RBGN REVISTA BRASILEIRA DE GESTÃO DE NEGÓCIOS
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ISSN 1806-4892
e-ISSN 1983-0807

OPEN ACCESS

ARTICLE

Intellectual capital readiness and the performance of village-owned enterprises in Indonesia: mediation through entrepreneurial knowledge

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Received on:
May/14/2024
Approved on:
January/30/2025

Responsible editor:
Prof. Dr. Eduardo Armando

Reviewers:
Aamir Suhail; One of the reviewers preferred not to disclose his name

Evaluation process:
Double Blind Review

This article is open data

Abstract

Purpose – This study investigates the impact of intellectual capital readiness on the performance of village-owned enterprises. The study discovered a new index to measure intellectual capital readiness and also looked into whether the relationship is mediated by entrepreneurial knowledge.

Theoretical framework – The relationship between intellectual capital readiness and the performance of village-owned enterprises is still rare.

Design/methodology/approach – This research used a quantitative study with 148 management respondents from village-owned enterprises in Indonesia. The data were collected using an online survey.

Findings – The findings show significant results. First, the Intellectual Capital Readiness Index (ICRI) shows a reasonable level of readiness. Second, the performance of village-owned enterprises is influenced by intellectual capital readiness. Third, entrepreneurial knowledge has a positive impact on the performance of village-owned enterprises. Finally, entrepreneurial knowledge moderates the impact of intellectual capital readiness on the performance of village-owned enterprises.

Practical & social implications of research – The development of the ICRI offers a valuable tool for managers and policymakers to evaluate and improve the readiness of these enterprises to effectively leverage their intellectual capital.

Originality/value – This research brings a fresh perspective to the field by introducing innovative methods and concepts to assess and enhance the performance of village-owned enterprises.

Keywords: Intellectual Capital Readiness Index, village-owned enterprise performance, entrepreneurship knowledge, BUMDes, Indonesia.

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How to cite:
Shara, Y., & Narsa, I M. (2025). Intellectual capital readiness and the performance of village-owned enterprises in Indonesia: mediation through entrepreneurial knowledge. *Revista Brasileira de Gestão de Negócios*, *27*(1),e20240064. https://doi.org/10.7819/rbgn.v27i01.4289

Revista Brasileira de Gestão de Negócios

https://doi.org/10.7819/rbgn.v27i01.4289

1 Introduction

The concept of BUMDes (village-owned enterprises) was first introduced in 2004 through Law No. 32 of 2004 on Regional Government (Republic of Indonesia, 2004). This law provides a legal basis for villages to manage their existing economic potential. In 2014, Law No. 6 of 2014 on Villages provided further impetus for the development of BUMDes. This law emphasizes the importance of villages in managing local resources and enterprises. The performance of village-owned enterprises is a critical issue in Indonesia: as Indonesia has a total village population of 83,843, increasing the performance of village-owned enterprises contributes to improving the village economy.

The willingness of villagers to develop is the most important thing in the development of the village. Economic backwardness, human resources, and village infrastructure are the root causes of slow rural and urban growth, which in turn reduces economic development (Nardin, 2019; Yani, 2017). In order to address the backwardness of villages, the administration adopted the SDGs from the ground up. Thus, the most basic level of government, in this case the village government, is essential to accomplishing the SDGs (W. Ali et al., 2017; Hartojo et al., 2022). The Financial and Development Supervisory Agency of Indonesia monitors and evaluates the performance of village-owned enterprises (hereafter abbreviated as BUMDes). A total of 362 BUMDes in the country were used as observation samples, and it was found that BUMDes showed ineffective performance. This is generally due to the fact that some of the BUMDes are not yet legal entities. This makes it difficult to access capital from banking institutions. In addition, business planning and the development of village potential are still weak points. BUMDes have not been able to develop village resources into productive enterprises. Therefore, it can be said that entrepreneurial values have not been fully mastered.

The Government of Indonesia emphasizes the importance of village autonomy through various laws and regulations, allowing villages to establish business entities to increase income and promote economic development. BUMDes play a crucial role in the long-term economic growth of villages, as supported by laws such as Law No. 6 of 2014 and Government Regulation No. 72 of 2005. BUMDes are crucial for the long-term development of the village economy. The aim is to improve the welfare and quality of life of the community while alleviating poverty by meeting basic needs, developing local economic potential, and using natural resources and the environment sustainably (Hartojo et al., 2022; Muda & Erlina, 2020).

The Ministry of Villages, Development of Disadvantaged Regions and Transmigration includes capital development, which aims to increase the capital of BUMDes and its role as a driver of the village economy and to create new workers. The establishment of BUMDes will contribute significantly to efforts to revitalize and drive the economies of rural communities. Profits from BUMDes must be contributed to Village Original Income (PADes) through the Village Revenue and Expenditure Budget (APBDes). To revitalize and drive village economies, from 2015 to 2020, village funds of IDR 4.2 trillion were budgeted as capital for BUMDes. As a result, BUMDes contributed to PADes in 2021, from the distribution of BUMDes results of up to IDR 1.1 trillion (Alamsyah, 2021). On the other hand, this income was accompanied by an increase in the number of BUMDes.

Every year, the number of BUMDes increases. There were 1022 in 2015, 11,945 in 2015, 18,446 in 2016, 39,149 in 2017, 45,549 in 2018, 50,199 in 2019, 51,134 in 2020, and 57,266 in 2021.

This study is critical for Indonesia for several reasons. The first is that a large number of villages in Indonesia intend to increase the village economy as a result of the influence of COVID-19 in Indonesia. Second, they intend to reduce the high rate of urbanization caused by a lack of income and work opportunities in the village. Third, they intend to hasten the development of underdeveloped districts and villages. Fourth, they intend to assist the government in implementing the SDGs. A literature review on intellectual capital readiness and the performance of village-owned enterprises with entrepreneurial knowledge as a mediator is included. The researchers assess the Intellectual Capital Readiness Index (ICRI) in depth. The ICRI has great potential to deepen BUMDes management practices and enrich theoretical fields related to knowledge management and innovation. By using this index, BUMDes can identify and utilize the intellectual capital they have to improve their performance, while theories related to knowledge management and intellectual capital can be better understood in a broader context and more applicable at the local level and in community-based organizations.

