

The Impact of BUMDes on Poverty in Pamekasan Regency

Aji Muharjana Putra¹, Alifah Rokhmah Idialis*²

^{1,2} Universitas Trunojoyo Madura, Indonesia

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ABSTRACT

Rural poverty in Pamekasan Regency remains a significant structural challenge in East Java. One of the government's strategies to address it is through strengthening the role of Village-Owned Enterprises (BUMDes) as community-based economic and social institutions. This study aims to analyze the effect of BUMDes' role on individual poverty levels in Pamekasan Regency. A quantitative approach with Ordinal Logistic Regression analysis was used to evaluate three roles of BUMDes, namely contribution to income generation, expansion of access to employment, and provision of economic and social services. Primary data was obtained through a survey of 85 respondents involved with BUMDes in a number of villages. The results of the analysis show that all three variables have a significant effect on the likelihood of individuals being at a lower poverty level. This finding confirms that the strategic role of BUMDes in income generation, employment generation, and provision of quality services can promote poverty alleviation at the village level. Based on these findings, village development policies should be directed towards strengthening the function of BUMDes through the development of inclusive business units, increasing the capacity of BUMDes in providing local employment opportunities, as well as providing relevant and community welfare-oriented services.

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Corresponding Author:

Alifah Rokhmah Idialis

Faculty of economics and Business, Universitas Trunojoyo Madura, Indonesia

Jl. Raya Telang, Telang, Kamal Subdistrict, Bangkalan Regency

Email: *alifah.ridialis@trunojoyo.ac.id

Introduction



Poverty is a fundamental issue that continues to be highlighted in various scientific studies and development discourses. As a complex and multidimensional phenomenon, poverty is not just about low income, but is also reflected in low levels of household expenditure, which are often influenced by limited access to sources of income, decent work opportunities, and basic services such as education, health, and infrastructure. This condition is one of the main obstacles in promoting growth and equitable development, especially in regions that have not yet developed optimally. Based on the basic needs approach used by the World Bank [1] and the Central Statistics Agency (BPS) [2], poverty is defined as the inability of individuals or households to fulfill basic needs, both food and non-food, as measured by the level of expenditure.

According to Nurske [3], poverty takes place in a vicious circle that stems from low total productivity in a country. This low productivity is caused by limited capital accumulation, market imperfections, and economic backwardness. These conditions result in low incomes, which in turn reduce people's capacity to save and invest. This situation maintains low productivity and reinforces the cycle of poverty. To break the cycle, Mankiw [4] emphasizes the importance of increasing investment, both in the form of physical capital such as infrastructure development and production facilities, as well as human capital through education, training, and workforce skills development. This investment is believed to increase the overall productivity of the community and encourage sustainable increases in household income.

Village-based development is crucial in poverty reduction efforts, considering that the contribution of rural areas to the national poverty rate is more dominant than urban areas [5]. The World Poverty Survey in 2024, shows that Indonesia's population is around 280,653,060 people and as many as 6,780,977 people live in extreme poverty. Of this number, around 89% or 6,027,577 poor people live in rural areas, while around 11% or 753,400 poor people live in urban areas. This inequality reflects a systemic failure in equitable development between regions. The phenomenon of rural poverty is particularly evident in East Java Province, which records the highest poverty burden in Java. Four

regencies on Madura Island are the main contributors, including Pamekasan Regency. The following is a picture of poverty in each district in East Java.

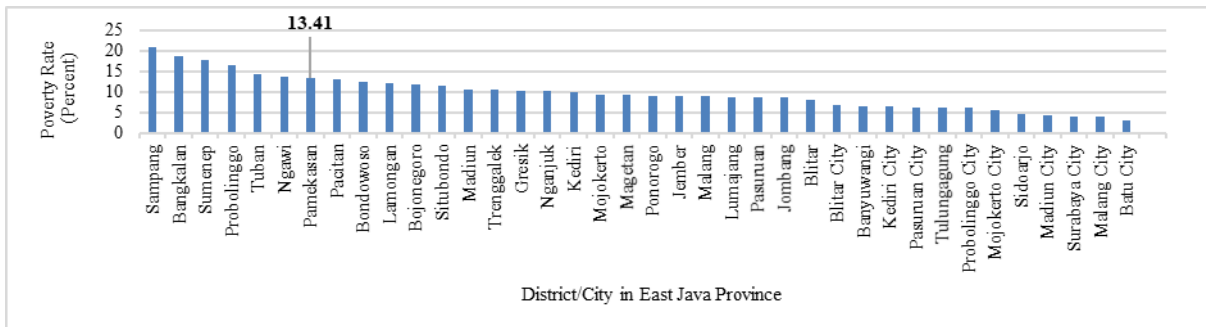


Figure 1. Percentage of Poverty Levels in Districts/Municipalities in East Java in 2024
 Source: East Java Central Bureau of Statistics, 2024 (processed by the author)

Based on Figure 1, the four districts on Madura Island are the main contributors to the poverty rate in East Java Province. Pamekasan Regency has the 7th highest poverty rate in East Java at 13.41%, which is far above the provincial (9.79%) and national (8.47%) averages. This condition reflects the existence of quite complex socio-economic problems in the region. One important indicator that reinforces these problems is the Gini Ratio value of Pamekasan Regency of 0.301 in 2024, which although classified as moderate inequality, tends to stagnate from 2019 to 2024. This indicates that poverty reduction has not been accompanied by improvements in income distribution, so social inequality remains a development challenge. The following is the Gini ratio trend in Pamekasan Regency from 2019 to 2024.

