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OPTIMIZATION OF VILLAGE-OWNED ENTERPRISES IN SUSTAINABLE VILLAGE ECONOMIC DEVELOPMENT IN BERAU REGENCY, INDONESIA

ENDAH SUSANTI [1], AMIARTUTI KUSMANINGTYAS [2]* and TRI ANDJARWATI [3]

[1,2,3] Universitas 17 Agustus 1945 Surabaya, Indonesia.
*Corresponding Author Email: amiartuti@untag-sby.ac.id

Abstract

This study explores local resources, infrastructure, and social innovation in the sustainable development of rural Berau District in Indonesia, with local economic development as the mediating variable and the role of village-owned enterprises as the moderating variable. The present study has a quantitative approach, with a sample size of 100 Village Heads for whom data was collected by using a structured questionnaire and analysed by SEM-PLS. Results show that local resources and social innovation contribute much to local economic development and sustainable rural development, focusing on agriculture, fisheries, tourism, creative industries, and initiatives such as the Digital Village Program. The contribution of infrastructure is negligible and represents a barrier due to issues in connectivity and planning processes. Local economic development plays a crucial mediating role, reinforcing the importance of optimization of resources and innovative practices. It also points to the barriers to these factors: limited leadership capacity and environmental degradation. It enumerates some actionable insights for policymakers in their pursuit of inclusive and sustainable rural development through targeted intervention.

Keywords: Sustainability, Resources, Innovation, Infrastructure, Development.

1. INTRODUCTION

The issue of sustainable rural development is a crucial concern because, globally, 45 percent of the population lives in rural areas and 70 percent of extreme poverty can be found therein. The data from BPS puts the number of people living under poverty in rural parts of Indonesia at 12.22% or 14.16 million out of a total population in March 2023, while in the urban areas it is only 7.29% or 11.74 million people (Central Bureau of Statistics, 2023). This gap shows that rural development still faces serious challenges in realizing sustainability. Various previous literature has discussed different factors affecting sustainable rural development. Liu et al. (2022), in this regard, identified nine critical factors, which include industrial activation, infrastructure, and public involvement. Iancu et al., 2022) pointed out that use of local resources and development of local infrastructure are the important aspects of sustainability of the locality.

An alternative study by Chomane & Biljohn (2021), studied social innovation in the development of a local economy. However, there are several research gaps to be addressed. Iancu et al. (2022) recognized that the limitations of their study lay in the fact that this was a study of only eight agricultural-based villages, meaning its generalizability was to a wider context. Liu et al. (2022) also recognized the need to develop new variables and methodologies in order to gain an enhanced understanding of the unfolding dynamics of sustainable village development. According to Resource-Based View Theory, as proposed by Barney (1991), the

The Seybold Report
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good use of strategic resources will enable an organization to achieve a continuous competitive advantage. This will be effective in the village context by optimizing or/and making optimal use of local resources, building local infrastructures, and social innovation.

This study took the case of Berau Regency, East Kalimantan, Indonesia which has unique characteristics because it is rich in natural resources but has problems with sustainability. Regional Medium-Term Development Plan Berau in 2021 stated that the very basic problem is the inability of local potential management to be optimized to realize welfare for the people. The novelty of this study is in the development of a conceptual model that integrates village-owned enterprises as a moderating variable in the relationship between local resources, local infrastructure, and social innovation toward local economic development for the realization of sustainable village development. This study uses a sample of 100 villages with diverse characteristics as its population to overcome the limitation of research conducted by Iancu et al. (2022). The model developed also extends the framework of Liu et al. (2022) by adding new variables relevant in the context of village development in Indonesia. It is expected that the results of this study would give theoretical and practical contributions to effort in realizing sustainable village development.

2. METHODS

This paper seeks to analyse the impact of local resources, infrastructure, social innovations, and Village-Owned Enterprises (BUMDes) on local economic development and sustainable village development in the Berau Regency. The quantitative approach, with a survey design, will allow for the collection of relevant data and statistical testing of relationships among these variables. The subjects of this research comprised Village Heads from 100 villages within Berau Regency. This region, situated in East Kalimantan Province, shares a border with North Kalimantan and encompasses 52 large and small islands, divided into 13 Districts and 10 Sub-districts, resulting in a distribution of the population across various areas. To ensure a comprehensive representation of the variables under investigation, the researcher selected the entire population as the sample. Consequently, the study employed a saturated sampling method. Utilizing this approach, the sample size (n) consisted of 100 Village Heads from 100 distinct villages in Berau Regency, Indonesia.

