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## **The Role of Village Fund and BUMDes Resources on Sustainable Rural Economic Development**

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### **Abstract**

**Purpose:** The objective of this study is to analyze the influence of Village Funds on BUMDes resources, Village Funds on sustainable rural economic development, BUMDes resources on sustainable rural economic development, Village Funds on rural economic development through BUMDes resources, and the role of BUMDes resources in mediating the influence Village Funds for sustainable rural economic development.

**Methodology/approach:** This research was conducted in Buleleng Regency, Bali Province. The research population was all Village Government officials in Buleleng Regency. The sample was determined using the convenience sampling method. The research respondents were 88 village government officials consisting of village heads, village secretaries, and heads of government sections. This research uses an associative quantitative approach. Data was collected using a questionnaire. The data analysis technique uses structural equation modeling (SEM).

**Results/findings:** The results of the analysis show that Village Funds have a significant positive effect on BUMDes resources. Village Funds have a positive and insignificant effect on sustainable rural economic development. BUMDes resources have a significant positive effect on sustainable rural economic development. Village Funds have a significant positive effect on rural economic development through BUMDes resources. BUMDes resources fully mediate the influence of Village Funds on sustainable rural economic development.

**Limitations:** Research limitations only analyze two independent variables that are thought to influence sustainable rural economic development.

**Contribution:** Research findings contribute to the achievement of sustainable rural economic development. Both central and regional governments should increase support for the development of BUMDes resources. Research findings contribute to the economy. Until now, research analyzing the influence of Village Funds and BUMDes resources on Sustainable Rural Economic Development is still limited.

**Novelty:** The novelty of this research is in the village fund indicators.

**Keywords:** *Village Funds, BUMDes, Economic Development, Rural, Sustainable.*

### **1. Introduction**

Sustainable development is a development concept that is a solution to non-inclusive growth caused by previous development concepts. All countries in the world through the United Nations High-Level Conference forum agreed on a sustainable development agenda which sets seventeen agendas, with 169 targets targeted to be achieved by 2030. The Government of the Republic of Indonesia is one of the countries that has agreed to a sustainable development agenda. Several policies have been issued to provide legal certainty for the implementation of sustainable development in Indonesia. One of the policies for implementing sustainable development goals in Indonesia is

regulated in Presidential Regulation Number 59 of 2017, which regulates the implementation of achieving sustainable development goals. The development goals are a presidential regulation, which is a document containing global goals and targets for 2016 to 2030.

The implementation of sustainable development in Indonesia is carried out down to the smallest government unit, namely at the village level, which is called the Sustainable Development Goals/Village SDGs. Sustainable rural development is an integrated effort of Village Development to accelerate the achievement of sustainable development goals, seventeen indicators set to achieving Village SDGs (**Glass, Newig, and Ruf 2023**) ; (**Republic of Indonesia 2020**);(**Taufik 2020**) . Sustainable rural development is sought to be a solution to the increasing vulnerability of rural areas (**Liu et al. 2023**). The achievement of sustainable rural development in Indonesia is in line with President Jokowi's Nawa Cita program number 3, namely developing Indonesia from the periphery (**Setiawan 2019**) . The instability and vulnerability of rural areas have increased along with the development of urban areas and this will challenge rural development (**Liu et al. 2023**) . Ending disparities in urban and rural development is one of the focuses of rural development (**Hilmawan et al. 2023**).

The development of rural areas has become one of the development priorities because rural areas play an important role in achieving balanced regional development (**Suárez Roldan, Méndez Giraldo, and López Santana 2023** ). A follow-up to efforts to achieve sustainable rural development is the distribution of funds to villages, which are called Village Funds. The amount of Village Funds that have been distributed up to 2021 is IDR 72 trillion, of which IDR 37.08 trillion has been allocated to productive villages, IDR 29.16 trillion to cash-productive villages, and IDR 5.76 trillion to Covid-safe villages (**Handayani et al 2023**). Priorities for the use of Village Funds change from year to year based on conditions in that year. Overall, the priority for using Village Funds is to accelerate the achievement of the entire sustainable rural development agenda, which consists of seventeen agendas. Equitable rural economic growth is the eighth agenda, and this research is interpreted as Sustainable Rural Economic Development (SRED).

Research on sustainable rural economic development finds that political leaders, especially partnerships, have a significant influence on sustainable economic development while reducing poverty and reducing hunger is not the focus of efforts to realize sustainable development in India (**Grover et al. 2021**). The reduction in the number of unemployed in rural areas is an indicator of sustainable rural economic development. The presence of Village Funds and BUMDes should ideally be one of the triggers for increasing village economic growth thereby encouraging a reduction in unemployment and poverty in the village. Research findings analyzing the role of Village Funds and BUMDes in increasing a village's original income and reducing unemployment are still inconsistent. The presence of Village Funds does not contribute to rural economic development and environmental sustainability, this is caused by three things, namely, firstly, Village Funds are considered a gift, secondly, there is a lack of direction from the government and thirdly there is a lack of involvement and innovation in village communities (**Astuti, 2018**) . Different findings state that Village Funds contribute to reducing gaps in village economic development and reducing poverty rates as indicators of rural economic development (**ARHAM and HATU 2020**) . Research on the role of BUMDes for village economic development through increasing the village's original income is still inconsistent. BUMDes in Karangasem Regency were found to increase the village's original income, encouraging village economic development (**Ni Kadek Sinarwati 2019**) ; (**Sinarwati and Prayudi 2021**) ; (**Sinarwati and I Nengah Suarmanayasa 2023**) . Different findings state that the presence of BUMDes has not been able to provide broad benefits and there has been no contribution found by BUMDes in Java in providing employment opportunities for rural communities (**Arifin et al. 2020**). This topic is important because villages have the authority to establish BUMDes (**Indonesia 2014**). The government has provided various supports for the development of BUMDes businesses. Government support contributes to the development of BUMDes businesses (**Sinarwati, Yasa, and Putra 2020**). BUMDes has the authority to manage village potential to achieve sustainable rural economic development, with indicators of increasing village original income, reducing poverty rates in villages, reducing unemployment rates, and increasing access to capital for micro businesses in

villages, but in reality, this condition has not yet fully occurred (**Arifin et al. 2020**) ; (**. and Astuti 2018**).Referring to these research findings, it is important to analyze whether Village Funds and BUMDes resources in Buleleng Regency contribute to achieving sustainable economic development in rural areas. This research was conducted in Buleleng Regency because this Regency is the regency with the largest number of villages in Bali Province. The motivation for the research is: first, research on the role of Village Funds and BUMDes in rural development which is still inconsistent. Both types of research that analyze the achievement of sustainable rural economic development in terms of the role of Village Funds and BUMDes resources are still limited. The difference between this research and previous research that reviewed SRED lies in four dimensions, namely: time, place, indicator variables, a unit of analysis. This research aims to analyze the influence of Village Funds on BUMDes resources, the influence of Village Funds on sustainable rural economic development, the influence of BUMDes resources on sustainable rural economic development, the influence of funds on sustainable rural economic development through BUMDes resources, and the role of BUMDes resources in mediating the influence Village Funds for sustainable rural economic development.

## **2. Literature review**

Referring to Government Regulation No. 60 of 2014, that Village Funds are used for implementing development, community development, and empowering village communities, to provide a reference in prioritizing the use of Village Funds, the government through the Ministry of Villages issued regulations governing the priority use of Village Funds. All regulations indicate that Village Funds can be prioritized for use to develop BUMDes businesses (**Minister of Villages 2020**);(**No. 7 of 2021**) . Apart from establishing, developing, and increasing the capacity of BUMDes/BUMDesma, developing the productive economic capacity and entrepreneurship of village communities is also aimed at developing productive economic businesses which are prioritized to be managed by BUMDes.

