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## Article

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# Open innovation in village-owned enterprises: the role of entrepreneurial orientation in improving financial and social performance

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## ABSTRACT

Unresolved issue regarding the role of entrepreneurial orientation in improving the financial and social performance of village-owned enterprises, as well as the importance of mediating the effect of open innovation, is the reason why this study was undertaken. The study involved 200 village-owned enterprises from 10 regencies in Central Java and Yogyakarta, Indonesia, and employed a purposive sampling method for data collection. Data analysis was conducted using SEM AMOS version 23. The results show that entrepreneurial orientation has an effect on financial performance and open innovation, but has no significant effect on social performance. Open innovation has a significant effect on social performance and financial performance. The research also supports the notion that open innovation acts as a mediator in the relationship between entrepreneurial orientation and financial and social performance. Therefore, the study recommends that village-owned enterprises should focus on increasing open innovation to improve performance, particularly in the social sphere, and that they should strive to retain managers with a high level of entrepreneurial orientation.

## IMPACT STATEMENT

The growth of BUMDes in tourism and trade has played an important role in creating jobs in the village, driving regional economic growth, and serving as a tool in reducing poverty in the village. BUMDes as social enterprises in villages that have a vision to maximize profits while still providing social and environmental impacts. BUMDes is a social enterprise, having a vision of maximizing profits while providing social and environmental impacts. This study focuses on BUMDes by looking at the potential and advantages of the village, because generally tourism and trading villages have potential in natural resources. Open innovation is expected to be a new energy for BUMDes to make changes with new approaches and methods. It includes optimising internal resources and developing knowledge and experience from external sources. Open innovation encourages BUMDes not only to rely on internal strengths, but also to increase opportunities for collaboration (partnership practices). Studies show that open innovation provides answers for BUMDes to improve their social and financial performance. In addition, it is important for BUMDes to be managed by managers with a strong entrepreneurial orientation who have persistence at work, proactive work behavior, competitive aggressiveness, courage to take measured risks, and innovativeness.

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## SUBJECTS

Social Entrepreneurship

## 1. Introduction

Village-owned enterprises, or in Bahasa Indonesia abbreviated as BUMDes, is a business entity owned and established by the village to increase village income. Law No. 16 of 2014 concerning village-owned enterprises posits that village-owned enterprises are charged with promoting villages to enhance economic welfare (Alhamidi & Muliarto, 2018). However, examination of records reveals a lack of significant impact of village-owned enterprises on village income. One factor contributing to this is that village-owned enterprises' revenue is insufficient to sustain operational costs. Village-owned enterprises have been

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unsuccessful in achieving this objective due to a lack of preparedness and difficulty in identifying village potential, a dearth of human resources, and low levels of community participation and knowledge pertaining to village-owned enterprises management (Huruta et al., 2020; Sofyani et al., 2019). People quality is a challenging issue for BUMDes. This study identified that BUMDes encounter many difficulties in finding employees with competence and capability (Kusuma & Krisnadewara, 2019). In addition to the shortage of qualified human resources, BUMDes managers also face challenges such as mismatches in implementation and regulations, as well as a lack of synergy between BUMDes and the village government (Kania et al., 2021).

BUMDes must have a competitive advantage to survive the competition, and innovation is the key driver. Innovation enables BUMDes to integrate, develop, and reconfigure internal and external competencies (Kusuma & Krisnadewara, 2019). Innovation is an essential factor in driving the village economy. These innovations depend on the readiness of BUMDes leaders and managers to make changes (Kusmulyono et al., 2023). And the most crucial factor in innovation is the readiness of employees to deal with the changes, due to the low quality of resources and limited access to information. This is in part because most of the younger generation in villages with potential resources prefer to work in the manufacturing sector or migrate to big cities. BUMDes are generally categorised as micro or small enterprises, thus a common problem is often a lack of innovation, due to barriers of knowledge, multidisciplinary competence, and capital (Cirule & Uvarova, 2022; Linde, 2017). The concept of BUMDes is similar to Social Enterprise (SE) or Community Based Enterprise (CBE) (Kania et al., 2021). The empirical evidence from Linde's, research (2017) suggests that few micro or small enterprises successfully innovate, with an average survival rate of only around 10%.

In nurturing innovation, BUMDes cannot rely solely on their internal capabilities and must engage in collaborative efforts with external parties to reduce costs, improve efficiency, and minimise risks. The decision to implement open innovation requires open management support, as well as the incorporation of external perspectives and knowledge (Linde, 2017). Thus, the implementation of open innovation in BUMDes requires managers with a high entrepreneurial orientation (Ginting, 2015), with an open mind to change, proactive behavior, risk-taking, and a tendency to accept improvement ideas.

This research gap relates to the different findings from the previous studies, which found that entrepreneurial orientation positively affects financial and social performance (Guo & Wang, 2022; John et al., 2022). However, different results by Veidal and Korneliussen (2013) that entrepreneurial orientation has no influence on company performance, and research by Hong and Cho (2012) who found the impact of entrepreneurial orientation on social performance is insignificant. Ginting's study (2015) reinforces that the low entrepreneurial orientation of managers is a factor that inhibits the non-optimal performance of SMEs.

