



Analysis of the Effect of Brick Printing Business Production on Welfare Through Income as an Intervening Variable in Stabat Lama Barat Village, Wampu Sub-District

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Abstract. This research to analyze one of the economic sectors that contributes to the economic development process is the industrial sector which makes a very important contribution to the absorption of labor. The purpose of this study is to determine whether production has a positive and significant effect on community welfare through sources of income in the brick printing business community and to determine whether sources of capital affect community welfare through sources of income in the brick printing business community in Stabat Lama Barat Village, Wampu District. Quantitative research is defined as a research method based on the philosophy of positivism. This research was conducted in Wampu District, Langkat Regency with a research period planned from January 2024 to May 2024. Data collection data includes primary data through direct interviews with respondents and secondary data from related agencies. The data analysis method used in this study is the Path Analysis method. Production does not affect Welfare through Income as an intervening variable. Capital affects Welfare through Income as an intervening variable. The government should pay more attention to coal craftsmen in Wampu District in the form of establishing training activities on innovation and development of the brick industry by involving experts and continuous monitoring, so that brick production can be even better.

Keywords. Production, Capital, Income, Welfare.

1. INTRODUCTION

The industrial sector is the main sector in the Indonesian economy after the agricultural sector. This sector is a contributor to the formation of Indonesia's GDP (Subandi, 2019). Industry is an effort to produce finished goods with raw materials or raw materials through a large-scale production process so that these goods can be obtained at the lowest possible price but with the highest quality (Sandi, 2010:148). Industry is all forms of economic activities that process raw materials and/or utilize industrial resources to produce goods that have higher added value or benefits, including industrial services (PP Number 28 of 2021). The development of the processing industry sector can be seen from the production value generated from production activities in each sector. Small industries such as household industries are a form of people's economy in Indonesia.

The industrial sector makes a very important contribution to the absorption of labor. The increasing population will also increase the number of workers in industrial areas, thus encouraging the creation of various economic activities in an effort to meet the needs of life (Rahmayanti, 2020). Therefore, various industries were born that produce the needs required by the community with one goal, namely to improve community welfare and support regional development programs. In increasing industry, what needs to be developed is an industry that

is widely used by the community that can absorb as much labor as possible. We realize that the small industry sector has an important role in responding to development challenges, namely expanding employment opportunities and increasing community income more evenly.

Small and home industries are one of the economic sectors of the community in Wampu District, especially in Stabat Lama Barat Village, the production of the industry that is widely worked on is brick printing production. The brick printing industry is increasingly emerging which then becomes one of the economic activities of the community. The brick production business is growing rapidly due to the high demand for bricks. The increasing population growth from year to year greatly affects the need for a place to live. The increasing need for housing, the greater the need for raw materials for building construction. Red bricks are a building material that is often used by the community because it is cheap and easy to obtain. The large number of new housing development activities in Langkat Regency has increased the demand for bricks. The raw materials used in producing bricks, namely clay and water, are mixed and plowed to form a texture that is easy to mold. The brick industry run by the people of Stabat Lama Barat village still uses a traditional system so that brick craftsmen are very dependent on the climate/weather, especially in the drying process. The income from the brick industry can provide additional benefits to the community so that it can affect the level of income and welfare of the community.

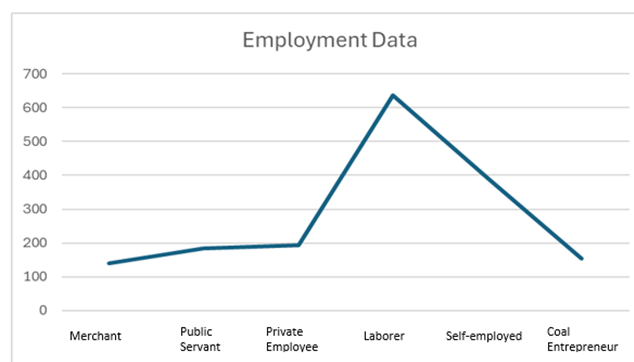


Figure 1. Employment Data of Stabat Lama Barat Village Community

Figure 1 describe the number of brick entrepreneurs is 154 higher than the traders which are only 141. The high number of brick entrepreneurs is because this business generates greater profits and provides great opportunities in absorbing labor because it requires 4-6 workers in each brick printing business.