The availability of clear regulations that allow Village Funds to be prioritized for developing BUMDes businesses, developing productive economic businesses that are prioritized to be managed by BUMDes, means that BUMDes have the authority and freedom to innovate so that BUMDes will increasingly develop in quantity and quality. Research on the influence of Village Funds on the development of BUMDes shows that Village Funds contribute to increasing the number of BUMDes, but the speed of increasing the number of BUMDes has not been accompanied by the large benefits that BUMDes provide to village communities on the island of Java (**Arifin et al. 2020**).Research findings on the influence of Village Funds on rural development state that Village Funds have a significant positive effect on rural economic development (**Hilmawan et al. 2023**).apart from having an impact on the economic sector, Village Funds have also been found to be able to reduce poverty in rural areas (**ARHAM and HATU 2020**).The presence of Village Funds used to finance conservation and reforestation implemented with tree planting programs can provide direct economic benefits to farming families in South Sulawesi Province(**Watts et al. 2019** ).

Village-owned enterprises in this research are abbreviated as BUMDes, which are social entrepreneurial institutions, which were established by the village government to become a driving force for the village economy. The presence of BUMDes was found to contribute to village economic development (**Ni Kadek Sinarwati 2019**).Improving the performance of craftsmen in Karangasem Regency (**Sinarwati, Marhaeni, et al. 2020**).One Tambun One Product Organization (OTOP) is an institution in Thailand which is similar to BUMDes in Indonesia which has the authority to manage local potential by increasing the creativity of local residents to produce regional superior products (**Diefenbach 2016**). BUMDes are not only profit oriented but must also be able to provide benefits to village communities, so that BUMDes contribute to economic, social and environmental development in rural areas. The presence of BUMDes in Jogjakarta was found to have a positive impact in the economic and social fields, but has not had a direct impact on the welfare of village communities (**Anggraeni 2016**).Empowering village communities by the government through BUMDes is an appropriate and relevant effort to implement because of Indonesia's vast geographical conditions with

diverse natural and human resource potential. BUMDes are capable of driving the village economy, but their movement is still slow (**Amri 2019**).

Economic development cannot be denied as a hope for all countries in the world. The meaning of economic development has experienced a shift from initially focusing only on growth to growth and balance or harmony. Economic development that takes into account nature conservation and has a positive impact on social life is the focus of current economic development. Several terms used for this condition include inclusive economic growth, sustainable economic growth and sustainable economic development. From a regional perspective, sustainable economic development in rural areas is one of the government programs of most countries, including Indonesia.

Sustainable rural economic development is economic development that is measured using indicators of economic, social and environmental growth in rural areas. The economic indicators used include growth in village original income, GRDP Per Capita, Economic Welfare. Social and environmental indicators include Decreasing Unemployment Rate, Decreasing poverty, Decreasing Inequality, Optimizing the use of resources and facilities Promoting industrial structure transition Fostering the growth of rural agriculture (**Ayu Purnamawati, Yuniarta, and Jie 2023**);(**Yanan, Ismail, and Aminuddin 2024a**). Research reviewing sustainable rural economic development states that rural economic development is influenced by the dynamic use of information technology, moderated by sustainable business, which has succeeded in increasing employment opportunities and participation of women entrepreneurs in Sub-Saharan Africa (**Asongu, Rahman, and Alghababsheh 2023**). Sharing economy, energy efficiency, population growth, inflation rate, unemployment rate are macro variables found to influence sustainable economic development in OECD ( Organization for Economic Co-operation and Development) member countries (**Dabbous and Tarhini 2021**). Sustainable rural economic development with indicators of growth in gross domestic product in villages and decreasing unemployment in villages occurring, caused by the presence of information technology in tourist villages (**Liu et al. 2023**);(**Yanan, Ismail, and Aminuddin 2024b**).

The priority use of Village Funds in the initial stage is to prioritize infrastructure development such as building roads and bridges to open connectivity between villages. Research findings state that the presence of Village Funds which are prioritized for infrastructure development is effective in encouraging rural economic development (**Kusmunawati and Syafruddin 2023**). Transport accessibility and infrastructure in Sweden are determinants of sustainable rural economic development (**Große 2024**). Village Funds, apart from being found to encourage rural economic growth, are also stated to be able to reduce poverty and improve the welfare of rural communities (**Yacoub 2022**);(**Telaumbanua and Ziliwu 2022**).

The five hypotheses of this research are:

- H1: Village Funds Have a Significant Positive Influence on BUMDes Resources.
- H2: Village Funds Have a Significant Positive Influence on Sustainable Rural Economic Development.
- H3: BUMDes Resources Have a Significant Positive Influence on Sustainable Rural Economic Development.
- H4: Village Funds Have a Significant Positive Influence on Sustainable Rural Economic Development Through BUMDes Resources.
- H5: BUMDes Resources Play a Mediating Role in the Influence of Village Funds on Sustainable Rural Economic Development.

### **3. Methodology**

This research is associative quantitative research, namely research that aims to determine the relationship between two or more variables(**Sugiyono 2010** ). There are three research variables, which consist of one independent variable, namely sustainable rural economic development, and two independent variables, namely Village Funds and BUMDes resources. Operational definitions and variable measurements are presented in Table 1. Research data are respondents' responses to statements that describe variable indicators for Village Funds, BUMDes resources, and sustainable

rural economic development. Data was collected using a questionnaire. A questionnaire/questionnaire is a data collection technique by giving respondents a set of questions to answer (**Sugiyono 2010**). The aim of distributing questionnaires is to find complete information about a problem. The scale used in this research instrument is the Likert scale. The Likert scale is the ranking value for each answer or response added up to reach a total value (**Darmawan 2023**). The scoring criteria for alternative answers for each item are as follows: a. For the answer Strongly Agree (SS) the respondent was given a score of 5 b. For the answer Agree (S), the respondent was given a score of 4 c. For Neutral answers (N), respondents were given a score of 3 d. The answer Disagree (TS) is given a score of 2 e. The answer Strongly Disagree (STS) is given a score of 1. Data collection via a questionnaire is carried out via Google Form for respondents who have been selected as research samples.

The research population was all village government officials (village heads, village secretaries, and heads of government sections) in Buleleng Regency, Bali Province. Determining the research sample used a convenience sampling technique, considering that this technique is the easiest technique with high-quality results (**Sekaran Uma 2016**). The minimum number of research respondents was 30 village government respondents, with the rationalization of this number the data was assumed to be normally distributed (**Wirawan 2002**). An explanation of variables, operational definitions, measurements, and sources of reference in measuring variables is presented in Table 1

Table 1. Types of Variables, Operational Definitions, Indicators, and Reference Sources

Variable Type		Operational definition	Indicator	Reference source
Independent Variable	Village Funds (X1)	Village Funds are funds that come from the Revenue, and Expenditures Budget of Indonesian Country, distributed to the Villages were transferred through the district/city Regional Revenue and Expenditure Budget and are used for finance government administration, implementation of development, community development and community empowerment.	1. The amount of Village Funds received, 2. Availability of regulations governing the use of Village Funds 3. Ease of understanding village government regulations	Developed by the author
	BUMDes Resources (X2)	This is the amount of	1. Amount of capital,	( <b>Sinarwati, Marhaeni, et al.</b> )

Dependent Variable	Sustainable Rural Economic Development (Y)	capital, number of workers and workforce competencies available in BUMDes which are used to carry out their business activities	Rural economic development is measured by increasing village original income, increasing access to capital for MSEs, reducing the number of poor people in villages, reducing development inequality in villages and reducing the number of unemployed villagers.	2. Total manpower 3. Workforce competency	2020) ; (Sinarwati and I Nengah Suarmanayasa 2023) .  1. Increase in village original income, 2. Increasing access to capital for MSEs, 3. Decrease in the number of poor people in the village. 4. reducing development inequality in villages and 5. reduction in the number of unemployed villagers

Source: ScienceDirect.com

Instrument quality testing is carried out by conducting validity and reliability tests. A validity test is a tool used to measure whether a questionnaire is valid or not. This research uses item analysis, namely the total item scores are seen as the X value, and the total score is seen as the Y value for validity testing using the SPSS 16 program. The results of the r calculation are then consulted with the r table with a significance level of less than 0.05. If the significant value is  $<0.05$  then the statement item can be declared valid. Reliability testing is carried out using the Cronbach alpha value, if the Cronbach alpha value is above 0.07 then the statement item is declared reliable (Darmawan 2023) .