The research objective is to analyze the influence of entrepreneurial orientation and its role in improving the financial and social performance of BUMDes, with the mediation of open innovation. From previous research (Guo & Wang, 2022; John et al., 2022), as well as from research Veidal and Korneliussen (2013) and Hong and Cho, (2012) that the effect of entrepreneurial orientation on financial and social performance shows inconclusive results due to diverse research findings and research limitations, especially if generalised to different sectors. This research focuses on tourism and trade BUMDes, where data from the Ministry of Villages 19.8% of BUMDes are engaged in the tourism and trade sector, while the largest sector is cooperatives and finance at 33%. However, BUMDes in the tourism and trade sector have the highest revenue, as they are business ventures that have uniqueness and potential. The novelty of this research is to answer the question whether open innovation is able to bridge the role of entrepreneurial orientation to the financial and social performance of BUMDes, as the two questions to be proven in this study.

## 2. Literature review and hypotheses development

### 2.1. Studies on entrepreneurial orientation from resource-based view

The Resource-based View (RBV) posits that a firm's competitive advantage stems from its unique tangible and intangible resources that are difficult for competitors to imitate (Szymaniec-Mlicka, 2014). According to this perspective, each company possesses distinct resources, leading to varying levels of performance.

Broadly speaking, these resources can be grouped into three categories: physical capital resources, human capital resources, and organizational capital resources. RBV assumes asserts that the source of competitive advantage is internal to the organization. Competition plays a crucial role in determining the success or failure of a company. To contend with competition, organizations must implement effective strategies such as innovation and fostering a positive corporate culture. When organizations compete with each other, it leads them to strive for better performance. One way to do this is through effective management of organizational knowledge, which includes encouraging employees to share their knowledge and expertise throughout the company. Knowledge management aims to increase the intellectual capital used by organizations to maintain a competitive advantage (Portillo-Tarragona et al., 2018).

## **2.2. Entrepreneurial orientation**

The 1970s was the first time the concept of entrepreneurial orientation introduced (Brunswick & Vanhaverbeke, 2014). Entrepreneurial orientation is a seminal concept in entrepreneurship studies (Akbar et al., 2020). Previous research discuss entrepreneurial orientation, such as Lumpkin and Dess (1996) and Wiklund and Shepherd (2005). They describe that entrepreneurial orientation is an attitude, trait, and character that is oriented towards success. Other scholars have conceptualized entrepreneurial orientation as comprising optimism, creativity, self-confidence, proactiveness, and a willingness to take calculated business risks (Akbar et al., 2020; Freixanet et al., 2021; Issa, 2020; Kollmann et al., 2016). Within the scope of this research, entrepreneurial orientation encompasses facets such as innovation, proactive behavior, risk-taking, competitive aggressiveness, and autonomy. Innovativeness is the tendency to engage in creativity and experimentation in introducing new products or services and being at the forefront of developing something new. Risk-taking entails embracing uncertainty and taking action (Chelliah et al., 2022). Pro-activeness is characterized by an attitude of not waiting, taking initiative and self-starting at work, and going beyond what is formally required by the job (Frese et al., 2016). Competitive aggressiveness is a company's attempt to outperform competitors (Chelliah et al., 2022). Meanwhile, autonomy is working independently, making decisions and taking action (Akbar et al., 2020; Freixanet et al., 2021; Issa, 2020; Kollmann et al., 2016).

## **2.3. Open innovation**

The concept of open innovation, first introduced by Chesbrough (2003), involves the integration of external innovation models with the goal of augmenting internal innovation. The implementation of open innovation is believed to enhance a company's reputation, attract new customers, and retain existing ones (Wadood et al., 2022). Open innovation is a combination of inbound and outbound open innovation. Alongside utilizing internal resources, open innovation endeavors to obtain ideas, technology, knowledge, and capabilities from external sources, such as consumers, suppliers, colleges, comparable companies, or even competitors. Unlike the idea of closed innovation, which primarily relies on internal company knowledge/ideas, open innovation relies on external sources of ideas (Trzeciak et al., 2022). Open innovation is considered more profitable as it accelerates the innovation process, is more efficient and increases service/product differentiation. In line with Naqshbandi and Jasimuddin (2018), open innovation aims to combine available knowledge, and identify, select and obtain ideas that are considered beneficial to the company from two sources of knowledge flows (inflows and outflows).

## **2.4. Financial performance and social performance**

Performance, which is commonly evaluated through financial and non-financial indicators, reflects the outcome of business operations. Financial indicators, such as revenue growth, capital expansion, profit increase, asset enhancement, and organizational size, are frequently used to measure performance (Loo et al., 2020). Meanwhile social performance indicators such as the ability to manage budgets, service quality, consumer satisfaction, consumer confidence in brands, consumer loyalty, increased market share, and corporate social responsibility (CSR) (Choi et al., 2021; Tulcanaza-Prieto et al., 2020). Loo et al. (2020)

posit that non-financial performance encompasses service and process excellence, as well as productivity metrics, such as efficiency and effectiveness. Studies (Bhattarai et al., 2019; Christensen et al., 2006) conceptualize social performance as the implementation of social strategies, objectives, and missions. According to Hong and Cho (2012) and Paulraj et al. (2017), social performance focuses on the welfare of stakeholders, reducing environmental impacts, enhancing public health and safety, promoting community rights, and raising awareness of social issues. A comprehensive evaluation of social performance can be conducted through various parameters, including service quality, business profitability, and the impact of business operations on the social environment.