The performance of BUMDes is greatly influenced by intellectual capital (Ali et al., 2021). Intellectual

capital includes knowledge, skills, experience, and social relationships possessed by individuals and organizations (Hein et al., 2019). Good managerial skills help BUMDes in making appropriate and efficient decisions, thereby increasing productivity and operational effectiveness. Investing in the training and development of BUMDes members increases intellectual capacity, which in turn improves overall organizational performance (Heubeck, 2023). By utilizing and developing intellectual capital, BUMDes can increase their competitiveness and have a positive impact on the village economy. However, previous research results actually show that intellectual capital does not significantly improve performance because performance is influenced by other factors (Anggraini et al., 2023; Hejase et al., 2016). Intellectual capital on the BUMDes scale cannot be deepened if knowledge, especially entrepreneurial knowledge, is ignored (Hakim et al., 2023). Thus, in this study, entrepreneurial knowledge mediates the direct relationship between intellectual capital and BUMDes performance. However, research on the role of entrepreneurial knowledge as a mediator is still rare, so it is a novelty in this study.

The study is unique in the following ways. First, it is the first study to use the new indicator to assess the intellectual capital readiness of BUMDes. Second, research on the relationship between intellectual capital readiness and village-owned enterprise performance is still rare. Third, this is the first study to use entrepreneurial knowledge as a mediator to examine the effect of intellectual capital readiness on the performance of village-owned enterprises. In the resource-based view (RBV), intellectual capital such as employees' knowledge, skills, and experience are considered valuable resources. These resources are strategic assets that can increase an organization's competitiveness. The RBV provides a framework for understanding how intellectual capital contributes to organizational performance and how these resources can be strategically managed to achieve competitive advantage. Thus, the results of this study are expected to contribute to the expansion and creation of variations of RBV theory.

The results of this study are also expected to provide considerations for BUMDes to optimize their resources, improve performance, and achieve the SDGs. The RBV gap related to the performance of BUMDes refers to the difference between the resources owned by BUMDes and the ability of BUMDes to effectively utilize these resources to achieve optimal performance. In this context, the RBV is a theory that emphasizes the importance of unique and valuable internal resources to create competitive advantage (Amaya et al., 2024). Human resources, especially in terms of management and leadership, are important factors in the success of BUMDes. Limitations in managerial expertise often lead to poor management, immature planning, and ineffective execution (Salah et al., 2023). The gap shows that many BUMDes have difficulty in building strong managerial and leadership capacity. Without competent managers, BUMDes will have difficulty planning and utilizing resources optimally. See Figure 1 for a summary of the proposed model.

2 Literature review

2.1 Resource-based view theory

The RBV is the most appropriate theory in this research. The RBV positions village-owned enterprises to increase their competitive advantage by utilizing internal

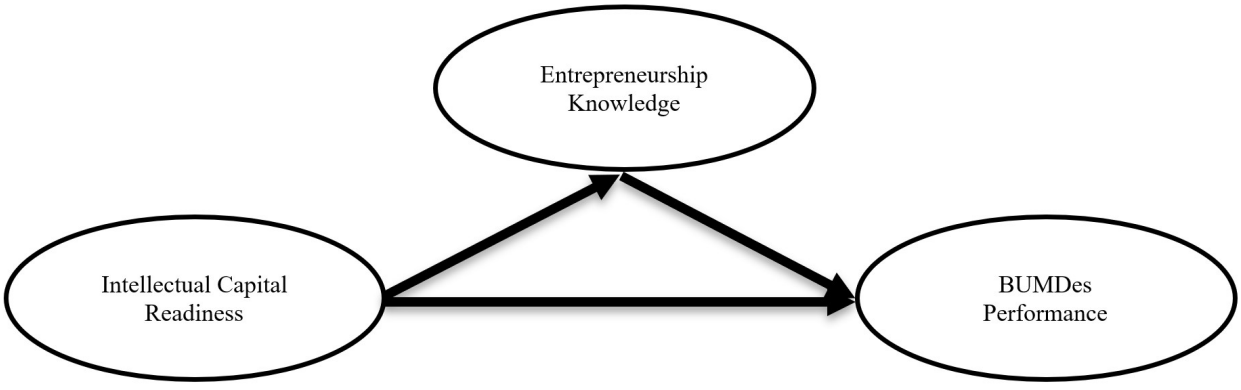

Figure 1. Conceptual Framework

resources that meet the criteria of being valuable, unique, rare, inimitable, and non-substitutable (Madhani, 2009; Munir et al., 2019; Penrose, 2009; Peteraf, 1993; Stewart, 2010; Wernerfelt, 1984). This theory is used to acquire a better understanding of the primary function of internal resources in the performance of village-owned enterprises (Ali et al., 2017; Masakure et al., 2009).

In order to improve their performance, businesses should emphasize intangible resources such as human capital, relational capital, and structural capital (Grant, 1991; Jogaratnam, 2018). Human resources will be more effective in enhancing their ability to transmit information if good tactics are used (Bag et al., 2020; Yang et al., 2015). In order to see the effect of mediation, this study requires entrepreneurship theory. This theory examines how entrepreneurs should conduct themselves in order to predict the outcome of their performance (Fiet, 2001). For other village-owned enterprise managers to develop an entrepreneurial attitude in running village-owned enterprises, village-owned enterprises leaders must train other village-owned enterprise managers. Entrepreneurs are vital to the country's economy and recognize the critical role of developing and supporting the small and medium micro-enterprise (SMME) sector (Mvunabandi et al., 2023).

