

FINANCIAL INCLUSION EFFECT ON CORE POVERTY DURING THE PANDEMIC PERIOD IN EAST JAVA

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Abstract

Poverty is increasing globally at this time especially the impact of the Covid-19 pandemic. Meanwhile, the banking sector has a role to play in controlling the growing poverty, one of which is through financial inclusion. In some areas, the financial inclusion index has improved, indicated by the number of people who have switched from traditional savings to financial institution savings and have also reached the infrastructure of conventional commercial banks, but the fact has not yet reached the “usefulness of banking services”. So that financial inclusion is not really felt by the community. This study uses data from the March 2020 National Socio-Economic Survey (Susenas) and Podes 2020 to determine the effect of financial inclusion on core poverty. From the results of the logit regression estimation, it was found that financial inclusion had a strong effect on the status of core poverty in households when the COVID-19 pandemic hit in East Java (2020). Ownership of bank accounts has a strong and negative effect on poverty. The farther the distance to banking facilities, the greater the chance of experiencing poverty. Access to formal credit has the opportunity to move away from poverty. Education remains a key variable if you want to be free from poverty. The added value of farming households is still not optimal in increasing welfare, because they still have the opportunity to experience poverty. Access to information technology in households can increase opportunities to be more prosperous. From these results, the government should seek to increase public participation in having a bank account through banking literacy, through formal education, adding infrastructure for financial institutions evenly to villages, expanding access to formal credit services, and adding cellular/internet network infrastructure up to suburbs (rural/remote areas).

Abstrak

Terjadi peningkatan kemiskinan secara global saat ini, terutama dampak pandemi Covid19. Sementara itu dunia perbankan memiliki peran untuk mengendalikan kemiskinan yang terus bertambah, salah satunya melalui inklusi keuangan. Di beberapa daerah, indeks inklusivitas keuangan sudah membaik, ditandai dengan banyaknya masyarakat yang sudah beralih dari tabungan tradisional ke tabungan lembaga keuangan dan juga sudah menjangkau infrastruktur bank umum konvensional, namun faktanya belum sampai menyentuh ke “kegunaan jasa perbankan”. Sehingga inklusivitas keuangan belum benar-benar dirasakan masyarakat. Penelitian ini menggunakan data Survei Sosial Ekonomi Nasional (Susenas) Maret 2020 dan Podes 2020 untuk mengetahui pengaruh antara inklusi keuangan terhadap *core poverty*. Dari hasil estimasi regresi logit ditemukan bahwa inklusi keuangan berpengaruh kuat pada status kemiskinan inti pada rumah tangga saat pandemi covid19 melanda di Jawa Timur (2020). Kepemilikan rekening bank memiliki pengaruh yang kuat dan arahnya negatif terhadap kemiskinan. Semakin jauh jarak ke fasilitas perbankan maka semakin besar juga peluang mengalami kemiskinan. Akses kredit formal memiliki peluang menjauh dari kemiskinan. Pendidikan tetap menjadi variabel kunci jika ingin terbebas dari kemiskinan. Nilai tambah pada rumah tangga tani masih belum optimal meningkatkan kesejahteraan, karena masih berpeluang mengalami kemiskinan. Akses teknologi informasi pada rumah tangga dapat meningkatkan peluang agar lebih sejahtera. Dari hasil ini, pemerintah mesti berupaya meningkatkan partisipasi masyarakat untuk memiliki rekening di bank melalui literasi perbankan, dapat melalui pendidikan formal, menambah infrastruktur lembaga keuangan secara merata hingga ke desa-desa, memperluas layanan akses kredit formal, dan menambahkan infrastruktur jaringan seluler/internet sampai wilayah pinggiran (perdesaan/pelosok).

INTRODUCTION

Poverty is still a major problem in developing countries around the world. The war on poverty continues to be carried out by countries in the world so that in 2015 a document called Sustainable Development Goals (SDGs) was published and the first point of the goal is to eradicate poverty anywhere and in any form by 2030 [1]. This challenge became difficult, when the Coronavirus Disease (Covid19) pandemic outbreak hit the world, including Indonesia, including in East Java. This certainly has an impact on the welfare of the community, especially the lower middle class, because the impact of this pandemic is the restriction of social and economic activities in the community. To reduce this impact, various government policies through fiscal and monetary programs have been launched by the government so that the public and the business world do not get worse.

Efforts to reduce poverty in East Java also encountered obstacles. This can be seen from the data published by BPS that poverty in East Java before the pandemic showed a fairly good condition, marked by poverty which had a declining trend. However, since the COVID-19 pandemic hit, the number of poor people has increased. As an illustration of the poor population in East Java, in March 2018 there were 4.3 million people or around 10.98% and decreased in March 2019 to 4.1 million people or around 10.37%. However, since the COVID-19 pandemic began to hit, it has had an impact on increasing poverty in East Java, where in March 2020 it became 4.4 million people or increased to around 11.09%. Until now, East Java's poor population has reached 4.5 million people or around 11.40% [2]. East Java is indeed not the province with the highest poverty percentage, but East Java is ranked number one in the number of poor people nationally.

