

## The Role of Financial Inclusion in Poverty Reduction: A Production Theory Approach

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### Abstract

This study attempts to analyze the role of financial inclusion in reducing poverty by using a production theory approach. This study used the production function as a function or equation that shows the relationship between the use of input combinations to produce the desired level of output in order to analyze the role of financial inclusion in reducing poverty. The results show that access to financial service products, especially loans, is used as capital input in community production activities. The community uses loans obtained from formal and informal financial institutions to increase their productivity through increased capital. Increased capital will increase output, so income will also increase.

### Keywords

Poverty, Financial Inclusion, Theory Production, Capital, Productivity Introduction

## 1. Introduction

Poverty is a condition of economic inability to meet the average standard of living of people in a country. This condition of inability is marked by the low ability of income to meet basic needs in the form of food, clothing, and shelter. This low income will also result in a reduced ability to meet average living standards, such as public health and education standards (Ali et al., 2020). The study of Manji (2010) has analyzed that financial inclusion is one of the means to accelerate economic growth and reduce poverty.

Financial inclusion is built to help the population, especially the poor, improve their lives. Financial inclusion offers access to financial services to the majority of the population according to their needs. Broad financial services refer to the reach of financial services in an economy. In other words, many people have access to financial services by measuring how. The percentage of people in a given area who have access to a bank account is a typical measure of the breadth of financial services (Beck & De la Torre, 2007). Bank accounts enable poor households to perform important financial functions such as keeping money safely outside the home, accessing credit, making loans or paying premiums, and transferring money (Mohan, 2006).

The definition of financial inclusion is the antithesis of financial exclusion, namely the various processes that provide certain social groups or individuals with access to the formal financial system. Financial inclusion is a driving force for development in increasing economic growth to reduce barriers to accessing all financial services, which will improve the community's welfare. Therefore, according to Sharma & Kukreja (2013), there are at least four financial inclusion objectives. First, to increase public access to a product, institution, or financial service. Second, improving the quality of financial products and services. Third, improve financial products or services that can be adapted to the abilities and needs of the wider community. Lastly, to provide financial products or services (Meiryani et al., 2021; Atif, 2021).

Production is a process that converts inputs into outputs — changes in the use of inputs to produce the desired output. Production is not only limited to manufacturing but also storage, distribution, transportation, retailing, and packaging. Many types of activities occur in the production process, including changes in the form, place, and time of use of the products. These changes involve the use of inputs to produce the desired output. In this context, this study attempts to analyze the role of financial inclusion in reducing poverty by using a production theory approach.

## **2. Literature Review**

### **2.1 Poverty**

The notion of poverty is generally always associated only with the economic sector alone, even though poverty can be seen from the social and cultural side of the community. In principle, poverty describes a lack of ownership and low income. In more detail, it describes a condition where basic human needs cannot be fulfilled, namely food, shelter, and clothing. Several definitions describe this state of absence. One of them is the poverty definition used by The Central Statistics Agency (CSA/ BPS) (2012) and Ravallion (1992), which describes poverty as an individual's inability to meet the minimum basic needs that are deemed reasonable by the standards of the society in question

The problem of poverty has indeed occurred a lot in society. However, determining the boundaries between the poor and the non-poor is a bit difficult to do. BPS has used an economical approach to estimate the level and number of poor people. BPS defines poverty as follows: Inability to meet certain standards of basic needs, both food and non-food. This standard is called the poverty line, which is the value of expenditure on basic food consumption, which is equivalent to 2,100 calories of energy per capita per day, plus the value of expenditure on non-essential basic

needs (Anirwan et al., 2021; Wahid & Sarfiah, 2021). In other words, the population whose income level is still below the poverty line is called the poor (Kurnia et al., 2022).

In measuring poverty, BPS used the concept of the ability to basic need approach. With this approach, poverty is seen as an economic inability to meet basic food and non-food needs measured in terms of expenditure. The Poverty Line is the sum of the Food Poverty Line and the Non-Food Poverty Line. People with an average expenditure per capita per month below the poverty line are categorized as poor (Rahayu et al., 2021).

## **2.2 Financial Inclusion**

There are two concepts of the main dimensions of financial inclusion according to the United Nations Capital Development Fund (2006). First, financial inclusion refers to customers accessing formal financial services, from simple credit and savings services to more complex services such as insurance and pensions. Second, financial inclusion implies that customers have access to more than one financial service provider, which guarantees various competitive options. Claessens (2006) defines financial inclusion as the availability of a supply of quality financial services at an affordable cost, where fair quality and reasonable costs are defined relative to some objective standards and costs in terms of money and non-money. According to Rangarajan (2008), financial inclusion is a process to ensure access to adequate, timely, and affordable financial services and credit if needed by vulnerable groups such as low-income groups.

