

The Influence of Income, Number of Family members, and Education on Household Consumption in Ngagel Rejo Village

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Abstract

This study aims to determine the effect of income, number of family members, and education on household consumption expenditure in Ngagel Rejo Village, Surabaya. This research was conducted using a quantitative approach and analyzed using multiple linear regression. Data were obtained from 150 respondents selected based on certain criteria. The results showed that simultaneously, the three variables had a significant effect on household consumption. Separately, only income and number of family members showed a significant effect, while education did not. These results can be taken into consideration for policy formulation related to community welfare.

Keywords: income, family members, education, household consumption

INTRODUCTION

Household consumption is one of the determinants of community welfare. In urban areas such as Ngagel Rejo Village, consumption patterns continue to change along with economic development, urbanization, and lifestyle changes. Internal factors such as income, number of family members, and education level, as well as external factors such as government policy, inflation, and technological development, have an important role in determining these consumption patterns.

First, income (X_1) is the main factor affecting people's purchasing power. According to Keynes' theory, there is a positive relationship between income and consumption, where an increase in income will encourage increased consumption.

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However, the concept of marginal propensity to consume (MPC) explains that each additional income is not entirely spent, because some will be saved or invested (Pristiyadi, 2019). In the urban context, higher income allows households not only to meet basic needs, but also to increase consumption on secondary or tertiary goods and services such as recreation, technology, and educational investment.

Research by Nurlaila Hanum (2019) shows that in regions with rapid economic growth, an increase in income has a direct effect on increasing household spending, especially in the service sector and non-essential goods.

Second, the number of family members (X_2) affects consumption through increased collective household needs. The more family members, the higher the total expenditure, especially on mandatory needs such as food, clothing, children's education, and health (Adiana & Karmini, 2019). In some cases, family size also affects per capita income distribution, which can influence the consumption capacity of each individual in the household.

Puspitawati (2012) emphasized that households with a large number of members face challenges in maintaining a balance between meeting basic needs and allocating funds for savings or investment.

Third, education (X_3) influences consumption behavior through improved financial literacy, understanding of need priorities, and the ability to make rational economic decisions. Households with higher education levels tend to have more planned consumption behavior, prioritize quality over quantity, and tend to minimize expenditure on goods that do not provide long-term benefits (Ariga, 2022).

Kamantyan et al. (2021) also found that education level affects household preferences in allocating expenditure, where highly educated groups invest more of their income in children's education and family health than in consumptive goods.

In addition to these internal factors, the social and cultural environment in urban areas also shapes household consumption patterns. Communities in areas like Ngagel Rejo face the influence of modern lifestyles, easier access to shopping centers, restaurants, and entertainment, as well as high exposure to social media. This encourages increased expenditure on secondary and tertiary needs that sometimes exceed primary needs.

Changes in commodity prices, fiscal and monetary policies, as well as easy access to public facilities are also variables that influence consumption decisions (BPS Surabaya, 2024).



Based on the study by Kinanti (2024), urban modernization in Indonesia triggers a shift in the consumption structure from primary needs to tertiary needs. Research by Adiana & Karmini (2019) in Gianyar also found that income and number of family members significantly affect household spending, while education shows varying effects depending on socio-economic background.

Moreover, the development of information technology and internet penetration in urban areas has accelerated the transformation of household consumption behavior. Easy access to e-commerce, social media-based promotions, and digital financial services make the consumption process faster, easier, and more impulsive.

These findings are in line with BPS (2024) reports which recorded a significant increase in online shopping among urban communities in the last five years. In Ngagel Rejo Village, this phenomenon is evident from the increase in household expenditure on non-essential products driven by digital advertising, online discounts, and instant payment services. This condition shows that modern society's consumption patterns are no longer only influenced by basic needs, but also by ease of access, trends, and lifestyle pressures.

Objectives

This study aims to comprehensively analyze the relationship between income, number of family members, and education level on household consumption patterns in Ngagel Rejo Village, Surabaya. The main goal is to identify the extent to which each variable contributes to influencing the level of consumption, both partially and simultaneously. In addition, this study aims to assess the combined influence of these three variables and provide relevant policy recommendations to improve community welfare. By understanding the factors influencing consumption, local governments and stakeholders are expected to be able to formulate more targeted strategies, especially in urban contexts with complex demographic characteristics.

DISCUSSION

This study uses a quantitative approach. To determine the extent to which the research results can be generalized to a wider population, a quantitative approach was chosen because it can provide an objective picture based on numerical data. The research method used is quantitative with multiple linear regression analysis. This analysis was carried out using SPSS version 25 statistical software, utilizing a certain model according to the predetermined analysis requirements.



In line with this, the study aims to determine whether there is an influence of income, number of family members, and education on the level of household consumption in Ngagel Rejo Village, Surabaya.