Furthermore, researchers believe that poverty is a complex and multidimensional phenomenon, not just a matter of income or monetary [3–9]. In addition, economic growth does not always have an impact on reducing poverty, especially related to the

quality of life of the poor [10]. The way of converting the income that a person receives in spending their consumption goods is not all the same, so a high income does not guarantee that a person is able to meet his basic needs [11]. Therefore, this emphasizes the importance of looking at poverty not only from a unidimensional point of view but more broadly by using a multidimensional perspective, in order to eradicate poverty more thoroughly both in terms of income and improving the quality of life.

Today, there are many studies on the issue of efforts to reduce poverty, both researchers who view poverty as a monetary problem [12–14], or researchers who examine poverty from the point of view of multiple dimensions [5,6,15]. From the many results of studies related to poverty, it turns out that the government or stakeholders are still facing difficult situations in making policies to eradicate poverty. The government is still struggling to determine what policies should be launched due to differences in measurement issues.

This research emerged because of this background. Poverty in this study refers to the term that was once expressed by Finch & Bradshaw in 2003 [16], namely Core Poverty. Core poverty is a poverty that is measured by accumulating the suffering of poverty experienced by a person not only from one measurement method. In this study, the term Core Poverty is a condition where a person/household experiences poverty both monetary and multidimensionally at the same time. So, a household is called experiencing poverty in core poverty if the household's expenditure is below the poverty line and also experiences deprivations in life such as nutrition, health, education, and quality of life.

On the other hand, the banking world has a very large contribution to efforts to improve the economy and also eradicate poverty. GRDP according to business sector in the first quarter of 2021 in the financial services sector shows a positive direction when compared to the fourth quarter of

2020 [17]. Nevertheless, the development of physical banking infrastructure has experienced a downward trend from time to time [18]. The Indonesian Banking Statistics (SPI) report for April 2021 shows that in Indonesia there has been a decline in the number of physical banking infrastructure (number of banks and number of offices) from 30,842 units at the end of 2020 to 29,887 units. This downward trend in physical infrastructure can become an obstacle in achieving financial inclusion.

Financial inclusion is a government program launched in 2012. Then on December 7, 2020 Presidential Regulation (Perpres) Number 114 of 2020 concerning the National Strategy for Financial Inclusion which has been adjusted to its target and signed by President Joko Widodo to promote public welfare, as one of the goals of the State of Indonesia, by continuing efforts to achieve financial inclusion for all community from previous efforts. Financial inclusion does not have a standard or standard definition, but financial inclusion has been recognized by the world for its benefits related to improving the economy and also reducing poverty. Financial inclusion is defined as a process that ensures easy access, availability, and benefits from the formal financial system for all economic actors [19]. Sarma has also created a standard for measuring financial inclusivity with an index. This index is formed from several dimensions, including the extent of banking penetration, the availability of banking services, and the usefulness of banking services.

Many studies related to the effect of financial inclusion on poverty have been carried out and revealed that financial inclusion significantly reduces poverty [20–22]. Public financial institutions such as conventional commercial banks provide services to the community, especially for the poor or underprivileged. The achievement of financial inclusion will encourage the community, especially the underprivileged to participate actively in the economy, so that they hope to escape poverty. In several regions in Indonesia,

financial inclusivity has improved, indicated by the number of people who have switched from traditional savings to financial institution savings and have also reached out to conventional commercial bank infrastructure, but in fact it has not yet reached the dimensions of the usefulness of banking services. So that financial inclusiveness has not really been felt by the community [23].

From the illustration above, this study aims to see the extent to which financial inclusion is able to have an effect on core poverty. In addition to core poverty, other innovations are in the variables used, including variables from Susenas and Podes. Previous studies mostly used regional research units and used macro data, but in this study, individual/household units of analysis were used. In addition, to support policy advice on a territorial basis, the next innovation is to analyze the effect of financial inclusion on core poverty in each Bakorwil (Regional Coordinating Board) area of East Java.

METHODOLOGY

1. Literature Review

Financial Inclusion

The three dimensions of financial inclusiveness developed by Sarma & Pais consist of banking penetration, availability of financial services, and use of banking services [24]. The definition was developed from the definition of financial inclusivity that has been made by Demirguc-Kunt et al [25] and World Bank [26]. Demirguc-Kunt define details related to differences in access to financial services and the use of financial services. Access is basically intended for supply while the use of financial services is determined by both supply and demand. Even if a high-income person has access to financial services, he or she may not be interested in using those services. Likewise, customers, both individuals and companies, are not necessarily willing to borrow money even though they are offered a low interest rate. Meanwhile, World Bank the explains that in a perfect world access to financial services

can be measured by the number of individuals, households, and companies that save, receive credit, make payments, and use other financial products from various financial institutions, both formal or informal.

A. Banking Penetration Dimension

An inclusive financial system should have as many users as possible. Therefore the financial system must reach widely among its users. The size of the population that accesses banks, for example the number of people who have bank accounts, is a measure of banking penetration. Banking penetration is a key indicator of financial inclusion.

B. Availability of Financial Services Dimension

In an inclusive financial system, financial services must be available to all users. This availability indicator is the number of outlets. The availability of services can be indicated by the number of branches of a financial institution or the number of ATMs (Automatic Teller Machines).