Financial inclusion is often considered a critical element that makes growth inclusive because access to finance can enable economic actors to make long-term consumption and investment decisions, participate in productive activities, and cope with unexpected short-term shocks. Financial inclusion is often considered a critical element that makes growth inclusive because access to finance can enable economic actors to make long-term consumption and investment decisions, participate in productive activities, and cope with unexpected short-term shocks (Park & Mercado, 2015).

Financial inclusion aims to illustrate that people who do not have a bank account enter the formal financial system so that they have the opportunity to access financial services ranging from savings, payments, credit, and insurance (Majanga, 2016; Yanescha, 2022). Financial inclusion does not imply that everyone must use formal financial services or that financial service providers must ignore the risks and costs of deciding to offer financial services. Both do so voluntarily and do not prevent households or small companies from using one or more financial services.

## **2.3 Production Theory**

The production process can be divided according to the time period divided into three, namely the production function of the very short term, short term, and long term. In the short term, producers cannot change labor or capital input. Labor input and capital input are fixed. In the production process using labor input and capital input, the amount is certain and fixed, so the output produced is also certain and fixed.

The short term refers to the period where one or more factors of production are fixed or constant. Variables that cannot change over a short period are called fixed inputs. In the short run, the capital variable is considered a fixed factor of production, meaning that the amount does not change and is not affected by changes in production volume. In the short run, the labor variable

is considered a production factor variable whose use varies according to changes in production volume. The long run is the amount of time it takes to change all the variable inputs. All inputs are varied in the long run to minimize production costs (Pindyck et al., 2013).

### 3. Methods

Several production factors or inputs used will produce output. The amount of input used to produce a certain output is influenced by technology. The production function is a function or equation that shows the relationship between the use of input combinations to produce the desired output level. The relationship between input and output is arranged in a production function by Shephard (2012) as follows:

$$q = f(K, L, M, \dots) \quad (1)$$

Where  $q$  represents the output of certain goods,  $K$  represents the machines (capital) used during that period,  $L$  represents the labor hour input, and  $M$  represents the raw materials used.

The production function assumes that production depends only on two inputs, namely capital ( $K$ ) and labor ( $L$ ). Thus, a production function can be formulated, namely:

$$q = f(K, L) \quad (2)$$

The production function allows the input to be combined in various proportions so that the output can be produced in various ways. Equation (2) can mean using more capital and less labor or vice versa. Production in a labor-intensive manner will use more labor than used capital. Production in a capital-intensive manner uses more capital and only a few workers. The production function describes technical when a company operates efficiently, using the input combination as effectively as possible.

## 4. Results

### 4.1 Production and Increased Capital

Labor and capital will change in the long run. It is useful for selecting the optimal input mix to increase the output. Assuming that the input is  $K > 0$ ,  $L > 0$ , and the input increases, there will be diminishing marginal returns in both the short and long run. An increase in one input assuming another input will still lead to a lower output because more capital will be added to labor and vice versa. The increase in the input will reduce the marginal product; it can be written as follows:

$$\frac{\partial F}{\partial K} > 0, \frac{\partial^2 F}{\partial K^2} < 0 \text{ dan } \frac{\partial F}{\partial L} > 0, \frac{\partial^2 F}{\partial L^2} < 0 \quad (3)$$

Capital and labor input can be varied. The amount of one input can be replaced by the number of other inputs with a fixed output (Marginal Rate of Technical Substitute / MRTS). MRTS shows that the productivity of one input is limited. The more capital added will also increase the workforce so that capital productivity will decrease.

$$MRTS = -\frac{\Delta K}{\Delta L} \quad (4)$$

The analysis of input substitution in the production function shows that another input will replace the replacement of one input by keeping the output constant. In the long run, all inputs are considered to change to increase output. One way is to change the scale of the operation by increasing all inputs proportionately. The Cobb-Douglas function is a production function that

shows the amount of production output as a function of capital and labor. Production output with a certain quantity and quantity will also produce a certain income level. In simple terms, the Cobb-Douglas production function can be written as follows:

$$Q = AL^{\alpha}K^{\beta} \quad (5)$$

$\alpha$ , and  $\beta$  represent the output elasticity of capital and labor input. Where  $A$ ,  $\alpha$ , and  $\beta$  are positive. The Cobb-Douglas function can indicate the degree of return to scale. If  $\alpha + \beta > 1$  then the function shows increasing returns to scale. If  $\alpha + \beta = 1$  then the function shows the constant return to scale. If  $\alpha + \beta < 1$  then the function indicates decreasing return to scale.