## 2.5. Hypothesis development

### 2.5.1. The effect of entrepreneurship orientation on open innovation, financial performance, and social performance of village-owned enterprises

The effect of entrepreneurial orientation on social performance has been investigated by various scholars such as Loong Lee et al. (2019) and Pinheiro et al. (2021). Empirical studies have consistently demonstrated that entrepreneurial orientation has a positive effect on financial performance (Chelliah et al., 2022). Additionally, innovation has been identified as a key driver in enhancing financial performance (Thoumrungroje & Racela, 2022). Previous research (Guo & Wang, 2022; John et al., 2022; Pinheiro et al., 2021; Veidal & Korneliussen, 2013) concur that entrepreneurial orientation, as a strategic orientation, promotes open innovation and is conducive to both financial and social performance.

*H<sub>1</sub>: Entrepreneurial orientation has an effect on open innovation*

*H<sub>2</sub>: Entrepreneurial orientation has an effect on financial performance*

*H<sub>3</sub>: Entrepreneurial orientation has an effect on social performance*

### 2.5.2. The effect of open innovation on the financial performance and social performance of village-owned enterprises

Previous research has demonstrated a correlation between innovation capability and company performance (Rajapathirana & Hui, 2017). These findings are consistent with previous studies (Oke, 2007; McDermott & Prajogo, 2012) which posit that innovation enhances organizational performance. Recent innovation research highlights the role of open innovation in enhancing service performance (Chelliah et al., 2022). Fu et al. (2018) found that open innovation strategies have distinct impacts when employed over short and long time frames. Specifically, inbound open innovation has a negative effect on short-term performance, but exhibits an inverted U-shaped relationship in the long term, whereas outbound open innovation has a negative effect on short-term performance but a positive effect on long-term performance. This research posits that organizations should maintain moderate open innovation and continue to increase their role as it contributes to long-term performance. However, Scarlata and Alemany (2009) argue that only economically sustainable and socially responsible enterprises will survive and grow, and ultimately be able to create a social impact.

*H<sub>4</sub>: The more use of open innovation, the better the financial performance*

*H<sub>5</sub>: The more use of open innovation, the better the social performance*

### 2.5.3. The effect of entrepreneurial orientation on the financial performance and social financial performance of village-owned enterprises with the mediation of open innovation

Entrepreneurial orientation is a business approach focused on developing entrepreneurial traits in organizations. Entrepreneurial orientation involves a number of principles and practices, such as innovation, proactivity, proactive behavior, ambidextrous (balance between exploration and exploitation), and taking controlled risks. Managers with a high entrepreneurial orientation are a strong foundation for enhancing open innovation (Usman et al., 2023). The study undertaken by Aftab et al. (2022) sought to examine the



mediating role of innovation and entrepreneurial competence in the relationship between entrepreneurial orientation and both financial and social performance. The results of the research indicate that entrepreneurial orientation, innovation, and entrepreneurial competence exert a positive effect on both financial and social performance, with innovation and entrepreneurial competence acting as mediators. The theoretical and practical implications of this research are the significant effect of entrepreneurial orientation on social enterprises in Pakistan. Meanwhile, research conducted by Freixanet et al. (2021) shows that an increased entrepreneurial orientation will affect innovation performance through the important role of open innovation, with the utilization of social media serving as a mediator of the effect of entrepreneurial orientation on open innovation (Figure 1).

$H_6$ : Open innovation mediates the relationship between entrepreneurial orientation and financial performance.

$H_7$ : Open innovation mediates the relationship between entrepreneurial orientation and social performance.

### 3. Methodology

#### 3.1. Sampling procedure and data collection

The population in this study is BUMDes of tourism and trade in Central Java and Yogyakarta Special Region (DIY). Nationally, there are 51,367 BUMDes in Indonesia (<https://sid.kemendesa.go.id/bumdes>), but the number of verified names and legal entities is 16,246. In Central Java the number of BUMDes is 1993 and around 300 BUMDes for DIY, which are divided into financial clusters, non-financial clusters, rental clusters, trade clusters, agriculture/livestock/fisheries clusters, tourism clusters and finally craft clusters. The number of BUMDes for tourism villages in Central Java is 132 and trade is 268. While BUMDes in DIY for the tourism and trade clusters there is no data that can be used as a reference, but it is estimated that there are 88 tourism and trade BUMDes spread across 4 regencies/cities (Sleman, Gunung Kidul, Kulon Progo, Yogya city) (<https://sid.kemendesa.go.id/bumdes>), such as BUMDes Karangrejek in the drinking water business, Tebing Breksi is a tourism BUMDes, Sambimulyo, Panggung Lestari in Mataraman Village in the culinary business, BUMDes Tunas Mandiri which focuses on processed chocolate, BUMDes Wirajaya Makmur which focuses on Minimarket, and so on.