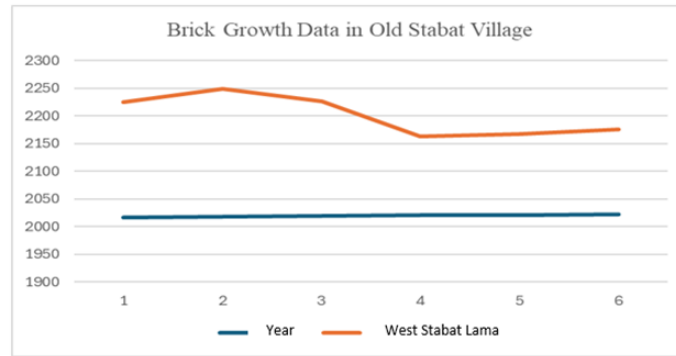


Figure 2. Brick Growth Data in Old Stabat Village

The brick printing business increased from 2017 until 2018, then in 2019 to 2020 it decreased due to the emergence of the Covid-19 pandemic which hampered all community activities including economic activities. In 2021, the number of brick printing businesses increased again because the community's economy slowly began to recover and continued to increase in 2022 because public demand for bricks continued to increase because more construction was carried out and this business also guaranteed the economy of entrepreneurs to improve. However, the increase was not high due to several problems such as the lack of capital for business owners to reopen this business. Lack of capital results in business owners being unable to provide raw materials and production equipment.

Based on observations the brick making in Stabat Lama Barat Village, Wampu Timur District has not been managed professionally and entrepreneurially, the level of productivity is low, capital to develop the business is not optimal, the marketing method is still based on orders, and the author has difficulty finding data for brick businesses and brick craftsmen from related government agencies, so that there is a lack of attention from the government to advance this brick business. This business can provide additional income for the surrounding population and can also accommodate unemployed residents by providing jobs in the business. In one brick business, there are 4-6 workers working. However, the number of brick makers sometimes decreases, because if the orders are quiet, many brick makers choose other jobs. In the labor factor, there is also a problem, namely the difficulty of finding young workers because most workers who work as brick workers are on average 40 years old and above. The lack of interest in young workers is because they prefer to work in agriculture or industry. In fact, young workers are very much needed because the performance of young workers and workers aged 40 years and above is certainly different in terms of the energy they have, of course if workers aged 40 years and above will be limited in doing work due to age and energy factors, so the number of bricks produced is certainly not optimal even though workers of that age have sufficient skills in producing quality bricks.

2. LITERATURE REVIEW

Source of income is an element that needs to get important attention before discussing the problem of income recognition and measurement further. Mistakes in determining the source of income that is less precise can affect the amount of income that will be obtained and is closely related to the problem of income measurement. According to Harnanto (2019:102) wrote that income is "an increase or addition of assets and a decrease or reduction in company liabilities which are the result of operational activities or procurement of goods and services to the public or consumers in particular. According to Sochib (2018:47) income is an inflow of assets arising from the delivery of goods/services carried out by a business unit during a certain period.

Welfare according to the United Nations Development Program (UNDP) is defined as the ability to expand choices in life, including by including an assessment of "participation in public decision-making". Welfare is defined as a condition in which a person or group of people, men and women are able to fulfill their basic rights to maintain and develop a dignified life. Well-being can be divided into two main aspects, namely economic well-being and social well-being. Social well-being includes aspects of housing, social relationships, security, social involvement, culture, health, environment and family. While economic well-being includes aspects of income and career. Community well-being focuses on financial resources and the use of these resources to achieve desired goals.

Industry makes the emergence of competition between companies increase in meeting the needs of consumers for goods or services produced. The existence of economic competition requires companies to continue to evaluate strategies in carrying out their production activities. In production theory, the level of production is influenced by several production factors. Production factors are everything that is used to produce and add to the function of a good or service produced (Fadilah, 2020). The theory of supply and demand explains how the prices of goods and services are determined in the market based on the interaction between consumer demand and producer supply.

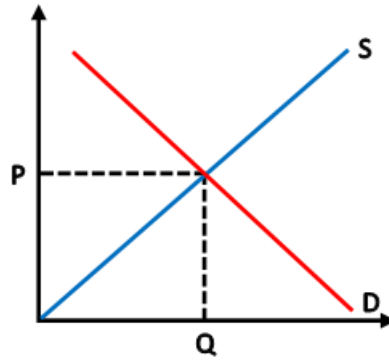


Figure 3. Demand and Supply Curve

When expressed in mathematical form, the demand function is an equation that shows the relationship between the amount of demand for a good and all the factors that influence it. The form of the demand function:

$$Q_d = f(H, H_s, H_k, Y, t) \dots \dots \dots 1$$

The supply function is an equation that shows the relationship between the quantity of goods offered by a seller and all the factors that influence it. The supply function is generally written as:

$$Q_s = f(H1, H2, B, t) \dots \dots \dots 2$$

According to economists, capital is the company's wealth that can be used for further production activities. While entrepreneurs argue that capital is the book value of securities. Capital is a production factor that has a strong influence in obtaining productivity or output, in macro terms capital is a major driver for increasing investment both directly in the production process and in production infrastructure, so that it can encourage increased productivity and output. The production function is able to determine the relationship between the explained variable (Y), with the explanatory variable (X) and is also able to determine the relationship between the explanatory variables. In simple mathematical terms, the production function can be written as follows:

$$Q = f(X1, X2, X3, \dots, X_i) \dots \dots \dots 3$$

Input used in the production process include capital, labor, and others. In economics, output is denoted by Q while the inputs (production factors) used usually (for simplification) consist of capital and labor inputs:

$$Q = f(K, L) \dots \dots \dots 4$$

3. METHODS

The data collection techniques used are primary data and secondary data. Primary data is obtained from direct interviews with respondents with the help of a prepared questionnaire. In addition to primary data, this study also uses secondary data as supporting data. Secondary data is obtained from related agencies, such as the Village and District Offices and other relevant sources. The data analysis method used in this study is the Path Analysis method. Path analysis aims to prove the hypothesis, namely to prove whether the Source of Income is the main/mediating variable in supporting Community Welfare as seen from Production and Capital Sources, with the following equation:

$$Y1 = PY1 X1 + PY1 X2 + \epsilon1 \dots\dots\dots 5$$

$$Y2 = PY2 X1 + PY2 X2 + PY2 Y1 + \epsilon2 \dots\dots\dots 6$$

Path Analysis is supported by a mediation test. The Mediation Test aims to test whether the intervening variable functions as a mediator or intermediary. With the condition: 1) $P1 < P2 \times P3$ or direct influence $<$ indirect influence then H_a is accepted 2) $P1 > P2 \times P3$, or direct influence $>$ indirect influence then H_a is rejected.

4. RESULTS

Path Analysis or path analysis is divided into direct influence analysis and indirect influence analysis. If the direct influence is greater than the indirect influence, then the intervening variable.

Table 1. Result of Equation 1 ($Y2 = PY2X1 + PY2Y1 + e$)

Model Summary ^b						
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate		
1	,463 ^a	,214	,204	,95145		
a. Predictors: (Constant), Welfare, Production						
b. Dependent Variable: Income						
The Influence of Production and Income on Welfare Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3,790	,901		4,205	,000
	Production	-,005	,072	-,005	-,075	,940
	Income	,544	,085	,462	6,400	,000
a. Dependent Variable: Welfare						

Table 2. Result of Equation 2 ($Y_2 = PY_2X_2 + PY_2Y_1 + e$)

Model Summary ^b					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	
1	,695 ^a	,484	,477	,77123	
a. Predictors: (Constant), Welfare, Capital					
The Influence of Capital and Income on Welfare Coefficients ^a					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	5,694	,672		8,472	,000
Capital	-,477	,074	-,455	-6,401	,000
Income	,776	,084	,660	9,285	,000
a. Dependent Variable: Welfare					

Table 3. Result of Equation 3 ($Y_1 = PY_1X_1 + e$)

Model Summary ^b						
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate		
1	,026 ^a	,001	-,006	1,06925		
a. Predictors: (Constant), Production						
b. Dependent Variable: Income						
The Impact of Production on Income Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	8,059	,559		14,405	,000
	Production	-,022	,069	-,026	-,319	,750
a. Dependent Variable: Income						

Table 4. Result of Equation 4 ($Y_1 = PY_1X_2 + e$)

Model Summary ^b					
Model	R	<i>R Square</i>	<i>Adjusted R Square</i>	<i>Std. Error of the Estimate</i>	
1	,434 ^a	,189	,183	,96344	
a. Predictors: (Constant), Capital					
b. Dependent Variable: Income					
The Effect of Capital on Income Coefficients ^a					
Model	<i>Unstandardized Coefficients</i>		<i>Standardized Coefficients</i>	t	Sig.
	B	<i>Std. Error</i>	<i>Beta</i>		
1 (Constant)	4,814	,522		9,223	,000
Capital	,387	,065	,434	5,945	,000
a. Dependent Variable: Income					

Table 5. Suitability Test

T-Test Results of the Effect of Production, Capital on Income <i>Coefficients^a</i>					
Model		<i>Unstandardized Coefficients</i>		<i>Standardized Coefficients</i>	
		B	Std. Error	Beta	
1	(Constant)	5,164	,700		7,379 ,000
	Production	-,047	,062	-,055	-,752 ,453
	Capital	,390	,065	,438	5,974 ,000
a. Dependent Variable: Income					