Based on the explanation of the Cobb-Douglas function above, determinants such as capital and labor are very important, especially in an effort to reflect the income level. It means that capital, and labor, which are inputs, can provide possible levels of income that might be obtained.

#### **4.2 The Rule of Financial Inclusion in Alleviating Poverty**

The food Poverty Line is the value of the minimum food expenditure, which is equivalent to 2100 kilos of calories per capita per day. This benchmark refers to the results of the Food and Nutrition Study Program in 1978. Commodity packages for basic food needs are represented by 52 commodities (grains, tubers, fish, meat, eggs and milk, vegetables, nuts, fruits, oils, fats, etc.). The equalization of the expenditure value for the minimum food needs is done by calculating the average calorie price of the 52 commodities.

The Non-Food Poverty Line (GKNM) is the sum of the minimum needs of selected non-food commodities, which include housing, clothing, education, and health. The selection of types of non-food goods and services has developed and improved from year to year in accordance with changes in the consumption pattern of the population. Before 1993, it consisted of 14 commodities in urban areas and 12 in rural areas. Since 1998 there have been 27 sub-groups (51 types of commodities) in urban areas and 25 sub-groups (47 types of commodities) in rural areas. The value of the minimum need per commodity/ non-food sub-group is calculated using a ratio of expenditure for this commodity/ sub-group to the total expenditure of commodities / sub-groups recorded in the Susenas data for the consumption module. The ratio is calculated from the results of the 2004 Basic Needs Commodity Package Survey (SPKPP, 2004), which was conducted to collect more detailed data on household consumption expenditures per non-food commodity compared to the Susenas Consumption Module data

The issue of poverty and discussion of the causes of poverty is still a matter of debate both in the academic environment and at the level of development policymakers. One of these debates is determining the definition of a person or group of people who are called poor. In general, poverty identification is only carried out on relatively measurable indicators such as per capita income and average expenditure or consumption.

Based on Law No. 24 of 2004, poverty is the socio-economic condition of a person or group whose basic rights are not fulfilled to maintain and develop a dignified life. Basic needs that become the right of a person or group of people include the needs for food, health, education, employment, housing, clean water, land, natural resources, the environment, a sense of security from treatment or threats of violence, and the right to participate in the organization of social life and politics. The People's Welfare Sector Report issued by the Ministry of Welfare in 2004 also explains that this so-called poor condition also applies to those working, but their income is

insufficient to meet basic needs. Currently, more specific efforts are needed to increase economic growth and reduce poverty.

Financial inclusion is a national development strategy to encourage economic growth through equal income distribution, poverty alleviation, and financial system stability. This community-centered strategy needs to target groups experiencing barriers to accessing financial services (Masnita & Triyowati, 2019; Ali, 2021). The measures to enhance financial inclusion include easy access to financial intermediaries, appropriate credit services, and face-to-face debt consulting (Treasury, 2004). The financial inclusion strategy explicitly targets groups with the greatest or unmet needs for financial services, namely three categories of the population (low-income poor, working / productive poor, and near-poor) and three cross-categories (migrant workers, women, and the population in underdeveloped regions) (Kim et al., 2018).

Many countries in the world have done financial inclusion. Financial inclusion is a comprehensive activity that aims to remove all forms of barriers, both price and non-price, to public access to the use of financial services. Price constraints are a prerequisite, such as the need to deposit a certain number of funds when opening an account at a bank, even though not all levels of Indonesian society meet these minimum requirements. Meanwhile, the non-price barrier is in the form of many complicated administrative requirements that are considered burdensome to consumers.

Financial inclusion offers access to sustainable financial services. It is characterized by access to bankable households and micro and small enterprises to various financial services, including short-term savings and long-term credit, mortgages, insurance, pension funds, remittances, leasing, and accounts receivable. Sustainable financial services to ensure access to financial services from time to time. Building financial inclusion requires intermediation in financial markets to mobilize domestic savings and capital to channel it into productive activities and the protection of the poor (Ardic et al., 2011).

## 5. Conclusion

The results showed that access to financial service products, especially loans, is used as capital input in community production activities. The community uses loans obtained from formal and informal financial institutions to increase their productivity through increased capital. Increased capital will increase output, so income will also increase. It is not easy for all people to access or use financial services. Many people, especially those with low incomes, find it difficult to access or use financial services.

