The Influence of The Total of Production and Demand for Products on Income Level of Brick Residents in Klopo Sepuluh Gedangan Village – Sidoarjo Post Covid'19 Pandemic

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ARTICLE INFO	ABSTRACT
Keywords: Number of Products, Product Demand and Income Level.	Brick business is a business that produces raw materials into ready-to-use goods that are used for building houses or high-rise buildings. By using cement and sand as the main raw materials. The purpose of this study is to determine the amount of production (X1) and product demand (X2) affect the level of income (Y) of the bricks of the residents of Klopo Ten Gedangan Village - Sidoarjo after the Covid-19 Pandemic. The data analysis method used is the quantitative method, the analysis used in this study is multiple correlation, coefficient of determination, multiple linear regression analysis, T-test and F_test, data processing using the SPSS statistical program. The conclusion of the research results show that the amount of production (X1) and product demand (X2), has a significant and positive effect on the level of income (Y). Product Demand is the most dominant variable. Judging from R2, which is 95 percent, it can be concluded that the diversification of product demand at 5 percent can be determined from other variables that are not included in the regression equation model in this study.
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1.   Introduction

Brick is a building material that is most often used to make walls, fences and several other elements. Brick is a construction building material. This can be seen from the number of brick factories built by the community to produce bricks. The use of bricks is widely used for civil engineering applications such as walls in residential buildings, buildings, fences, channels and foundations. Bricks generally in building construction have a function as a non-structural material, in addition to functioning as a structural one. As a structural function, bricks are used as a support or load bearing on it, such as in the construction of simple houses and foundations. Meanwhile, in high-rise buildings/buildings, bricks function as non-structural which are used for boundary walls and aesthetics without carrying the burden on them.

The brick business is also not like the convection and culinary business so the market is constant because the brick model does not change like clothes and will not be a waste if it is not sold out like food, on the other hand bricks are also non-flammable objects such as combustible materials. another burn. However, in 2019 there was a disaster that hit Mother Earth, namely the Covid-19 virus in which all economies experienced total paralysis. Due to the COVID-19 virus, where activities are limited, many people have lost their jobs due to reduced company income, resulting in many employees losing their jobs. Based on the background above, the author has taken the title "The Influence of Production and Product Demand on the Income Level of Bricks for the Villagers of Klopo Ten Gedangan – Sidoarjo Post-Covid-19 pandemic".

2.   Literature Review

2.1   Understanding Operations & Production Management

Operations & Production Management Science is widely applied by companies in various production processes. Examples of the application of operations & production management in various types of business fields such as: hospitals, universities, garment factories, etc. Why is that?

Because the types of businesses mentioned above produce products that can be in the form of goods or services, which for effective and efficient production process activities require various concepts, equipment and various ways of managing their operations. Operations Management is a series of activities that generate value in the form of goods and services by converting inputs into outputs. Jay Heizer & Barry Render (2005:4).

The functions in operations management are as follows: Tita Deitiana (2011:2)
a.   Marketing Function. This function makes a request or at least gets an order for the manufacture of goods and services.
b.   Production/Operation Function. This function produces the product.
c.   Finance/Accounting function. This function monitors whether the company is running well, pays all bills and looks for sources of funds.

Production theory is a study that studies how factors of production produce production in the form of goods or services. Production is all work that causes to enlarge and distribute among many people.

2.2   Definition of Product Demand

According to Sugiarto et al (2007) demand theory describes the relationship between quantity demanded and price as well as the formation of the demand curve. A commodity is produced by producers because it is needed by consumers who are willing to buy it.

Consumers buy necessary commodities if they are priced accordingly. Commodities consumed have a unique characteristic, namely the more the commodity is consumed, the less useful the commodity will be. With this condition, buyers will be willing to buy more commodities if the price of the commodity becomes low.