Indonesia has a very large population with a young age structure. This offers great potential for producing productive and innovative workers (Kudrna et al., 2022; Priyarsono, 2024). Research tends to emphasize the development of human capital (skills, education) without directly linking it to intellectual capital (knowledge, innovation) in the context of micro-enterprises. More in-depth empirical research in this context, especially in developing countries, can help understand the dynamics and challenges of developing intellectual capital in the micro-enterprise sector (Aljuboori et al., 2022). BUMDes often have limited human, financial and technological resources, which hinders the development of intellectual capital. Not all BUMDes managers and employees have sufficient competence to manage a business professionally. Intellectual capital is a very important asset for the success of BUMDes (Iacuzzi & Pauluzzo, 2024). By optimally developing intellectual capital, BUMDes can improve their performance, contribute to society, and become an important pillar in village economic development (Jordão & Novas, 2024).

The implementation of the concept of intellectual capital in BUMDes in Indonesia faces many challenges, especially related to limited access to resources, understanding of the concept, and the lack of in-depth empirical research. To enrich the theoretical and practical foundations, more studies are needed that examine the impact of intellectual capital on rural economic performance, especially in the context of micro-enterprises in developing countries (Nugraha et al., 2022). Research that focuses more on human capital development in BUMDes and micro-enterprises will be very useful in overcoming existing limitations and helping to formulate more effective strategies to improve the performance of BUMDes and the village economy as a whole (Neumann, 2021).

In the Indonesian market, SMMEs are at the forefront of business transformation, with intellectual capital being the critical element. SMMEs may not be industry giants, but they play an important role in the nation's economy. Intellectual capital, in the form of knowledge, skills, and experience, has been shown to improve the competitiveness and sustainability of SMMEs. A recent study confirms that investment in human capital can improve operational efficiency and relationships with stakeholders. However, the challenge faced is the slow adoption of new technologies and innovations by SMMEs (Anatan & Nur, 2023). The recommendation for the future is to strengthen knowledge-based strategies and support initiatives that enhance the intellectual capital of SMMEs. This will enable SMMEs to compete in the global market and achieve sustainable growth (Hariyono & Narsa, 2024). However, the application of intellectual capital in BUMDes management requires adaptation and a more contextual approach. Developing a stronger intellectual capital model for BUMDes and exploring the practical implications of the ICRI will provide a more meaningful contribution to BUMDes literature and practice (Iqbal et al., 2022). This approach will help BUMDes to manage and utilize their intellectual resources in a more structured way and provide a stronger foundation for sustainable local economic development (Amrullah et al., 2023).

2.1.1 *The influence of intellectual capital readiness on BUMDes performance*

Human capital, consisting of the skills and knowledge of BUMDes administrators and members, has a direct impact on the ability of BUMDes to manage businesses and adapt to existing challenges. For example, BUMDes administrators with good managerial skills will be able to plan and manage projects more efficiently,

increase product competitiveness, and manage finances more wisely. Conversely, a lack of these skills can lead to operational inefficiencies and a lack of competitiveness. A stronger rationale for intellectual capital readiness and its relationship to BUMDes performance lies in the ability to describe how efficient intellectual capital management affects BUMDes' ability to innovate, manage human and structural resources, and build relationships that support their business. With good intellectual capital management, BUMDes can improve their operational performance, expand their markets, and ultimately achieve sustainable economic development at the village level.

One of the most important tactics for improving the performance of village-owned enterprises is to develop intellectual capital. Employees, structures, and customers are all examples of intellectual capital (Stewart, 2010). Intellectual capital comprises three types of resources: human capital (skills, knowledge), structural capital (processes, patents, databases), and relational capital (customer relationships, networks). Bontis (1996), Kaplan and Norton (2004), Roos and von Krogh (1996), Stewart (2010), and Sveiby (1997) define "readiness" as the need to prepare intangible assets to support the efficient implementation of a strategy. It could be a form of intellectual capital. Readiness makes it easier to adopt an appropriate organizational plan (Rylander & Peppard, 2003; Tjahjadi et al., 2022; Zemlyak et al., 2022). Intellectual capital readiness also implies that village-owned enterprises must plan and develop human, relational, and structural capital to support strategy implementation (Tjahjadi et al., 2022). According to Muda and Erlina's (2020) research, the growth stage is when human, structural, and relational capital have a more significant impact on a company's success (Muda & Erlina, 2020; Rylander & Peppard, 2003; Tjahjadi et al., 2022; Zemlyak et al., 2022). Previous studies on intellectual capital have shown that it affects performance (Mavridis, 2004; Tjahjadi et al., 2022). Based on these considerations, the following hypothesis is proposed:

H1. Intellectual capital readiness has a positive impact on BUMDes performance.

2.1.2 *The influence of entrepreneurship knowledge on intellectual capital readiness*

Support from BUMDes managers and internal BUMDes resources such as human capital, relational capital, and structural capital are critical components of systematic BUMDes management expertise. One manages management expertise in BUMDes by combining ownership and managerial responsibilities. The BUMDes manager must understand the culture and values of the BUMDes that they manage. They should preserve what is beneficial and discard what is hindering the growth of new knowledge. On the one hand, lack of knowledge and belief in one's abilities to address all problems are frequently the most significant barriers to success. Another characteristic is that ordinary entrepreneurs rarely recognize what talents they lack and what knowledge they need to acquire to manage their businesses (Kessler, 2013; Salmony & Kanbach, 2022). As a result, entrepreneurs must understand the significance of expanding their expertise and why it is necessary (Svabova et al., 2022). The provision of expertise for BUMDes managers is typically achieved through experience in managing BUMDes and government training to increase managers' knowledge or skills in managing BUMDes. As a result, their entrepreneurial knowledge has no limits and will continue to grow so that entrepreneurs can continue to create new added value by combining new tools, technologies, resources, and opportunities. Entrepreneurship can be learned through education or practice (Wang & Mangmeechai, 2022). Based on these considerations, the second hypothesis is developed:

H2. Entrepreneurship knowledge is positively influenced by intellectual capital readiness.