C. The Use of Banking Services Dimensions

Even though they have access to financial services, there are still a group of people who have not been able to take advantage of the existence of financial services. This can be due to several reasons, including being far from bank outlets or having bad experiences with service providers. Therefore, having an account is not enough to demonstrate an inclusive financial system, but it must also be usable. These uses include credit, deposits, payments, remittances, and transfers. One of the indicators that can be used is access to financial credit received by households or the community.

Monetary Poverty Measurement

Using a measure of monetary poverty, which is a measure of the level of poverty using the formula presented by Thorbecke [27]. The poor are people who have an average per capita expenditure (person) per month below the Poverty Line (Head Count). The Poverty Line is the price paid

by the reference group to meet food needs of 2,100 kcal/capita/day and essential non-food needs including housing, clothing, health, education, transportation, and others [2].

Multidimensional Poverty Measurement

Measurement of multidimensional poverty in this study using Alkire Foster Methods (AF-Methods). Based on this AF Methods, if a poor household experiences poverty deprivation more than equal to 0.33 or 33.33% [28]. The data source used for the measurement of this AF method is raw data Susenas (Survei Sosial Ekonomi Nasional). The measurement steps are as follows:

1. Choose the unit of analysis. The unit of analysis can be a household.
2. Choose the dimension of poverty
3. Selecting indicators for each dimension
4. Set deprivation cut off for each indicator
5. Specifies the weight (w_i) any dimension/indicator
6. Calculating deprivation scores $\sum C_i$ experienced by the household

$$\sum C_i = w_i I_1 + w_i I_2 + w_i I_3 + \dots + w_d I_d \quad (1)$$

Where $I_1 = 1$ if the household is deprived of the i -th indicator and $I_1 = 0$ if the household is not deprived in the i -th indicator. For d is indicator of multidimensional poverty (Table 1).

Determine poor and non-poor households with a total deprivation score. Poor households are multidimensional if the total deprivation score ($\sum C_i$) more than or equal to 0.33. However, if the score is less than 0.33, it is defined as not poor and the deprivation value is replaced by zero (censorship deprivation). If households are deprived of all indicators then $\sum C_i = 1$, if households are not deprived in all indicators then $\sum C_i = 0$.

2. Types and Sources of Data

This research uses quantitative research. The data source uses the March 2020 Susenas data and the 2020 Podes. The number of samples of the March 2020 Susenas households in East Java is 32,025 households. Meanwhile, Podes data covers

Table 1. Dimensions, indicators, Cut offs and Weights of Multidimensional Poverty Measurement

Dimensions	Indicators	Cut off deprivation or Household is deprived if,	Weights
Nutrition and Health	Household Calorie Consumption	Calories consumed by households are less than 70 percent of Indonesian Nutritional Adequacy Rate (2013)	1/6
	Household Protein Consumption	Protein consumed by households is less than 80 percent of Indonesian Nutritional Adequacy Rate (2013)	1/6
Education	Years of school	None of the household members have completed 9 years of education (minimal junior high school)	1/6
	School Participation	There are school-age children (7-15 years) who are not in school	1/6
Standard of Living	Decent drinking water	Do not have access to proper drinking water	1/18
	Proper sanitation	Do not have access to proper sanitation	1/18
	Source of light	Does not use electricity	1/18
	Floor condition	Type of floor soil/sand	1/18
	Cooking fuel	Wood/charcoal fuel	1/18
	Asset	Do not own a car or motorboat and do not own more than one of the following assets, such as: motorcycles, bicycles, boats, flat screen televisions, air conditioning, water heaters, gas cylinders 5.5 kg or more, refrigerators, telephone, PC/laptop, gold, and land/land.	1/18

Source: Alkire-Foster Methods [28]

all villages/kelurahan in East Java or 8,496 villages. The Susenas and Podes variables used are as described in equation (3).

3. Analysis Method

The next analysis is to look at the effect of financial inclusion and household socioeconomic variables on core poverty. Core poverty households are the criteria for households experiencing two types of poverty, namely monetary poverty and multidimensional poverty.

From the 32,025 sample households in the March 2020 Susenas in East Java, there are 1,450 households with core poverty criteria, as shown in Table 2. So there are 30,575 sample households that do not fall into the core poverty criteria.

This analysis uses the logistic regression method with the dependent variable being the core poverty household ($P_i = E(Y_i = 1|X_i)$) and the household is not in core poverty $1 - P_i = E(Y_i = 0|X_i)$. Where $P_i/(1 - P_i)$ is odd ratio or

Table 2. Table of classification of poverty criteria (multidimensional/MPI and monetary/HC) for the March 2020 Susenas sample households in East Java

Monetary Poverty/MP (Head Count)	Multidimensional Poverty Index (MPI)		
	Not Poor MPI	Poor MPI	Total
Not Poor Monetary MP	25.865	3.092	28.957
Poor MP	1.618	1.450	3.068
Total	27.483	4.542	32.025

Source: Susenas on March, 2020 (Processed)

probability household that in core poverty. With natural logarithm, probability household with core poverty criteria showed:

$$L_i = \ln \left(\frac{P_i}{1-P_i} \right) = Z_i \quad (2)$$

$$\begin{aligned} Z_i &= \beta_0 + \beta_i X_i \\ Z_i &= \beta_0 + \beta_{bankaccount} X_{bankaccount} + \beta_{bankdifficulty} X_{bankdifficulty} + \beta_{distancebank} X_{distancebank} + \beta_{bankcredit} X_{bankcredit} + \beta_{HHHeducation} X_{HHHeducation} + \beta_{HHHworksector} X_{HHHworksector} + \beta_{HHHICT} X_{HHHICT} \end{aligned} \quad (3)$$

Y = Core poverty (household core poverty=1, other=0).