#### **Data analysis technique**

This research uses descriptive analysis techniques and quantitative analysis techniques with structural equation models or *Structural Equation Modeling* (SEM), especially Partial Least Square (PLS). The relationship between variables is presented in Figure 1.

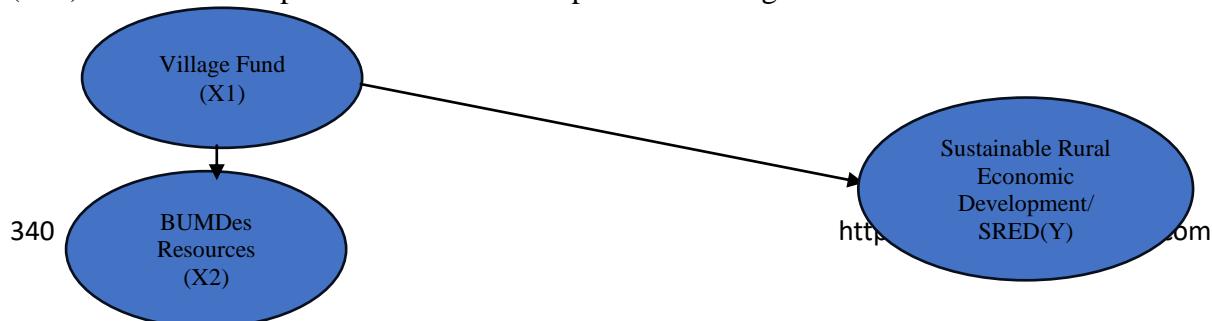




Figure 1. Relationship between research variables

## 4. Results and discussion

### 4.1 Results

The research population is all village government officials (village heads, village secretaries and heads of government sections) in the Buleleng Regency area which numbered 387 people which is called the population size. The sampling technique uses *convenience sampling*. The minimum number of samples collected was 30 people, considering that the data was assumed to be normally distributed (Wirawan 2002). Data was collected from 88 respondents using a closed questionnaire with 5 alternative choices, with a Likert scale which includes statements from strongly agree (SS) with a score of 5 to strongly disagree (STS) with a score of 1. Before being used to collect data, the questionnaire was first tested for validity and reliability. Questionnaires that have been tested for validity and reliability are delivered to all respondents online using Google Forms. The data obtained was then analyzed using Structural Equation Modeling (SEM) analysis techniques assisted by Smart PLS Version 4 software.

#### Testing Research Instruments

The level of validity and reliability of the questionnaire used in this research is not yet known. For this reason, the validity of each questionnaire item and the reliability of the questionnaire list were tested on 30 potential respondents. A questionnaire item is categorized as valid if it has a product-moment correlation coefficient between the scores of the questionnaire items and the total score of the items  $>0.30$ . It is categorized as reliable if the variable questionnaire list has a Cronbach's alpha coefficient  $>70$  (Hair et al. 2016).

Testing of this research instrument was carried out by taking data from 30 potential respondents. Calculation of the correlation coefficient and Cronbach alpha was assisted with SPSS software version 26, Reliability sub-menu. Validity testing was carried out on each questionnaire item for each corresponding variable. Reliability testing was carried out for each research variable, namely *Village Fund (X1)* which has 9 questionnaire items, *BUMDes Resources (X2)* which has 15 questionnaire items, and *Sustainable Rural Economic Development (Y)* which has 5 questionnaire items. From the results of distributing the questionnaire to 30 respondents, data was obtained as shown in Table 2.

Table 2. Instrument Validity and Reliability Testing

Variables	Items	Correlation Items	r critics	Information	Cronbach's Alpha	Critical limitatio n	Information
Village Fund (X1)	x1.01	0.787	0.30	Vld	0.965	0.60	Reliable
	x1.02	0.814	0.30	Vld			
	x1.03	0.855	0.30	Vld			
	x1.04	0.887	0.30	Vld			
	x1.05	0.883	0.30	Vld			
	x1.06	0.806	0.30	Vld			
	x1.07	0.919	0.30	Vld			
	x1.08	0.926	0.30	Vld			
	x1.09	0.824	0.30	Vld			
BUMDes Resources (X2)	x2.01	0.462	0.30	Vld	0.60	Reliable	
	x2.02	0.804	0.30	Vld			
	x2.03	0.583	0.30	Vld			
	x2.04	0.760	0.30	Vld			
	x2.05	0.855	0.30	Vld			

x2.06	0.837	0.30	Vld			
x2.07	0.827	0.30	Vld			
x2.08	0.718	0.30	Vld			
x2.09	0.829	0.30	Vld			
x2.10	0.868	0.30	Vld			
x2.11	0.891	0.30	Vld			
x2.12	0.880	0.30	Vld			
x2.13	0.809	0.30	Vld			
x2.14	0.690	0.30	Vld			
x2.15	0.746	0.30	Vld			
y1.1	0.777	0.30	Vld			
<i>Sustainable Rural Economic Development (Y)</i>	y1.2	0.696	0.30	Vld	0.897	0.60
	y1.3	0.822	0.30	Vld		Reliable
	y1.4	0.661	0.30	Vld		
	y1.5	0.849	0.30	Vld		

Source: Results of data analysis, Vld=valid

Data Table 2. shows that all research instrument items have a *Corrected Item-Total Correlation coefficient* greater than 0.30, so it can be stated that all questionnaire items for each research variable are valid. Furthermore, the *Cronbach's Alpha* value for the seven variables is  $> 0.60$ , so it can be stated that the entire questionnaire for this research is reliable. The results of testing this instrument show that all research instruments are valid and reliable so that all research questionnaire items are suitable for use for further analysis.

### Descriptive Statistical Analysis

Descriptive statistical analysis describing the research variables was carried out to determine the description of each variable in terms of the frequency distribution and the average value of respondents' answers to the statements of the variables studied. The research variables used consist of *Village Fund (X1)*, *BUMDes Resources (X2)*, and *Sustainable Rural Economic Development (Y)*. These results are further interpreted using a continuum table tool, as follows:

Table 3 Interval Categories

Scale	Category	
	VF, BR, SRED	VF, BR, SRED
1.00 – 1.80	STS (strongly disagree)	very bad
1.81 – 2.60	TS (disagree)	bad
2.61 – 3.40	CS (quite agree)	enough
3.41 – 4.20	S (agree)	good
4.21 – 5.00	SS (strongly agree)	very good

Source: Researcher (2024)

Information:

VF: *Village Fund (X1)*

BR: *BUMDes Resources (X2)*

SRED: *Sustainable Rural Economic Development (Y)*

### Variable Description Sustainable Rural Economic Development (Y)

The *Sustainable Rural Economic Development* variable in this research consists of 5 statement items which are measuring instruments for *Sustainable Rural Economic Development indicators*. The results of the descriptive analysis regarding the *Sustainable Rural Economic Development variable* are shown in Table 4.