2.1.3 *The influence of entrepreneurial knowledge on BUMDes performance*

Knowledge is achieved by combining the ability to think with science to realize theoretical understanding. Knowledge of a fundamental concept can manifest an idea (Cho et al., 2022). An entrepreneur manages a business, can capitalize on opportunities and risks, and produces commercially speculative ideas (Niode, 2022). To succeed in business, an entrepreneur must possess several characteristics, including the ability (skill) to control, the ability to build their business, the ability to face challenges, the ability to generate a lot of money, and the ability to choose the best alternative. Knowledge is the aspect that allows entrepreneurs to differentiate themselves from their competitors (Dodor & Akolgo, 2022). Entrepreneurs with more knowledge will be less hesitant about their effectiveness and will be able to learn and detect market changes more quickly. According to the research findings reviewed thus far, entrepreneurial expertise influences

BUMDes performance (Asmawanti et al., 2022). A third hypothesis is developed based on this logic:

H3. Entrepreneurial knowledge improves BUMDes performance.

2.1.4 *Entrepreneurship knowledge modulates the relationship between intellectual capital readiness and BUMDes performance*

Entrepreneurship theory contends that entrepreneurship knowledge can boost competitive advantage by incorporating BUMDes managers' innovations into BUMDes operations (Correa da Cunha et al., 2022; Hair et al., 2019). With the help of entrepreneurial knowledge, one of the critical strategic variables for increasing BUMDes performance can be identified (Siraj et al., 2022). According to this study, there is a high level of application of intellectual capital. As a result, the greater the entrepreneurial knowledge to support strategy execution, the greater the impact on BUMDes performance. According to the research of Kim and Boh (2017), entrepreneurshipknowledge influences BUMDes performance. Based on the previous considerations, the following hypothesis can be proposed:

H4. Entrepreneurship knowledge modulates the influence of intellectual capital readiness on BUMDes performance.

3 Method

The study aims to investigate the relationship between intellectual capital readiness, entrepreneurial knowledge, organizational commitment, and BUMDes performance. This study employs the Intellectual Capital Readiness Index through a quantitative approach. Two sections are considered: the data collection process and the data analysis techniques. Surveys were used to collect data during the data collection process. Second, this study assessed the data using structural equation modeling as the data analysis method.

3.1 Data collection

This study used an online questionnaire to collect data from respondents. Before distributing the questionnaire, the researchers conducted a pilot test with 30 accounting lecturers, academic forum members, village practitioners, and students. The pilot test results showed that the questionnaire was valid and reliable. The total number of BUMDes recorded until 2021 is 57,266. As a result, the sample in this study is based on the Rausoft sample size calculation of 382.

Furthermore, the online questionnaires were distributed to BUMDes administrators who are members of the Telegram group and BUMDes managers. This was supported by a WhatsApp forum of academics and village practitioners. The results of the questionnaire distribution were monitored for two weeks. Respondents could have been more responsive in answering the questionnaire during the first week of submission; therefore, the researchers sent the questionnaire directly to each group member and 148 respondents completed the survey. The response rate (148/382) was 38%.

3.2 Data analysis

This study uses partial least squares structural equation modeling (PLS-SEM) to evaluate the research model. PLS-SEM is one of the most popular data analysis techniques, especially in social and business research. PLS-SEM can handle complex models with many latent variables and indicators. This approach maximizes the variance explained to evaluate the complicated cause-and-effect relationships among latent variables. This research includes two evaluation methods (Baron & Kenny, 1986). As part of the measurement model analysis, indicator loadings, internal consistency reliability, the convergent and discriminant validity of each construct measure, and the discriminant validity of the overall measure are all evaluated (Sarstedt & Cheah, 2019). In order to evaluate the structural model, collinearity, explanatory power, and predictive accuracy must be examined (Baron & Kenny, 1986) (Supplementary Data 2 – Smart PLS output Outer model, Supplementary Data 3 – Smart PLS output Inner model.)

3.3 Definition and measurement

3.3.1 *Intellectual capital readiness*

Intellectual capital readiness refers to the ability and expertise of human and organizational resources to improve BUMDes performance. Intellectual capital readiness is defined as the readiness of intellectual capital' in terms of human capital (skills, knowledge), structural capital (processes, patents, databases), and relational capital (customer relationships, networks) to execute business strategy more effectively. Because of the different

fields of study, intellectual capital is classified and defined differently.

Human capital, relational capital, and structural capital are the three dimensions of intellectual capital discussed in this study (Bontis, 1996; Carr et al., 2004; Hubert, 1996; Kaplan & Norton, 2004; Roos & von Krogh, 1996; Tjahjadi et al., 2022). The five human capital statements used included:

1. BUMDes managers already have sufficient knowledge to carry out the organization's vision and mission.
2. BUMDes financial managers are already well versed in financial management.
3. BUMDes managers already have the necessary skills to carry out the mission and vision.
4. BUMDes manager understand the organization's values.
5. BUMDes managers work well together to achieve common goals.

The six structural capital statements used were as follows:

1. The managed BUMDes have a clear organizational structure.
2. The managed BUMDes have a reputation, patents, and other intellectual capital.
3. The management of BUMDes is excellent.
4. Your regional values and beliefs align with the objectives of BUMDes.
5. BUMDes are well managed in terms of data and documentation.
6. BUMDes' processes and work methods are managed to support operational activities.

The four statements used for relational capital were as follows:

1. BUMDes managers can form alliances with other BUMDes managers
2. BUMDes managers can maintain strategic relationships with other BUMDes, companies, governments, and others.
3. BUMDes managers are concerned about public health.
4. BUMDes managers regularly conduct stakeholder satisfaction surveys and evaluations.

Full details of the indicator statements for each variable can be found in Appendix A.