By selecting probability sampling and stratified random sampling technique. In this method, the population is divided into strata based on certain relevant characteristics. Then, from each stratum, a simple random sample is drawn. The aim is to ensure that each stratum is represented in the sample and to reduce variation within those strata. In the study, disproportionate random sampling was used. In many studies, having a sample between 100 and 200 is considered adequate for statistical analysis. In this study the sample used was 200 BUMDes. The samples in the study are BUMDes located in 6 regencies in Central Java and 4 regencies in DIY Yogyakarta. Based on the existing sample, Yogyakarta DIY amounted to 64 samples or (32%) and Central Java with 136 samples (68%). In percentage terms, the number of

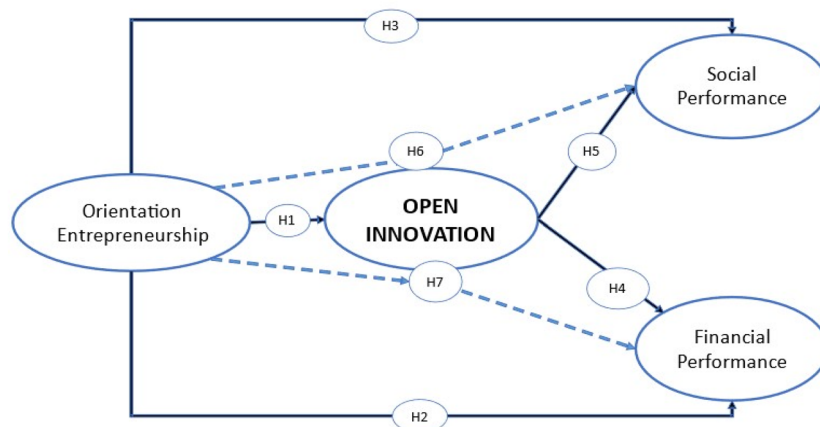


Figure 1. Empirical research model.

BUMDes for Tourism and Trade in DIY Yogyakarta is greater, even though the number of BUMDes is only 88 or the sample is taken around 77%. Meanwhile, in Central Java with 400 BUMDes for tourism and trade, only 136 BUMDes or 34% were taken. The high percentage in DIY Yogyakarta Province. Although the number of BUMDes in Yogyakarta is smaller, the market prospects and growth are much higher. The strata in the study are the proportion of representation of each cluster and the representation of income which is divided into 4 clusters namely (< 100 Million, 101 Million–1 Billion, 1–5 Billion and > 5 Billion) with a disproportionate amount depending on the size of the population of each region.

The data collection technique in this study is to distribute questionnaires to BUMDes managers, namely BUMDes managers or operational staff. By using a Likert scale answering questions from scale (1) strongly disagree and strongly agree with scale (7) (Table 1).

### 3.2. Data analysis

To conduct SEM (Structural Equation Modeling) analysis, AMOS 23 was utilized.

## 4. Results

### 4.1. Descriptive statistic

Table 2 presents the characteristics of village-owned enterprises and village-owned enterprises managers in Central Java and Yogyakarta, including their origin, line of business, income, year established, respondent's age, and gender.

The characteristics of village-owned enterprises, based on their regional origin, reveal that the majority originate from Klaten Regency (31.2%), followed by Sleman Regency (11.9%). Concerning the line of business, 147 village-owned enterprises are involved in trade and commerce, whereas those engaged in the tourism village sector comprise 53 village-owned enterprises. Analysis of the characteristics of village-owned enterprises based on annual income demonstrates that around 53 village-owned enterprises, or 26.2%, have an income below 100 million. On average, village-owned enterprises have an income ranging between 100 million and 1 billion per year, with a total of 137 village-owned enterprises, or approximately 68.5%. Conversely, the least numerous are village-owned enterprises with revenues above 5 billion per year. In terms of the duration of operation, the village-owned enterprises in this study have been in operation for an average of 1–5 years, with a total of 191 village-owned enterprises, while the remaining village-owned enterprises have been operating for more than 5 years. Additionally, other data can be seen in Table 2.

### 4.2. Logical connection between indicators

The results of the SEM analysis show that overall all indicators are fit, there are no more loading factors <0.5, which means that the model is feasible to test the hypothesis. However, judging from the criteria

**Table 1.** Origin province, district, number of respondents, BUMDEs revenue, and percentage of region.

Origin Province	District	Number of Respondents	Trade Type	Types of Tourism	< 100 Million	101 Million–1 Billion	1–5 Billion	> 5 Billion	Percentage of Region
DIY Yogyakarta	Bantul	14	13	1	5	9	0	0	32%
	Kulon Progo	12	12	0	1	11	0	0	
	Sleman	24	13	11	6	15	0	1	
	Gunung Kidul	14	10	4	3	11	0	0	
Jawa Tengah	Klaten	63	35	28	16	40	6	1	68%
	Wonogiri	15	14	1	1	14	0	0	
	Sukoharjo	15	15	0	9	4	2	0	
	Boyolali	21	14	7	2	19	0	0	
	Karanganyar	9	9	0	6	3	0	0	
	Sragen	13	12	1	2	11	0	0	
Number of Respondents		200	147	53	53	137	8	2	100%



**Table 2.** Characteristics of village-owned enterprises and village-owned enterprises managers in central Java and Yogyakarta by origin, line of business, income, year established, respondent's age, and gender.