Table 4. Description of the Sustainable Rural Economic Development (Y)

No.	Statement Item (Code)	Frequency of Respondents' Answers					Total Score	Averag e Score	Note
		STS (1)	T.S (2)	CS (3)	S (4)	SS (5)			

1	y1.1	1	1	5	46	35	377	4.28	VG
2	y1.2	0	4	15	54	15	344	3.91	G
3	y1.3	0	1	7	48	32	375	4.26	VG
4	y1.4	1	1	8	52	26	365	4.15	G
5	y1.5	0	2	7	53	26	367	4.17	G
<b>Amount</b>		2	9	42	253	134	1828	20.77	
		<b>Average</b>				<b>4.15</b>		G	

Source: Results of data analysis

Data from Table 4 shows that overall the *Sustainable Rural Economic Development* variable obtained an average score of 4.15 in the good category. The highest assessment regarding *Sustainable Rural Economic Development* is the y1.1 indicator with an average score of 4.28 in the very good category, while the lowest is the y1.2 indicator with an average of 3.91 in the good category. In general, the description of respondents' answers provides information that respondents perceive *Sustainable Rural Economic Development* in the good category.

#### **Description of Village Fund (X1)**

The *Village Fund* variable in this research consists of 9 statement items which are measuring instruments for *Village Fund indicators*. The results of the descriptive analysis regarding the *Village Fund variable* are shown in Table 5.

Table 5. Variable Description *Village Fund (X1)*

No.	Statement Item (Code)	Frequency of Respondents' Answers					Total Score	Averag e Score	Note
		STS (1)	T.S (2)	CS (3)	S (4)	SS (5)			
1	x1.01	1	2	11	53	21	355	4.03	G
2	x1.02	2	5	13	56	12	335	3.81	G
3	x1.03	1	4	12	56	15	344	3.91	G
4	x1.04	2	3	12	52	19	347	3.94	G
5	x1.05	1	6	16	52	13	334	3.80	G
6	x1.06	1	3	15	56	13	341	3.88	G
7	x1.07	1	4	14	53	16	343	3.90	G
8	x1.08	1	5	17	53	12	334	3.80	G
9	x1.09	1	4	16	60	7	332	3.77	G
<b>Amount</b>		11	36	126	491	128	3065	34.83	
		<b>Average</b>				<b>3.87</b>		Good	

Source: Results of data analysis, G=Good

Data from Table 5 shows that overall the *Village Fund variable* obtained an average score of 3.87 in the good category. The highest assessment regarding the *Village Fund* is the x1.04 indicator with an average score of 3.94 in the good category, while the lowest is the x1.09 indicator with an average of 3.77 in the good category. In general, the description of the respondents' answers provides information that the respondents have a perception of the *Village Fund* in the good category.

#### **Description of Variable Perception of BUMDes Resources (X2)**

Results of descriptive analysis regarding the *BUMDes Resources perception variable* are shown in Table 6.

Table 6. Description of *BUMDes Resources Perception Variables(X2)*

No.	Statement Item (Code)	Frequency of Respondents' Answers					Total Score	Average Score	Note
		STS (1)	T.S (2)	CS (3)	S (4)	SS (5)			
1	x2.01	1	2	10	45	30	365	4.15	G
2	x2.02	1	4	16	53	14	339	3.85	G
3	x2.03	1	2	11	55	19	353	4.01	G
4	x2.04	1	2	7	53	25	363	4.13	G
5	x2.05	2	4	18	50	14	334	3.80	G

6	x2.06	1	1	12	60	14	349	3.97	G
7	x2.07	1	5	23	47	12	328	3.73	G
8	x2.08	1	12	23	39	13	315	3.58	G
9	x2.09	1	10	22	42	13	320	3.64	G
10	x2.10	3	4	21	49	11	325	3.69	G
11	x2.11	3	8	29	39	9	307	3.49	G
12	x2.12	2	7	24	46	9	317	3.60	G
13	x2.13	2	5	18	51	12	330	3.75	G
14	x2.14	2	3	19	50	14	335	3.81	G
15	x2.15	2	4	17	52	13	334	3.80	G
<b>Amount</b>		24	73	270	731	222	5014	56.98	
							<b>Average</b>	<b>3.80</b>	<b>Good</b>

Source: Results of data analysis, G=Good

Table 6 data shows that overall the *BUMDes Resources perception variable (X2)* obtained an average score of 3.80 in the good category. The highest assessment regarding the perception of *BUMDes Resources (X2)* is questionnaire item x2.01 with an average score of 4.15 in the good category, while the lowest is questionnaire item x2.11 with an average of 3.49 in the good category. In general, the description of the respondents' answers provides information that the respondents have a perception of *BUMDes Resources (X2)* in the good category.

### Inferential Analysis

An inferential analysis is used to analyze the relationship between variables in this research, namely Sustainable Rural Economic Development, Village Fund, and BUMDes Resources. The analysis will include an evaluation of the measurement model (*Outer Model*) and an evaluation of the structural model (*Inner Model*).

#### Evaluation of the Measurement Model (*Outer Model*)

*Outer model* evaluation is applied to all indicators for each research variable. Evaluation of the *outer model* includes two things, namely validity testing and construct reliability testing. The validity tests used are *convergent validity* and *discriminant validity* which include: (1) *Factor Loadings Test*, (2) *Fornell-Larcker Criterion Test*, and (3) *Cross Loadings Test*.

#### Construct Validity Test

Construct validity shows the level of conformity of the use of a measurement with the theories used to define a construct. To test the validity and reliability of the construct, it is deemed necessary to display the output of the *SEM Algorithm data processing results* with *PLS software* as presented in Figure 2.

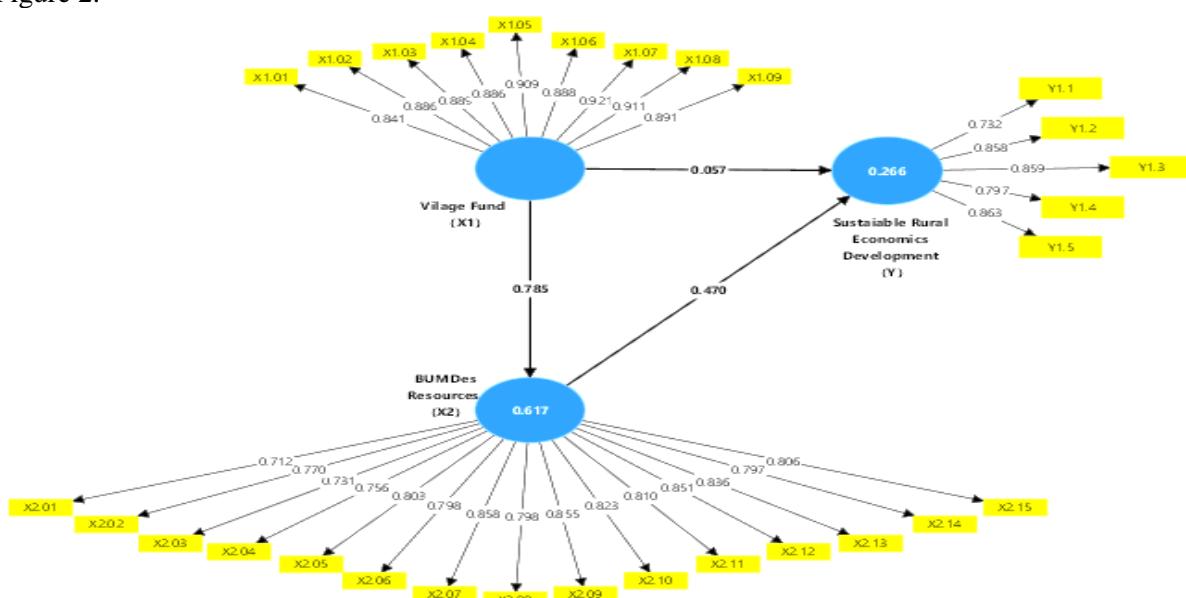


Figure 2. *Smart PLS Algorithm Output*

One way to test the validity of an indicator is the *Outer Loading test*. An indicator is declared valid if it has a *loading factor*  $> 0.7$  T-statistics  $> 1.960$  and a P value  $< 0.05$  for the intended construct (**Anon nd**). *Loading factor* values for all variable indicators in Table 7.

