone with a high level of education is far superior to those with a lower level of education because it refers to the job held, especially for the head of the family as a leader in a small family area.

In the city of Manado, research was conducted on poverty. using regression with dummy variables, it was found that there was a significant influence between variable x, namely education level, health level, and the ratio of floor area per capita to poverty. This research was initiated by (Manoppo et al., 2018)in 2018. Increasing the level of education will reduce the level of poverty that occurs. In 2017, there was also research showing that occupation, gender, age of the head of the household and household size, dependency ratio, and receipt of remittances had a significant influence on poverty in the urban sector in Sri Lanka in 1990-2010. This research was conducted by (Ranathunga, 2017).

Research carried out by (Silooy, 2017) Examining the influence of education (Yudha et al., 2021), equipment ownership (Yudha et al., 2018), and the role of institutions on poverty among fishermen in Seilale Village shows that all three influence poverty that occurs. Case study (Kurniawan., 2017) in Sungai Lilin District 2017, the factors that cause poverty are the level of education which partially influences poverty, then the income of family members has a significant influence on poverty. Meanwhile, the number of family members is because basically increasing family size will increase family income. And work does not have a significant effect on poverty because both workers and non-workers do not have significant differences in terms of income.

Further research by (Windan, 2016) in 2016 in Gowa Regency, the quality of the workforce had a significant positive effect on family poverty. Capital ownership, natural resources and population growth have a positive but not significant effect. Meanwhile, access to technology does not have a significant influence on poverty. But it has a negative influence. This means that if technology access is high, then family poverty will be low.Other relevant research in 2013 by(Annur, 2013)who researched poverty factors and compared Jekulo and Mejobo Districts in Kudus Regency. The results show that education is

one of the X variables, that poverty is lower in Jekulo sub-district because the education period is longer. So it can be concluded that the level of education has a significant negative effect on poverty.

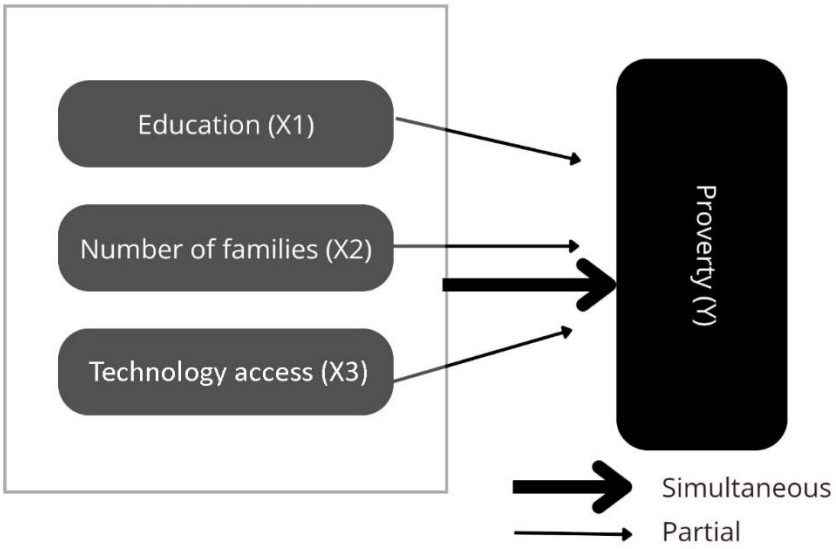

Figure 3. Model of variable

Hypothesis Formulation

The Relationship between Education and Poverty

According to Sen, the causes of poverty do not only include economic conditions but are related to other aspects such as low education quality. Sen in his book "Development as Freedom" has also outlined six ways to eradicate poverty, among these six ways he explains Human and Knowledge Capital. Human Capital discusses the need for skills in each individual that can be obtained from education. Knowledge Capital focused on the importance of knowledge and technological developments to increase productivity. Increasing productivity will of course also increase Natural Capital (Wardhana, 2021). According to (Uddin & Mohiuddin, 2020), the cause of poverty is due to low education, human capital, training, or inability to develop. Sharp et al explained that the possibility of poverty occurs due to one of the factors being low access to technology. If more and more people or individuals are unable to adapt and access to technology in the era of globalization, this will cause the percentage of unemployment to increase. From the description above it could be concluded that:

