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THE DETERMINANTS OF POVERTY IN INDONESIA, HOW DIGITALIZATION AND ISLAMIC BANKS PLAY A ROLE?

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Abstrak

Kemiskinan merupakan masalah di negara berkembang yang diakibatkan oleh dualisme pembangunan sektor modern yang memberikan kesempatan kerja yang terbatas. Penanganan masalah tersebut dapat dilakukan melalui kebijakan multidimensi yang didasarkan pada aspek ekonomi dan non-ekonomi. Penelitian ini bertujuan untuk menganalisis pengaruh digitalisasi, penanaman modal asing, pendidikan, pertumbuhan ekonomi, dan bank syariah secara parsial terhadap kemiskinan di Indonesia. Objek pengamatan sebanyak 33 provinsi di Indonesia selama 10 tahun dari tahun 2012 hingga 2021 dan diolah dengan teknik regresi panel statis. Hasil penelitian menunjukkan bahwa digitalisasi, investasi asing langsung, dan pendidikan berpengaruh negatif signifikan terhadap kemiskinan. Di sisi lain, bank syariah berpengaruh negatif dan tidak signifikan terhadap kemiskinan. Pertumbuhan ekonomi berpengaruh positif dan signifikan terhadap kemiskinan. Implikasi dari penelitian ini adalah penguatan infrastruktur digital dan akses pendidikan yang lebih luas dapat meningkatkan dampak positif investasi asing langsung (FDI) dan pertumbuhan ekonomi terhadap pengurangan kemiskinan. Penelitian ini berkontribusi untuk memberikan rekomendasi pada penguatan infrastruktur digital dan akses pendidikan yang lebih luas dapat mengurangi kemiskinan di Indonesia.

***Kata Kunci** : Kemiskinan, Digitalisasi, Bank Syariah, Penanaman Modal Asing, Pendidikan, dan Pertumbuhan Ekonomi*

Abstract

Poverty is a problem in developing countries resulting from the dualism of modern sector development that provides limited employment opportunities. The handling of the problem can be done by multidimensional policies based on economic and non-economic aspects. This study aims to analyze the effect of digitalization, foreign investment, education, economic growth, and Islamic banks partially on poverty in Indonesia. The object of observation is 33 provinces in Indonesia over 10 years from 2012 to 2021 and processed with static panel regression. The results showed that digitalization, foreign direct investment, and education have a negative significant effect on poverty. On the other hand, Islamic bank has negative and insignificant effect on poverty. Economic growth has a positive and significant effect on poverty. The implication of this research is that strengthening digital infrastructure and expanding access to education can have a positive impact on investment, while economic growth can in turn reduce poverty. This research contributes to providing recommendations on how strengthening digital infrastructure and wider access to education can reduce poverty in Indonesia.

***Keywords:** Poverty, Digitalization, Islamic Bank, Foreign Direct Investment, Education, and Economic Growth.*

1. INTRODUCTION

Poverty is a problem in developing countries resulting from the dualism of modern sector development that provides limited employment opportunities (Sukirno, 2022). The idealism of a country's economic development is to achieve the welfare of the population (Frisdiantara & Mukhklis, 2016). Australia as developed country define welfare with the fulfillment of five indicators, one of which is prosperous as measured by national income per capita (Australian Institute of Health and Welfare, 2023). Nationally, the Central Bureau of Statistics mentions textually that poverty is one of eight welfare indicators (Badan Pusat Statistik, 2023). In the Islamic view, surah Quraysh verses 3 and 4 formulate three indicators of welfare, namely tawhid, economic stability (eliminating poverty), and security (Sodiq, 2015). As an indicator of welfare, poverty reduction will improve the quality of economic development in developing countries.

The government is committed to alleviating poverty as emphasized by Islam in Surah Quraysh verse 4 which views poverty as a matter of basic needs (Muhamad, 2020). This commitment is in line with the Sustainable Development Goals developed by the United Nations and must be implemented by all countries. Table 1 shows the percentage of poverty in Indonesia and the world in the last five years.

Table 1. Poverty Rate in Indonesia and World

Year	Indonesia	World
2018	9,82	8,60
2019	9,41	8,30
2020	9,78	9,20
2021	10,14	8,80
2022	9,54	9,00

Source: Badan Pusat Statistik and World Bank

Poverty rate in 2019 began to show a decline compared to the previous year. However, the period from 2019 to 2021 recorded an increasing trend in poverty, reaching 10.14%. Although in 2022 the poverty rate in Indonesia has decreased from 2021, it is still higher than in 2019 and the global poverty rate. The poverty phenomenon in Indonesia from 2018 to 2022 is consistently higher than the global average. The handling of the problem can be through multidimensional policies based on economic and non-economic aspects.