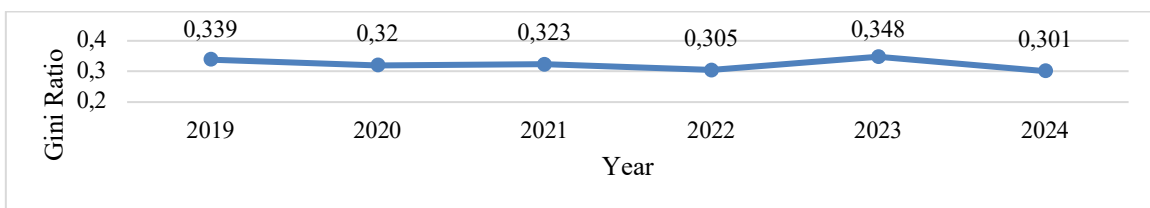


Figure 2. Trend of Gini Ratio of Pamekasan Regency, 2021-2024
 Source: BPS Pamekasan Regency, 2024 (processed by the author)

Figure 2 shows that income inequality in Pamekasan Regency has not experienced significant changes over the past six years. This stagnation of inequality strengthens the indication that poverty in the region is structural in nature, not just the result of a short-term decline in income, but rooted in systemic inequalities in the distribution of access, resources, and economic opportunities among community groups. To provide a more comprehensive picture of the dynamics of poverty in this region, the following presents the trend in the percentage of poor people in Pamekasan Regency from 2016 to 2024.

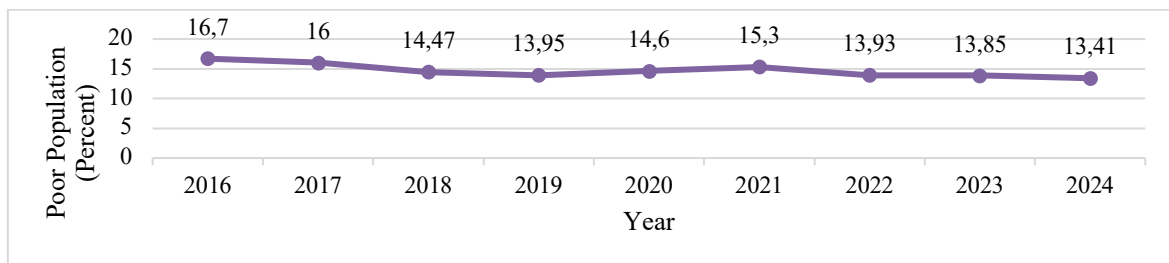


Figure 3. Percentage of Poor Population in Pamekasan Regency 2016-2024 (percent)
 Source: East Java Central Bureau of Statistics, 2024 (processed by the author)

Figure 3 shows that the decline in the poverty rate in Pamekasan Regency has been very slow in the last eight years. The poverty rate, which continues to be above the provincial and national averages, shows that the existing poverty alleviation strategies have not been able to effectively address the root of the problem. Based on data from BPS [2], the Poverty Depth Index (P1) of Pamekasan Rregency in March 2024 was recorded at 1.05, while the Poverty Severity Index (P2) was 0.14. These figures indicate that the majority of the poor live quite far below the poverty line, and there are deep welfare inequalities even among the poor themselves. According to Todaro and Smith [6], structural poverty is caused by systemic injustices in the economic and political system, such as limited access to resources, education, and decent work. This is very relevant to the situation in Pamekasan Regency, where the problem of poverty is not only about high income, but also to limited access to equitable and sustainable economic opportunities. Thus, poverty in Pamekasan Regency can be categorized as structural poverty, which requires development policy interventions that are inclusive, long-term, and based on the local conditions of rural communities.



The problem of poverty cannot be overcome instantly, because each region has different social, economic, and geographical characteristics. To address these challenges, the government has initiated various policy interventions in order to reduce poverty and reduce the gap between rural and urban areas. One of the strategies taken is to strengthen the local economy through village-based development, where national development is directed to encourage the independence and empowerment of villages as new centers of economic growth.

According to Romer [7] in endogenous growth theory, economic development can be maximized if the government plays an active role in managing and encouraging economic activity. As part of its efforts to promote rural development and enhance the welfare of village communities, the Indonesian government allocates grants to all villages through the Village Fund program [8]. One key initiative supported by this program is the establishment of Village-Owned Enterprises (BUMDes), which are jointly initiated and managed by village authorities and local residents. The legal foundation for BUMDes is provided in Article 87 of Law No. 6 of 2014 on Villages, which empowers villages to create such enterprises based on their unique needs and local potential, with the aim of fostering a sustainable rural economy [9].

Government Regulation No. 11 of 2021 emphasizes the dual role of BUMDes as a dual-functional entity that performs both commercial and social functions that have a strategic impact on strengthening the local economy [10]. Thus, BUMDes plays a crucial role in driving village economic growth. Various empirical findings show that BUMDes contribute significantly to reducing poverty through economic empowerment programs based on local village potential [11], [12], [13]. BUMDes were first legally regulated through Government Regulation No. 72/2005 on Villages. The implementation of this regulation has been effective in Pamekasan Regency, where almost all villages have legal BUMDes institutions based on verified data from the local BUMDes Forum. The local government's commitment to institutional-based village economic development is also reflected in the records of the Pamekasan Regency Community and Village Empowerment Office (DPMD),



which recorded 130 active BUMDes by 2025. The following is the data of BUMDes in Pamekasan Regency.