Data in this study were collected through a closed questionnaire with a series of statements about the research variables, including those on local resources, infrastructure, social innovation, the role of BUMDes, and local economic development. Structured questions used a 5-point Likert scale ranging from "strongly disagree" to "strongly agree" to assess the degree at which respondents agree with the statement. The validity and reliability of the questionnaire were pre-tested before its usage; therefore, the Cronbach's Alpha values had been used in statistical analysis to ensure the consistency internally (Nunnally, 1978). Data collection was carried out by distributing questionnaires directly or electronically with regard to geographical conditions and the availability of access to technology in the respective villages to village heads, BUMDes administrators, and representatives of the village community who had knowledge about economic and social development in their villages.

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Data used in this study are secondary data used as supporting materials derived from government reports, academic publications, and statistical data related to the social and economic conditions of Berau Regency. The data analysis used SEM-PLS with Smart PLS software. PLS-SEM has been chosen because it is able to perform modelling and estimation when the model has many variables and a large number of indicators to avoid multicollinearity constraints (Hair et al., 2014). This SEM-PLS model is also suitable for an exploratory study and a complex model, such as this research, which involves several independent variables and moderating variables. The analytical process involves evaluating the measurement model to assess the validity and reliability of the construct, followed by examining the structural model to demonstrate the significance of the relationships between the variables.

3. RESULTS

Measurement Model Analysis (Outer Model)

The validity and reliability tests were among the assessments the researcher conducted when examining the measurement model.

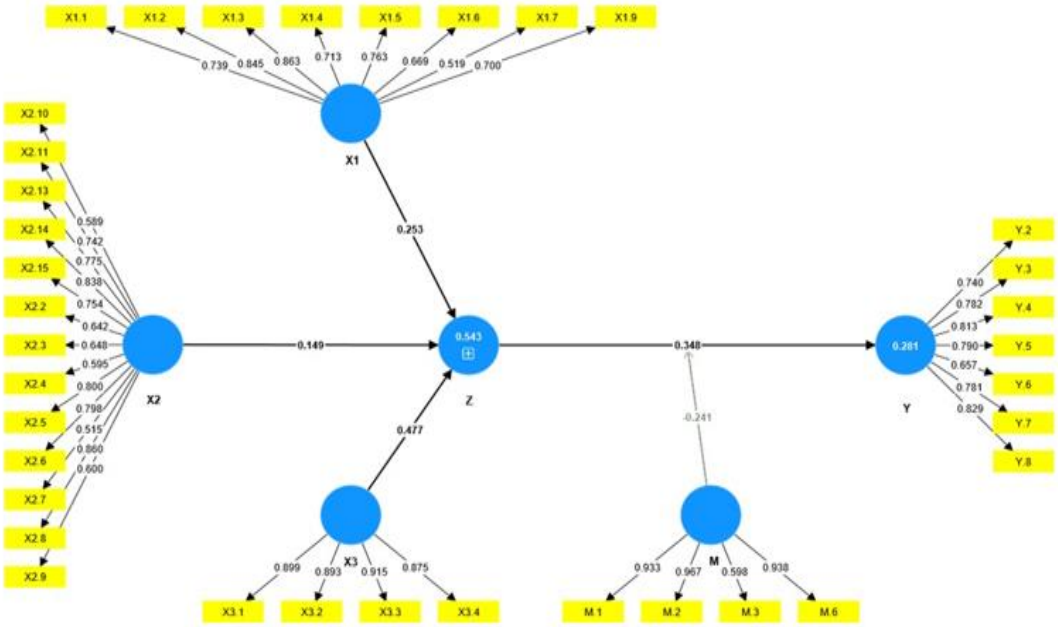

Figure 1: Research Model

Source: Researcher's results (2024)

Convergent Validity Test

The assessment of convergent validity in Partial Least Squares (PLS) utilizing reflective indicators is determined by the factor loadings of the indicators that correspond to the construct being measured. This form of validity evaluates the correlation between reflective indicators and their associated latent variables. An indicator is considered valid if its loading

The Seybold Report
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factor exceeds 0.7. Nevertheless, in the context of preliminary research aimed at developing a measurement scale, a loading factor value ranging from 0.5 to 0.6 is deemed acceptable (Ghozali & Latan, 2015). Additionally, convergent validity can be evaluated through the Average Variance Extracted (AVE) metric. A measurement instrument is regarded as convergently valid if the AVE for each variable is greater than 0.5 (Chin, 2009). An AVE of 0.5 or higher indicates that the construct accounts for 50% or more of the variance in its items (Wong, 2013; Hair Jr et al., 2017). The outcomes of the convergent validity assessment for all instruments are summarized in the table below.