In its implementation, this study uses primary data obtained from surveys of 150 household respondents, selected using purposive sampling techniques based on certain criteria. In addition, the author also conducted a literature review to obtain a theoretical basis and support the discussion, referring to sources such as scientific articles, journals, research reports, and official data from the Central Statistics Agency (BPS).

Income (X_1) in this study is the total household income per month expressed in rupiah. This variable is a ratio type and reflects the household's economic ability to meet its needs. Number of Family Members (X_2) is the total individuals who are part of a household, including the head of the household, spouse, children, and other family members living together, measured in persons. Education (X_3) refers to the length of formal education undertaken by the head of the household, measured in years or the highest level of education completed. The dependent variable, Household Consumption (Y), is measured by the total household expenditure to meet primary, secondary, and tertiary needs in a month, expressed in rupiah.

The regression model used in this study can be written as:

$$KRT = a + b_1PDN + b_2JAK + b_3PDK + e$$

KRT = Household Consumption

PDN = Income

JAK = Number of Family Members

PDK = Education

α = Constant

$\beta_1, \beta_2, \beta_3$ = Regression coefficients of each independent variable

e = Error term

Before hypothesis testing, a series of classical assumption tests were carried out, including normality test, multicollinearity test, heteroskedasticity test, and autocorrelation test, to ensure the validity and reliability of the model. All statistical analysis procedures were performed using SPSS version 25.

The results of multiple linear regression analysis show that income, number of family members, and education simultaneously have a significant effect on household consumption, with an F-count value of 25.223 and significance of 0.000. The coefficient

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of determination (R^2) value of 0.339 indicates that the three independent variables explain 33.9% of the variation in household consumption, while the rest is influenced by other factors outside the model

Partially, income and number of family members were proven to have a significant effect with significance values of 0.000 each, while education was not significant with a significance value of 0.052. The regression coefficients show that each increase in income and addition of family members will increase consumption, while an increase in education level tends to reduce consumption, although not statistically significant.

Table 1. Regression Analysis test

Coefficients ^a					
Model		Unstandardized Coefficients		Standardized Coefficients	Sig.
		B	Std. Error	Beta	
1	(Constant)	757050.647	515635.125		<.144
	PDN	0.587	.088	.472	.000
	JAK	319985.901	55529.615	.397	.000
	PDK	-54321.378	27761.725	-.140	.052

The multiple linear regression analysis reveals that income, family size, and education collectively exert a significant influence on household consumption, as indicated by an F-value of 25.223 and a significance level of 0.000. The determination coefficient (R^2) of 0.339 suggests that these three independent variables account for 33.9% of the variation in household consumption, with the remaining proportion attributed to other factors beyond the scope of the model.

Partially, income and number of family members were found to have a significant effect, each with a significance value of 0.000, while education was not significant with a significance value of 0.052. The regression coefficients indicate that each increase in income and addition of family members will increase consumption, whereas an increase in the level of education tends to reduce consumption, although not statistically significant.



Table 2. Normality Test

One-Sample Kolmogorov-Smirnov Test		
		Unstandardized Residual
N		150
Normal parameters ^{a,b}	Mean	.0000000
	Std. Deviation	.659260.2613
Most Extreme Differences	Absolute	.072
	Positive	.055
	Negative	-.072
Test Statistic		.072
Asymp. Sig. (2-tailed)		.060 ^d

Referring to the Kolmogorov-Smirnov test results shown in the table, the Monte Carlo Sig. (2-tailed) value is 0.060, which exceeds 0.05. This indicates that the dataset follows a normal distribution.

Table 3. Multicollinearity test

Coefficients ^a			
Model		Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		
	PDN	.911	1.089
	JAK	.968	1.033
	PDK	.893	1.119

Based on the Coefficients output table above, the basis for decision-making in this test is taken from the VIF and Tolerance values. In the data above, it is known that the VIF values of all variables are < 10 and the Tolerance values of all variables are > 0.1. In this regard, based on the decision-making criteria for the multicollinearity test, it can be concluded that there is no occurrence of multicollinearity in the regression model.



Table 4. Heteroscedasticity test

Correlations			
			Unstandardized Residual
Spearman's Rho	PDN	Correlation Coefficient	-.014
		Sig. (2-tailed)	.865
		N	150
	JAK	Correlation Coefficient	.000
		Sig. (2-tailed)	.910
		N	150
	PDK	Correlation Coefficient	-.065
		Sig. (2-tailed)	.433
		N	150
	Unstandardized Residual	Correlation Coefficient	1.000
		Sig. (2-tailed)	.
		N	150

The results of the heteroskedasticity assumption test, based on the table above, show that the significance levels of the Spearman test coefficients for the variables Income (0.865), Number of Family Members (0.910), and Education (0.433) on the residuals are all higher than 0.05, consistent with the results above. In this regard, it can be observed that there is no occurrence of heteroskedasticity.