Table 1. Classification of BUMDes Data of Pamekasan Regency in 2025

Classification	Number of BUMDes	Percentage (%)
Beginer	37	29%
Developing	51	39%
Advanced	42	32%
Total	130	100%

Source: East Java Provincial Office of Community and Village Empowerment, 2025 (processed by the author)

Based on table 1. From the recorded data, a total of 130 BUMDes in Pamekasan Regency can be classified into three categories: 42 BUMDes (32%) have reached the advanced category, 51 BUMDes (39%) are in the developing stage, and 37 BUMDes (29%) are still in the beginner category. The types of businesses run by these BUMDes are very diverse, covering a wide range of potential sectors such as savings and loan units, agricultural product management, village tourism, creative businesses, general services, fishery product management, and animal husbandry. This variety of businesses shows the dynamics and potential of the village economy that continues to be developed through BUMDes institutions.

BUMDes is an entity that combines commercial and social functions, which has the potential to alleviate poverty in rural areas. Through its strategic role in increasing income, providing employment, and providing services that support community welfare, BUMDes is present as an instrument of local community-based development [14], [15]. These three aspects have an important role in influencing the level of individual welfare directly and indirectly. Increased income is one of the main contributions resulting from the existence of BUMDes [11]. The involvement of individuals in BUMDes business units, whether as workers, business partners, or beneficiaries, creates wider economic opportunities [13]. The income earned from these activities can strengthen purchasing power, meet basic needs, and reduce dependency on seasonal or informal sector jobs that tend to be unstable [9]. In the context of poverty alleviation, an increase in income has a direct correlation to a reduction



in the poverty rate, as it allows individuals to move out of the poverty line through more adequate consumption and expenditure [1]. Therefore, income sourced from BUMDes economic activities can be considered as a transformative mechanism in improving the economic condition of the poor.

The employment opportunities available through BUMDes business units also play an important role in reducing poverty [11]. The existence of BUMDes, which is able to provide easy access to employment, is a distinct advantage for rural communities who have faced limitations in obtaining decent work [15]. This includes an open recruitment process, close work locations, and the lack of administrative barriers. In addition, the types of jobs offered by BUMDes are generally aligned with the abilities and skills of local communities, thereby increasing labor participation and productivity without the need for intensive additional training. Equally important, the extent to which a BUMDes is able to provide employment opportunities demonstrates its capacity to absorb village community labor [14]. These three aspects, namely ease of access, suitability to capabilities, and availability of employment opportunities, simultaneously contribute to increasing the economic independence of individuals involved with BUMDes and reducing open unemployment. Thus, the role of BUMDes in providing employment to the community has implications for reducing poverty levels in rural areas.

The services provided by BUMDes also contribute greatly to strengthening individuals' capacity to deal with economic vulnerabilities [21]. Easy access to services, such as savings and loans, entrepreneurship training, and business capital assistance, provides space for communities to obtain economic and social support in a timely and relevant manner. The matching of services to specific individual needs, such as capital assistance for village MSME players or technical training for informal labor, reflects the responsiveness of BUMDes to local dynamics. Moreover, the benefits of such services in the form of increased income, economic efficiency, and access to social infrastructure contribute to improving individual welfare and resilience to economic shocks. Thus, the combination of



convenience, appropriateness, and service benefits makes BUMDes an important part of addressing poverty through a sustainable individual capacity building approach [33].

These three roles reflect the overall contribution of BUMDes in supporting poverty alleviation at the village level. As a local economic institution, BUMDes not only drives the economy, but also builds collective community awareness on the importance of managing village resources in a professional and participatory manner [16]. The link between increased income, ease and suitability of employment, and the relevance and benefits of services to poverty reduction strengthens the argument that community-based interventions through BUMDes have an impact on the welfare of village communities. The active involvement of village government as well as community participation makes BUMDes a relevant sustainable development model in responding to poverty challenges in rural areas [17].

There have been many studies on poverty alleviation and the contribution of BUMDes in rural economic development. However, most of the existing studies are still macro and descriptive, and have not empirically examined how BUMDes impact individual poverty at the micro level. Research by Damayanti et al. [11] highlights the role of BUMDes on poor households in the context of the COVID-19 pandemic. Although relevant in emergency situations, the results of the study are temporary and do not represent long-term dynamics. Meanwhile, Rohmah and Yulistiyono [12] examined the presence of BUMDes on the poor in villages by emphasizing economic, social, and environmental aspects in general. However, this approach has not specifically integrated poverty-causing variables such as income, access to employment, and services into a simultaneous and systematic quantitative analysis framework.

The methodological and scope limitations in these studies indicate a gap in the literature in comprehensively understanding how BUMDes affect poverty levels and categories. Therefore, this study aims to fill the gap by presenting a micro data-driven empirical analysis that integrates income, employment, and village service variables to evaluate the influence of BUMDes' role on poverty. Pamekasan Regency was chosen as the study location because it consistently records a higher poverty rate than the provincial and national averages, but has not received much attention in previous empirical studies. With



this approach, this study is expected to make a theoretical contribution to the enrichment of the literature on rural poverty and the role of local institutions, as well as a practical contribution to the formulation of more effective, contextualized, and *evidence-based* village development policies.

Method

This study employs a quantitative approach to analyze the influence of Village-Owned Enterprises (BUMDes) on poverty level in villages in Pamekasan Regency. The data utilized are primary data collected through questionnaires designed based on the indicators of each research variable. The target population consists of individuals who are directly involved in or benefit from BUMDes activities in Pamekasan. A multistage sampling method was applied. In the first stage, BUMDes were stratified according to their development levels namely: beginner, developing, and advanced. This stage employed purposive stratified sampling to ensure representation from each category. From each stratum, BUMDes were then selected purposively by considering the geographical distribution across sub-districts, resulting in the selection of 13 BUMDes from 13 different sub-districts in Pamekasan Regency. In the next stage, respondents were chosen using purposive sampling, targeting individuals who met the criteria as direct beneficiaries and active participants in BUMDes programs in their respective villages. The number of respondents per village was determined proportionally, yielding a total of 85 respondents, with an average of 6–7 individuals per village. The sample size was determined based on the approach suggested by Hosmer & Lemeshow [18], which recommends a minimum of 10–15 respondents per variable to ensure the validity and reliability of the analysis. The classification of the respondent data used in this study is presented as follows.