Table 7 *Loading Factors* Village Fund (X1), BUMDes Resources (X2), and Sustainable Rural Economic Development (Y)

	Original Sample (O)	T Statistics (  O/STDEV  )	P Values
x1.01 <- X1	0.841	14,828	<b>0,000</b>
x1.02 <- X1	0.886	17,582	<b>0,000</b>
x1.03 <- X1	0.889	22,513	<b>0,000</b>
x1.04 <- X1	0.886	30,275	<b>0,000</b>
x1.05 <- X1	0.909	32,877	<b>0,000</b>
x1.06 <- X1	0.888	22,798	<b>0,000</b>
x1.07 <- X1	0.921	37,663	<b>0,000</b>
x1.08 <- X1	0.911	37,264	<b>0,000</b>
x1.09 <- X1	0.891	23,884	<b>0,000</b>
x2.01 <- X2	0712	8,130	<b>0,000</b>
x2.02 <- X2	0.770	11,221	<b>0,000</b>
x2.03 <- X2	0.731	8,654	<b>0,000</b>
x2.04 <- X2	0.756	10,382	<b>0,000</b>
x2.05 <- X2	0.803	14,846	<b>0,000</b>
x2.06 <- X2	0.798	11,563	<b>0,000</b>
x2.07 <- X2	0.858	22,607	<b>0,000</b>
x2.08 <- X2	0.798	18,037	<b>0,000</b>
x2.09 <- X2	0.855	27,941	<b>0,000</b>
x2.10 <- X2	0.823	15,756	<b>0,000</b>
x2.11 <- X2	0.810	13,792	<b>0,000</b>
x2.12 <- X2	0.851	23,613	<b>0,000</b>
x2.13 <- X2	0.836	20,455	<b>0,000</b>
x2.14 <- X2	0.797	15,113	<b>0,000</b>
x2.15 <- X2	0.806	16,161	<b>0,000</b>
y1.1 <- Y	0.732	8,956	<b>0,000</b>
y1.2 <- Y	0.858	26,327	<b>0,000</b>
y1.3 <- Y	0.859	13,847	<b>0,000</b>
y1.4 <- Y	0.797	9,175	<b>0,000</b>
y1.5 <- Y	0.863	12,643	<b>0,000</b>

Source: Results of data analysis

Table 7 data shows that all indicators for all constructs have *loading factors (original sample)* above 0.7. Apart from these results, it can also be seen that all indicators have T-statistics  $> 1.960$  and a P value  $< 0.05$ . Thus, it can be stated that all valid indicators reflect their respective constructs so that all data is deemed worthy of further analysis.

### Construct Reliability Test

The reliability of a construct shows the consistency of the results of measuring a concept or a variable. Reliability can be measured by looking at *Cronbach's Alpha* and *Composite Reliability values*. Based on the results of data processing, Table 10 can be presented which contains *Cronbach's Alpha*, *rho\_A*, *Composite Reliability*, and *AVE*.

Table 8. *Cronbach's Alpha, rho\_A, Composite Reliability, and AVE*

	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
<b>Village Fund (X1)</b>	<b>0.968</b>	<b>0.970</b>	<b>0.972</b>	<b>0.795</b>
<b>BUMDes Resources (X2)</b>	<b>0.960</b>	<b>0.961</b>	<b>0.964</b>	<b>0.642</b>
<b>Sustainable Rural Economic Development (Y)</b>	<b>0.885</b>	<b>0.971</b>	<b>0.913</b>	<b>0.678</b>

Source: Results of data analysis

Table 8 data shows that the *Cronbach's Alpha, rho\_A, and Composite Reliability values* for each construct are all worth  $> 0.70$  and the *Average Variance Extracted ( AVE)* values for each construct are all worth  $> 0.50$ . Thus, all measurements used in this research are reliable and suitable for further analysis.

### Structural Model Evaluation (Inner Model)

*Inner model* evaluation includes two main things, namely evaluating the *goodness of fit of the model* and evaluating the influence of exogenous variables on endogenous variables through hypothesis testing. Evaluation of model suitability (*goodness of fit*) and evaluation of the influence of exogenous variables on endogenous variables refers to the *SEM PLS output* as shown in Figure 3.

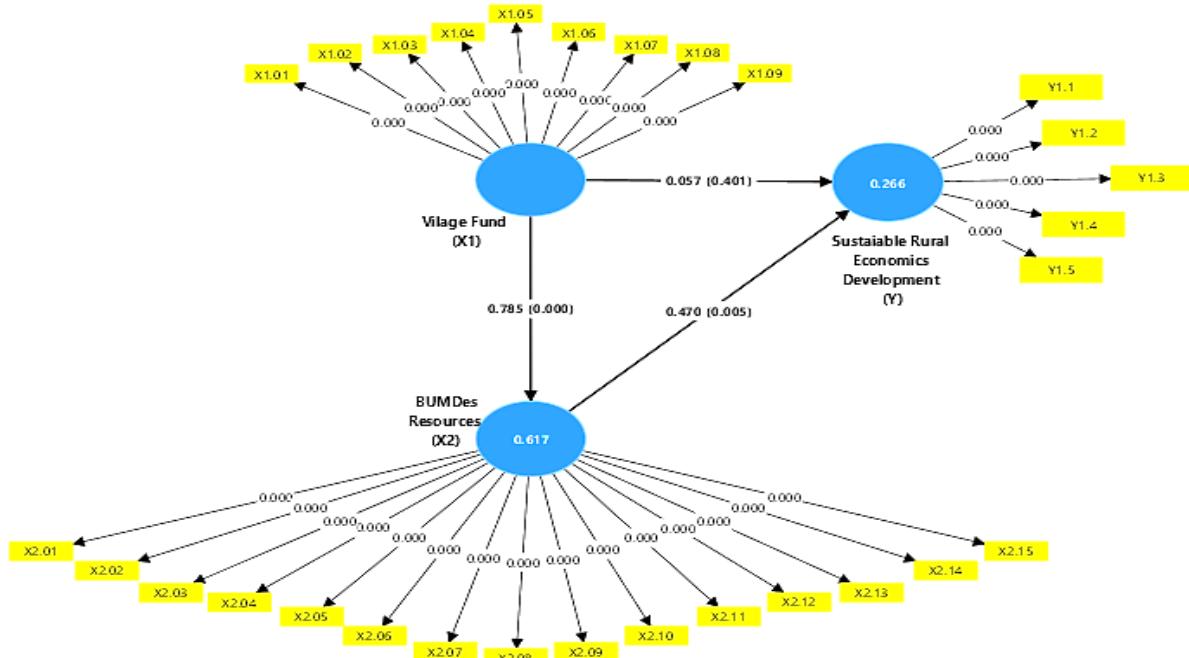


Figure 3. Path Coefficient Bootstrapping Model

Figure 3. shows that there is one exogenous variable, namely, *Village Fund (X1)* which has nine

indicators. One endogenous variable is *Sustainable Rural Economic Development* (*Y*), which has five indicators. One mediating variable is *BUMDes Resources* (*X2*) which has fifteen indicators as shown in Figure 3. Next, the evaluation of model suitability (*goodness of fit*) and hypothesis testing are carried out.