Table 1: Result of Validity Test

Variable	Indicator	Nilai λ	AVE	Remark
Local Resources (X1)	X1.1	0.739	0.538	Valid
	X1.2	0.845		
	X1.3	0.863		
	X1.4	0.713		
	X1.5	0.763		
	X1.6	0.669		
	X1.7	0.519		
	X1.9	0.700		
Local Infrastructure (X2)	X2.2	0.642	0.507	Valid
	X2.3	0.648		
	X2.4	0.595		
	X2.5	0.800		
	X2.6	0.798		
	X2.7	0.515		
	X2.8	0.860		
	X2.9	0.601		
	X2.10	0.589		
	X2.11	0.742		
	X2.13	0.775		
	X2.14	0.838		
	X2.15	0.754		
Social Innovation (X3)	X3.1	0.899	0.802	Valid
	X3.2	0.893		
	X3.3	0.915		
	X3.4	0.875		
Local Economic Development (Z)	Z.1	0.864	0.631	Valid
	Z.2	0.517		
	Z.3	0.870		
	Z.4	0.889		
	Z.5	0.829		
	Z.6	0.762		
	Z.7	0.758		
	Z.8	0.804		
The Role of Village-Owned Enterprises (M)	M.1	0.933	0.761	Valid
	M.2	0.967		
	M.3	0.598		
	M.6	0.938		
Sustainable Village Development (Y)	Y.2	0.740	0.596	Valid
	Y.3	0.782		

The Seybold Report
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	Y.4	0.813		
	Y.5	0.790		
	Y.6	0.657		
	Y.7	0.781		
	Y.8	0.829		

Source: Researcher's results (2024)

According to the findings from the preliminary measurements of the loading indicators and in accordance with the work of Ghozali & Latan (2015), five variables exhibit a loading factor value of less than 0.5. Consequently, the indicators deemed to provide invalid information are eliminated from the model measurement and subsequently retested. This process is iterated multiple times to achieve satisfactory values for Composite Reliability (CR), Cronbach's Alpha (CA), and Average Variance Extracted (AVE). After being tested by eliminating six invalid indicators, namely X1.8, X2.1, X2.12, Y.1 M.4, and M.5, the values in table 1 are produced which show that all indicators are valid with an AVE value> 0.5 from a total of 44 valid indicators. For the Local Resources variable (X1) there are eight indicators, the Local Infrastructure variable (X2) has 13 indicators, the Social Innovation variable (X3) has four indicators, the Local Economic Development variable (Z) has eight indicators, the Role of Village-Owned Enterprises variable (M) has four indicators, and the Sustainable Village Development variable (Y) has seven indicators.

Discriminant Validity Test

Discriminant validity can be evaluated using the Fornell-Larcker criterion. According to this criterion, discriminant validity is considered satisfactory when the square root of the Average Variance Extracted (AVE) for a construct exceeds the correlations between that construct and other latent variables (Sekaran, 2016).

Table 2: Result of fornell-larcker Test

Variable	(X2)	(X3)	(Y)	(Z)	(M)	(X1)
Local Infrastructure (X2)	**0.712**					
Social Innovation (X3)	0.572	**0.896**				
Sustainable Village Development (Y)	-0.093	0.037	**0.772**			
Local Economic Development (Z)	0.549	0.677	0.337	**0.795**		
The Role of Village-Owned Enterprises (M)	-0.124	-0.064	0.367	0.089	**0.872**	
Local Resources (X1)	0.504	0.454	0.265	0.545	0.070	**0.733**

Source: Researcher's results (2024)

According to the Fornell-Larcker test presented in Table 2, it is evident that the values within each construct exceed the correlation values between the construct and other latent variables. This indicates that all research variables have achieved discriminant validity. Furthermore, the cross-loading values for each construct are assessed to confirm that the correlation between the construct and its corresponding measurement item is greater than that with other constructs. The anticipated cross-loading value should be greater than 0.7 (Ghozali & Latan, 2015).

The Seybold Report
ISSN 1533-9211
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Reliability Test

The reliability assessment in this instance pertains to internal consistency reliability, which evaluates the extent to which the indicator variable rises in response to an increase in the latent variable. A widely recognized criterion for assessing internal consistency is Cronbach's Alpha, which should exceed 0.6. An alternative measure that can be utilized alongside Cronbach's Alpha is Composite Reliability, with a suggested benchmark value of over 0.7 (Abdillah & Hartono, 2015). The outcomes of the reliability assessment conducted in the study are presented in the subsequent table.

Table 3: Result of reliability test

Variable	Cronbach's Alpha	Composite Reliability	Remark
Local Resources (X1)	0.873	0.901	Reliable
Local Infrastructure (X2)	0.916	0.929	Reliable
Social Innovation (X3)	0.918	0.942	Reliable
Local Economic Development (Z)	0.926	0.931	Reliable
The Role of Village-Owned Enterprises (M)	0.900	0.925	Reliable
Sustainable Village Development (Y)	0.886	0.911	Reliable

Source: Researcher's results (2024)

The comparison of values between Cronbach's Alpha and Composite Reliability in table 3 above shows a value > 0.7 so that all variables are reliable.