Table 5. Autocorrelation Test

Model Summary ^b					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.582 ^a	.339	.325	.666139.685	1.842

Table indicates a Durbin-Watson (d) statistic of 1.842. This figure is then compared to the Durbin-Watson critical values at a 5% significance level.



Table 6. Simultaneous Test

ANOVA ^a						
Model		Sum of Squares	dF	Mean Square	F	Sig.
1	Regression	3.302e+13	3	1.10E+13	24.801	<.000 ^b
	Residual	6.346E+13	143	4.437e+11		
	Total	9.647E+13	146			

Table reveals that the computed F-value of 24.801 exceeds the F-table value of 2.67, while the significance level of 0.000 is below 0.05. These results imply that Household Income (X_1), Number of Family Members (X_2), and the Head of Household's Length of Education (X_3) together significantly influence the Household Consumption (Y) variable.

Table 7. Coefficient Of Determination Test

Model Summary ^b				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.837 ^a	.700	.550	.597

Table indicates that the coefficient of determination (R Square) is 0.700. This figure is obtained by squaring the correlation coefficient (R), where $0.837 \times 0.837 = 0.700$. An R Square of 70% suggests that the variables Income (X_1), Number of Family Members (X_2), and Education (X_3) collectively account for 70% of the variation in Household Consumption (Y). The remaining 30% is attributed to other factors not analyzed or variables excluded from the regression model.

Table 8. t-test

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	757050.467	515635.125		1.468	<.114
	PDN	.587	.088	.472	6.640	.000
	JAK	319985.901	55529.615	.397	5.762	.000
	PDK	-54321.378	27761.725	-.140	-1.957	.052

the income variable records a t-value of 6.640 with a significance level of 0.000, which is below the 0.05 threshold. This suggests that income has a notable positive impact on household consumption in Ngagel Rejo Village. The regression coefficient of 0.587 implies that for every Rp 1 increase in income, household consumption rises by Rp 0.587, assuming all other variables are constant. This outcome aligns with Keynes' theory, which highlights income as a primary determinant of consumption levels, and supports the findings of Nurlaila Hanum (2019), who reported that higher income boosts household purchasing power, thereby promoting greater expenditure on both essential and non-essential needs.

The number of family members (X_2) variable likewise demonstrates a significant positive influence on household consumption, reflected by a t-value of 5.762 and a significance level of 0.000, which is below the 0.05 threshold. The regression coefficient of 319,985.901 suggests that each additional household member raises consumption by Rp 319,985.90, assuming other variables are held constant. This finding supports the research of Adiana & Karmini (2019), which asserts that larger households have greater needs—especially for food, education, and healthcare—thereby increasing total spending.

In contrast, the education variable (X_3) records a t-value of -1.957 with a significance level of 0.052, exceeding the 0.05 limit, indicating no significant impact on household consumption. Its regression coefficient of -54,321.378 indicates a negative relationship, meaning that higher education levels of the household head tend to reduce consumption, although the effect is not statistically significant. This may be due to the inclination of more educated households to direct income toward long-term investments such as children's education or savings rather than on consumptive expenditures. This outcome aligns with the findings of Kamantyan et al. (2021), which note that education's influence on consumption is indirect and more closely linked to shifts in preferences and spending priorities.

CONCLUSION

Based on the results of the study on the effect of income, number of family members, and education on household consumption in Ngagel Rejo Village, it can be concluded that income, measured by the total monthly household income, has a positive and significant effect on household consumption. This means that the higher the household income, the greater the level of consumption, whether for primary, secondary, or tertiary needs.

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Meanwhile, the number of family members, measured by the total individuals who are part of a household, also has a positive and significant effect on household consumption. This indicates that the more family members there are, the higher the expenditure required to meet the needs of all household members.

On the other hand, education, measured by the length of formal education of the head of the household, shows a negative but not significant effect on household consumption. This means that even though the head of the household has a higher level of education, it does not necessarily increase household consumption. This finding may be due to the tendency of highly educated households to be more selective in spending and to allocate income toward productive needs or long-term investments.

With these findings, readers are expected to gain a deeper understanding of the influence of income, number of family members, and education on household consumption, especially in urban areas such as Ngagel Rejo Village. Local governments are expected to formulate policies that encourage increased community income, provide household financial management education, and ensure adequate access to family planning.

In addition, future research is expected to expand the scope of the study by adding other variables such as credit access, type of employment, or lifestyle, as well as using different analytical methods so that the results obtained are more accurate and relevant to the dynamics of household consumption in urban areas.

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