#### **Evaluation of *Goodness of Fit Inner Model* )**

The evaluation of this structural model will be carried out using several approaches *F -Square, and the result is shown in Table 9.*

Table 9. *F-square* value of Village Fund, BUMDes Resources, and Sustainable Rural Economic Development variables

Relationship Between Variables	<i>f-square</i>	<i>Information</i>
<b>Village Fund (X1) → BUMDes Resources (X2)</b>	1,608	Strong
<b>Village Fund (X1) → Sustainable Rural Economic Development (Y)</b>	0.002	Very weak
<b>BUMDes Resources (X2) → Sustainable Rural Economic Development (Y)</b>	0.115	Weak

Source: Results of data analysis

Data Table 9 shows the *f-square value* of influence Village Fund (X1) → BUMDes Resources (X2) = 1,608. The effect size value of 1.608 is above 0.35 so it can be classified as the influence of the Village Fund (X1) on BUMDes Resources (X2) Large. Influence *f-square* value Village Fund (X1) → Sustainable Rural Economic Development (Y) = 0.002. The effect size value of 0.002 is below 0.02 so it can be classified as the influence of the Village Fund (X1) on Sustainable Rural Economic Development (Y) is Very Weak. *F-square* value of BUMDes Resources influence (X2) → Sustainable Rural Economic Development (Y) = 0.115. The effect size value of 0.115 is between 0.02 to 0.15 so it can be classified as the influence of BUMDes Resources (X2) towards Sustainable Rural Economic Development (Y) is Weak.

#### **Hypothesis test**

Hypothesis testing includes three things, namely direct effect hypothesis testing which includes hypotheses 1 to hypothesis 3, indirect effect testing for hypothesis 4, and mediation effect testing for hypothesis 5.

##### **a. Direct Effect Testing**

Direct influence analysis can explain the relationship between research variables (*latent variables*). Namely *Village's Fund, BUMDes Resources, and Sustainable Rural Economic Development*. The direct effect is shown by the coefficient of all arrows with one tip. To determine the direct influence between variables, the SMART PLS *Bootstrapping coefficient path is displayed* as in Figure 4 and Table 11 below.

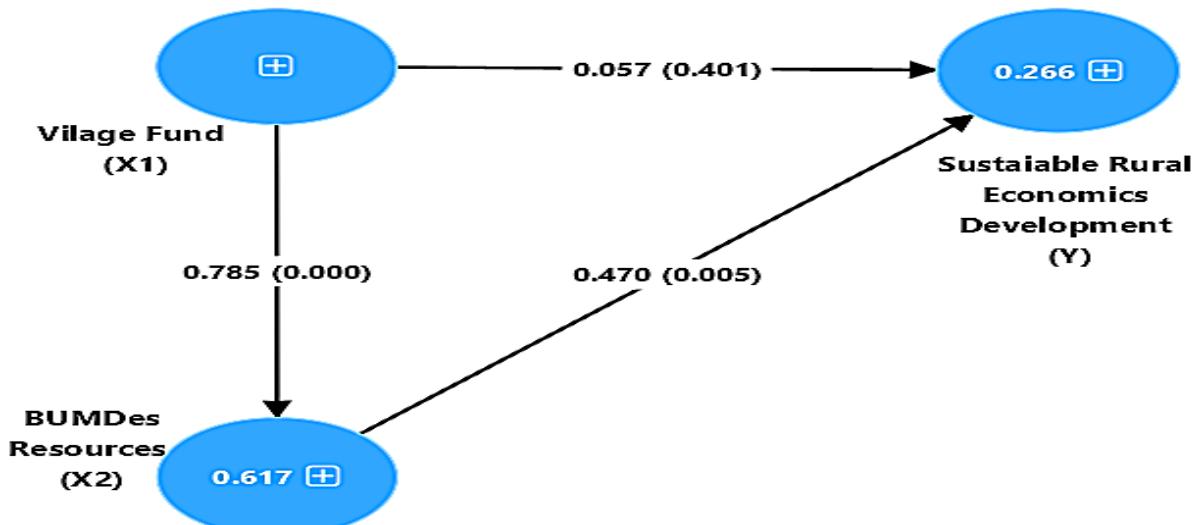


Figure 4. *T-statistical coefficient and P-value of the Bootstrapping Model*

Table 10. *Direct Effect Path Coefficients, T-Statistics, P-Values*

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics ( O/STDEV )	P Values
Village Fund (X1) -> BUMDes Resources (X2)	0.785	0.784	0.057	13,804	<b>0,000</b>
Village Fund (X1) -> Sustainable Rural Economic Development (Y)	0.057	0.068	0.226	0.251	<b>0.401</b>
BUMDes Resources (X2) -> Sustainable Rural Economic Development (Y)	0.470	0.488	0.180	2,612	<b>0.005</b>

Source: Results of data analysis

Based on Figure 4 and Table 10, hypotheses 1 to 3 were tested regarding the influence of *the Village Fund*, *BUMDes Resources*, and *Sustainable Rural Economic Development*. Hypothesis testing criteria use a one-sided test, namely the right side using a level of  $\alpha = 5\%$  and the size of the  $t_{\text{table}} = 1.645$  (Adi et al. 2023) ; (Adi, Gede, and Adi 2024) ; (Ruxton and Neuhäuser 2010) .

#### **Testing the Influence Hypothesis Village Fund for BUMDes Resources**

Data in Figure 4 and Table 10 show a big coefficient path ( $\beta_1$ ) = 0.785;  $t_{\text{count}} = 13.804$  and  $P_{\text{value}} = 0,000$ . Coefficient path ( $\beta_1$ ) = 0.785 matter. This means there is an influence positive Village Fund to BUMDes Resources of 0.785. Coefficient  $t_{\text{count}} = 13.804 > 1,645$  and  $P_{\text{value}} = 0.000 < 0.05$ ; matter. This means the influence of Village Fund on BUMDes Resources is significant. With thereby can be stated hypothesis 1 states that, Village Fund is influential positive and significant to BUMDes Resources tested the truth. It means influencing Village Fund directly to BUMDes Resources is a significant positive. The more good Village Fund, then the more Good BUMDes Resources.

#### **Testing the Influence Hypothesis Village Fund Towards Sustainable Rural Economic Development**

In Figure 4 and Table 10, big coefficient path ( $\beta_2$ ) = 0.057;  $t_{\text{count}} = 0.251$  and  $P_{\text{value}} = 0.401$ . Coefficient path ( $\beta_2$ ) = 0.057 matter. This means there is an influence positive Village Fund to Sustainable Rural Economic Development of 0.057. Coefficient  $t_{\text{count}} = 0.251 < 1,645$  and  $P_{\text{value}} = 0,401 > 0.05$ ; matter. This means the influence of Village Fund on Sustainable Rural Economic Development is Not significant. Thereby, hypothesis 2 states that, the Village Fund is influential

positive, and significant to Sustainable Rural Economic Development. It means the influence of directly Village Fund towards Sustainable Rural Economic Development is positive which is not significant. The more good Village Fund, no as well as immediately the more high Sustainable Rural Economic Development.