Structural Model Evaluation (Inner Model)

In order to evaluate the causal relationship established within the model (framework of thinking), specifically the impact of exogenous variables on endogenous variables, this study employs the T-statistic and significance value (p-value). The criteria for assessment stipulate that the T-statistic must exceed the T-table value of 1.96, and the p-value should be less than 0.05. The results of the tests are derived using the PLS bootstrapping method and are detailed in Table 4 below.

Table 4: Total Effect

Variable	Original Sample (O)	T Statistics (|O/STDEV|)	P Values
Local Resources (X1) -> Local Economic Development (Z)	0.253	3.271	0.001
Local Infrastructure (X2) -> Local Economic Development (Z)	0.149	1.584	0.113
Social Innovation (X3) -> Local Economic Development (Z)	0.477	4.772	0.000
Local Resources (X1) -> Sustainable Village Development (Y)	0.088	2.035	0.042
Local Infrastructure (X2) -> Sustainable Village Development (Y)	0.052	1.377	0.169
Social Innovation (X3) -> Sustainable Village Development (Y)	0.166	2.788	0.005
Local Economic Development (Z) -> Sustainable Village Development (Y)	0.348	3.130	0.002
(M) The Role of Village-Owned Enterprises * (Z) Local Economic Development (M=Z*M) -> Sustainable Village Development (Y)	-0.241	1.997	0.046

Source: Researcher's results (2024)

The Seybold Report
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Table 4 above shows that:

- The effect of X1 on Z is 0.253 with a t-statistics value of 3.271 and a p-value of 0.001, which means that if X1 increases by one unit, Y can increase indirectly through Y by 25%. This effect is positive and Local Resources have a significant effect on Local Economic Development.
- The effect of X2 on Z is 0.149 with a t-statistics value of 1.584 and a p-value of 0.113, which means that if X2 increases by one unit, Y can increase indirectly through Y by 14.9% or 15%. This effect is positive Local Infrastructure does not have a significant effect on Local Economic Development.
- The effect of X3 on Z is 0.477 with a t-statistic value of 4.772 and a p-value of 0.000, which means that if X3 increases by one unit, Y can increase indirectly through Y by 47.7% or 48%. This effect is positive and Social Innovation has a significant effect on Local Economic Development.
- The effect of X1 on Y is 0.088 with a t-statistic value of 2.035 and a p-value of 0.042, which means that if X1 increases by one unit, Y can increase indirectly through Y by 8.8% or 9%. This effect is positive and Local Resources have a significant effect on Sustainable Village Development.
- The effect of X2 on Y is 0.052 with a t-statistic value of 1.377 and a p-value of 0.169, which means that if X2 increases by one unit, Y can increase indirectly through Y by 5%. This influence is positive and Local Infrastructure does not have a significant effect on Sustainable Village Development.
- The influence of X3 on Y is 0.166 with a t-statistics value of 2.788 and a p-value of 0.005, which means that if X3 increases by one unit, Y can increase indirectly through Y by 16.6% or 17%. This influence is positive and Social Innovation has a significant effect on Sustainable Village Development.
- The influence of Z on Y is 0.348 with a t-statistics value of 3.130 and a p-value of 0.002, which means that if Z increases by one unit, Y can increase indirectly through Y by 34.8% or 35%. This influence is positive and Local Economic Development has a significant effect on Sustainable Village Development.
- The effect of Z*M on Y is -0.241 with a t-statistics value of 1.922 and a p-value of 0.055, which means that if Z*M increases by one unit, Y can increase indirectly through Y by -24%. This effect is negative and the Role of Village-Owned Enterprises*Local Economic Development does not have a significant effect on Sustainable Village Development.

4. DISCUSSION

The Influence of Local Resources on Local Economic Development

The facts on local economic development in Berau Regency reveal that local resources are a significant factor that affects village economic development. The data analysis shows positive

The Seybold Report
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results with an Original Sample value of 0.253, and the p-value of 0.001 (< 0.05), and a t-statistic of 3.271 (>1.96). Such findings support the resource-based theory by emphasizing managing the local resources to create competitive advantages and village economic sustainability. This opinion is in agreement with the study by Zhong (2022), which indicated that integrated approach by the village government in utilizing local resources drives economic growth. Indeed, Hadiwibowo et al. (2023) insisted that increasing village resources encourages more productive economic activities.

According to Olmedo & O'Shaughnessy (2023), the rich natural resources of Berau Regency should, if optimized, raise business opportunities, productivity, and competitiveness among villages. On the other hand, poor HR quality, particularly village heads, is still a significant challenge. Until now, 77% of the village heads in Berau have a high school education; it reduces their capacity for planning in development and communicating with the people. This low level of education hinders the effectiveness of development, which should be oriented towards environmental sustainability and the welfare of future generations (Nwande & Olorunfemi, 2021).