$X_{bankaccount}$ = Proportion of family member that 17 years and over in households with bank accounts (Banking Penetration Dimensions, Susenas Kor r701)

$X_{bankdifficult}$ = Difficulty level to reach financial/bank infrastructure (1=difficult, 0=easy). From Podes. (Dimension of Availability of Banking Services)

$X_{distancebank}$ = Distance to financial infrastructure that provides formal credit services (Dimensions of Availability of Banking Services). From Podes (903 A and B. if not in the village then use the closest distance)

$X_{bankcredit}$ = Whether or not there are household members who get formal banking credit services in the household (Dimension of Usefulness of Banking Services). From Susenas r1901. If Yes = 1, none = 0.

$X_{HHHeducation}$ = Education of Household Head (SMP and above=1, other=0)

$X_{HHHworksector}$ = Household Head occupations (Agriculture=1, non-agricultural=0)

X_{HHHICT} = Household Head access Information Technology/IT (yes = 1, no = 0)

The first model was conducted to determine the effect of financial inclusion on core poverty in East Java. The second model was conducted to determine the effect of financial inclusion on core poverty in each Bakorwil. The second model using the logistic regression method in each Bakorwil region.

RESULT

As an illustration of the household data sample used in this study, it is shown in Table 3. In addition, the distribution of the March 2020 Susenas household sample for each Bakorwil in East Java Province is as shown in Table 3. The regional distribution for each Bakorwil is as shown in Figure 1. In general, of all these variables, the variable $X_{HHHeducation}$ (Household Head with a minimum junior high school certificate) has variations the largest, followed by the variable $X_{HHHworksector}$ (Household Head has the main occupation of agriculture).

Based on the results of the simultaneous test, the p-value (0.000) was obtained. Thus, it can be concluded that in the logit regression for the dependent variable Y (core poverty), there is at least one significant parameter in the model. Meanwhile, based on the results of the partial test, the predictor variables are significant for the model for East Java 2020, as shown in Table 4.

Table 3. Descriptive data on the March 2020 Susenas household sample, East Java Province

Information	East Java	Bakorwil 1	Bakorwil 2	Bakorwil 3	Bakorwil 4	Bakorwil 5
N of Household sample	32.025	7.821	6.790	7.689	3.410	6.315
$Y_{corepoverty}$ (1=household core poverty)	1.450 (4,53%)	389 (4,97%)	260 (3,83%)	241 (3,13%)	216 (6,33%)	344 (5,45%)
$X_{bankaccount}$ (the proportion of 17+ years have an account)	0,37 (mean)	0,42 (mean)	0,37 (mean)	0,44 (mean)	0,23 (mean)	0,31 (mean)
$X_{bankdifficulty}$ (1= access to bank is difficult)	269 (0,84%)	40 (0,51%)	0 (0%)	20 (0,26%)	199 (5,84%)	10 (0,16%)
$X_{distancebank}$ (km distance bank)	2,86 (mean)	2,43 (mean)	2,82 (mean)	1,65 (mean)	6,32 (mean)	3,05 (mean)
$X_{bankcredit}$ (1= household credit access bank)	4.885 (15,25%)	1.452 (18,57%)	1.265 (18,63%)	984 (12,8%)	182 (5,34%)	1.002 (15,87%)
$X_{HHHeducation}$ (1=head of household min. SMP)	14.158 (44,21%)	3.434 (43,91%)	3.264 (48,07%)	4.220 (54,88%)	909 (26,66%)	2.331 (36,91%)
$X_{HHHworksector}$ (1= head of household working agriculture sector)	10.882 (33,98%)	2.933 (37,5%)	2.276 (33,52%)	1.362 (17,71%)	1.781 (52,23%)	2.530 (40,06%)
X_{HHHICT} (1=head of household access HP/Internet)	23.403 (73,08%)	5.564 (71,14%)	4.631 (68,2%)	5.962 (77,54%)	2.725 (79,91%)	4.521 (71,59%)

Based on Table 4, the variable $X_{bankdifficulty}$ (difficult access to the Bank) does not significantly affect the household's core poverty status. For the variable $X_{bankaccount}$ (the proportion of household members who have an account at a bank) has a significant and negative effect. This variable is included in the dimensions of banking penetration in financial inclusion. So that the the participation of family member having a savings account at a bank, the greater the opportunity for the household to avoid core poverty with a

5.39% chance to avoid it in 2020. This opportunity is the largest compared to other variables. This is in line with [29] that account ownership has a major effect on household welfare. In this regard, it is necessary to implement a program that can increase public participation in having a savings account at a bank. Especially since the current poverty alleviation program is mostly non-cash in order to be more effective and targeted, the ownership of a savings account is one of the most crucial things.