Table 2. Research Sample Data

No	Name of BUMDes	Classification	Frequency (Respondents)
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1	Settong Ateh	Beginer	7
2	Bersahaja	Developing	6
3	Candi Jaya	Beginer	7
4	Barokah	Advanced	7
5	Pemuda Berkarya	Beginer	6
6	Sejahtera	Advanced	7
7	Bhari Lana	Developing	7
8	Mandiri	Developing	6
9	Lestari	Developing	6
10	Jembar Sadhejenah	Beginer	7
11	Adi Warna	Advanced	6
12	Maju Bersama	Beginer	6
13	Sumber Rejeki	Beginer	7
	Total		85

Source: Author's calculation

The description of variables in operational form is done to provide clarity regarding conceptual definitions, measurement indicators, as well as techniques and types of data used in this study. Variable operationalization aims to allow each variable to be measured systematically, both through objective (such as expenditure and income) and subjective (such as individual assessments of employment and services provided by BUMDes) data, thus enabling a comprehensive and scientifically justifiable analysis. In this case, the measurement of employment and service variables is conducted through individuals' subjective assessments, reflecting the *perceived value* approach as proposed by Zeithaml [34], where individuals' evaluation of a service is influenced by their expectations, experiences, and the relevance of the local context. Details of the operational definitions of each variable are shown in Table 3. Definition of Variable Operationalization below.

Table 3. Definition of Variable Operationalization

Variabel	Acronym	Operational Definition	Indicator	Referen ce
Poverty (Y)	POV	Poverty is defined as a household's inability to meet essential food and non-food needs, as indicated by the total monthly per capita expenditure.	Poverty categories: 0 = Not Poor (Expenditure > \$3.65/day or Rp 1,798,106/month). The	[1], [2].

		classification of poverty follows the absolute poverty line standards set by both the World Bank and Indonesia's Central Bureau of Statistics (BPS).	1 = Vulnerable to Poverty (Expenditure < \$3.65/day or IDR 1,798,106/month), 2 = Poor (Expenditure < \$2.15/day or IDR 1,059,158/month), 3 = Extreme Poor (Expenditure < \$1.21/day or IDR 595,242/month).
Income (X1)	INCM	Income refers to the earnings received by individuals through their direct involvement in BUMDes business units. This income reflects the economic contribution of BUMDes to individual well-being.	Income earned from BUMDes. [11].
Employment (X2)	EMPL	This variable reflects an individual's perception of the availability and quality of employment opportunities offered by BUMDes. It includes aspects such as the ease of accessing employment, the alignment between job types and individual capabilities, and the extent to which job opportunities are available for individuals..	- Ease of access to employment [11], [19] - Suitability of job opportunities - Availability of job opportunities
Service (X3)	SERV	This variable captures an individual's evaluation of the services delivered by BUMDes in enhancing economic and social well-being. The assessment focuses on the ease of access to services, their relevance to individual needs, and the	- Ease of access to services. [20], [21], [22] - Conformity of services to needs. - Service benefits for economic and social welfare.



perceived benefits these services bring to daily life.

Source: Processed by the author

The data in this study were analyzed using the Ordinal Logistic Regression (OLR) model, as the dependent variable consists of more than two ordered categories [23]. This model estimates the cumulative probability that an individual falls into a specific poverty category or a lower one, based on the effects of the independent variables. The general form of the ordinal logistic regression model is as follows:

$$\log \left(\frac{P(POV \leq j)}{P(POV > 0)} \right) = \alpha_j + \beta_1 INCM + \beta_2 EMPL + \beta_3 SERV + \epsilon \dots \dots \dots (1)$$

Description:

- POV* : Poverty category (0 = Not Poor, 1 = Vulnerable to Poverty, 2 = Poor, 3 = Extreme Poor)
- P* : Probability
- j* : Ordinal level of the variable POV
- α_j : Threshold of j-th poverty category
- β_i : Regression coefficient of the i-th independent variable
- INCM* : Income generated from participation in BUMDes
- EMPL* : Employment opportunities provided by BUMDes
- SERV* : Services delivered by BUMDes
- ϵ : *Error term*

Statistical testing in this study was conducted to examine the significance of the relationship between the independent variables namely income, employment opportunities, and services provided by BUMDes and the dependent variable, which is poverty status. The analysis employed the Ordinal Logistic Regression (OLR) approach, a commonly used

method for analyzing ordered categorical data. This approach was chosen due to its ability to generate maximum likelihood estimates based on the observed data [23]. The modeling process followed a systematic sequence, including the Test of Parallel Lines (to assess the proportional odds assumption), the Likelihood Ratio Test (to evaluate model significance), the Goodness of Fit Test (to assess model fit), Pseudo R-Square tests (using McFadden's R^2 and Nagelkerke R^2), and the Wald Test (for testing the partial significance of predictors). Ordinal logistic regression does not require a linear relationship between variables, does not assume normality, and is not affected by heteroscedasticity, making it a flexible tool for analyzing socio-economic data, which is often categorical and not normally distributed [23]. The hypotheses tested in this study are as follows:

H_0 : The independent variables have no statistically significant influence on the levels of poverty ($\beta_i = 0$).