T-Test Results of the Influence of Production, Capital and Income on Welfare <i>Coefficients^a</i>					
Model		<i>Unstandardized Coefficients</i>		<i>Standardized Coefficients</i>	
		B	Std. Error	Beta	
1	(Constant)	5,456	,843		6,475 ,000
	Production	,030	,064	,030	,470 ,639
	Capital	-,480	,075	-,458	-6,401 ,000
	Income	,779	,084	,662	9,272 ,000
a. Dependent Variable: Welfare					

Table 6. Determination

Coefficient of Determination Against Income <i>Model Summary^b</i>				
Model	R	R Square	Adjusted Square	Std. Error of the Estimate
1	,438 ^a	,192	,181	,96482
a. Predictors: (Constant), Capital, Production				
b. Dependent Variable: Income				
Coefficient of Determination on Welfare <i>Model Summary^b</i>				
Model	R	R Square	Adjusted Square	Std. Error of the Estimate
1	,618 ^a	,382	,370	,99583
a. Predictors: (Constant), Income, Production, Capital				
b. Dependent Variable: Kesejahteraan				

Table 7. Mediation Test

Production Towards Welfare Through Income <i>Model Summary^b</i>				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,026 ^a	,001	-,006	1,06925
a. Predictors: (Constant), Production				
b. Dependent Variable: INcome				
Production to Revenue <i>Coefficients^a</i>				

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	8,059	,559		14,405	,000
	Produksi	-,022	,069	-,026	-,319	,750
a. Dependent Variable: Income						
Production Towards Welfare Through Income Coefficients^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3,790	,901		4,205	,000
	Production	-,005	,072	-,005	-,075	,940
	Income	,544	,085	,462	6,400	,000
a. Dependent Variable: Welfare						

Table 8. Interpretation of Capital on Welfare through Income

Capital to Prosperity Through Income Model Summary ^b						
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate		
1	,434 ^a	,189	,183	,96344		
a. Predictors: (Constant), Modal						
b. Dependent Variable: Income						
Capital to Income Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	4,814	,522		9,223	,000
	Capital	,387	,065	,434	5,945	,000
a. Dependent Variable: Income						

Source: SPSS Processing Results

Capital to Welfare through Income Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	5,694	,672		8,472	,000
	Capital	-,477	,074	-,455	-6,401	,000
	Income	,776	,084	,660	9,285	,000
a. Dependent Variable: Welfare						

5. DISCUSSION

The results of the path analysis show that Production can have a direct influence on Welfare and can also have an indirect influence, namely from the influence of Production to Income (as an intervening variable) and then to Welfare.

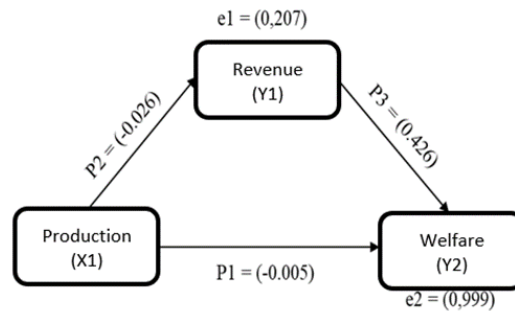


Figure 4. Path Analysis of the Influence of Production on Welfare and Income

The value of direct influence ($P1 = -0.005$) is greater than the value of indirect influence ($P2 \times P3 = -0.011$), so H_a is rejected. This means that production does not have a significant effect on welfare through income as an intervening variable, or it can be concluded that income is not a mediating/intervening variable between production and welfare, so income does not function as an intervening variable. In line with the research results (Amalia et al., 2021), the results of the research that has been conducted, it is known that the amount of production partially does not affect the welfare of shallot farmers in Serading Village. This means that the increase or decrease in the welfare of shallot farmers in Serading Village is not influenced by the amount of production issued by farmers. There are other factors that have a greater influence on the welfare of the community. Although the production of goods can contribute to the economy and economic growth of a region, research shows that factors such as own resource income and balance funds have a more direct impact on community welfare.

The definition of the Cobb-Douglas Production Function as stated by (Putong, 2014) is a function or equation that explains the resolution of the relationship between Y and X, namely that variations in Y will be influenced by variations in X. This theory is not in line with the results of this study which show that the variable X production does not affect the variable Y income and welfare. Which means that with increasing production, the source of income and welfare does not increase either.