**Testing the Influence Hypothesis BUMDes Resources towards Sustainable Rural Economic Development**

In Figure 4 and Table 10 it is known that the path coefficient ( $\beta_3$ ) = 0.470;  $t_{\text{count}} = 2.612$  and  $P_{\text{value}} = 0.005$ . Path coefficient ( $\beta_3$ ) = 0.470, this means that there is a positive influence of BUMDes Resources towards Sustainable Rural Economic Development of 0.470. The calculated  $t$  coefficient =  $2.512 > 1.645$  and  $P_{\text{value}} = 0.005 < 0.05$ ; this means the influence of BUMDes Resources towards Sustainable Rural Economic Development is significant. Thus, hypothesis 3 can be stated which states that BUMDes Resources has a positive and significant effect on Sustainable Rural Economic Development proven to be true. This means the direct influence of BUMDes Resources towards Sustainable Rural Economic Development is a significant positive. The better the BUMDes Resources, the higher the Sustainable Rural Economic Development.

**b. Indirect Effect Testing**

Indirect influence analysis can explain the relationship between research variables (*latent variables*) *Village Fund* on *Sustainable Rural Economic Development* through BUMDes Resources. The indirect effect is shown by the specific indirect effect coefficient through BUMDes Resources. Hypothesis testing criteria use a one-sided test, namely the right side using a level of  $\alpha = 5\%$  and the size of the  $t$  table = 1.645 (**Adi et al. 2023**) ; (**Adi et al. 2024**) ; (**Ruxton and Neuhauser 2010**).

To find out the indirect influence between variables, the path coefficient of the specific indirect effect is displayed through BUMDes Resources. SMART PLS bootstrapping as in Table 11.

Table 11. Indirect Effect Path Coefficients, T-Statistics, P-Values

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics ( $ O/STDEV $ )	P Values
<b>Village Fund (X1) → BUMDes Resources (X2) → Sustainable Rural Economic Development</b>	0.369	0.382	0.147	2,518	<b>0.006</b>

Source: Results of data analysis

Data Table 11 shows the magnitude of the indirect path coefficient ( $\beta$ ) = 0.369;  $t_{\text{count}} = 2.518$  and  $P_{\text{value}} = 0.006$ . Indirect path coefficient ( $\beta$ ) = 0.369, which means that there is a positive influence of the Village Fund on Sustainable Rural Economic Development through BUMDes Resources of 0.369. The calculated  $t$  coefficient =  $2.518 > 1.645$  and  $P_{\text{value}} = 0.006 < 0.05$ ; This means that the influence of the Village Fund on Sustainable Rural Economic Development through BUMDes Resources is significant. Thus, hypothesis 4 can be stated which states that the Village Fund has a positive and significant effect on Sustainable Rural Economic Development through BUMDes Resources proven to be true. This means that the indirect influence of the Village Fund on Sustainable Rural Economic Development through BUMDes Resources is significantly positive. The better the Village Fund Through good BUMDes Resources, Sustainable Rural Economic Development will be.

### c. Mediation Testing

The testing method for mediating variables uses path coefficient analysis of the direct influence and indirect influence. The indirect influence coefficient is the product of the path coefficient of the segments traversed (**Solimun et al. 2017:92**). Mediating variable testing is used to determine whether the mediating variable being analyzed is full mediation or partial mediation. The criteria for determining whether a variable is a partial mediation or full mediation are as follows: a. If the indirect influence path coefficient ( $P_2 * P_3$ ) is significant and the direct influence path coefficient ( $P_1$ ) is also significant, then the mediating variable is a partial mediating variable; b. If the indirect influence path coefficient ( $P_2 * P_3$ ) is significant and the direct influence path coefficient ( $P_1$ ) is not significant, then the mediating variable is a full mediating variable. The results of testing the mediating role hypothesis are presented in Figure 5.

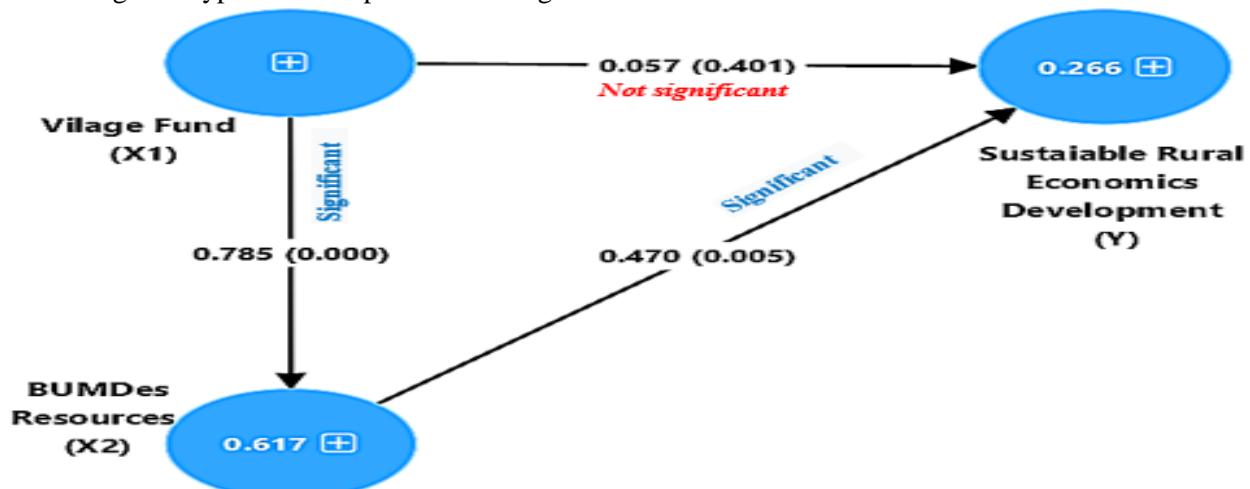


Figure 5. BUMDes Resources Path DiagramAs a Mediator for the Influence of the Village Fund Towards Sustainable Rural Economic Development

Based on the analysis results which show that the indirect influence of *the Village Fund* on Sustainable Rural Economic Development through BUMDes Resources is significant and the direct influence of *the Village Fund* on Sustainable Rural Economic Development is not significant, it can be stated that BUMDes Resources is a full mediation of the influence of *the Village Fund* on Sustainable Rural Economic Development. Thus, hypothesis 5 states that BUMDes Resources plays a full role in mediating the influence of the Village Fund towards Sustainable Rural Economic Development is proven to be true. This means that the Village Fund can improve Sustainable Rural Economic Development through the existence of BUMDes Resources.

### 4.2 Discussions

#### *The influence of Village Funds on BUMDes resources.*

The results of statistical analysis show that Village Funds have a significant positive effect on BUMDes resources. The average value of the statement items that measure the village fund variable is 3.87 and is in a good category. The highest value is 4.03, namely in the statement that the number of Village Funds received can increase the amount of BUMDes capital. The amount of Village Funds received, the availability of regulations governing the use of Village Funds, and the ease with which the village government understands the regulations have proven to have a significant positive effect on the amount of capital, the number of workers, and the competency of BUMDes workers. Village Funds received by the village government are permitted to be allocated for BUMDes business development (**Kemendes PDTT 2020**);(**No. 7 of 2021**). BUMDes development in this case means that Village Funds can be used to provide additional capital for BUMDes. The availability of

regulations and the ease of understanding regulations regarding Village Funds means that there is no worry for the village government in allocating Village Funds to provide additional capital, so that BUMDes resources, especially the amount of BUMDes capital, increase. The increasing BUMDes capital is managed to increase business units, so additional BUMDes business units require an additional workforce. This explains that there is a significant positive influence of Village Funds on BUMDes resources. This finding is in line with (**Wicaksono et al. 2019**) Village Funds distributed on the island of Java was able to increase the number of BUMDes. Village Funds are a form of government funding that can be managed to develop BUMDes. Government funding and government policies for BUMDes have been proven to be able to increase the competency of human resources in BUMDes (**Sinarwati, Yasa, et al. 2020**).