Several factors influence the theory of demand, namely:
a.   The price of the commodity itself

b.   Prices of other commodities related to these commodities
c.   Household income and community income
d.   Distribution pattern in people's income
e.   Population
f.   Forecast about the situation in the future

2.3 Definition of Income

In the Big Indonesian Dictionary, income is the result of work (business or so on). Meanwhile, income in the management dictionary is money received by individuals, companies and other organizations in the form of wages, salaries, rent, interest, commissions, fees and profits. BN. Marbun (2003:230)

According to Boediono (2002: 150) a person's income is influenced by several factors, including:

a.   The number of production factors owned which are sourced from, the results of this year's savings and inheritance or purchases.
b.   The yield per unit of each factor of production, this price is determined by supply and demand in the market for factors of production.
c.   The results of the activities of family members as side workers.

The level of income affects the level of public consumption. The relationship between income and consumption is a very important thing in various economic problems. The fact shows that consumption expenditure increases with increasing income, and vice versa if income decreases, consumption expenditure also decreases. The level of expenditure is highly dependent on the ability of the family to manage their income or income.

2.4 Hypothesis

H1:   It is suspected that there is an effect of the Total Production (X1) and Product Demand (X2) partially on the Income Level (Y) of the bricks of the residents of Klopo Ten Gedangan Village – Sidoarjo Post-Covid-19 Pandemic?
H2:   It is suspected that there is an effect of Simultaneous Production (X1) and Product Demand (X2) on the Income Level (Y) of the bricks of the residents of Klopo Ten Gedangan Village – Sidoarjo Post-Covid-19 Pandemic?
H3:   It is suspected that there is an influence of the Amount of Production (X1) and Product Demand (X2) that have a dominant influence on the Income Level (Y) of the bricks of the residents of Klopo Ten Gedangan Village – Sidoarjo Post-Covid-19 Pandemic?

3.   Research Method

3.1 Types of research

Based on the type of data used in this study, the researcher used a quantitative descriptive research. According to Sugiyono (2017:8) quantitative descriptive is a research method based on the philosophy of positivism, used to examine certain populations or samples, data collection using research instruments, quantitative/statistical data analysis, with the aim of testing predetermined hypotheses.

3.2 Data Type

This research method uses quantitative methods, namely: Data in the form of numbers. Quantitative method can be defined as a research method based on the philosophy of positivism, used to examine the population and sample. Where in this study the amount of production and product demand are the independent variables, the level of income is the dependent variable. So that the population in this study is the amount of production, product demand and the level of brick income in the village of Klopo Ten Gedangan-Sidoarjo after the Covid-19 pandemic.

4.   Result and Discussion

Table 1
Total Production of Bricks in 2018-2020 (In Units)

No.	Year	Number of Production Units/year	Average Amount
1.	2018	5.000	416,66
2.	2019	2.500	208,33
3.	2020	6.000	500

Source: Brick Processing Business 2020

It can be seen from the table that brick production in 2018 is still producing normally with an average of 416.66/unit every month. Meanwhile, in 2019 during the COVID-19 pandemic, production began to decrease drastically. And in 2020 the number of production slowly began to increase to reach 500/unit every month.

Table 2
Total Demand for Bricks 2018-2020 (In Units)

No.	Year	Number of Requests (Units)	Amount Average per month (units)
1.	2018	4.990	415,83
2.	2019	2.250	187,5
3.	2020	6.000	500

Source: Brick Processing Business 2020

It can be seen from table that during the COVID-19 pandemic, the effort to manufacture bricks experienced a very significant decline. In 2020 there will be an increase in the number of requests for bricks. This is the economy has started to move slowly

Table 3

Bricks Sales Revenue for 2018-2019

No.	Year	Price of Unity Bricks (Rp)	Production Quantity (Unit)	Total Income (Rp)
1.	2018	400	5.000	2.000.000
2.	2019	500	1.500	750.000
3.	2020	850	6.000	5.100.000

Source: Brick Processing Business 2020

4.1 Data Analysis Method

From the collection and processing of data, the results obtained by using the analytical method in the SPSS 20.0 for windows program as for the results of the calculations as follows:

Table 4

Multiple Linear Regression

Model	Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.
(Constant)	2066.652	262.841		7.863	.001
Production quantity	1.025	.450	.410	2.260	.070
Product request	.500	.150	.592	3.255	.030

Coefficients^a

Source :SPSS Version 20.0

The results of calculations carried out by the author using multiple linear regression analysis have obtained the following equation:

$Y = 2.067 + 1.025 X_1 + 0.500 X_2 + e$

a. The constant value is 2066.6, this means that the value of the income level variable (Y) is 2066.6 without being influenced by the independent variables, namely the amount of production (X1) and product demand (X2)

b. The regression coefficient value of the Amount of Production (X1) variable is 1.025, this means that if the value of the Amount of Production (X1) variable is increased by one unit, it will cause an increase in the value of the Income Level variable (Y) of 1.025. Assuming that the value of the other independent variables is constant or zero.

c. The regression coefficient value of the Product Demand variable (X2) is 0.500, this means that if the value of the Product Demand (X2) variable is increased by one unit, it will cause an increase in the value of the Income Level variable (Y) by 0.500. Assuming that the value of the other independent variables is constant or zero.

Table 5

Simple Correlation

Correlations	Production Quantity	Product Request	Income Level
Pearson Correlation	1	.866**	.932**
Sig. (2-tailed)		.005	.001
N	8	8	8
Pearson Correlation	.866**	1	.956**
Sig. (2-tailed)	.005		.000
N	8	8	8
Pearson Correlation	.932**	.956**	1
Sig. (2-tailed)	.001	.000	
N	8	8	8

Source :SPSS Version 20.0

Simple correlation for the variable Amount of Production (X1) is obtained at 0.932 or 93.2%, so the effect of Total Production (X1) partially on Income Level (Y) is classified as very strong or very high. And the partial correlation for the Product Demand variable (X2) is obtained at 0.956 or 95.6%, so the relationship between Product Demand (X2) partially and the Income Level (Y) is also classified as very strong or very high.

Table 6

Korelasi Berganda

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.970^a	.950	.940	181.955

Source :SPSS Version 20.0

Multiple correlation is obtained by 0.970 or 97%, so the effect of Total Production (X1) and Product Demand (X2) simultaneously on Income Level (Y) is classified as very strong or very high.

4.2   Coefficient of Determination

Coefficient of Determination R^2 = 0.950, Contribution of Total Production (X1) and Product Demand (X2) of 95% simultaneously to Income Level (Y) is classified as very strong. And the remaining 5% is determined by other variables that are not included in the regression equation model in this research.

Table 7
t test

Model	Coefficients a		t	Sig.
	Unstandardized Coefficients			
	B	Std. Error		
(Constant)	2066.652	262.841	7.863	.001
Production Quantity	1.025	.450	2.260	.070
Product Request	.500	.150	3.255	.030

Source :SPSS Version 20.0

Then the calculation for the t-test results for the X1 variable is obtained tcount X1 2.260≥ttable2.571, then the assumption is Ho is accepted and Ha is rejected, so that the variable Amount of Production (X1) has no significant effect on Income Level (Y) in the brick business of Villagers Klopo Ten Gedangan-Sidoarjo after the Covid-19 pandemic.

Table 8
F test

ANOVA a

Model	Sum of Squares	df	Mean Square	F	Sig.
1.Regression	3718268.408	2	1859134.204	56.158	.000 b
Residual	165537.467	5	33107.493		
Total	3883805.875	7			

Source :SPSS Version 20.0

The F-test obtained the Fcount 56,158 Flabel 5.79, then H0 was rejected and Ha accepted, which means that there is a simultaneous significant effect between Total Production and Product Demand on Income Levels in the brick business of the residents of Klopo Ten Gedangan Village-Sidoarjo after the Covid-19 pandemic.

5.   Conclusion

Based on the research that has been done, the following conclusions can be drawn:
a.   Based on the results of the partial test, the variables X1 and X2 have a partial effect on Y. Seen by the results of the t-test, it is obtained that tcount ttable, namely X1 = 2.260, and X2 = 3.255 and the value of t-table = 2.571
b.   Based on the results of the simultaneous test, the variables X1 and X2 have a simultaneous effect on Y. Seen from the results of the F test, it is obtained that Fcount Ftable, namely Fcount 56,158 Flabel 5.79 This means that the independent variables have a simultaneous effect on the dependent variable.
c.   From the results of the beta coefficient table in the regression test column, the results of the SPSS show that the Total Production has a value of 0.410 while the Product Demand is 0.592, it can be concluded that Product Demand X2 is the most dominant variable.

6.   References

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