Table 4. The results of the logistic regression of variables that are thought to affect core poverty in East Java Province 2020

Independent Variable	Coefficient	Marginal Effect
$X_{bankaccount}$	-1.29373***	-0.05395***
Independent Variable	Coefficient	Marginal Effect
$X_{bankdifficulty}$	-0.17394	
$X_{distancebank}$	0.02677***	0.00112***
$X_{bankcredit}$	-0.25203**	-0.01051**
$X_{HHHeducation}$	-0.57544***	-0.024***
$X_{HHHworksector}$	0.12769**	0.00533**
X_{HHHICT}	-0.8082***	-0.0337***
$_{cons}$	-2.16408***	

Source: Susenas on March, 2020 (processed by STATA 14.2), Significance *** = 1%, ** = 5%, * = 10%.

The level of difficulty in accessing bank infrastructure does not significantly affect poverty in 2020. This condition is thought to have occurred because the village fund program since it was first rolled out in 2015, has dominantly contributed to infrastructure improvement, especially village roads that facilitate access to and from infrastructure facilities. This condition is almost uniform in villages in East Java, considering that at the beginning of the implementation of village funds, this village road infrastructure project was expected to be one of the labor-intensive activities of rural communities. So that the level of difficulty, especially because the topography of the household area is relatively reduced in almost all villages in East Java, so that the opportunity to experience poverty is also decreasing [30], otherwise good road access will facilitate the movement of people and goods of economic value [30,31].

The variable distance to financial infrastructure that provides formal credit services such as banks ($X_{distancebank}$) is a dimension of the availability of banking services from financial inclusion. The variable distance to the bank is significant and has a positive direction. So that the chance of households experiencing core poverty will increase when the distance to the bank or financial infrastructure is further away, i.e. the opportunity will increase by 0.11% of households becoming core poverty, for every additional 1 kilometer

distance. This finding supports the research conducted by Koomson et al which mentions distance as a variable that can result in households not being able to improve their welfare [32]. The distance to banking services is getting farther, of course, it will increase the cost burden. Households will certainly rethink the cost and time to reach this banking service unit, so it is important to be able to bring banking infrastructure closer to the community to remote areas so that financial inclusion can be achieved.

Meanwhile, the third dimension of financial inclusion is the usefulness dimension of financial services ($X_{bankcredit}$). Even though banking infrastructure exists and is close at hand, this does not necessarily mean that people will get the financial services they need. The formal credit variable through conventional commercial banks has a strong and negative effect on household core poverty. For households that benefit from banking services through bank credit, they are able to reduce the opportunity to experience core poverty by 1.05% in 2020. This is in line with Khaki & Sangmi [33] and Das [34] that households receiving financial services in the form of credit can reduce the opportunity to experience poverty. This credit service is beneficial for the lower middle class community, especially if the credit received is used for productive business capital and improving the quality of life such as repairing housing facilities,

adding assets such as vehicles and so on. Based on this, the government needs to think about efforts so that poor households can access bank credit to improve their standard of living.

The education variable in this study ($X_{HHHeducation}$) has a significant and negative effect on core poverty. In this study, the higher the education of the head of household, the smaller the chance of experiencing poverty. The chance of experiencing core poverty is reduced by 2.40% in 2020, if the household's head of household has a minimum education of junior high school. Education is the key to moving away from poverty situations. Not all people with low education experience poverty, but most poverty occurs in those with low education. Not all but the majority of research related to poverty, education variable has a strong and negative influence on poverty including Salam et al [35] and Megbowon [36].

The agricultural sector consists of rice and secondary crops, horticulture, plantations, fisheries, animal husbandry, forestry and other agriculture. The $X_{HHHworksector}$ variable is used to see how big the chances of a household experiencing poverty compared to the probability of a household experiencing poverty if they work in other sectors. Table 4 above shows that the variable of head of household working in the agricultural sector in 2020 has a significant influence and has a positive direction. So that the chance of households experiencing core poverty will increase in households with the head of the household working in the agricultural sector, that is, the opportunity will increase by 0.53% of the household having the opportunity to become core poverty. The agricultural sector as the majority business field in East Java has not been able to provide welfare for farmers. In line with [37] that agriculture in Indonesia is still carried out in the traditional way and almost 80% of East Java's farmers are smallholders (less than half a hectare land) and the majority are farm laborers.

One of the efforts to accelerate the achievement of financial inclusion, banks

are also transforming through the adoption of information technology (IT). The use of information technology is certainly aimed at increasing market penetration and community services in the regions. For this reason, this study also looks at the extent to which households can access information technology, especially its effect on core poverty. Information from this research can certainly support the development of financial technology (fintech) so that financial inclusion can be achieved. A household is defined as having access to IT if the household uses a cellular phone (HP) or can access the internet (X_{HHHICT}). The IT access variable has a strong and negative effect on the household's core poverty status. If households can access IT, then the chance of experiencing poverty will be smaller, namely 3.37% in 2020. This finding is in line with research by [38], where IT can help reach the poor in several ways, through e-banking. Mobile-banking, also helps access information on time and cheaply as well as better connectivity with bank agents. The use of cell phones is an excellent medium to accelerate financial inclusion, especially in remote and remote areas. For that, through the Sky Toll program launched by the Government which aims to expand the telephone and internet signal network to remote areas of the archipelago, it will certainly bring benefits, one of which is that banking services are more accessible and the community is more prosperous.