H1: Education significantly influences poverty

The Relationship between Family Size and Poverty

National Team for the Acceleration of Poverty Reduction (TNP2K) of Indonesia stated that in 2010 the average number of poor families was one person more than non-poor families. One indication of this is the large number of children that were dependent on their parents until they grew up. Because many children are followed by many needs fulfilled. According to (Dhewanto et al., 2020), there are three main causes of poverty namely; household/individual characteristics, community characteristics, and regional characteristics. Household/individual characteristics can be seen from certain aspects such as age, gender, number of family members, and dependency ratio. The above discussions could be concluded as:

H2: Family size significantly influences poverty.

The Relationship between Technology Access and Poverty

The cause of the high poverty rate did not only come from economic problems but also attention to other aspects such as social, cultural, geographic, and technological developments in a country. As explained in the research(Widiastuti, 2010)explains the causes of poverty, one of which is the lack of access to communication and information among poor communities. Mujer and Subhan have also explained that due to the lack of access to communication and information for the poor, information on social programs or assistance from the government is often not on target because technological developments are still uneven.(Yusup et al., 2017). The reason why there are still so many poor people is because they have limited information so they tend to be late in getting information related to business opportunities that they could have gotten if they could have gotten the information more quickly. The above discussions could be concluded as:

H3: Technology access significantly influences poverty.

Methodology

Researchers used quantitative methods with a simple random sampling approach. The total population is 500 poor households. Determining the sample size using Slovin's formula, it was found that there were 85 poor households.

$$n = \frac{N}{1+Ne^2}$$
$$n = \frac{575}{1+575(0,1)^2}$$
$$n = \frac{575}{1+575(0,01)}$$
$$n = \frac{575}{1+5.75}$$
$$n = \frac{575}{6.75}$$
$$\boldsymbol{n = 85.18 = 85 \text{ Poor Households}}$$

Where :
n: Number of Samples
N: Number of Population
e: Error Tolerance

Primary data sources were obtained through filling out questionnaires and interviews with research objects. Meanwhile, secondary data sources come from various literature and data published by several agencies and institutions which are re-processed by researchers. The testing technique for the data that has been obtained uses the multiple linear regression equation method. There were 3 stages of regression tests, namely data validity testing, classical assumption testing, and hypothesis testing which can explain the correlation between the variables of education level, income, family size, expenditure, access to technology, and poverty (Perdana, 2016). Based on the variables used in this research, the equation for multiple linear regression formulation is written as

$$Y = \alpha + b1\ X1 + b2\ X2 + b3\ X3 + \varepsilon$$

Then, the data was collected using validity, reliability, classical assumption tests, and using multiple linear regression analysis using SPSS 26.

Results and Discussion

Result

Tomb Rangkah Scavenger Village is in Tambakrejo Village and is one of the Villages in the northern part of Surabaya. Tambakrejo Village has an area of 61.25 HA. Tambakrejo Subdistrict has approximately 10 Neighborhood Units (RW) and 60 Neighborhood Units (RT). The Keputih Graveyard Scavenger Village is located in RW 04 with 5 Neighborhood Units (RT) inside. In terms of the educational facilities and infrastructure around Tambakrejo Subdistrict, there are no government school buildings in the subdistrict area, meaning there is not a single state school building from elementary school (SD) to high school (SMA). Parents have to spend more money to pay education costs because there are only private schools consisting of 2 private elementary schools.

Data Validity Test

Validity Test

Validity tests are carried out in order to determine the validity of a questionnaire obtained by researchers from respondents. In the validity test, the basic reference for decision making is as follows:

a) If the R count value is greater than the Rtable value (Rcount > Rtable), then the questionnaire is declared valid
b) If the R count value is smaller than the R table value (Rcount < Rtable), then the questionnaire is declared invalid.