## References

- Ali, A. (2021). Determining Mediating Role of Managerial Commitment and Technological Capability Between Environmental Management Accounting and Organisational Efficiency: A Case of Middle Eastern Countries. *Arthatama*, 5(2), 27-38.
- Ali, A. E. S., Ali, K. M., & Khaleequzzaman, M. (eds.). (2020). *Enhancing Financial Inclusion through Islamic Finance, Volume I*. Palgrave Macmillan Cham

- Anirwan, A., Ibrahim, M. A., Hasniati, H., & Lambali, S. (2021). Target Group Behavior for Policy Performance Impact: Study on Poverty Reduction Implementation in Makassar, Indonesia. *Journal of Asian Multicultural Research for Social Sciences Study*, 2(3), 33-39.
- Ardic, O. P., Heimann, M., & Mylenko, N. (2011). Access to financial services and the financial inclusion agenda around the world: a cross-country analysis with a new data set. *World Bank Policy Research Working Paper*, (5537).
- Atif, M. (2021). The Effects of Energy Consumption, Economic Growth, and Financial Development on CO2 Emissions in Greece. *Arthatama*, 5(1), 13-26.
- Badan Pusat Statistik (BPS). (2012). *Statistical Yearbook of Indonesia 2012*. Jakarta: Badan Pusat Statistik (BPS).
- Beck, T., & De La Torre, A. (2007). The basic analytics of access to financial services. *Financial markets, institutions & instruments*, 16(2), 79-117.
- Claessens, S. (2006). Access to financial services: A review of the issues and public policy objectives. *The World Bank Research Observer*, 21(2), 207-240.
- Kim, D. W., Yu, J. S., & Hassan, M. K. (2018). Financial inclusion and economic growth in OIC countries. *Research in International Business and Finance*, 43, 1-14.
- Kurnia, H., Masbar, R., Sirojuzilam, & Zulham. (2022). Effect of regional planning on social welfare in the Islands and mainland of Aceh Province. *Journal of Human Behavior in the Social Environment*, 32(3), 356-374.
- Majanga, B. (2016). The Journey to Financial Inclusion in Malawi-What Does the Future Hold?. *International Journal Economics and Financial Research*, 2(9), 169-175.
- Manji, A. (2010). Eliminating poverty? 'Financial inclusion', access to land, and gender equality in international development. *The Modern Law Review*, 73(6), 985-1004.
- Masnita, Y., & Triyowati, H. (2019). Application of financial inclusions in Indonesia: A study on vulnerable group. *Eurasian Journal of Economics and Finance*, 7(3), 22-33.
- Meiryani, M., Hanna Uli Pakpahan, N., Wahyuningtias, D., Mad Daud, Z., & Liawatimena, S. (2021, December). The Role of Financial Technology for Development of Micro, Small and Medium Enterprises (Msmes) in Indonesia. In *2021 the 11th International Conference on Communication and Network Security* (pp. 60-65).
- Mohan, R. (2006). Economic growth, financial deepening and financial inclusion. *Reserve Bank of India Bulletin*, 1305..
- Park, C. Y., & Mercado, R. (2015). Financial inclusion, poverty, and income inequality in developing Asia. *Asian Development Bank Economics Working Paper Series*, (426).
- Pindyck, R. S., Rubinfeld, D. L., & Rabasco, E. (2013). *Microeconomia*. Pearson Educación.
- Rahayu, A. S., Hasanah, L. A. N., & Pratiwi, L. S. (2021). The Role of Financial Literacy in Reducing Poverty: Experience from Indonesia. *Dinamika Ekonomi*, 12(2), 133-141.
- Rangarajan, C. (2008). *Report of the committee on financial inclusion*. Ministry of Finance, Government of India.
- Ravallion, M. (1992). Poverty comparisons: A guide to concepts and methods. The World Bank.
- Sharma, A., & Kukreja, S. (2013). An analytical study: Relevance of financial inclusion for developing nations. *International journal of engineering and science*, 2(6), 15-20.
- Shephard, R. W. (2012). *Cost and production functions* (Vol. 194). Springer Science & Business Media.

- Treasury, H. M. S. (2004). *Promoting financial inclusion*. London: HM Treasury.
- United Nations Capital Development Fund. (2006). *Building inclusive financial sectors for development*. United Nations Publications.
- Wahid, R. M., & Sarfiah, S. N. (2021). Analysis of Factors Affecting the Poverty Gap Index in Aceh Province 2017-2019. *Research Horizon*, 1(6), 217-228.
- Yanescha, N. Y. P. (2022). Analysis of Factors Affecting Inflation in Indonesia 2015-2020: English. *Research Horizon*, 2(2), 330-344.