H_a : The independent variables have a statistically significant influence on the levels of poverty ($\beta_i \neq 0$).

Results and Discussion

This section presents the results and discussion of the data analysis on the effect of income, employment, and services from BUMDes on poverty levels in Pamekasan Regency. The analysis was conducted using the Ordinal Logistic Regression (OLR) method with cross section primary data obtained from 85 respondents in the village area. All results are presented through the stages of assumption testing and model feasibility to the interpretation of the influence of each variable on the poverty category, in order to explain the effectiveness of BUMDes' role in poverty alleviation at the micro level.

Table 4. Case Processing Summary

	N	Marginal Percentage
Poverty		
Not Poor	9	10,6%
Vulnerable to Poverty	14	16,5%
Poverty	23	27,1%
Extreme Poverty	39	45,9%
Valid	85	100,0%
Missing	0	
Total	85	

Source: Primary Data processed by SPSS, (2025)

Table 4 presents the distribution of poverty level categories, which serve as the dependent variable in the model. Out of 85 valid observations, 45.9% of individuals fall into the extreme poverty category, 27.1% are categorized as poor, 16.5% are considered vulnerable to poverty, and only 10.6% are classified as not poor. This distribution indicates that the majority of respondents experience moderate to severe poverty, highlighting the significant economic vulnerability within Pamekasan Regency. This composition justifies the use of the Ordinal Logistic Regression model, which is designed to examine factors that influence an individual's likelihood of transitioning from a higher to a lower poverty level. Furthermore, the dataset contains no missing values (missing = 0), ensuring that all observations are included in the model estimation process. As a result, the analysis can be considered both complete and statistically reliable.

Test of Proportional Odds Assumption (Test of Parallel Lines)

The Test of Proportional Odds (also known as the Test of Parallel Lines) is conducted to verify that the model satisfies the key assumption required for applying the Ordinal Logistic Regression (OLR) method. This test assesses whether the relationship between each category of the dependent variable and the independent variables remains consistent, allowing the use of a single regression equation across all category thresholds. The procedure involves comparing the cumulative logit model, which assumes proportional odds, with a less restricted general model using the -2 Log Likelihood value. If the resulting significance level (p-value) is greater than 0.05, the assumption is considered met, indicating that the OLR model is appropriate. However, if the p-value is less than or equal to 0.05, the

assumption is violated, and the model is deemed unsuitable for OLR. The results of this test are presented in the following table.

Table 5. Parallel Lines Test Results

Model	-2 Log Likelihood	Chi-Square	df	Sig.
Null Hypothesis	63,691			
General	63,232 ^b	0,459 ^c	6	0,998*

* indicates statistical significance at the 5% level ($\alpha = 0.05$)

Source: Primary Data processed by SPSS, (2025)

Table 5 presents the results of the Test of Parallel Lines, where the Chi-Square value is 0.459 with a significance level (p-value) of 0.998. This value results from comparing the null model, which assumes proportional odds, with the general model, which does not. Since the p-value of the Chi-Square test (0.998) exceeds the standard significance level of $\alpha = 0.05$, the null hypothesis cannot be rejected. This indicates that there is no statistically significant difference between the two models. In other words, the assumption of proportional odds is met, meaning the Ordinal Logistic Regression (OLR) model is appropriate for further analysis. As stated by Agresti [24], satisfying the proportional odds assumption is essential for applying the OLR method, as it allows a single set of coefficients to be used across all thresholds of the dependent variable. Therefore, it can be concluded that the OLR model is valid and can proceed to the next step, namely the Likelihood Ratio Test, to assess the joint significance of all independent variables in explaining the variation in the dependent variable.

Model Significance Test (Likelihood Ratio Test)

The model significance test is used to evaluate whether all independent variables jointly influence the dependent variable in the Ordinal Logistic Regression (OLR) model. This test involves comparing the -2 Log Likelihood values between the intercept-only model (null model) and the final model. A Chi-Square p-value less than or equal to 0.05 indicates

that the model is statistically significant, meaning the set of independent variables has a simultaneous effect on the dependent variable. Conversely, if the p-value exceeds 0.05, the model is not considered statistically significant, suggesting that the independent variables do not collectively influence the dependent variable.

Table 6. Likelihood Ratio Test (LR) Results

Model	-2 Log Likelihood	Chi-Square	df	Sig.
Intercept Only	180,684			
Final	63,691	116,992	3	0,000*

* indicates statistical significance at the 5% level ($\alpha = 0.05$)

Source: Primary Data processed by SPSS, (2025)

Based on the results presented in Table 6, the Chi-Square value is 116.992 with a significance level (p-value) of 0.000. Since the p-value of the Chi-Square test 0.000 is less than the significance level of $\alpha = 0.05$, the null hypothesis (H_0) is rejected. This indicates that there is sufficient statistical evidence to conclude that the regression model is jointly significant—meaning that all independent variables collectively influence the dependent variable. As noted by Hosmer et al. [25], the Likelihood Ratio Test evaluates whether the inclusion of independent variables significantly improves the fit of the logistic regression model compared to the intercept-only model. If the p-value is ≤ 0.05 , the model is considered statistically valid for further analysis. Therefore, the test results confirm that the regression model in this study is statistically appropriate and can proceed to the next stage: the Goodness of Fit test, which assesses how well the model fits the observed data.