Table 1. Validity Test Output

Statement	Rcount	Table	Information
X1.1	0.887	0.2133	Valid
X1.2	0.938	0.2133	Valid
X1.3	0.958	0.2133	Valid
X1.4	0.918	0.2133	Valid
X1.5	0.847	0.2133	Valid
X2.1	0.851	0.2133	Valid
X2.2	0.901	0.2133	Valid
X2.3	0.934	0.2133	Valid
X2.4	0.900	0.2133	Valid
X2.5	0.798	0.2133	Valid
X3.1	0.866	0.2133	Valid
X3.2	0.904	0.2133	Valid
X3.3	0.943	0.2133	Valid
X3.4	0.915	0.2133	Valid
X3.5	0.824	0.2133	Valid
Y.1	0.920	0.2133	Valid
Y.2	0.946	0.2133	Valid
Y.3	0.959	0.2133	Valid
Y.4	0.937	0.2133	Valid
Y.5	0.824	0.2133	Valid

Source: Independent Preparation (2023)

Seen in the table above, the 20 questionnaire questions covering the independent and dependent variables are declared valid because each of them has a value greater than Rtable.

Reliability Test

According to Wiratna Sujarweni. 2014. SPSS for Research

a) If the Cronbach's Alpha value is > 0.60 then the questionnaire is declared reliable.
b) If the Cronbach's Alpha value is <0.60 then the questionnaire is declared unreliable.

Table 2. Reliability Test Output

Variable	*Cronbach's a*	Reliability Limits	Information
Education (X1)	0.827	0.60	Reliable
Number of Families (X2)	0.821	0.60	Reliable
Access to Technology (X3)	0.823	0.60	Reliable
Poor Family (Y)	0.829	0.60	Reliable

Source: Independent Preparation, 2023

It can be seen in the table above that the variables Education (X1), Number of Families (X2), Access to Technology (X3) and Poor Families (Y) are declared reliable, because each has a value of > 0.60.

Classic Assumption Test

Normality Test

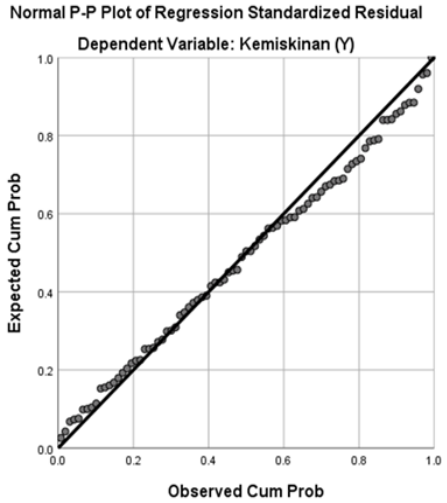

Figure 4. Normality Test Output

Source: SPSS Data Processing 26.00

According to Imam Ghazali, the data results in the normality test can be said to be normally distributed if the plotting or points are on a diagonal line. We can see in the normality test output image that the plotting or points are located or attached to the diagonal line, meaning that it can be said that the data is normally distributed.

Multicolinearity Test

Table 3. Multicollinearity Test Output

Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	7,378	1,462		5,048	,000		
Education (X1)	.144	,060	,160	2,424	.018	,830	1,205
Number of Families (X2)	,060	,067	,058	,903	,369	,884	1,131
Access to Technology (X3)	,737	,057	,872	12,922	,000	,794	1,260

a. Dependent Variable: Poverty (Y)

Source: SPSS Data Processing 26.00

In Imam Ghozali's opinion, if the tolerance value is > 0.100 and the VIF value is < 10.00, then it can be ascertained that there are no symptoms of multicollinearity in the data. From the processed data from the independent variables for poor families in Kampung Pemulung Makam Rangkah Surabaya obtained in the table above shows that the tolerance values are for education (X1) = 0.830, number of families (X2) = 0.884 and technology access (X3) = 0.794, respectively -each is greater than 0.100 and the VIF of the three independent variables obtained in the table above shows that the VIF values are Education (X1) = 1.205, Number of Families (X2) = 1.131 and Technology Access (X3) = 1.260, each of which is smaller from 10.00.

Heteroscedasticity

Table 4. Heteroscedasticity Test Output

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	4,365	1,795		2,432	.017
	Education (X1)	,053	,051	.114	1,048	,298
	Number of Families (X2)	,112	,063	,192	1,771	,080
	Access to Technology (X3)	,001	,056	,002	.017	,987

a. Dependent Variable: Abs_RES

Source: SPSS Data Processing 26.00

The basis for decision making in the Heteroscedasticity Test using the Glejser Test method is that if the significance value (Sig.) is greater than 0.05, then the conclusion is that there are no symptoms of heteroscedasticity in the regression model. If the significance value (Sig.) is smaller than 0.05, then the conclusion is that there are symptoms of heteroscedasticity in the regression model. In the results of the

image above, it can be seen that the significance value of the three independent variables, namely education, number of families and access to technology, is greater than 0.05, so there is no heteroscedasticity problem in the data.