3.3.2 *Entrepreneurship knowledge*

Entrepreneurship knowledge is the ability to create something new through original thinking and inventive action, allowing one to generate viable business prospects or ideas (Omerzel & Antončič, 2008; Wang & Mangmeechai, 2022). The four BUMDes managers already have sufficient knowledge to accomplish the organization's vision and mission. The following entrepreneurial knowledge statements were used:

1. I know how to start a good business because of my experience.
2. Because of my professional experience, I am very familiar with the needs of customers
3. I am very good at recognizing business opportunities in my field of expertise.
4. I am familiar with the work procedures of the BUMDes I oversee.

A seven-point Likert scale was used, with one representing "strongly disagree" and seven representing "strongly agree."

3.3.3 *BUMDes performance*

BUMDes performance is defined as the implementation of overall business strategies and the realization of all assets owned by BUMDes. Organizations must proactively protect the environment from the problems caused by their operational business activities (Muda & Erlina, 2020; Omerzel & Antončič, 2008; Rustiarini et al., 2022). The performance of BUMDes has three dimensions: operational performance, job satisfaction, and employee involvement. According to Ahmad et al. (2021), the three operational performance statements used are:

1. You can evaluate the quality of growth of the BUMDes you oversee.
2. You can evaluate an employee's performance.
3. You can control the costs of BUMDes.

The two statements used to measure job satisfaction were:

1. You are content in your current role in a BUMDes.
2. If the BUMDes that you oversee need personnel, you will encourage a friend to apply for a job there.

The two statements used to express employee involvement were as follows:

1. You have the option to take part in troubleshooting as a BUMDes maintainer.
2. You have an excellent commitment to the BUMDes that you manage.

A seven-point Likert scale was used, with one denoting "strongly disagree" and seven denoting "strongly agree." (Supplementary Data 1 – Database).

4 Results

4.1 Descriptive statistics and respondent characteristics

The characteristics of the respondents are shown in Table 1. Overall, males made up the majority of respondents. Most respondents had completed high school. The average respondent had two years of experience working for BUMDes. The financial sector employs the broadest range of business types (e.g., savings and loans). 34.45% of BUMDes have been around for at least seven years. Java and Madura accounted for 46.6% of the sample's BUMDes.

Table 1
Respondent Characteristics

Classification	Sub-Classification	Frequency	
		Absolute	Percentage
Gender	Male	87	59%
	Female	61	41%
Educational Level	Primary school	1	0.67%
	Junior high school	3	2.08%
	Senior high school	73	49.32%
	Diploma	18	12.16%
	Bachelor	48	32.43%
	Graduate	5	3.38%
Work Experience	<2 Years	47	31.76%
	2-4 Years	38	25.67%
	5-7 Years	38	25.67%
	>7 Years	25	16.89%
BUMDes Business Type	Natural resource management	34	22.97%
	Local resource-based processing industry (processed agricultural products in the form of intermediate goods and finished goods)	28	18.92%
	Type of distribution (e.g. distributor of village agricultural products)	13	0.68%
	Financial sector (e.g. savings and loans)	48	32.43%
	Public services (building village power plants, providing clean water/drinking water for villagers, means of transportation, etc.)	25	16.89%
Age of BUMDes	<2 Years	47	31.76%
	2-4 Years	44	29.73%
	5-7 Years	51	34.45%
	>7 Years	6	4.05%
BUMDes Area	Sumatra	53	35.8%
	Java and Madura	69	46.6%
	Kalimantan	3	2.03%
	Bali and Nusa Tenggara	5	3.38%
	Sulawesi	12	8.12%
	Papua and Maluku	6	4.054%

4.2 Intellectual Capital Readiness Index

The researchers use the Intellectual Capital Readiness Index (ICRI) to assess the intellectual capital readiness in BUMDes. The index was adapted from Cricelli et al. (2014) by adding two value drivers, namely openness to change and business and innovation environment, to measure intellectual capital readiness. The ICRI is implemented by interviewing BUMDes managers. The interviews consist of four parts. In the first step, the interviewers identify essential groups of IC components that may enhance value development. In the second, third, and fourth steps, the interviewers assess the mutual direct and indirect impact that each of the identified groups of IC components has on other groups and on performance. Finally, the collected data are synthesized into an overall index. The table 2 shows the calculations of the BUMDes ICRI. From the results of the ICRI calculations, the value of 0.52 is still somewhat ready to withstand changes. Figure 2 indicates that institutional relationships contribute significantly to the value of the BUMDes ICRI.

4.3 Measurement Model Analysis

Measurement model analysis was used to conduct reliability and validity tests on the relationship between the

Table 2
Calculation of the BUMDes ICRI

No.	ICs	$Ii * Pi$	$Ii * \ln(1 + CIi) * \bar{P}jt$	Total
1	Knowledge skills	0.03	0.01	0.04
2	Management skills	0.02	0.02	0.04
3	Creativity and innovation	0.05	0.02	0.07
4	Intangible infrastructure assets	0.04	0.02	0.06
5	Relationships with customers	0.04	0.02	0.06
6	Relationships with suppliers	0.03	0.01	0.04
7	Institutional relationships	0.05	0.02	0.07
8	Brand and image	0.02	0.02	0.04
9	Openness to change	0.04	0.02	0.06
10	Business and innovation environment	0.03	0.01	0.04
Total		0.35	0.17	0.52