Goodness of Fit Test

Once the model has been confirmed as jointly significant, the next step is to assess how well the model fits the empirical data. This is done through the Goodness of Fit Test, which evaluates the model’s ability to statistically represent the observed outcomes. Two key indicators are used in this test: the Pearson Chi-Square and the Deviance Chi-Square. The model is considered to have a good fit if the significance values (p-values) of both tests

are greater than the threshold of $\alpha = 0.05$. If the p-value > 0.05 , the model is deemed to fit the data well. Conversely, if the p-value ≤ 0.05 , the model is regarded as a poor fit. The results of the Goodness of Fit test are presented in the following table.

Table 7. Goodness of Fit Test Results

	Chi-Square	df	Sig.
Pearson	79,494	99	0,925*
Deviance	43,769	99	1,000*

* indicates statistical significance at the 5% level ($\alpha = 0.05$)

Source: Primary Data processed by SPSS, (2025)

As shown in Table 7, the Pearson Chi-Square value is 79.494 with a significance level of 0.925, and the Deviance Chi-Square value is 43.769 with a significance level of 1.000. Since both p-values of the Chi-Square tests (0.726 and 0.894) are greater than the significance level of $\alpha = 0.05$, the null hypothesis (H_0) is not rejected. This indicates that there is no statistically significant difference between the model's predictions and the observed data, confirming that the model fits the empirical data well. According to Norusis [26], the model fit test is intended to determine whether the estimated model adequately represents the real-world data. A high p-value suggests the model does not differ significantly from the actual observations. Therefore, it can be concluded that the model used in this study demonstrates a very good fit and is appropriate for interpreting the influence of each independent variable on the dependent variable (poverty status).

Pseudo R-Square Test

After confirming that the model fits the data, the next step is to assess the model's explanatory strength using a Pseudo R-Square test. This test evaluates how well the independent variables explain or predict the categories of the dependent variable in the context of ordinal logistic regression. Unlike linear regression, which uses the traditional R^2 to measure the proportion of variance explained, logistic regression employs alternative metrics known as pseudo R^2 values. These values serve as indicators of the model's

predictive capability. Commonly reported pseudo R^2 measures include Cox and Snell, Nagelkerke, and McFadden, with the latter often preferred due to its interpretability and conservative estimation. According to McFadden (1979), values between 0.2 and 0.4 are considered to represent an excellent model fit. In applied research, the following extended classification is often used for practical interpretation $R^2 < 0.1 \rightarrow$ Weak fit, $0.1 \leq R^2 < 0.2 \rightarrow$ Moderate fit, $0.2 \leq R^2 < 0.4 \rightarrow$ Strong fit (Excellent, per McFadden), $R^2 \geq 0.4 \rightarrow$ Very strong fit (Practically rare but desirable). This framework allows researchers to contextualize the predictive power of the model beyond a simple pass/fail fit test, highlighting the degree to which the model's independent variables contribute to explaining the outcome. The Pseudo R-Square results in this study are summarized in the following table.

Tabel 8. Test Results Pseudo R^2

Cox and Snell	0,748
Nagelkerke	0,815
McFadden	0,552

Source: Primary Data processed by SPSS, (2025)

As presented in Table 8, the Nagelkerke value is 0.815, Cox and Snell is 0.748, and McFadden's Pseudo R^2 is 0.552. These values represent the model's explanatory power in the context of Ordinal Logistic Regression. Among them, McFadden's R^2 is widely regarded as the standard reference for evaluating a model's predictive strength. With a McFadden value of 0.552, the model demonstrates a very strong ability to explain the relationship between the independent variables (income, employment, and services provided by BUMDes) and the categorical outcome of poverty. According to McFadden [27], a value above 0.3 indicates that the model possesses strong predictive performance regarding the phenomenon under investigation. Therefore, it can be concluded that the model in this study is not only statistically significant and well-fitted but also highly capable of explaining the observed phenomenon making it suitable for further analysis and interpretation.

Partial Significance Test (Wald Test)

Once the model has been confirmed to be statistically significant, well-fitted, and demonstrates strong predictive power, the next step is to perform a partial significance test

to evaluate the individual effect of each independent variable on the dependent variable (poverty category). This is done using the Wald Test, which examines the regression coefficient (Estimate), p-value, and odds ratio (Exp(B)) for each predictor. An independent variable is considered to have a statistically significant partial effect if its p-value is less than or equal to 0.05. Furthermore, the direction and strength of the effect are interpreted using the odds ratio: If $\text{Exp}(B) = 1$, the variable has no effect, if $\text{Exp}(B) < 1$, the variable decreases the likelihood of being in a higher poverty category (indicating a negative effect), and if $\text{Exp}(B) > 1$, the variable increases the likelihood (indicating a positive effect). The results of the Wald Test are presented in the following table.

Tabel 9. Wald Test Results

		Estimate	Odds Ratio	Std. Error	Wald	df	Sig.	95% Confidence Interval	
								Lower Bound	Upper Bound
Treshold	[POV=0]	-19,028		3,113	37,360	1	0,000*	-25,130	-12,927
	[POV=1]	-15,374		2,636	34,023	1	0,000*	-20,539	-10,208
	[POV=2]	-11,449		2,200	27,080	1	0,000*	-15,761	-7,137
Location	INCM	-2,675	0,068	0,448	35,684	1	0,000*	-3,553	-1,797
	EMPL	-1,040	0,353	0,460	5,120	1	0,024*	-1,941	-0,139
	SERV	-0,790	0,454	0,344	5,264	1	0,022*	-1,465	-0,115

* indicates statistical significance at the 5% level ($\alpha = 0.05$)

Source: Primary Data processed by SPSS, (2025)

Based on the results presented in Table 9, all independent variables in the model—namely income, employment, and services provided by BUMDes—have significance values (p-values) less than or equal to 0.05, indicating that each variable has a statistically significant partial effect on the dependent variable (poverty status). This finding suggests that income, employment, and services individually play a meaningful role in explaining variations in poverty levels among individuals.