Efforts to overcome core poverty in East Java, with 38 districts/cities, are of course still very generic when using the model/characteristic of East Java's core poverty. For this reason, efforts are needed to involve the role of the Regional Coordinating Board (Bakorwil) which consists of 5 Bakorwil, which of course can become coordinators in each district/city under it.

However, related to core poverty, each Bakorwil has different characteristics. For Bakorwil 1, the proportion of accounts owned by households will have a 7.93% chance of avoiding core poverty, then each additional one kilometer distance will

Table 5. The results of the logistic regression of variables that are thought to affect core poverty according to Bakorwil in East Java Province 2020

Independent Variable	Coefficient (Marginal Effect)				
	Bakorwil 1	Bakorwil 2	Bakorwil 3	Bakorwil 4	Bakorwil 5
$X_{bankaccount}$	-1.74537*** (-0.07929***)	-1.30228*** (-0.04657***)	-1.36366*** (-0.04042***)	-0.53714* (-0.03042*)	-0.89578*** (-0.04408***)
$X_{bankdifficulty}$	0.05646	-	-	0.17763	0.22835
$X_{distancebank}$	0.03971** (0.0018**)	0.04097** (0.00147**)	0.06467*** (0.00192***)	0.00998 (0.00057)	0.06848*** (0.00337***)
$X_{bankcredit}$	-0.05105	-0.47368** (-0.01694**)	-0.49109* (-0.01456*)	-1.15014	-0.02778
$X_{HHHeducation}$	-0.29262** (-0.01329**)	-0.35992** (-0.01287**)	-0.54709*** (-0.01621***)	-1.00877*** (-0.05713***)	-0.84558*** (-0.04161***)
$X_{HHHworksector}$	0.06164	0.03717	0.10062	0.34604** (0.0196**)	-0.10411
X_{HHHICT}	-0.75546*** (-0.03432***)	-0.88511*** (-0.03165***)	-0.58146*** (-0.01723***)	-1.11435*** (-0.06311***)	-0.91243*** (-0.0449***)
_cons	-2.03432***	-2.35937***	-2.52***	-1.94649***	-2.13157***

increase the chance of core poverty by 0.18%. The education of the head of household at least junior high school will avoid the opportunity for core poverty households by 1.33%. For the Head of Household with access to Information Technology will avoid core poverty by 3.43%.

For Bakorwil 2, the proportion of accounts owned by households will have the opportunity to avoid core poverty by 4.66%, then every additional 1 kilometer distance will increase the chance of core poverty by 0.15%. The education of the head of the household at least junior high school will avoid the chance of core poverty by 1.29%. For the Head of the Household with access to Information Technology will avoid core poverty by 3.16%. In contrast to Bakorwil 1, for Bakorwil 2, households that receive bank credit will have a 1.69% chance of avoiding core poverty.

Identical to Bakorwil 2, for Bakorwil 3 the proportion of accounts owned by households will have a 4.04% chance of avoiding core poverty, then every additional 1 kilometer distance will increase the probability of core poverty by 0.19%. Furthermore, households that get bank credit will have the opportunity to avoid core poverty by 1.46%. The education of the

head of the household at least Junior High School will avoid the opportunity for core poverty by 1.62%. For the Head of Household with access to Information Technology will avoid core poverty by 1.72%.

Bakorwil 4 is slightly different from other Bakorwil, where the chance of a household with a household head working in the agricultural sector has a significant effect on core poverty, which will increase the chance of being poor by 1.96%. While others are relatively the same as other Bakorwil, the proportion of accounts owned by households will have the opportunity to avoid core poverty by 3.04%. The education of the head of household at least Junior High School will avoid the chance of core poverty by 5.71%. For the Head of Household with access to Information Technology will avoid core poverty by 6.31%.

For Bakorwil 5, the proportion of accounts owned by households will have a chance of avoiding core poverty by 4.41%, then every additional 1 kilometer distance will increase the chance of core poverty by 0.34%. The education of the head of household at least junior high school will avoid the chance of core poverty by 4.16%. For the Head of Household with access to

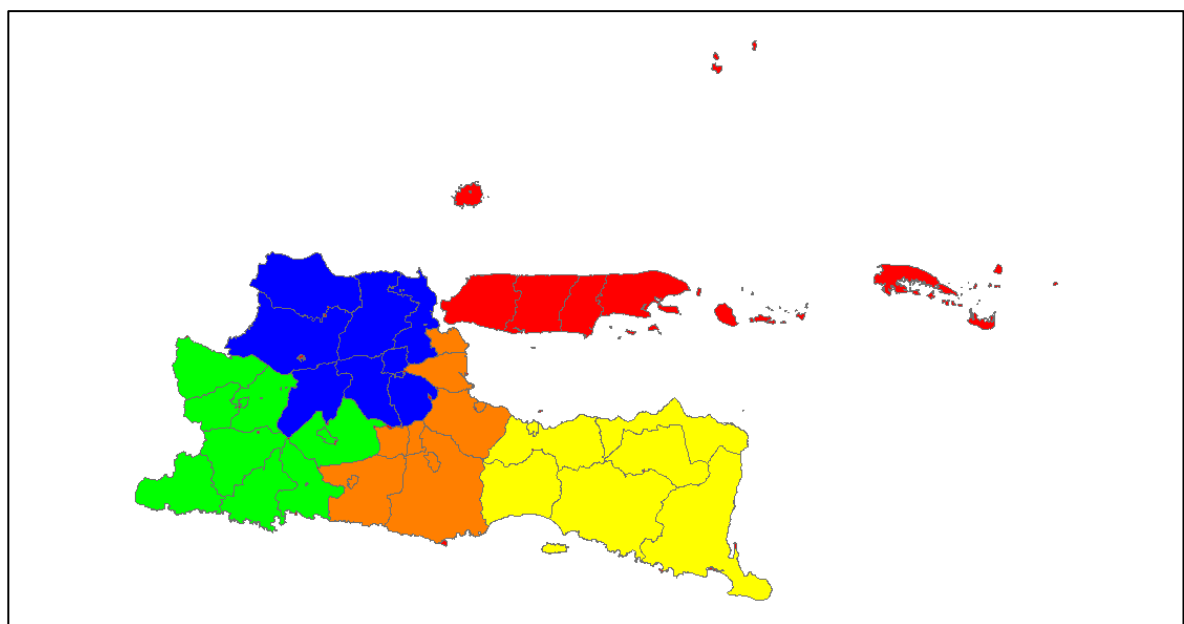
Information Technology will avoid core poverty by 4.49%.