### ***The Influence of Village Funds on Sustainable Rural Economic Development***

Sustainable rural economic development in this study is measured by increasing the village's original income, increasing access to capital for MSEs, reducing the number of poor people in villages, reducing development inequality in villages, and reducing the number of unemployed villagers. Prioritized Village Funds for the SDGs acceleration program through national economic recovery and national priority programs according to village's authority. The use of Village Funds for national economic recovery by Village authority is prioritized for achieving Village SDGs, carried out through the formation, development, and revitalization of BUMDes, provision of Village electricity, and development of productive economic enterprises.

The use of the Village Fund for national priority programs by Village authority is prioritized for Villages data collections, potential and resource mapping, and development of information and communication technology as an effort to expand partnerships for Village development, strengthening food security, and preventing stunting in Villages and inclusive Villages to increase women's involvement in Villages, peaceful villages with justice, and realizing dynamic village institutions and adaptive village culture (**Kemendes PDTT 2020**) ; (**No. 7 of 2021**). The use of Village Funds by the village government in Buleleng Regency refers to existing regulations, so it has not had a direct effect on increasing the village's original income, the ability of MSMEs to access capital sources, reducing the number of poor villagers, reducing development inequality and has also not been able to reduce the number of village residents who are unemployed. This condition is shown in Table 9 in the Fsquare value of the relationship between X1 (Village Funds) and Y (sustainable rural economic development) of 0.002, namely a very weak relationship. This finding contradicts (**Anggara 2021**) who found that village fund allocation contributed positively to village original income. This finding also fails to support (**Yacoub 2022**) ; (**Normasyhuri, Suryanto, and Prayoga 2012**) which found that Village Funds are able to reduce the number of poor people in villages.

### ***The Influence of BUMDes Resources on Sustainable Rural Economic Development***

The BUMDes resources in this research are the amount of capital, the number of workers and the competency of the BUMDes workforce. The majority of BUMDes capital comes from the village government and specifically for BUMDes in Bali Province, BUMDes obtains capital from the Bali Provincial Government through the Pintusadu Mandara program. The additional capital by BUMDes managers is used to create business units including savings and loans, drinking water management, fertilizer provision and other natural potential management. The savings and loan business carried out by BUMDes can be an alternative for MSMEs to obtain additional capital. For example, BUMDes business activities in Wall Village help farmers sell their agricultural products, BUMDes in Tajun Village manage natural resources such as clean water to meet the needs of residents. BUMDes business activities that generate profits contribute to increasing village original income (**Sinarwati and Prayudi 2021**).

Increasing the amount of BUMDes capital has an effect on increasing business units and employment. The presence of BUMDes which absorb labor has an effect on reducing the number of

unemployed village residents (**Ni Kadek Sinarwati 2019**) . CompetencemanagerThe increase in BUMDes, seen from increased education and experience, indirectly provides additional capabilities in managing village potential. The potential of villages managed by BUMDes increases the amount of profit and the amount of BUMDes capital so that more target households are helped to obtain loans with low interest.Target households who receive capital assistance carry out business activities, and with the business activities carried out they can get out of poverty. This condition is an explanation that BUMDes resources have a positive effect on reducing the number of poor villagers, as an indicator of sustainable rural economic development.This finding found that BUMDes resources in Buleleng Regency increased the village's original income and reduced the number of poor villagers in line with(**Hilmawan et al. 2023**) ; (**Ibrahim, Canon, and Sudirman 2023**) .

### ***The Influence of Village Funds on Sustainable Rural Economic Development Through BUMDes Resources***

The amount of Village Funds, the availability of regulations and the ease of understanding the regulations governing the use of Village Funds have not been proven to directly influence sustainable rural economic development. The research results show that Village Funds through BUMDes resources with indicators of amount of capital, number of workers and workforce competency are able to contribute to increasing village original income, increasing access to capital for MSMEs, reducing development gaps and reducing the number of poor and unemployed villagers. Village Funds allocated for the development and revitalization of BUMDes. Apart from providing funds for development and revitalization, the government is also implementing a village cash-intensive program involving BUMDes. This program has been proven to be able to increase BUMDes business development (**Sinarwati, Yasa, et al. 2020**) . BUMDes businesses that develop by getting allocated funds from Village Funds then result in BUMDes gaining increased profits, which is one source of increasing village original income.

### ***The Role of BUMDes Resources in Mediating the Influence of Village Funds on Sustainable Rural Economic Development***

Village Funds have not directly had an impact on sustainable rural economic development. Village Funds contribute to increasing original village income, the ability to access capital for MSMEs, and reducing the number of poor and unemployed villagers after being mediated by the presence of BUMDes. BUMDes resources fully mediate the influence of Village Funds on sustainable rural economic development. This shows the need to continue involving BUMDes in rural development, especially development in the economic sector to achieve village SDGs.

## **5. Conclusion**

### ***5.1. Conclusion***

Research conclusions are answers to research questions. Based on the results of data analysis, the research conclusions are as follows: ***Hypothesis 1*** which states that the Village Fund has a positive and significant effect on BUMDes Resources has been proven to be true. The higher the Village Fund, the higher the BUMDes Resources. ***Hypothesis 2*** states that the Village Fund has a positive and significant influence on Sustainable Rural Economic Development has not been proven to be true. The higher the Village Fund, the higher the Sustainable Rural Economic Development will not necessarily be. ***Hypothesis 3*** states that, BUMDes Resources has a positive and significant effect on Sustainable Rural Economic Development proven to be true. The better the BUMDes Resources, the higher the Sustainable Rural Economic Development. ***Hypothesis 4*** states that the Village Fund has a positive and significant influence on Sustainable Rural Economic Development through BUMDes Resources has been proven to be true. The better the Village Fund, if it is through BUMDes Resources, the higher the Sustainable Rural Economic Development. ***Hypothesis 5*** states, that BUMDes Resources ' role in mediating the influence of the Village Fund on Sustainable Rural Economic Development is proven. Full mediation to be exact. The Village Fund can improve Sustainable Rural Economic Development if only through BUMDes Resources.

### **5.2. Limitations**

The weakness of this research lies in the limited variables analyzed which are thought to influence sustainable rural economic development. This research only analyzes the influence of Village Funds and BUMDes resources on sustainable rural economic development.

### **5.3. Suggestions**

Referring to research findings which state that Village Funds have a significant positive effect on BUMDes resources. BUMDes resources have a positive influence on sustainable rural economic development. BUMDes resources fully mediate the influence of Village Funds on sustainable rural economic development, so it is recommended that the central government maintain the continuity of distribution of Village Funds. The village government should further increase the involvement of BUMDes in managing Village Funds. It is recommended that BUMDes improve its management capabilities to further increase its contribution to sustainable rural economic development. The community empowerment department is advised to increase support for the development of BUMDes, one of which is by providing management training. Based on research limitations, it is recommended that future researchers add independent variables, for example, technology, or use a qualitative approach in analyzing sustainable rural economic development.

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