In accordance with what happens in the field, increasing production does not always result in increased income or welfare due to various inhibiting factors, such as increased production without a balanced increase in demand can cause excess supply, which then depresses the selling price of bricks and reduces income, increased production costs, such as raw material costs, labor that is not balanced with the income obtained, so that the resulting profit is minimal or even losses. In accordance with the theory of demand and supply that price, competitors, and other substitute goods are factors that influence demand and supply. The occurrence of price differences with brick printing businesses in other areas can cause a

decrease in demand, for example the price of brick A is IDR 500.00; per brick while the price of B is IDR 450.00; per brick with cheaper costs.

Although there is only a slight difference in price, consumers prefer bricks with price B because they consider the cheaper costs. The decrease in demand can also be caused by consumers preferring to use bricks as a substitute for bricks for construction/building material needs because the larger size of bricks only requires a little adhesive material so that it can shorten and save time. The decrease in demand that occurred caused a decrease in income. Due to this minimal profit, income is reduced and the initial capital owned cannot be used again for production, so these business actors decide to look for external sources of capital obtained from creditors such as banks, cooperatives, or personal loans.

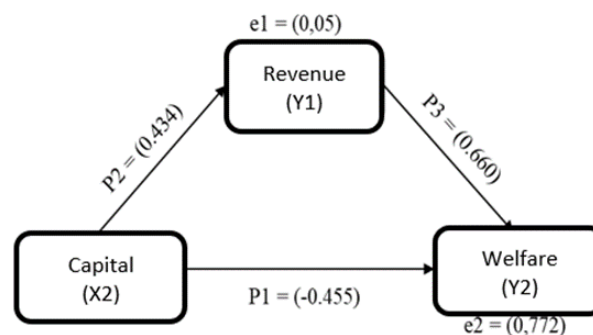


Figure 5. Analysis of the Influence of Capital Sources on Welfare Through

The direct influence value ($P1 = -0.455$) is smaller than the indirect influence value ($P2 \times P3 = 0.286$), so H_a is accepted, meaning that Capital has a significant effect on Welfare through Income as an intervening variable. Or it can be concluded that Income is a variable that mediates/intervenes between Capital and Welfare, so Income functions as an intervening variable.

In line with the results of the study (Hartati et al., 2017), it shows that Technology, area of cultivated land, capital, and amount of production have a positive and significant effect on farmer welfare. This means that the greater the capital, the farmer's welfare will also increase. With adequate facilities, it will make it easier for workers to carry out business activities. It can be done effectively and efficiently. Capital ownership is an absolute must for a business owner, this is because the business requires a lot of financing. Reduction in efforts to fulfill this financing can result in declining productivity. Inaccurate cost predictions actually cause losses for farmers because production costs are crucial to both productivity and income of a business (Dharmasiri, 2020).

Cobb Douglass' theory of production function is able to determine the relationship between the variables explained (Y), with the variables that explain (X) and at the same time

is able to determine the relationship between the explanatory variables. This theory is in line with the results of research where the variable X source of capital has a positive effect on the variable Y source of income and welfare. Thus, it means that production is able to explain the relationship with sources of income and welfare where if the source of capital increases, the source of income and welfare will also increase.

It can be seen in the field that the capital needed to produce these bricks is quite large. This capital can enable brick business actors to improve product quality and expand market reach. With additional capital, they can buy quality raw materials, repair equipment, and use more efficient technology, so that business productivity increases, which can encourage increased community income. The availability of adequate capital can make entrepreneurs better prepared to face market fluctuations, such as managing inventory more effectively or responding to market demand well. More capital can create additional job opportunities to earn additional income when production stagnates due to lack of demand such as opening another business.

6. CONCLUSION

The results of the research on the analysis of Income and Welfare in Brick Printing in Stabat Lama Barat Village, Wampu District, several conclusions can be put forward as follows: 1) Production directly has a negative and insignificant effect on the source of income for the brick printing business community in Stabat Lama Barat Village, Wampu District. 2) Capital directly has a positive and significant effect on the source of income for the brick printing business community in Stabat Lama Barat Village, Wampu District. 3) Production directly has a negative and insignificant effect on the welfare of the community through the source of income for the brick printing business community in Stabat Lama Barat Village, Wampu District. 4) Capital directly has a positive and significant effect on the welfare of the community through the source of income for the brick printing business community in Stabat Lama Barat Village, Wampu District.

LIMITATION

This research is limited so that the discussion is focused and does not deviate from the desired objectives. Thus, the author limits the problem only to the problems of Production (X1), Capital Sources (X2), Income Sources (Y1), and Community Welfare (Y2) in the brick printing business in Wampu District, especially Stabat Lama Barat Village.

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