Development in Berau Regency, therefore, has to be oriented toward policies based on environmental insight and sustainability, especially with regard to quality improvement in human resources, socio-economic integration, and cross-sectoral cooperation. Being an approach with more emphasis on optimizing local potential and increasing community involvement, development should be able to support sustainable economic, social, and cultural growth. With this approach, local potential would be the main supporting factor in improving the welfare of village communities in the future.

The Influence of Local Infrastructure on Local Economic Development

The test results show that the local infrastructure of Berau Regency does not contribute to the improvement of the economic situation at the local level: Original Sample is 0.149, p-value is 0.113 (>0.05), t-statistic is 1.584 (<1.96). This contrasts with the previous finding of Resuello (2018), where he had identified that infrastructure support is an important driving force in local economic development through the development of connectivity, innovation, and value creation. The difference was due to limited quality and quantity of infrastructure in rural Berau, such as interlinking roads between villages, electricity supply, and communication and internet accesses, which caused an inability to accelerate the local economy.

The underdeveloped and unequal infrastructure development, particularly in the interior and coastal areas of Berau, is a main barrier. Most villages lack access roads or connecting bridges, which fact makes it difficult to distribute goods and access education, health, and economic services. This condition is contrary to Rondinelli (1981) village development theory, which maintains that adequate physical infrastructure will improve the quality of rural community life.

Berau is a coastal area with great potentials in fisheries, agriculture, and tourism, where natural resource use faces serious challenges due to limitations of road infrastructure. The coastal and inland villages are not able to access markets and other services, leading to high costs of

The Seybold Report
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distribution and hindering economic growth. Having established Berau as a buffer in the tourism sector, especially in marine tourism with the Indonesian Capital City, infrastructure improvement is the thing that must be prioritized. Right connecting roads will encourage village product distribution and increase access to services, so that local economic development and the welfare of the community can be faster. Several researchers support this statement (Nwande & Olorunfemi, 2021; Resuello, 2018).

The Influence of Social Innovation on Local Economic Development

This study also shows that social innovation has an influence on local economic development in Berau Regency. This is evidenced by the Original Sample 0.477; p-value 0.000 (< 0.05); and t-statistic of 4.772 (>1.96). These findings support the view advanced by Chomane & Biljohn (2021) that social innovation contributes to local economic development through its attributes, antecedents and its consequences. Peter (2021) has also emphasized the role of social innovation for the realization of the vision of economic development.

It works as a creative and sustainable solution for development inequality, poverty, and unemployment. It enhances communities' capacities to act through the introduction of new concepts, processes, and products developed by basic considerations for individual and communal well-being. One real example of success related to social innovation is the Village Innovation Program in Berau Regency. Commitment to active participation by the community, private sector involvement, academics, and the application of innovative technologies are unparalleled leverages to keep improving the efficiency and effectiveness of socio-economic development programs.

The positive changes that happened in Berau include the Digital Village Program, which provided 1000 Wi-Fi spots to support internet access in rural areas, Tourism Village, which utilized local potential for tourism, and the Women's Empowerment Program, Renewable Energy Village, Sustainable Agriculture, and Inclusive Education. These programs contribute to improving not only economic conditions but also the quality of life in village communities in a sustainable manner.

This success confirms the resource-based theory, where social innovation is used as a strategic resource to achieve local economic development. These results further affirm the social change theory propounded by Hagen in 1962 that significant changes can be engendered through new innovations emanating from innovative attitude of the community (Chomane & Biljohn, 2021; Peter, 2021).

The Influence of Local Resources on Sustainable Village Development through Local Economic Development (Direct & Indirect)

The local resource contribution of Berau Regency contributes to the support of sustainable village development through local economic development and indirectly contributes to 8.8% with t-statistics 2.035; p-values 0.042. This showed that using local resources wisely and with targeting can be a catalyst in stimulating economic growth and people's welfare in the village. It involves the utilization of local potential on a range of sectors, including agriculture,

The Seybold Report
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fisheries, tourism, creative industry, and traditional crafts, which support one another to create a strong economic ecosystem within the village.

Land optimization that is fertile in the agricultural sector to produce organic products is a method in line with the principles of environmental sustainability. The villages in Berau have the opportunity to develop fisheries sectors into local freshwater fish farming and fishery product processing as an alternative source of income. In addition, the creative industry based on local skills and traditional arts offers great potential to create high-value products that can compete in national and international markets (Medeiros, 2021).

Meanwhile, another backbone for local economic development is tourism. The tourism sector can be integrated with local communities through tourist villages that boast natural beauty and culture, presenting local wisdom in its own uniqueness. Furthermore, the concept of sustainable tourism should be applied in Berau-for example, in Kampung Payung-Payung, Kepulauan Maratua-to keep a balance between environmental, social, cultural, and economic aspects in touristic areas. Within this framework, local government has elaborated the four main pillars necessary to support sustainable tourism: tourism business management, long-term economic sustainability, cultural preservation, and environmental protection.