This study uses internet access as a proxy for the digitization variable because internet penetration has a dominant influence on poverty reduction compared to mobile phone penetration (Widiyastuti, 2015). The lack of internet accessibility as a basic facility can be a factor in high poverty rates (Ruhyana & Essa, 2020). Restrictions on internet connectivity limit the poor's access to government programs, such as training, social assistance, and educational innovations (Widiastuti, 2014). Therefore, limiting internet access means limiting the poor from increasing their income due to inadequate information dissemination (Galperin et al., 2014). Adequate internet access can create a bridge to connect information between the various parties involved, thus supporting the synergy of appropriate policy-making to overcome poverty (Urquhart et al., 2008).

Poverty eradication requires a large amount of funding, and foreign investment is one alternative funding that can be done. Bourguignon (2004) states that foreign direct investment (FDI) can affect poverty through two channels. First, the contribution of FDI to economic growth, which then has an impact on the poverty rate. Second, the impact of FDI on income distribution, which in turn affects poverty levels. Economic growth and income distribution will interact dynamically over time in reducing poverty, forming a triangular relationship between growth, inequality, and poverty known as the triangle hypothesis.

Education through school enrollment plays a crucial role in helping individuals escape poverty (Haughton & Khandker, 2009). The education level of household heads and children can reduce the transmission of poverty between generations (Alkire & Shen, 2017). Education not only serves as the main means to get a job, but also an asset to improve skills and critical thinking in solving daily problems independently through Problem Based Learning (Lapuz & Fulgencio, 2020). Increased economic growth will increase production activities and require additional human resources. The increased need for human resources will increase employment, so poverty will decrease.

Along with increased productivity, economic growth also progresses, which is reflected in the output generated from economic activity over time (Frisdiantara & Mukhklis, 2016). In Islamic perspective, economic growth is not only measured by the increase in output in a period, but also includes aspects of equitable income distribution, zakat obligations, and the elimination of usury instruments in economic performance (Muhamad, 2020). This confirms that economic growth has a significant impact on poverty levels, where inclusive growth can reduce poverty through equitable income distribution and the application of fair economic principles (Kouadio & Gakpa, 2022).

A commonly used islamic social finance instrument in reducing poverty and empowering the poor is zakat (Ghifara et al., 2022; Herianingrum et al., 2020; Purbasari et al., 2020). In the aspect of financial institutions, Islamic banking has a role in reducing poverty (Iqbal et al., 2020; Junaidi, 2024; Siddique et al., 2020). Islamic banking as a financial intermediary institution has a role in poverty reduction efforts. Law Number 21 of 2008 stipulates that one of the tasks of Islamic banking is to achieve equitable distribution of public welfare. As a financial institution, Islamic banking operates by collecting funds from the public and then channeling them back in the form of financing according to Sharia principles (Syafril, 2020). Islamic banking can reduce poverty through adherence to sharia-compliant operational principles such as profit-loss sharing, prohibition of interest, and channeling capital to productive sectors such as MSMEs. The application of these principles can increase productivity and reduce poverty (Junaidi, 2024).

The formulation of the problem in this study is how the effect of digitalization, foreign investment, education, economic growth, and Islamic banks partially on poverty in Indonesia. In answering the problems that occur empirically, this study aims to analyze the effect of digitalization, foreign investment, education, economic growth, and Islamic banks partially on poverty in Indonesia. The results of this study will be a policy recommendation for the government in collaborating macroeconomic elements with digitalization and Islamic banks in tackling poverty problems.

2. RESEARCH METHOD

This research is a type of quantitative research with descriptive explanatory type. The object of observation is 33 provinces in Indonesia in the period 2012 to 2021. The type of data used is secondary data collected from the Central Bureau of Statistics and the Financial Services Authority. The endogenous variable of this study is poverty as measured by the percentage of poor people. This study also have five exogenous variables. The digitization variable is measured by the percentage of households that access the internet, the Islamic bank variable is measured by working capital financing to MSMEs, the foreign investment variable is measured by the amount of foreign direct investment, the education variable is measured by the Gross Participation Rate (APK) of senior high school, and the economic growth variable is measured by Gross Domestic Product at Constant Prices.