Autocorrelation Test

Table 5. Autocorrelation Test Output

Model Summary [b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.841a	,707	,696	2.11430	1,783

a. Predictors: (Constant), Technology Access (X3), Family Size (X2), Education (X1)

b. Dependent Variable: Poverty (Y)

Source: SPSS Data Processing 26.00

According to Imam Ghozali, in the autocorrelation test the data can be said to be normal if the Watson line is located between du – (4-du). If d (durbin watson) is smaller than dL or greater than (4-dL) then there are symptoms of autocorrelation. If d (durbin watson) is located between dU and (4-dU), then there are no autocorrelation symptoms or definite conclusions. The Durbin Watson value (d) of 1.783 is greater than the upper limit (dU) which is 1.7210 and less than (4-dU) 4 - 1.7210 = 2.279. Which means the DW value is between dU and (4-dU). So, as is the basis for the Durbin Watson test decision, it can be concluded that there are no problems or symptoms of autocorrelation. In this way, the multiple linear regression test can be continued.

Multiple Regression Analysis

In testing the Multiple Linear Regression Analysis as an estimation using the SPSS tool, it was found that the independent variables that influenced Poor Households in the Scavenger Village of Makam Rangkah Surabaya were as follows.

Table 6. Multiple Regression Analysis Output

Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	7,378	1,462		5,048	,000		
Education (X1)	.144	,060	,160	2,424	.018	,830	1,205
Number of Families (X2)	,060	,067	,058	,903	,369	,884	1,131
Access to Technology (X3)	,737	,057	,872	12,922	,000	,794	1,260

a. Dependent Variable: Poverty (Y)

Source: SPSS Data Processing 26.00

Based on the table above, the equation for multiple linear regression analysis obtained is:

$Y = 7.378 + 0.144\ b1X1 + 0.060\ b2X2 + 0.737\ b3X3 + \varepsilon$

The results of the regression equation above can be interpreted as follows:

a) The coefficient value β0 is 7.378, if the variables education (X1), number of families (X2) and

access to technology (X3) do not change or are equal to 0 then it will be possible to experience an increase in poverty of 7,378.

b) The β1 coefficient value is 0.144, indicating that if there is a 1% increase in the education assessment of poverty, the poverty level of poor families will increase by -0.144%.

c) The β2 coefficient value is 0.060, indicating that if there is a 1% increase in the assessment of the number of families in poverty, the poverty level of poor families will increase by 0.060%.

d) The β3 coefficient value is 0.737, indicating that if there is a 1% increase in the assessment of access to technology against poverty, the poverty level of poor families will increase by 0.737%.

Partial T Test

According to Imam Ghazali, if the significance value is <0.05 then the variable (partially) has a significant influence on the dependent variable (Y). Conversely, if the significance value is > 0.05 then the variable (partially) has an insignificant influence on the dependent variable (Y). From the test results of the T-test or partial multiple linear regression on the influence of poor families in the Makam Rangkah Scavenger Village in the table in the significance column above, the variables that have a significance value of <0.05 are education and access to technology with values of 0.018 and 0.000. This means that for H0 Education and access to technology is rejected and H1 education and access to technology is accepted, it is suspected that the variable Education and access to technology influence poor families in the Tomb Rangkah Scavenger Village, Surabaya. Meanwhile, the variable that has a significance value > 0.050 is the number of families which has a significance value of 0.903, meaning that H0 is accepted and H1 is rejected, then the variable number of families does not affect poor families in the Makam Rangkah Scavenger Village, Surabaya.