These will constitute a contribution to enhancing the local economy and would ensure long-lasting positive impacts on local communities and tourists while making Berau a model for village sustainable development based on integrative local potential.

The Influence of Local Infrastructure on Sustainable Village Development through Local Economic Development (Direct & Indirect)

Indirectly, impact local infrastructure development in Berau Regency to sustainable village development through the path of local economic development was positive with 5% t-statistics 1.377; p-values 0.169. This is an insignificant causal link due to the fact that the provision of basic infrastructures such as drinking water, electricity, irrigation, drainage, and telecommunications networks of many villages is still minimal. This condition presupposes that the available infrastructure so far has not been in a position to optimally support local economic development and community needs (Torrisi, 2009).

The fundamental problems faced include the lack of coordination between the government and village communities, so that the real needs of the village are often ignored in development policies. As a result, the infrastructure projects that are implemented are often not on target, both in terms of function, use, and implementation time. This results in low benefits that can be felt by the community, exacerbating their limitations in accessibility and mobility (Kaiser & Barstow, 2022).

Added to that are a limited budget, lack of adequate expertise, and harsh geography that is further deteriorating the situation. Absence of a community in the planning and monitoring of infrastructure development reduces the effectiveness of the projects already implemented. A community-based approach is one of the key strategies to be pursued for sustainability and suitability of infrastructure to local needs. Subject involvement in development from the

The Seybold Report
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community's end increases ownership and ensures a long-term maintenance cycle as stated by (Roseland, 2000).

The government of Berau Regency allocated IDR 63 billion through the 2024 APBD for access roads and bridges to remote villages, one of which is the road in Segah District. This is expected to raise the level of connectivity, boost the local economy, and improve villagers' living standards to create independent and sustainable villages.

The Influence of Social Innovation on Sustainable Village Development through Local Economic Development (Direct & Indirect)

Social innovation significantly drives village development through local economic development, with an indirect effect of 16.6% or 17% (t-statistics 2.788; p-values 0.005). That means increasing social innovation can positively influence the growth of the local-based economy toward sustainability in village development. In this discussion, social innovation becomes an important aspect in the optimization process of local potentials that have not been optimally used (Phills et al., 2008).

It is the collaboration of the government, communities, and the private sector in developing new solutions to better utilize the local resources. The government's involvement can be in the form of policies and incentives for doing so, while the private sector develops technologies and provides money. It also involves village communities as producers and consumers to ensure innovation appropriate to the local needs. This collaboration drives efficiency, productivity, and sustainability of the village economy (Nicholls et al., 2015).

The foremost benefits associated with social innovation are efficiency in resource management, job creation, and competitiveness in the global market. Products and services can be developed based on local potential to create added value for community income and reduce unemployment. Social innovation also allows villages to maintain local culture and traditions in their sustainable practices (Mulgan et al., 2007). The success of social innovation in the Berau Regency proves that it is one of the strategic answers for village development based on local potential. It means that through social innovation, villages might develop an inclusive economy which is simultaneously competitive and sustainable, hence society and environment receive long-term benefits.

The Influence of Local Economic Development on Sustainable Village Development

The contribution of this study reveals that local economic development significantly affects sustainable village development in Berau Regency with an Original Sample value of 0.348, p-value 0.002 < 0.05 and t-statistics 3.130 > 1.96, supporting the prior findings of Jankulovski et al. (2017), which underlined firmly the importance of activities increasing rural income to achieve sustainable growth. The concept of sustainable village development was introduced by summarizing that Local Economic Development (LED) emphasizes using the local potential in developing the village according to the village characteristics to create community welfare. However, various obstacles that occurred included limited human resources, infrastructure, market access, and management of the village fund. Dependence on one

The Seybold Report
ISSN 1533-9211
DOI: 10.5281/zenodo.14203355

economic sector as well as a lack of community skills in business management becomes a challenge (Medeiros, 2021). On the other hand, the presence of coal mining in Berau has ontogenesis effects, among others, economic growth due to higher income and improved social facilities. However, it is also observed that mining activities have brought on damage to the land, conflicts in land use, changes in social structures in village communities, and other serious problems. One big concern is mine reclamation because the progress of reclamation does not balance with the land cleared.

The mining companies are to reduce the negative impacts through Corporate Social Responsibility programs, such as improvement of skills, education, and infrastructure. An appropriate CSR program will enable the rural communities around the mine to overcome the environmental impacts while improving competitiveness and the quality of life. Sustainable village development based on the local economy with an approach that takes into account social, economic, and environmental aspects is expected to be able to create independent and competitive villages, thereby reducing migration to cities and strengthening local purchasing power (Medeiros, 2021).