The Effect of Income on Poverty in Villages

The income variable has an estimate of -2.675, an odds ratio (Exp(B)) of 0.068, and a significance value (p-value) of 0.000. Since the p-value of the Wald test is 0.000 is less than the 0.05 significance level, the null hypothesis (H_0) is rejected. This indicates that income from BUMDes has a statistically significant effect in reducing the likelihood of individuals falling into higher poverty categories. The negative coefficient suggests an inverse relationship between income and poverty level, meaning that as income increases, the risk of poverty decreases. Furthermore, the odds ratio of 0.068—being less than 1—implies that each one-unit increase in income reduces the odds of being in a higher poverty category by approximately 93.2% ($1 - 0.068 = 0.932$). Therefore, higher income derived from BUMDes programs plays a crucial role in directly lowering household poverty risk.

The Effect of Employment on Poverty in Villages

The employment variable has a regression coefficient (Estimate) of -1.040, an odds ratio (Exp(B)) of 0.353, and a significance value (p-value) of 0.024. Since the p-value of the Wald test 0.024 is less than the 0.05 significance level, the null hypothesis (H_0) is rejected, indicating that employment opportunities provided by BUMDes have a statistically significant effect on reducing the likelihood of individuals being in higher poverty categories. The negative coefficient reflects an inverse relationship, suggesting that improved employment conditions are associated with a lower risk of poverty. Furthermore, the odds ratio of 0.353 implies that a one-unit increase in perceived employment availability, accessibility, or suitability reduces the odds of being in a higher poverty level by approximately 64.7% ($1 - 0.353 = 0.647$). This finding highlights the importance of accessible and relevant employment from BUMDes in decreasing household vulnerability to poverty.

The Effect of BUMDes Services on Poverty in Villages

The services variable has a regression coefficient (Estimate) of -0.790, an odds ratio (Exp(B)) of 0.454, and a significance value (p-value) of 0.022. Since the p-value of the Wald test 0.022 is less than the 0.05 significance level, the null hypothesis (H_0) is rejected,

indicating that services provided by BUMDes have a statistically significant effect on reducing the risk of poverty. The negative coefficient implies that better perceived services are associated with a lower likelihood of households falling into higher poverty categories. Moreover, the odds ratio of 0.454 suggests that each one-unit increase in the perceived quality or accessibility of BUMDes services reduces the odds of being in a higher poverty level by approximately 54.6% ($1 - 0.454 = 0.546$). This underscores the role of accessible, relevant, and beneficial services in enhancing the economic and social resilience of rural households.

All three variables income, employment, and services have negative regression coefficients and odds ratios below 1, signifying their significant and inverse effect on poverty. The results highlight that BUMDes contributions in generating income, providing employment, and delivering essential services play a vital role in reducing the probability of individuals falling into deeper poverty. As Long & Freese [23] assert, the odds ratio in ordinal logistic regression reflects the extent to which a one-unit increase in an independent variable influences the likelihood of shifting to a different category of the dependent variable. Therefore, the findings affirm that BUMDes plays a key role in alleviating household poverty in rural areas.

Discussion

Village-owned enterprises (BUMDes) are institutions established with two main functions, namely commercial and social, aiming to improve the economic and social welfare of village communities. The existence of BUMDes has a significant impact in addressing poverty issues in rural areas. Poverty alleviation can be optimized through collaboration between the government, related agencies, and local communities. Thus, this strategy integrates top-down (from government to community) and bottom-up (from community to government) approaches. The community is expected to play a creative and active role in developing programs facilitated by the government, so that each individual gains value added to survive and improve their standard of living. Based on the results of

the logistic regression analysis, the independent variables (income, employment, services) used in this study have a significant effect on the dependent variable (poverty). The following is an in-depth explanation for each variable.

The Effect of Income from BUMDes on Individual Poverty Levels

The results show that the income earned by individuals from involvement in the economic activities of village-owned enterprises (BUMDes) has a negative and significant effect on poverty levels. This finding indicates that the higher the income received by individuals from BUMDes business units, the lower the likelihood of individuals being in a higher poverty category. This income allows individuals to fulfill basic needs more adequately, increase purchasing power, and expand access to education, health, and other non-food needs. Thus, income sourced from BUMDes activities contributes to improving individual welfare and accelerating the process of moving out of poverty. This finding is in line with the basic needs approach proposed by Alkire & Foster [28], which states that poverty can be overcome through the fulfillment of people's basic needs. In addition, based on Endogenous Growth Theory [7], increasing local income through productive economic activities such as BUMDes is a driver of long-term economic growth from within the community itself. Rantung's research [29] also corroborates that an increase in income is inversely related to the poverty rate, as it directly increases the ability of individuals to fulfill their needs. Other studies from Rohmah & Yulistiyono [30] and Maddatuang [9] also concluded that from an economic aspect, BUMDes is quite effective in encouraging a significant increase in the income of rural communities to improve welfare and move out of poverty. These results are reinforced by Damayanti [11], who states that low income minimizes the possibility for people to move out of poverty. Conversely, with increased income, the opportunity for individuals to fulfill their basic needs and move out of poverty becomes greater. Thus, the existence of BUMDes as a driver of the village economy is proven to have a positive impact on increasing individual income and indirectly plays a role in poverty alleviation.