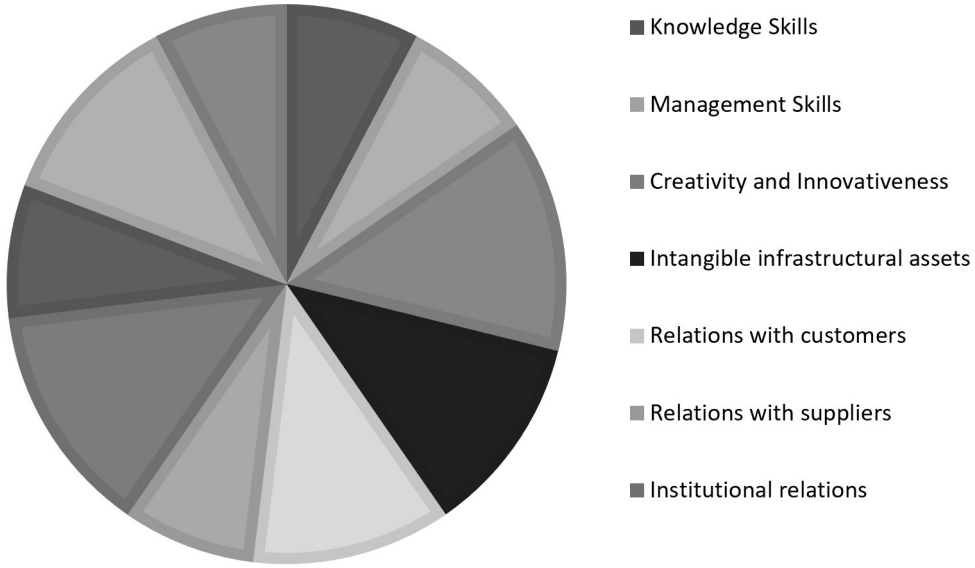

Figure 2. Contributions of the ICs to the Overall ICRI

Table 3
Results of Measurement Model Analysis

Construct	Factor Loading	p-Value	Construct	Factor Loading	p-Value
HC1	0.865	<0.001	EK1	0.857	<0.001
HC2	0.837	<0.001	EK2	0.935	<0.001
HC3	0.906	<0.001	EK3	0.906	<0.001
HC4	0.842	<0.001	EK4	0.873	<0.001
HC5	0.836	<0.001	Composite Reliability (CR):0.940		
SC1	0.811	<0.001	AVE: 0.798		
SC2	0.777	<0.001	OP1	0.868	<0.001
SC3	0.862	<0.001	OP2	0.879	<0.001
SC4	0.843	<0.001	OP3	0.861	<0.001
SC5	0.851	<0.001	JS1	0.870	<0.001
SC6	0.848	<0.001	JS2	0.784	<0.001
RC1	0.840	<0.001	EI1	0.824	<0.001
RC2	0.873	<0.001	EI2	0.871	<0.001
RC3	0.799	<0.001	Composite Reliability (CR): 0.949		
RC4	0.809	<0.001	AVE: 0.725		
Composite Reliability (CR): 0.973					
AVE: 0.707					

measurement indicators and the constructs. All loading factors must be greater than 0.7. In the first iteration, all loading factors of ICR, BP, and EK were more significant than 0.7. Table 3 shows the results of the data analysis following the second iteration. All measures in this investigation were significant and the loading factors were above the 0.7 threshold. This finding indicates that the latent variables account for 70% of the variance. Composite reliability was used to measure reliability. Hair Jr et al. (2013) stipulate that the composite reliability value must be greater than 0.7. The composite reliability of each construct in this study was greater than 0.7, indicating that they met the criteria and the measures were reliable. The average variance extracted (AVE) was used to assess convergent validity. The AVE value must be greater than 0.5, indicating that the variance of the construct exceeds the measurement error (Vandenbosch, 1996). The AVE values for the constructs in this study were greater than 0.5. ICR, BP, and EK had AVE values of 0.973, 0.949, and 0.940, respectively. As a result, the values met the convergent validity requirement. The number must be greater than 0.5, indicating that the construct variation exceeds the measurement error (Vandenbosch, 1996). The AVE values for the constructs in this study were greater than 0.5. ICR, BP, and EK had AVE values of 0.707, 0.725, and 0.798, respectively.

As a result, the values met the convergent validity requirement. The results of the discriminant validity test are shown in Table 4. The discriminant validity test was designed to guarantee that the construct used to assess causal relationships did not measure the same thing, which could lead to multicollinearity issues. The square root of the AVE was compared with the correlations between the latent variables to test for discriminant validity. If the square root of the AVE of the construct is greater than the correlation between the constructs, then the square root of the AVE is valid (Fornell & Larcker, 1981). The ICR value was 0.841, the highest when compared horizontally with the values of the other variables. When the value of BP was compared horizontally with the values of the other variables, it was 0.852. When the value of EK was compared horizontally with the values of the other variables, it was 0.893.

Table 4
Results of Discriminant Validity Test

	ICR	EK	BP
ICR	0.841		
EK	0.808	0.893	
BP	0.721	0.738	0.852

Note(s): *** indicates statistical significance at the 1% level ($p < 0.01$).

4.4 Structural model analysis

Structural model analysis was performed to test the hypotheses investigated. This study aimed to investigate

the direct influence of ICR on BP. We also want to know whether EK mediates the relationship. Structural model analysis was used in the study to (1) explore the direct influence of ICR on BP and (2) test EK as a mediating variable in relation to the effect of ICR on BP (Baron & Kenny, 1986). The results of the structural model analysis are shown in Table 5.

Table 5 (Panel A) shows that ICR has a positive effect on BP (coefficient: 0.358; p-value 0.01). Thus, the first hypothesis that ICR influences BP is supported. EK was introduced as a mediating variable in a subsequent study (Panel B). The data show that ICR affects EK (coefficient: 0.808; p-value 0.01), indicating that the second hypothesis is validated. The third hypothesis is supported because EK affects BP (coefficient: 0.449; p-value: 0.01). After being mediated by EK, the effect of ICR on BP remained significant (coefficient: 0.721; p-value 0.01). Thus, the fourth hypothesis that EK mediates the effect of ICR on BP is supported. Finally, ICR affects BP, and EK partially mediates the influence of ICR on BP.