The Influence of the Role of Village-Owned Enterprises (BUMDes) in Moderating the Relationship between Local Economic Development and Sustainable Village Development

This study underlines the role of BUMDes in moderating local economic development toward sustainable village development in Berau Regency. The result of the test described that the role of BUMDes gave negative significance to the moderating variables, with an Original Sample value of -0.241 and a p-value of $0.046 < 0.05$. The finding confirms the Resource-Based Theory, pointing out the role of BUMDes as one important village resource contributing to the development of natural resources in a sustainable manner.

However, the role of BUMDes in the Regency of Berau is still classified as weak. Several factors that raise this weakness are limited resources, low understanding of village officials regarding the authority regulated in Law Number 6 of 2014, and weak managerial capabilities of BUMDes managers. Many BUMDes operate in a minimal way, with minimal capital, skills, and cooperation with stakeholders. Besides, bureaucratic obstacles and complicated regulations add to this condition.

The limited understanding about the functioning of BUMDes, from within the apparatus to the community level, is one of the most serious barriers. BUMDes is too often seen as an administrative complement instead of an entrepreneurial motor that could give more independence to the village economy. This reduces the possibility of optimum resource utilization by BUMDes in contributing toward sustainable village development.

This study confirms the findings of Olmedo & O'Shaughnessy ((2023), which stated that social enterprises in rural areas could inspire social innovation, Srirejeki (2018) who highlighted that BUMDes has the potential to be a new economic force in Indonesia. Guided by better management of resources and the application of sustainable practices, BUMDes can indeed serve as an effective driver of social change. This would involve enhancing managerial

The Seybold Report
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capability through education of the community and strategic partnership building, in line with the findings of Olmedo & O'Shaughnessy (2023); Srirejeki (2018).

5. CONCLUSION

This paper explores local resources, infrastructure, and social innovation in terms of their effect on sustainable village development in Berau Regency, Indonesia, with mediation by local economic development. The main results indicated that local resources contributed significantly both to the local economic development with p=0.001 and to the sustainable village development with p=0.042. This underlined the optimization of available resources in agriculture, fisheries, tourism, and creative industries as basic elements to build an enabling economic environment in tune with the principles of sustainability.

Besides, social innovation significantly influences local economic development, with p=0.000, and village development in a sustainable way, with p=0.005. Digital Village Program development, tourism development, and women's empowerment represent the means of ensuring economic growth, efficiency of resources, and social participation, confirming that social innovation is a strategic tool for inclusive and sustainable development.

In contrast, infrastructure helps in making local economic development enhancement insignificant, at p=0.113, and unsustainable village development at p=0.169, since there is poor connectivity, inadequate basic facilities, and ineffective planning. Therefore, the findings have highlighted the need for a targeted development of infrastructure to support economic activities and improve community accessibility.

Local economic development serves as a critical mediator, significantly influencing sustainable village development (p=0.002). While economic initiatives like tourism and small-scale industries promote growth, challenges such as low education levels among leaders and environmental degradation from mining activities persist.

Promotion of the local potential, social innovation, and coordination in improving infrastructure become important strategies in the effort to achieve sustainable village development in Berau Regency. This holistic approach ensures long-term community welfare, environmental preservation, and economic resilience.

References

1) Abdillah, W., & Hartono, J. (2015). Partial least square (PLS) Alternatif structural equation modeling (SEM) dalam penelitian bisnis. *Yogyakarta: Penerbit Andi*, *22*, 103–150.

2) Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, *17*(1), 99–120. https://doi.org/10.1177/014920639101700108

3) Chin, W. W. (2009). How to write up and report PLS analyses. In *Handbook of partial least squares: Concepts, methods and applications* (pp. 655–690). Springer. https://doi.org/10.1007/978-3-540-32827-8_29

4) Chomane, P., & Biljohn, M. I. (2021). *A conceptual framework for using social innovation as an approach to local economic development*. https://doi.org/10.4102/apsdpr.v9i1.565

The Seybold Report
ISSN 1533-9211
DOI: 10.5281/zenodo.14203355

5) Ghozali, I., & Latan, H. (2015). Partial least squares konsep, teknik dan aplikasi menggunakan program smartpls 3.0 untuk penelitian empiris. *Semarang: Badan Penerbit UNDIP*.

6) Hadiwibowo, Y., Dokhi, M., Hidayat, R. T., & Johantri, B. (2023). Sustainable Regional Economic Development by Developing Villages. *European Journal of Development Studies*, *3*(1), 22–28. https://doi.org/10.24018/ejdevelop.2023.3.1.201

7) Hair, J. F., C., W., Black, B. J., Babin, R. E., & Anderson. (2014). *Multivariate Data Analysis, Seventh Edition*. Pearson Education Limited.