The Effect of Employment Opportunities from BUMDes on Individual Poverty Levels

In addition to income, the results of this study also show that an individual's assessment of employment provided by BUMDes has a negative and significant effect on poverty levels. The more positive the individual's view of the aspects of employment, namely ease of access, suitability of the job to their ability, and availability of job opportunities, the less likely the individual is to be in the poor category. Individuals who feel that they can easily access jobs at BUMDes, that the types of jobs are in accordance with their abilities or skills, and that there are sufficient job opportunities in the village environment, tend to have better economic opportunities. This positive assessment suggests that the existence of employment opportunities is not only judged by their number, but by the extent to which they are actually perceived as relevant and can be directly utilized by individuals or households. This finding is in line with Empowerment Theory proposed by Rappaport [31], which emphasizes the importance of community involvement as the subject of development to increase their capacity and independence. In the context of BUMDes, empowerment is not only reflected in the creation of business units, but also in how the community assesses access, suitability, and availability of employment as opportunities that can be directly utilized. Research by Darmawan [14] and Fadillah & Arbarini [19] shows that business diversification through BUMDes is able to create jobs that not only expand employment opportunities, but also increase the relevance of the type of work to the capabilities of the local community, thus encouraging active community participation in village economic activities. Bahri [32] adds that the success of BUMDes in reducing the unemployment rate is strongly influenced by the extent to which the community assesses the available jobs as feasible, in accordance with skills, and easily accessible, so that the existence of employment is truly felt by the village community. This is reinforced by Rohmah & Yulistiyono [30], who state that the provision of decent employment opportunities that can be accessed directly by the community is one of the main strategies in reducing poverty in rural areas. Thus, the more positive the individual's assessment of the quality and accessibility of employment opportunities provided by BUMDes, the greater the contribution in strengthening the



individual's economic condition. This confirms that the effectiveness of BUMDes in reducing poverty depends not only on the quantitative presence of employment opportunities, but also on the extent to which the community perceives such opportunities as relevant, feasible, and accessible in the context of local needs and capacities.

The Effect of BUMDes Services on Individual Poverty Levels

The findings of this study show that an individual's assessment of the services provided by BUMDes has a negative and significant effect on poverty. This indicates that individuals who have a positive perception of aspects of BUMDes services tend to have a lower likelihood of being in poverty. These perceptions include three main dimensions, namely ease of access to services, suitability of services to economic and social needs, and usefulness of services in supporting welfare. BUMDes services include various programs such as entrepreneurship training, business assistance, provision of savings and loan facilities, and support for marketing local products. If these services are perceived as relevant, easily accessible, and making a real contribution to improving economic capacity and quality of life, then this has the potential to encourage individuals to be more actively involved in productive economic activities. Thus, the perceived usefulness of services not only reflects the level of community acceptance of BUMDes, but also acts as a supporting factor in reducing economic vulnerability. This finding is in line with the research results of Engkus [20] and Maharani [22], which show that innovation and digitalization of BUMDes services improve the community's assessment of the accessibility and quality of public services, especially in reaching the poor in a more inclusive manner. Communities who feel that the services are easily accessible and appropriate to their needs tend to trust and actively utilize them in improving economic welfare. Furthermore, Larasdiputra [33] asserts that the success of BUMDes' strategic services such as micro savings and loans, managerial training, business mentoring, and local asset development can be optimized if the community assesses these services as relevant and having a real impact on improving economic capacity. This positive assessment not only encourages active service utilization, but also strengthens participation in village economic development. Thus, an individual's assessment of the



usefulness of BUMDes services is one of the important elements that bridge between service quality and the success of poverty alleviation programs. Within the framework of sustainable village development, BUMDes not only functions as an economic institution, but also as a social instrument that plays a role in community empowerment and welfare improvement. Inclusive, equitable service delivery that is responsive to local needs will strengthen community trust and engagement, ultimately contributing to participatory and sustainable poverty reduction.

Conclusion

The findings in this study provide important policy implications for strengthening the role of BUMDes in poverty alleviation in rural areas. First, local governments need to encourage the optimization of BUMDes business units that are not only oriented towards economic profit, but also contribute to local job creation that is inclusive and in line with the capacity of village communities. This can be done through the provision of entrepreneurship training, technical assistance, and improving the managerial capacity of BUMDes managers. Secondly, improving the quality and relevance of BUMDes services needs to be prioritized, as effective services that meet the needs of the community are proven to support poverty reduction efforts. BUMDes are expected to provide services that have a direct impact on social welfare, such as savings and loan programs, business training, and assistance to local MSMEs. Third, there is a need to integrate BUMDes programs into the broader village development strategy through a participatory and local needs-based approach. Village governments together with other stakeholders need to develop planning, monitoring, and evaluation mechanisms that actively involve the community, to improve program accountability and effectiveness. With the right policy direction, the role of BUMDes can be further optimized as a strategic instrument in supporting sustainable and socially equitable village economic development.

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BIOGRAPHIES OF AUTHORS



Aji Muharjana Putra    Was born in Lamongan on March 13, 2002. Author's address in Blimbing village RT 01 RW 08 Kec Paciran Kab Lamongan. The author started his education at WaliSongo Brondong Kindergarten and continued at MI Muhammadiyah 04 Blimbing, then studied at SMPM 15 Brondong Lamongan and the next level at SMAM 09 Brondong Lamongan. Currently, the author is studying S1 in the Development Economics study program, Faculty of Economics and Business, Trunojoyo Madura University, class of 2020. He can be reached by email: ajimuharjana@gmail.com



Alifah Rokmah Idialis    Was born in Pamekasan on July 21, 1987. She Obtained a Bachelor of Economics degree from Gadjah Mada University in 2013, a Master of Economics degree from Gadjah Mada University in 2016. He is currently a Permanent Lecturer at Trunojoyo University, Madura. She can be contacted at email: alifah.ridialis@trunojoyo.ac.id