CONCLUSION

The results of this study indicate that each region has characteristics that affect the core of each poverty, especially for the effect of financial inclusion. So different poverty alleviation policies or programs are needed, based on the aspect of the region.

In general in East Java, financial inclusion has a strong influence on core poverty. The banking penetration dimension on the variable of bank account ownership has a strong influence on core poverty. This condition is very relevant to the situation in 2020, when the COVID-19 pandemic hit, and East Java was no exception. The distribution of Government assistance to maintain the level of community welfare, of course, is very effective if non-cash, avoiding crowds is one of the protocols for preventing the expansion of COVID-19. For this reason, the Government needs to continue to provide saving literacy in formal institutions such as banks, how to include saving literacy in banks through formal education, as well as changing the mechanism for distributing Government

assistance programs from Cash to Non-Cash. This encourages households to increase their participation in financial literacy. This can be done in all districts/cities, especially through the role of the respective Bakorwil. The dimensions of the availability of banking services on the variable distance to the infrastructure of conventional financial institutions/banks have a significant effect on core poverty. If you want to escape poverty, one way is to add conventional commercial bank infrastructure that is evenly distributed in the area so that distance constraints do not reappear, so that people in remote villages have easy access to banking products. This recommendation can be applied, especially to districts/cities in Bakorwil 1, 2, 3, and 5. The usability dimension of banking services on bank credit variables has a significant and negative impact on poverty. The government and stakeholders can encourage access to banking credit services that target underprivileged households and in remote areas that are still far from the reach of banks, especially after the pandemic. This recommendation may be more appropriate if applied to districts/cities in Bakorwil 2 and 3.



Source: Map (Processed). Based on the Regional Regulation of East Java Province number 16 of 2016

Figure 1. Regional Coordination Agency (Bakorwil) of East Java Province

Education remains the key to a better future with a better level of welfare. However, the dilemma of education during a pandemic is quite complex, especially the issue of the declining quality of students during the online learning process during a pandemic. As input from this research for the Government for those who have left the age of education, through efforts to promote the Kejar Paket program at least Package B, and at least the current education that can complete 9 years of education can be achieved. Digitalization is currently supporting the acceleration of financial inclusion. Households that have access to Information Technology have a better level of welfare than those who do not use it. The government can add cellular and internet network infrastructure, so that people in remote rural areas can more easily enjoy banking products through digitizing banking services so as to increase opportunities for a more prosperous life.

REFERENCES

- [1] Bappenas 2020 Metadata Indikator Tujuan Pembangunan Berkelanjutan (TPB)/Sustainable Development Goals (SDGs) Indonesia Pilar Pembangunan Sosial, Edisi II
- [2] BPS Provinsi Jawa Timur 2021 Profil Kemiskinan Di Jawa Timur Maret 2021 1–7
- [3] Alkire S, Conconi A, Mónica P-R and Vaz A 2019 How to Build a National Multidimensional Poverty Index (MPI): Using the MPI to inform the SDGs 160
- [4] Apablaza M and Yalonetzky G 2012 Chronic Multidimensional Poverty or Multidimensional Chronic Deprivation *OPHI Research in Progress No 34a*.
- [5] Ataguba, Fonta W and Ichoku E H 2011 The Determinants of Multidimensional Poverty in Nsukka, Nigeria *PEP PMMA Working Paper* 1–22
- [6] Bautista 2018 Explaining Multidimensional Poverty: A Household-Level Analysis *Asian Economic Papers* 13 30–58
- [7] Brück T and Kebede S W 2013 Dynamics and Drivers of Consumption and Multidimensional Poverty: Evidence from Rural Ethiopia *Deutsches Institut für Wirtschaftsforschung*
- [8] Sumargo B, Miduk N and Simanjuntak M 2019 Deprivasi Utama Kemiskinan Multidimensi Antarprovinsi di Indonesia *Jurnal Ekonomi dan Pembangunan Indonesia* 19 160–72
- [9] Bourguignon, Bénassy-quéré A, Dercon S, Estache A, Gunning J W, Kanbur R, Maxwell S, Platteau J and Spadaro A 2008 Millennium Development Goals at Midpoint : Where do we stand and where do we need to go? *European Report on Development* 1–74
- [10] Indriani L 2018 Analisis Kemiskinan Multidimensi Di Provinsi Jawa Tengah 2011-2013 *Jurnal Aplikasi Statistika & Komputasi Statistik* 2018 13–24
- [11] Alkire S and Santos M E 2014 Measuring Acute Poverty in the Developing World : Robustness and Scope of the Multidimensional Poverty Index *World Development* 59 251–74
- [12] Teka A M, Temesgen Woldu G and Fre Z 2019 Status and determinants of poverty and income inequality in pastoral and agro-pastoral communities: Household-based evidence from Afar Regional State, Ethiopia *World Development Perspectives* 15 100123
- [13] Verner D 2004 Poverty in the Brazilian Amazon: An Assessment of Poverty Focused on the State of Pará *Policy Research Working Paper Series* 66
- [14] Gutiérrez-Romero R and Ahamed M 2021 COVID-19 response needs to broaden financial inclusion to curb the rise in poverty *World Development* 138
- [15] Yakubu A, Mobolaji H I, Ijaiya G T, Kilishi A A and Yaru M A 2014 Multidimensional Poverty