Simultaneous F Test

Table 7. Simultaneous F Test Output

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	874.215	3	291.405	65.187	.000[b]
	Residual	362.091	81	4.470		
	Total	1236.306	84			

a. Dependent Variable: Kemiskinan (Y)

b. Predictors: (Constant), Penguasaan Teknologi (X3), Jumlah Keluarga (X2), Pendidikan (X1)

Source: SPSS Data Processing 26.00

R Square Test

According to Imam Ghazali, if the significance value in the ANOVA table is <0.050, it means that all independent variables (X) simultaneously influence the dependent variable (Y). It can be seen in the table above that it has a significance value of 0.000 which is smaller than 0.05, so H0 is rejected and H1 is accepted. This means that simultaneously the variables education, family size, and access to technology influence poor households in the Makam Rangkah Scavenger Village, Surabaya.

It can be seen that the coefficient of determination or r square from the table above is 0.65 or 65.%, indicating that the variables of education, family size, and access to technology can explain the factors that influence poor families in the Rangkah Public Cemetery Scavenger Village, Surabaya. Meanwhile, the remaining 29.3% can be explained by other variables not studied.

Discussion

Education for Poor Families

From the results of data processing of multiple linear regression analysis obtained using SPSS 26 for the education variable, a β1 coefficient of 0.144 was obtained, indicating that if there was an increase in education of 1%, the poverty level of poor families would decrease by 0.144%. From the results of data analysis of approximately 85 questionnaires that have been distributed, in the Makam Rangkah Scavenger Village for partial education, the T-test obtained a significance value of 0.018<0.05, meaning that it can be assumed that the education factor influences poor families in the Makam Rangkah Scavenger Village, Surabaya. It can also be proven by the results of the answers to the questionnaire from the people of Kampung Pemulung Makam Rangkah Surabaya that on average, most of them only studied up to elementary school (SD) with a percentage of 44% in Table 4.4 above. Recent education is the most important capital to get the dream jobs to fulfill daily needs. The higher the level of education a person attains, the quicker that person will get a job with a higher salary. The higher a person's income, the easier it is for that person to meet the family's needs.

According to Sen, the causes of poverty do not only include economic conditions but are related to other aspects, one of them is low access to good education. The purpose of education itself is to liberate humans themselves. With more educational provisions, individuals will have more knowledge and skills. If individuals have acquired knowledge and skills, they could manage to increase their economic condition. The individual can meet life's needs and be free from the abyss of poverty. Based on the results from 85 respondents or samples, 64% agreed and 14% disagreed that the higher the level of education, the higher the income level. These results are relevant to previous research by(Fauziana et al., 2022) that the determining factor in poverty levels comes from human resources or in this case education. Research by (Wijayanti & Ryandono, 2020) also stated this. This means that there is a negative direction in the correlation between education and poverty levels. The findings of previous research strengthen the findings of this research and believe that a low level of education will make a person more vulnerable to poverty.

The Effect of Family Size on Poor Families

From the results of data processing of multiple linear regression analysis obtained using SPSS 26 for the variable number of families, a β2 coefficient of 0.060 was obtained, indicating that if there was an increase in the number of families by 1%, the poverty level of poor families would increase by 0.060%. From the results of data analysis of approximately 85 questionnaires that have been distributed, in the Makam Rangkah Scavenger Village for Education, a partial T test obtained a significance value of 0.369 > 0.05, meaning that it can be assumed that the number of families has no effect on poor families in the Makam Rangkah Scavenger Village. Surabaya. It can also be proven by the results of the answers to the questionnaire from the people of Kampung Pemulung Makam Rangkah Surabaya, which on average only has a small number of families (<4) with a percentage of 60%.

It was stated by the National Team for the Acceleration of Poverty Reduction (TNP2K) that in 2010 it was explained that the average number of poor families was one person more than non-poor families. One indication of this is the large number of children who are dependent on their parents until they grow up. Because many children are followed by many needs fulfilled. This research is proven from research in urban and rural areas.Based on the results of a questionnaire on 85 respondents or samples, 66% agreed and 1% disagreed that the larger the family size, the greater the expenditure incurred. This means that more than 50% of them agree that family size has a big influence on the level of expenditure.