Variance accounted for (VAF) was used to calculate the level of mediation of EK in the effect of ICR on BP (Hair Jr et al., 2013). VAF values of less than 20% indicate no mediation effect, VAF values between 20 and 80% indicate partial mediation, and VAF values greater than 80% indicate full mediation. The VAF value was calculated using the formula:

VAF = Indirect Effect / (Indirect Effect + Direct Effect) = 0.665/66.5%

Thus, the VAF value is 0.665, or 66.5%. This confirms that EK helps to mitigate the effect of ICR on BP. The inner and outer model outputs are shown in Figure 3.

Table 5
Results of the Direct and Indirect Effects

Panel A: Direct Effect		
Hypotheses	Path Coefficient	Decision
ICR>BP	0.358***	Supported
ICR>EK	0.808***	Supported
ICR>BP	0.449***	Supported
Panel B: Indirect Effect		
Hypotheses	VAF	p-Value
ICR>EK>BP	66.5%	<0.001***

***p: 0.01; VAF value is between 20 and 80%.

5 Discussion

5.1 Effect of Intellectual Capital Readiness on BUMDes performance

According to the RBV, intellectual capital readiness, which includes human capital, structural capital, and relational capital, increases competitive advantage and BUMDes performance. The findings support the first hypothesis, which states that intellectual capital readiness has a positive impact on BUMDes performance. It supports previous research (Mavridis, 2004; Pike et al., 2006; Villela & Paredes, 2022) that shows that intellectual capital increases a company's success. According to the findings of Tjahjadi et al. (2022), intellectual capital affects university performance. According to the ICRI estimations, the BUMDes are well prepared for current changes. Physical and intangible assets are seen as potential strategic assets. Following encouraging findings of links between firm resources and performance measures, this resource-based view of the firm, which includes the benefits of both tangible and intangible assets, is becoming more widely known in the accounting, economics, and strategic management literature (Barathi Kamath, 2007; Garanina et al., 2021). Another work worth mentioning in this context is an evaluation of the effectiveness of the physical capital and intellectual potential of the European central banks in 1996. According to the study's conclusions, intellectual potential is critical to company performance, and boosting the efficiency of intellectual potential is the quickest, cheapest, and surest way to ensure long-term economic success. A similar study was conducted to assist New Zealand banks in understanding the critical cost factors that determine the cost of acquiring IC (human capital). The study led to the development of an IC accounting model for New Zealand banks (Sahrawat, 2001).

5.2 Effect of Intellectual Capital Readiness on entrepreneurship knowledge

Entrepreneurship knowledge is positively influenced by intellectual capital readiness. The three components of intellectual capital readiness influence entrepreneurial knowledge. Intellectual capital readiness provides the most value to organizations by combining, utilizing, interacting, aligning, and balancing the three forms of intellectual capital readiness and managing the flow of knowledge between the three components (Kong, 2007; Liñán & Chen, 2009). With the readiness possessed by BUMDes managers, it is envisaged that they can expand their entrepreneurial knowledge and increase creativity in managing BUMDes. This is consistent with the studies