This study uses static panel regression to examine the effect of digitalization, foreign investment, education, economic growth, and Islamic banks on poverty. Panel data which is a combination of cross section and time series data can minimize research bias and prevent model specification errors (Wahyudi, 2016). This study uses the Panel Estimated Generalized Least Squares (EGLS) method with the Fixed Effect (FE) cross-section approach, which is effective in overcoming heteroscedasticity between cross-sections (Mance et al., 2020). The Fixed Effect model is more appropriate than Random Effect in panel data regression because it provides different intercept values for each province. It is assumed that the unique characteristics of each province in Indonesia are correlated with the independent variables, so it is necessary to control for the potential bias of these characteristics. In addition, the model chosen during the analysis emphasizes the specific effects of variables that change over time on each individual or entity, without assuming that individual effects are random (Widarjono, 2023). The econometric model formed in this study is as follows:

$$POV_{it} = \alpha + \beta_1 DIG_{it} + \beta_2 Log(IB)_{it} + \beta_3 Log(FDI)_{it} + \beta_4 EDU_{it} + \beta_5 GRO_{it} + \varepsilon_{it} \ldots.. (1)$$

Description:

POV = Poverty
DIG = Digitalization
IB = Islamic Bank
FDI = Foreign Direct Investment
EDU = Education
GRO = Economic Growth
α = Constant
β = Coefficient of Exogenous Variable
ε = *Error Term*
i = Province i (I = 1,2,3...,33)
t = Period of year t (year 2012,2013…,2021)

3. RESULT AND DISCUSSION

Result

Multicollinearity test is conducted to detect the presence of linear correlation between exogenous variables. Table 2 show the results of the multicollinearity test on this research data.

Table 2. Multicolinearity Test Results

Variabel	DIG	LOG (IB)	LOG (FDI)	EDU	GRO
DIG	1,00	0,16	0,19	0,57	-0,37
LOG (IB)	0,16	1,00	0,57	-0,19	-0,05
LOG (FDI)	0,19	0,57	1,00	-0,13	0,00
EDU	0,57	-0,19	-0,13	1,00	-0,21
GRO	-0,37	-0,05	0,00	-0,21	1,00

Data Source Processed (2024)

Based on Table 2, no variable has a correlation coefficient value exceeding the tolerance threshold commonly associated with multicollinearity problems, indicating that the data in this study study did not detect multicollinearity problems. Static panel regression research model selection involves the Chow Test, Hausman Test, and Lagrange Multiplier Test. Based on the chow and hausman tests which have a value below 0.05, the static panel regression model used in this study is the fixed effect model (FEM). To determine the partial effects of exogenous variables on endogenous variable, a t-test was conducted. The results of the t-test, which provide information on the individual significance of each exogenous variable in influencing endogenous variable, can be seen in Table 3 below. This analysis allows for a deeper understanding of the contribution of each variable in the model and how they interact to influence the endogenous variable.

Table 3. t Test Results

Variable	Coefficient	Significant	Note
Constant	14.04	0.00	Significant
DIG	-0.02	0.00	Significant
Log(IB)	-0.01	0.84	Not Significant
Log(FDI)	-0.85	0.04	Significant
EDU	-0.02	0.00	Significant
GRO	0.02	0.00	Significant

Data Source Processed (2024)

Four variables have a partially significant effect on poverty and one variable has a partially insignificant effect on poverty.

Discussion

Digitalization has a negative and significant effect on poverty. The use of the internet in Indonesian households has a positive contribution to reducing poverty. The results of this study are supported by Mora-Rivera & García-Mora (2021) who state that the use of the internet can reduce poverty in urban and rural areas in Mexico. On a regional scale, improving digital infrastructure such as the internet can reduce disparities between regions and lead to a decrease in the poverty rate on Java (Hidayat et al., 2021). The use of the internet can reduce the information gap obtained by the poor, thus having an impact on improving the quality of human resources in facing labor market competition (Phan, 2023). The wise behavior of accessing the internet also supports the results of this study. Nguyen et al. (2022) provide specific requirements, namely that poverty reduction through internet use can occur if it is used for productive purposes, such as accessing digital learning, conducting business activities online, and searching for useful information.

Islamic bank has a negative and insignificant effect on poverty. Working capital financing for MSMEs by Islamic Commercial Banks and Islamic Business Units has not been able to contribute to poverty reduction in Indonesia. This is due to the limited capacity of banks in channeling funds which depends on the ability to raise funds and distribute them to various productive sectors (Agustina et al., 2022). In addition, MSME financing in Indonesia often faces challenges in feasibility of islamic banking's requirements (International Labour Organization, 2019). This is due to a lack of managerial and financial capabilities. In fact, MSMEs play an important role in increasing economic activity at various levels of society, which in turn will contribute to poverty reduction (Nursini, 2020). Other research suggests that Islamic Microfinance financing has more impact on poverty reduction (Gupta & Sharma, 2023; Umar et al., 2022).