The results of this regression are also in line with the conclusions of research conducted by (Fadilah & Basuki, 2020; Kurniawan., 2017; Rahmatullah et al., 2022) that the number of family members has a significant effect on poverty in a positive direction. This means that when the number of

families is quite large or high, the family's vulnerability to poverty will be higher. This is because the amount of expenditure that will be allocated for needs will increase with income levels that are not necessarily balanced. Joseph, (2020) also said so in line with this research. And this result is different and contrary to research conducted by, this research concluded that if the number of family members is high, it will be in line with the amount of income that will be received. So the variable number of family members has a significant effect in a negative direction on the poverty level (Syamsuri et al., 2022).

The Influence of Technology Access on Poor Families

From the results of data processing of multiple linear regression analysis obtained using SPSS 26 for the technology access variable, a β3 coefficient of 0.737 was obtained, indicating that if there was an increase in technology access by 1%, the poverty level of poor families would increase by 0.737%. From the results of data analysis of approximately 85 questionnaires that have been distributed, in the Makam Rangkah Scavenger Village for Education, a partial T test obtained a significance value of 0, 000 < 0.05, meaning that it can be assumed that the technological access factor influences poor families in the Makam Rangkah Scavenger Village, Surabaya. . It can also be proven by the results of the questionnaire answers from the people of Kampung Pemulung Makam Rangkah, Surabaya, who on average cannot access technology with a percentage of 80%. Technology is applied science to be able to provide solutions to problems by creating sophisticated tools. If at the educational level we only know basic knowledge about universal problems or existing natural resources, then technology comes as a solver of these problems and can overcome various difficulties faced by humans (Mafruchati, Ismail, et al., 2023).

The reason why there are still so many poor people is because they have limited information so they tend to be late in getting information related to business opportunities that they could have gotten if they could have gotten the information more quickly. Based on the results of a questionnaire on 85 respondents or samples, 61% agreed and 8% disagreed that the more individuals could access technology, the more benefits they receive, such as information related to business opportunities that they can actually get quickly (Wardhana et al., n.d.). This result is very relevant to the theory expressed by Sharp et al which states that one of the factors causing poverty is relative access to technology. Apart from that, it is also in line with Mujer and Subhan's explanation that there is a lack of access to communication and information for the poor, information on social programs or assistance from the government is often not on target because technological development is still uneven (Mafruchati, Othman, et al., 2023). This result contradicts research conducted by Windan (2016), that access to technology has a negative and insignificant relationship with variable Y, namely poor families.

Conclusion

Based on the data obtained from research results using multiple linear regression analysis using SPSS which has been described in the previous chapters regarding the variables studied, namely the influence of education, number of families, and access to technology on poor families in the Scavenger Village of Makam Rangkah Surabaya, several conclusions can be drawn as follows. From the questionnaire and interview data obtained, as well as the processing and processing of statistical tests that have been carried out, partially the variables education (X1) and access to technology (X3) have a significant effect with significance values of 0.018 and 0.000, both of which are less than the specified significance value, namely (0 .05 or a = 5%). Meanwhile, the variable number of families (X2) partially does not have a significant effect with a significance value of 0.369, exceeding the predetermined significance value, namely (0.05 or a = 5%). From the questionnaire and interview data obtained, as well as the processing and processing of statistical tests that have been carried out, the independent variables (X), namely education, family size, and technological access simultaneously have a significant effect on poverty. It means that the variables of education, number of families, and access to technology can

explain poor households in the Makam Rangkah Scavenger Village, Surabaya with validity reaching 65.2%.

This study contains limitations, first, it concentrated on the micro level of poverty as the object is in Makam Rangkah Scavenger Village, Surabaya. Consequently, future investigations should use a wider range of study objects if data is available. Furthermore, this study only investigated the linear relationship between family size, education, and access to technology to poverty. Thus, this research recommends future investigations analyze the non-linear impact of education and access to technology on poverty. This study also suggested the Surabaya Government to improve the quality and quantity of education among citizens. Education quality could influence the poverty level in society. This also happens for access to technology that can significantly influence poverty. Surabaya City Government could give some programs to involve Surabaya citizens to access technology.

Author's Contribution

All authors have contributed to the final manuscript. The contributions of each author are as follows, Ana Toni Roby Candra Yudha for collecting data, drafting manuscripts, drafting key conceptual ideas, and providing critical revisions of articles; Arinda Septiani responsible for collecting data; and Setia Rini Arista, provided excellent guidance. All authors discussed the results and contributed to the final manuscript.

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