Characteristics of Village-owned enterprises and Respondents	Frequency	Percent
Origin		
Bantul	14	6.9
Gunung Kidul	14	6.9
Kulon Progo	12	5.9
Sleman	24	12.9
Boyolali	21	10.4
Klaten	63	31.2
Karanganyar	9	4.5
Sukoharjo	15	7.4
Wonogiri	15	7.4
Sragen	13	6.4
Total	200	100%
Line of Business		
Trade	147	73.8
Tourism Village	53	26.2
Total		
Income (Rupiah)	200	100%
< 100 million	53	26.2
100 million–1 billion	137	68.8
1 Milyar–5 billion	8	4
>5 billion	2	1
Total	200	100%
Year Established i		
< 1 year	0	0
1–5 year	193	94.6
6–10 year	5	4.4
>10 year	2	1
Total	200	100%
Respondent's Age		
20–30 years old	28	13.9
31–35 years old	46	22.8
36–40 years old	28	13.9
41–45 years old	49	24.3
46–50 years old	28	13.9
>50 years old	21	11.4
Total	200	100%
Gender		
Male	109	54
Female	91	46
Total	200	100%
Experience as Manager		
1–5 years	196	97
6–10 years	4	3
Total	200	100%

for goodness of fit index, there are many values that are not fit. The next step is to modify the model by eliminating indicators with low loading factor values in entrepreneurial orientation, there are 5 indicators, open innovation has 6 indicators removed, social performance and financial performance are 2 indicators each removed in the next analysis. After modification by removing 15 indicators from four variables, the full model results from the structural equation can be seen in the results below [Figure 2](#) and [Table 3](#).

### 4.3. Feasibility test index

The results demonstrate that the chi-square statistic, represented by the value of  $\chi^2$ , is indicative of the model's fitness. Specifically, a smaller  $\chi^2$  value indicate a better-fitting model. However, the calculated chi-square statistic of 131,306, in this case, suggests that the model is not adequate as it exceeds the chi-square statistical model. Nonetheless, it is important to acknowledge that the chi-square value is a conservative measure and is contingent upon the sample size, thereby increasing the likelihood of a type II error, which is the rejection of a correct model. Consequently, it is imperative to evaluate the fitness of the model using other indices (Hooper et al., 2008). Despite the medium fit of the structural equation model, the large sample size of 200 or more indicate chi-square value can be ignored. The results of the TLI and CFI indicate that the model is a good fit, with values of 0.960 and 0.969 respectively. The GFI

value is also a good fit, at 0.909. The CMIN/DF value of 2.188 suggests a marginal fit, as well as the AGFI value. The RMSEA value indicates that the model is a good fit.

#### 4.4. SEM analysis

The description of Table 4 is as follows:

H<sub>1</sub>: The effect of the entrepreneurial orientation on open innovation has a coefficient of 0.409 with a significance level of \*\*\*, which is below the probability value of 0.01 or 1%. This implies that the effect of entrepreneurial orientation on open innovation is statistically significant. Therefore, Hypothesis 1 is accepted.

H<sub>2</sub>: The effect of the entrepreneurial orientation on financial performance has a coefficient of 0.515 with a significance level of \*\*\*, which is below the probability value of 0.01 or 1%. This suggests that the effect of entrepreneurial orientation on financial performance is statistically significant. Therefore, Hypothesis 2 is accepted.

H<sub>3</sub>: The effect of the entrepreneurial orientation on social performance has a coefficient of 0.145 with a significance level of 0.173, which is greater than the probability value of 0.05 or 5%. This indicates that entrepreneurial orientation has no statistically significant effect on social performance. Therefore, Hypothesis 3 is rejected.

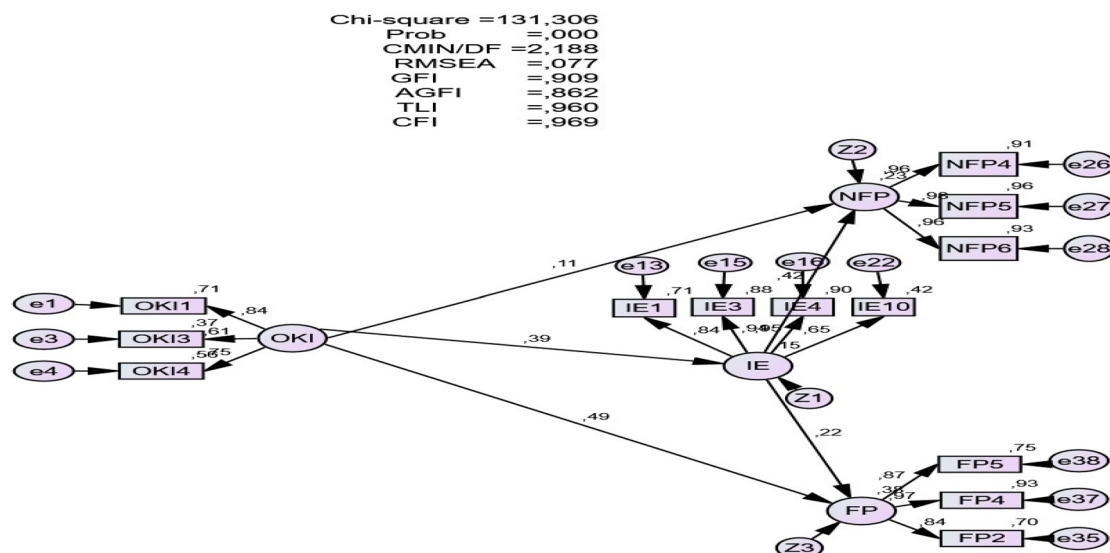
H<sub>4</sub>: The effect of the open innovation on financial performance has a coefficient of 0.423 with a significance level of 0.002, which is below the probability value of 0.05 or 5%. This implies that there is a statistically significant effect of open innovation on financial performance. Therefore, Hypothesis 4 is accepted.