- Analysis and Informal Sector in Nigeria *European Journal of Business and Management* 6 354–62
- [16] Finch N and Bradshaw J 2003 Core Poverty *Journal of Social Policy* 32 513–26
- [17] BPS Provinsi Jawa Timur 2020 Produk Domestik Regional Bruto Provinsi Jawa Timur Triwulanan Menurut Lapangan Usaha 2015–2019 283
- [18] (OJK) O J K 2021 Statistik Perbankan Indonesia April 2021
- [19] Sarma M 2012 Index of Financial Inclusion – A measure of financial sector inclusiveness *Berlin Working Papers on Money, Finance, Trade and Development*
- [20] Inoue T 2019 Kobe University Repository: Kernel *Journal of Financial Economic Policy* 11 21–33
- [21] Álvarez-Gamboa J, Cabrera-Barona P and Jácome-Estrella H 2021 Financial inclusion and multidimensional poverty in Ecuador: A spatial approach *World Development Perspectives* 22
- [22] Ang J B 2010 Finance and Inequality: The Case of India *Southern Economic Journal* 76 738–61
- [23] Ummah B B, Nuryantono N and Anggraeni L 2015 Jurnal Ekonomi dan Kebijakan Pembangunan, hlm. 172–186 Vol 4 No 2 *Jurnal Ekonomi dan Kebijakan Pembangunan* 4 172–86
- [24] Sarma M and Pais J 2011 Financial Inclusion and Development: A Cross Country Analysis *In Annual Conference of the Human Development and Capability Association, New Delhi* 168 1–30
- [25] Demircuc-Kunt A, Beck T and Honohan P 2008 *Finance for All? Policies and Pitfalls in Expanding Access* (Washington DC: World Bank)
- [26] World Bank 2009 Financial Access 2009: Measuring Access to financial Services around the world *Consultative Group to Assist Poverty* 3–300
- [27] Thorbecke E, Foster J and Joel G 2013 Notes and Comments a Class of Decomposable Poverty Measures 52 761–6
- [28] Alkire S and Foster J 2011 Counting and multidimensional poverty measurement *Journal of Public Economics* 95 476–87
- [29] Brilliant F and Kautsar A 2020 Apakah Literasi Keuangan Memengaruhi Kesejahteraan Rumah Tangga di Indonesia? *Kajian Ekonomi dan Keuangan* 4 103–15
- [30] Artha D R P and Dartanto T 2018 The multidimensional approach to poverty measurement in Indonesia: Measurements, determinants and its policy implications *Journal of Economic Cooperation and Development* 39 1–38
- [31] Roy P, Ray S and Halder S K 2019 Socio-economic Determinants of Multidimensional Poverty in Rural West Bengal: A Household Level Analysis *Journal of Quantitative Economics* 17 603–22
- [32] Koomson I, Villano R and Hadley D 2020 Effect of Financial Inclusion on Poverty and Vulnerability to Poverty: Evidence Using a Multi-Dimensional Measure of Financial Inclusion *SSRN Electronic Journal*
- [33] Khaki A R and Sangmi M U D 2017 Does access to finance alleviate poverty? A case study of SGSY beneficiaries in Kashmir Valley *International Journal of Social Economics* 44 1032–45
- [34] Das T 2018 Does credit access lead to expansion of income and multidimensional poverty? A study of rural Assam *International Journal of Social Economics* 46 252–70
- [35] Salam A, Pratomo D S and Saputra P M A 2020 Sosio-economic determinants of multidimensional poverty in the rural and urban areas of East Java *International Journal of Scientific and Technology Research* 9 1445–9

- [36] Megbowon E T 2018 Multidimensional Poverty Analysis of Urban and Rural Households in South Africa *Studia Universitatis Babeş-Bolyai Oeconomica* 63 3–19
- [37] Pratomo D S 2015 The Analysis of Underemployment in Indonesia: Determinants and its Implication *Procedia - Social and Behavioral Sciences* 211 528–32
- [38] Mushtaq R and Bruneau C 2019 Microfinance, financial inclusion and ICT: Implications for poverty and inequality *Technology in Society* 59 101154