Khandker (2005) detailing the role of Islamic Microfinance financing is reducing female poverty in rural areas.

Foreign Direct Investment has a negative and significant effect on poverty. Opening up opportunities for other countries to invest in Indonesia can reduce poverty in Indonesia. Directly, foreign direct investment can increase employment opportunities that target the need for unskilled labor (Do et al., 2021). Labor demand increases the absorption of labor filled by the poor to escape poverty. Hanim (2021) also stated that foreign direct investment in sectors that employ unskilled labor can increase the income of the poor and help them escape poverty. The establishment of industry through foreign direct investment also needs to be thoroughly studied before it is realized. Rahman et al. (2022) emphasized that the industrial sector can increase the poverty rate. Liu et al. (2021) detailed that industrial development has more impact on the well-off than the poor because of the effect of heterogeneity on farmers' livelihood capital.

Education has a negative and significant effect on poverty. An increase in high school enrollment will reduce the poverty rate. The results of this study are in line with the research of Spada et al. (2023) with an observation object of 34 countries in Europe. Ronaghi & Scorsone (2024) also found that human capital development through access of high school services is a key driver in increased income and poverty reduction. Federated states like United States are interconnected, and in particular, low education can have an indirect impact on increase poverty. Globally, the poverty rate can be reduced by 50% in one generation if there is an increase in secondary school participation (UNESCO, 2017). Pratama et al. (2022) explained that education contributes to the mastery of scientific skills. In the course of classroom learning, students can recognize their potential and develop literacy, creativity, and mastery of technology (Majumder & Biswas, 2017; Zhang, 2021). These abilities can be an individual's capital to continue education to a higher level, take part in training at the Job Training Institute (LPK), or work in sectors that require unskilled labor.

Economic growth has a positive and significant effect on poverty. Increasing Gross Domestic Product (GDP) will lead to a rise in the poor population. Research by (Balasubramanian et al., 2023; Kouadio & Gakpa, 2022b) offers a different perspective, economic growth significant as a tool to combat multidimensional poverty. However, these findings align with Susanti (2013), who states that GDP growth does not directly alleviate poverty. Giovanni (2018) also states that income inequality arises when GDP growth is not accompanied by an equitable distribution across different societal levels. Inequitable economic growth in Indonesia can lead to an increase in income inequality, which further exacerbates poverty levels despite overall economic growth (Ali & Son, 2007). Empirical research also shows that in the context of developing countries such as Indonesia, economic growth that is not accompanied by equitable income distribution can result in an increase in the number of poor people (Ravallion, 2001).

4. CONCLUSION

Based on the results, poverty in Indonesia is influenced by digitalization, foreign direct investment (FDI), education, and economic growth. The study found that digitalization, FDI, and education generally have a negative impact on poverty, whereas economic growth is associated with an increase in poverty. Islamic banks also have a negative effect on poverty; however, this effect is not statistically significant in reducing poverty levels.

To provide a more comprehensive understanding, it is crucial to explore how advancements in digitalization and education could amplify the positive impacts of FDI and economic growth on poverty alleviation. For instance, enhancing digital infrastructure can improve access to educational resources and business training, especially for the lower middle class. The condition can leverage the benefits of FDI and economic growth by creating a more skilled workforce that attracts further investment and supports sustained economic development.

Policy recommendations emerging from this study suggest several key actions. First, strengthening digital infrastructure is vital for reducing poverty, and efforts should focus on expanding internet access and digital literacy programs for marginalized communities. Additionally, making business training and practical skills available through online platforms can benefit the lower middle class. Effective delivery of these programs requires collaboration between central and local governments and private sector partners. It is also important for the government to ensure that educational content is high-quality and engaging, prioritizing educational resources over entertainment.

In terms of Islamic banking, expanding services to include specialized offerings for low-income individuals and increasing branch presence in rural areas could improve accessibility and financial inclusion. Furthermore, extending compulsory education to include tertiary education will help ensure that individuals from poor backgrounds can access formal employment opportunities with higher wages compared to informal labor. By addressing these areas, Indonesia can create an environment where digitalization, education, and FDI collectively contribute to effective poverty reduction and sustainable economic growth.

Future research can explore other factors that affect poverty in Indonesia, such as Islamic Microfinance financing, zakat distribution, innovation, government spending, and government social fund spending. In more detail, future researchers can specify the education variable with education spending by the government, whether it has been able to solve the problem of poverty in Indonesia.

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