H<sub>5</sub>: The effect of the open innovation on social performance has a coefficient of 0.423 with a significance level of \*\*\*, which is below the probability value of 0.01 or 1%. This suggests that there is a statistically significant effect of open innovation on social performance. Therefore, Hypothesis 5 is accepted.

#### 4.5. Sobel test

The description of Table 5 is as follows:

H<sub>6</sub>: The effect of entrepreneurial orientation on financial performance is mediated by open innovation, as demonstrated by the Sobel test, which yields an estimated value of 2.62183313 and a two-tailed



**Figure 2.** Measurement model. OKI: Entrepreneurial orientation; IE: Open innovation; Financial Performance, NFP: Social performance.

Source: AMOS Result (2023).

**Table 3.** Measurement of variable, validity, and reliability.

Statement	Variable	Loading Factor	Cronbachalpha	AVE (Average Variance Extract)	CR Construct Reliability	Descrip tion
Entrepreneurial Orientation (Chelliah et al., 2022; Freixanet et al., 2021)						
Village-owned enterprise managers are to create something new and different	OKI1	0.628	0.889	0.707	0.819	Accepted
The village-owned enterprise's managers are very supportive of innovative ideas in an effort to capitalise on existing market opportunities.	OKI2	0.605				
Village-owned enterprise's managers have an unyielding spirit.	OKI3	0.617				
Village-owned enterprise's managers seizing opportunities.	OKI4	0.751				
Village-owned enterprises manager's build partnerships with external parties	OKI5	0.718				
Village-owned enterprise's managers dare to make decisions	OKI6	0.680				
Village-owned enterprise's managers flexible in business planning and strategy	OKI7	0.637				
Village-owned enterprise's managers is adaptive and willing to accept a moderate level of risk.	OKI8	0.613				
Open Innovation (Andrés-Sánchez et al., 2022; Freixanet et al., 2021)						
Village-owned enterprise's managers establishing collaborations with external stakeholders who have the knowledge and experience in relevant fields.	IE1	0.750	0.938	0.708	0.886	Accepted
Village-owned enterprises are supported by external partners such as customers, research institutes, consultants, government, or universities.	IE2	0.727				
Village-owned enterprises offer lower or cheaper rates than competitors.	IE3	0.835				
BUMDes establishes co-operation of external stakeholders such as universities, research institutes, business partners, or innovation communities, which may provide fresh ideas.	IE4	0.822				
Village-owned enterprises adopt new technology that is relevant to the development	IE5	0.766				
Village-owned enterprises actively develop knowledge and technology from external sources for use in Village-owned enterprises	IE6	0.823				
Reform the village-owned enterprises' organizational structure to make it more efficient and grow faster	IE8	0.761				
Village-owned enterprises leverage existing opportunities to maximize the benefits of innovations	IE9	0.673				
BUMDes conduct comparative studies to other advanced BUMDes.	IE10	0.758				
Financial Performance (Feng et al., 2021; Gill et al., 2018; Morgan et al., 2021; Musah et al., 2022; Silwal, 2022)						
Village-owned enterprises have an increasing profit every year	FP1	0.866	0.954	0.715	0.879	Accepted
Village-owned enterprises show increased productivity and growth	FP2	0.899				
Village-owned enterprises have an increased level of tourist visits or sales of superior products	FP3	0.910				
Village-owned enterprises have an increased level of tourist visits or sales of superior products.	FP4	0.886				
Village-owned enterprises can be financially independent.	FP5	0.797				

(Continued)

**Table 3.** Continued.

Statement	Variable	Loading Factor	Cronbachalpha	AVE (Average Variance Extract)	CR Construct Reliability	Description
Social Performance (Choi et al., 2021; Kijkasiwat et al., 2022; Morgan et al., 2021; Muangmee et al., 2021; Yadegaridehkordi et al., 2023; Zafar et al., 2021)						
Village-owned enterprises improve the welfare of its stakeholders.	NFP1	0.724	0.926	0.717	0.814	Accepted
Village-owned enterprises use a large portion of their profits for social purposes.	NFP2	0.754				
Village-owned enterprises continually upgrade their facilities and infrastructure.	NFP3	0.734				
Village-owned enterprises contribute to employment opportunities for local residents.	NFP4	0.851				
Village-owned enterprises have social goals and social responsibility	NFP5	0.819				
Customer/tourist satisfaction has increased in the last 3 years	NFP6	0.837				

$p$ -value of .00874. This result is statistically significant, as the  $p$ -value is less than .05. Therefore, it can be inferred that open innovation plays a mediating role in the relationship between entrepreneurial orientation and financial performance.