8) Hair Jr, J. F., Sarstedt, M., Ringle, C. M., & Gudergan, S. P. (2017). *Advanced issues in partial least squares structural equation modeling*. saGe publications.

9) Iancu, T., Petre, I. L., Tudor, V. C., Micu, M. M., Ursu, A., Teodorescu, F.-R., & Dumitru, E. A. (2022). A difficult pattern to change in Romania, the perspective of socio-economic development. *Sustainability*, *14*(4), 2350. https://doi.org/10.3390/su14042350

10) Jankulovski, N., Silva, E., Bojkovska, K., & Jankulovska, A. (2017). Rural Development in a Function of Local Economic Development: Case Study of Municipality of Krushevo. *International Journal of Economics and Finance*, *9*(1), 162–168. https://doi.org/10.5539/ijef.v9n1p162

11) Kaiser, N., & Barstow, C. K. (2022). Rural transportation infrastructure in low-and middle-income countries: a review of impacts, implications, and interventions. *Sustainability*, *14*(4), 2149. https://doi.org/10.3390/su14042149

12) Liu, C.-C., Lee, C.-T., Guo, Y.-F., Chiu, K.-N., & Wang, T.-Y. (2022). The study of sustainable rural development in Taiwan—A perspective of causality relationship. *Agriculture*, *12*(2), 252. https://doi.org/10.3390/agriculture12020252

13) Medeiros, E. (2021). Development clusters for small places and rural development for territorial cohesion? *Sustainability*, *14*(1), 84. https://doi.org/10.3390/su14010084

14) Mulgan, G., Tucker, S., Ali, R., & Sanders, B. (2007). *Social innovation: what it is, why it matters and how it can be accelerated*.

15) Nicholls, A., Simon, J., & Gabriel, M. (2015). *New frontiers in social innovation research*. Springer Nature.

16) Nunnally, J. C. (1978). An overview of psychological measurement. *Clinical Diagnosis of Mental Disorders: A Handbook*, 97–146. https://doi.org/10.1007/978-1-4684-2490-4_4

17) Nwande, M. C., & Olorunfemi, G. C. (2021). Theories, Approaches and Models Of Rural Development In Nigeria-A Thematic Review. *International Journal of Innovative Social Sciences & Humanities Research*, *9*(4), 102–110.

18) Olmedo, L., & O'Shaughnessy, M. (2023). A Substantive View of Social Enterprises as Neo-endogenous Rural Development Actors. *VOLUNTAS: International Journal of Voluntary and Nonprofit Organizations*, *34*(2), 209–221. https://doi.org/10.1007/s11266-021-00442-7

19) Peter, C. (2021). Social innovation for sustainable urban developmental transitions in Sub-Saharan Africa: Leveraging economic ecosystems and the entrepreneurial state. *Sustainability*, *13*(13), 7360. https://doi.org/10.3390/su13137360

20) Phills, J. A., Deiglmeier, K., & Miller, D. T. (2008). Rediscovering social innovation. *Stanford Social Innovation Review*, *6*(4), 34–43.

21) Resuello, M. D. (2018). Hard Infrastructure as Local Economic Development (LED) Enabling Environment in Selected Local Governments in Aichi Prefecture, Japan. *Intermestic: Journal of International Studies*, *3*(1), 44–59. https://doi.org/10.24198/intermestic.v3n1.4

The Seybold Report
ISSN 1533-9211
DOI: 10.5281/zenodo.14203355

22) Rondinelli, D. A. (1981). Government decentralization in comparative perspective: theory and practice in developing countries. *International Review of Administrative Sciences*, *47*(2), 133–145. https://doi.org/10.1177/002085238004700205

23) Roseland, M. (2000). Sustainable community development: integrating environmental, economic, and social objectives. *Progress in Planning*, *54*(2), 73–132. https://doi.org/10.1016/S0305-9006(00)00003-9

24) Sekaran, U. (2016). *Research methods for business: A skill building approach*. John Wiley & Sons.

25) Srirejeki, K. (2018). Empowering the role of village owned enterprises (BUMDes) for rural development: case of Indonesia. *Jurnal Akuntansi, Manajemen Dan Ekonomi*, *20*(1), 5–10. https://doi.org/10.32424/1.jame.2018.20.1.1018

26) Torrisi, G. (2009). Public infrastructure: definition, classification and measurement issues. *Economics, Management, and Financial Markets*, *4*(3), 100–124.

27) Wong, K. K.-K. (2013). Partial least squares structural equation modeling (PLS-SEM) techniques using SmartPLS. *Marketing Bulletin*, *24*(1), 1–32.

28) Zhong, L. (2022). "Cultivating" Local Resources or "Hunting" Mobile Resources? Analysis of Endogenous and Exogenous Approaches for Local Economic Development. *Current Urban Studies*, *10*(1), 156–162. https://doi.org/10.4236/cus.2022.101009