H<sub>7</sub>: Similarly, the Sobel test results indicate that open innovation also mediates the relationship between entrepreneurial orientation and social performance, with an estimated value of 2.62183313 and a two-tailed  $p$ -value of .00874. As this  $p$ -value is below .05, it can be concluded that open innovation serves as a mediator in the relationship between entrepreneurial orientation and social performance.

## 5. Discussion

Entrepreneurial orientation creates an enabling environment for external collaboration, the search for new ideas, and greater innovative effort, all of which are essential aspects of open innovation (Usman et al., 2023). Open Innovation allows entrepreneurs to take better advantage of entrepreneurial opportunities through partnership-based innovation. The results of this research support previous studies in emphasising the important role of entrepreneurial orientation in implementation of open innovation, as entrepreneurial orientation is an important driver of strategic change in BUMDes. Secondly, managers with high entrepreneurial orientation have more open management, which opens up wider collaboration opportunities.

The results of this study suggest that there is an influence of entrepreneurial orientation on open innovation. In line with findings by Chelliah et al. (2022) that the risk-taking courage encourages open innovation and improves organisational performance. Entrepreneurial Orientation encourages organisations to seek external partners, explore new ideas, and access additional resources that can help the success of BUMDes from internal factors such as entrepreneurial orientation, effective organisational structure, as well as relying on external support to attract government funds and partners in collaboration (Qureshi, 2018). Open innovation includes collaboration with external parties, such as local government, business partners, suppliers, customers, universities, and research institutes. Collaboration partners will see the potential and future prospects of BUMDes whether it can be developed with the prospect of mutually beneficial cooperation. Generally, there are several factors that constrain the development of BUMDes. These factors include the community's low level of education and the lack of efforts to collaborate (Huruta et al., 2020).

In line with research conducted by Wadood et al. (2022), it reveals that risk taking and competitive aggressiveness affect open innovation. However, autonomy and pro-activeness have no significant effect on open innovation. This study corroborates previous findings that a strong entrepreneurial orientation in the Malaysian manufacturing industry, has a strong impact on improving company performance (Akbar et al., 2020). Research by Brunswicker and Vanhaverbeke (2014) by using an open innovation

**Table 4.** Unstandardized parameter estimates.

Variable	Estimate	S.E	C.R	Probability	Description
H <sub>1</sub> : Entrepreneurial orientation → Open innovation	0.409	0.085	4.810	***	Accepted
H <sub>2</sub> : Entrepreneurial orientation → Financial performance	0.515	0.089	5.810	***	Accepted
H <sub>3</sub> : Entrepreneurial orientation → Social performance	0.106	0.117	1.363	0.173	Not accepted
H <sub>4</sub> : Open innovation → Financial performance	0.222	0.071	3.103	0.002**	Accepted
H <sub>5</sub> : Open innovation → Social performance	0.554	0.095	5.616	***	Accepted

\*\*\* < 1%, \*\* < 5%.

approach, companies are expected continue to seek creative opportunities that exceed their current capabilities, so that they can dramatically achieve superior organizational performance.

However, the findings are different from research conducted by Adom et al. (2023) all dimensions of entrepreneurial orientation have a significant effect on the innovation performance of social enterprises, with the biggest result being innovativeness, the second being pro-activeness and then competitive aggressiveness and autonomy. These results provide an additional contribution that social companies should continue to exploit entrepreneurial orientation as a strategic policy to create superior companies and improve their social performance. Strengthened by Yadegaridehkordi et al. (2023) in their research, it indicates that the role of entrepreneurial orientation, stakeholder pressure, leadership commitment and market orientation influence social performance. The results show that entrepreneurial orientation influences all performance (social performance, financial performance and environmental performance). The research findings expand understanding while highlighting the factors that most determine the sustainable performance of SMEs, namely the important role of leader commitment and entrepreneurial orientation.

The results show that open innovation affects the social performance and financial performance of BUMDes. In line with Kania et al.'s research, (2021) by utilizing village wealth and potential, BUMDes tries to encourage entrepreneurship at the rural level. Strengthened by Kusumastuti et al. (2022) research using scopus metadata and science direct, that developing BUMDes must take into account the potentials that exist in the village which are beneficial to improving the rural economy. Indigenous innovation is one strategy to encourage economic and business sustainability. Based on natural resources, local wisdom and hidden knowledge in exploring potential or business opportunities related to local innovations that use natural resources in an area can be a competitive advantage.

The results confirms that open innovation has a significant mediating role in linking entrepreneurial orientation to the performance of BUMDes, both in social and financial aspects. BUMDes that adopt open innovation practices gain more access to various external sources of knowledge and ideas (Raya et al., 2021). Collaboration with external parties in the context of open innovation also plays a key role in helping BUMDes manage financial resources more diversely. This allows them to raise investments from business partners, government, or other investors interested in their innovative potential. Open innovation enables BUMDes to develop products and services that are more innovative and relevant to the ever-changing and competitive market dynamics. Their entrepreneurial orientation therefore becomes more competitive. In conclusion, through open innovation, BUMDes can also manage their product and service development process more flexibly, by collaborating with external parties to design, test and refine their products and services more efficiently. To achieve their social mission and financial sustainability, social enterprises require to have a sustainability innovations that help them balance both objectives (Harsanto et al., 2022).

Strengthened by the research of Kusmulyono et al. (2023) so that BUMDes can achieve success in social performance and economic performance, there must be a commitment from the village government, professional BUMDes management, and the involvement of village communities so that social and economic performance can be achieved in a balanced manner. BUMDes needs to recognize the role of various parties with interests, such as the village government as the legal owner, working partners, and the village community as the legal beneficiary. To achieve the main objective of BUMDes development

in improving welfare in rural areas through economic and social performance, BUMDes needs to maintain a balance between economic and social benefits.

## 6. Conclusions, research contributions, limitations, and recommendations

### 6.1. Conclusions

The novelty of this research is to examine social enterprises by adopting open innovation as a mediating variable to analyze the effect of entrepreneurial orientation on both social and financial performance. The result indicates that the direct effect of entrepreneurial orientation on financial performance is significantly positive, but social performance has no significant effect. Besides, it also shows that open innovation has an effect on social performance and financial performance, but in both results, the effect of social performance is more dominant. The results explain the importance of the mediating role of open innovation in the effect of entrepreneurial orientation on the financial performance and social performance of BUMDes. The mediation of open innovation on the effect of entrepreneurial orientation on financial performance is partial mediation. Meanwhile, the mediation of open innovation, the effect of entrepreneurial orientation on social performance is full mediation.

### 6.2. Theoretical contributions and policy implications

Theoretically, this study adopts the Resource-Based View (RBV) theory that an organization will excel if it has superior resources that are difficult to imitate. These superior resources are manifested by resources possessing an entrepreneurial orientation in the form of risk taking, competitive aggressiveness, autonomy, and pro-activeness, adopting previous research, such as researches from (Chelliah et al., 2022; Freixanet et al., 2021; Wahyuni & Sara, 2020; Yadegaridehkordi et al., 2023). Based on existing research gaps, this study tries to fill the gap by adding an open innovation variable to bridge the gap in previous studies between entrepreneurial orientation and BUMDes performance. By expanding the BUMDes performance study, namely developing measures of social and financial performance adopting local wisdom in social enterprises developed from previous studies. This study finds a new relationship that the direct effect of entrepreneurial orientation is not significant on social performance, but with the mediation of open innovation the effect becomes significant.

The practical implications of the research are: first, the importance of entrepreneurial orientation for BUMDes managers, especially in the courage to take measured business risks, competitive aggressiveness, pro-activeness, autonomy, and respect for innovative ideas that are beneficial for the development of BUMDes. Second, not all BUMDes have good performance, even based on data only 5%–10%, BUMDes have good performance. By adopting open innovation, BUMDes is expected to increase collaboration with various parties and try to find opportunities with creativity that goes beyond current performance. The results of this research provide evidence that open innovation can improve both financial performance and social performance. In the case of social enterprises, to build successful BUMDes, selecting managers with a strong entrepreneurial orientation is absolutely necessary. The conclusion from this study is that in selecting BUMDes managers, the managers should have a strong entrepreneurial orientation, as well as quite open to new ideas for developing BUMDes service processes, create aspects of

**Table 5.** The mediating effect of open innovation.

Hypothesis	Mediating Variable	Sobel test statistic	One-tailed probability	Two-tailed probability	Result
H <sub>6</sub>	Entrepreneurial Orientation → Open Innovation → Financial Performance	2.62183313	0.00437291	0.00874582	Mediating
H <sub>7</sub>	Entrepreneurial Orientation → Open Innovation → Social Performance	3.71144424	0.00010304	0.00020608	Mediating

\*\*\* < 1%, \*\* < 5%.



open innovation as part of a business strategy that help BUMDes improve success from the aspect of financial and social performance.

### 6.3. Limitations and recommendations

The limitation of this research is that the sample used is only BUMDes engaged in the trade and tourism village sector, while the BUMDes cluster is very diverse, for example BUMDes (financial, agricultural/livestock, craft and non-financial), so this research has limitations in generalizing to all business units BUMDes. Another limitation is that the direct effect of entrepreneurial orientation on social performance is not significant, meaning that the research results contradict the theory developed. Future research can be developed by describing the dimensions of entrepreneurial orientation, namely: risk taking, competitive aggressiveness, autonomy, and pro-activeness to find out which dimension has the greatest influence in encouraging open innovation and the performance of both BUMDes. In addition, future research can be developed by adding the variable role of information technology, optimal online marketing or social innovation in developing BUMDes, bearing in mind that the role of technology, social interaction and social capital in social enterprises is still very relevant.

### Ethics statement

The author obtained respondent consent before collecting the data.

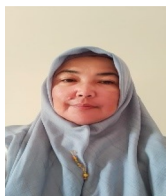
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