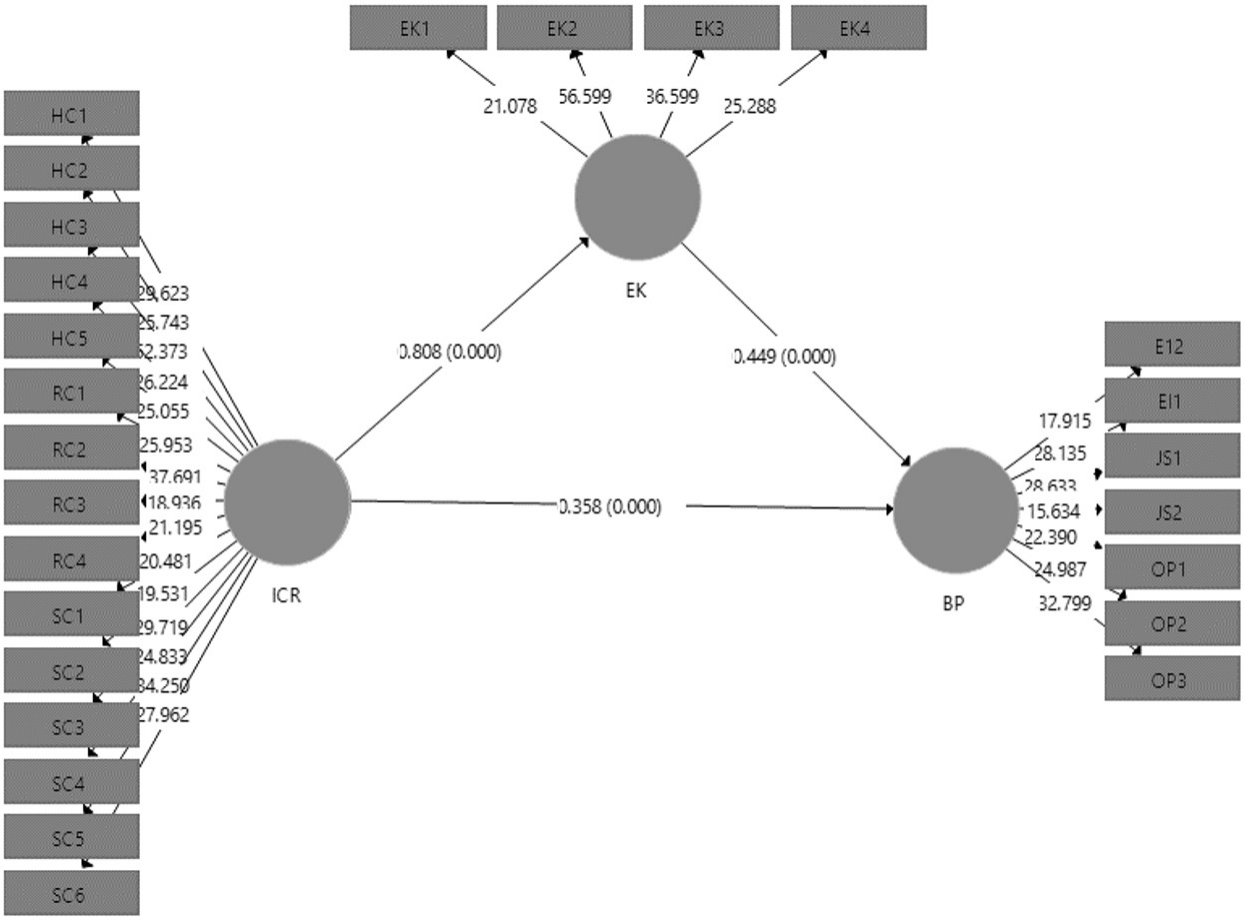

Figure 3. Results of Full Model

conducted (Hussinki et al., 2017; Kong, 2007; Ngah & Ibrahim, 2011).

5.3 Impact of Entrepreneurship Knowledge on BUMDes Performance

Entrepreneurial opportunities require a strong vision and vigilance derived from management, as indicated by the RBV and entrepreneurship theory. Knowledge of entrepreneurship benefits BUMDes. According to Purnamawati et al. (2022), managers can effectively create plans that will be put into practice to enhance BUMDes performance. Understanding opportunities and how to seize them in the organizations they lead is the essence of intelligent entrepreneurship (Omerzel & Antončič, 2008). Knowledge is urgently needed to foster innovation and implicitly filter the risks and uncertainties that come with entrepreneurship (Audretsch et al., 2008). The dissemination of information depends on identifying and seizing the opportunities offered by new technological knowledge (Audretsch et al., 2008). The opportunity to improve BUMDes performance will increase in direct proportion to the managers' knowledge of entrepreneurship.

5.4 Entrepreneurship knowledge mediates the effect of intellectual Capital Readiness on BUMDes performance

Entrepreneurship theory states that having an understanding of entrepreneurship can provide a competitive advantage because it can be used to incorporate management innovations into the process of starting a BUMDes (Correa da Cunha et al., 2022; Hair et al., 2019; Yasir et al., 2014). One of the most important strategic components for improving BUMDes performance may be knowledge of entrepreneurship (Siraj et al., 2022). By improving customer benefits and reducing production and service delivery costs, intellectual capital supported by employees with greater experience can improve firm performance (Simsek & Heavey, 2011; Tarighi et al., 2022). The results of this study lend credence to the idea that intellectual capital readiness is increasing at this time.

A better understanding of entrepreneurship is needed to facilitate strategy execution. Additionally, this will have an impact on BUMDes operations. The application of entrepreneurial expertise affects BUMDes performance (Kim & Boh, 2017; Simsek & Heavey, 2011; Uit, 2000).

This study contributes by developing a theoretical model that links intellectual capital readiness (ICR) and BUMDes performance, with entrepreneurial knowledge as a mediator. This model offers new insights into how BUMDes can manage their intellectual capital to improve their competitiveness and business performance. Entrepreneurial knowledge serves as a bridge connecting intellectual capital to better results in BUMDes performance. Intellectual capital readiness ensures that BUMDes have a strong base to face challenges and create innovations that are relevant to local and national market needs.

As a mediator, entrepreneurial knowledge plays an important role in leveraging intellectual capital to achieve better results in BUMDes performance, leading to economic growth at the village level. BUMDes management practices can also be inspired by the findings of this study to focus on intellectual capital management and entrepreneurial knowledge development, so as to improve business performance and sustainability. This study makes a significant contribution to the development of intellectual capital theory and practice in the context of BUMDes. By emphasizing the importance of intellectual capital readiness and the role of entrepreneurial knowledge as a mediator, this study shows how BUMDes in Indonesia can optimize their potential to improve performance and contribute to local economic development. These findings pave the way for further research on other ways to improve the capacity of BUMDes and provide practical recommendations that can be adopted by managers and policy makers at the village level.

6 Conclusions

This study examines the impact of intellectual capital reserves on the performance of Indonesian BUMDes. More importantly, it explores whether knowledge of entrepreneurship mediates the relationship. Based on the number of members of the BUMDes and BUMDes Telegram groups supported by the Forum of Village Academics and Practitioners (FAPDes), the RBV, entrepreneurship theory, and partial least squares structural equation modeling (PLS-SEM) were used to analyze a sample of 148 BUMDes administrators in Indonesia and to explain the relationships between the constructs and the hypothesis under investigation. The level of intellectual capital readiness was also evaluated in this study using the ICRI. The empirical findings of the study are follows: (1) intellectual capital readiness has a positive impact on BUMDes performance; (2) it has a positive impact on entrepreneurship knowledge; and (3) entrepreneurial knowledge partially mediates the effect of intellectual capital readiness on BUMDes performance.

The findings of this study are consistent with the RBV, which emphasizes the importance of BUMDes preparing their intellectual capital to deal with current changes, including those brought about by internal and governmental policies. Since village governments provide funding for BUMDes, there must be accountability. For BUMDes management to be prepared for changes in regulations, it is hoped that the central government will be able to read conditions on the ground more quickly with the help of the measurements made by village administrators and village governments using the ICRI. The study highlights the need for further research into the predisposing variables influencing BUMDes performance. Practical implications motivate BUMDes managers to maximize intellectual capital readiness and develop efficient management practices. At the same time, the resources in a village are equal to those in the city, and more than processing is needed. BUMDes must keep up with development and create new businesses for the village economy to advance. The existence of entrepreneurial knowledge can improve the perspective on the potential that the community can manage, hence improving BUMDes Village-Owned performance. Businesses also expect that academic support will help the community's economy to grow. Administrators of BUMDes receive regular training from academics to increase their entrepreneurial knowledge.

The results of this study indicate that intellectual capital readiness and entrepreneurship knowledge partially influence BUMDes performance, that intellectual capital readiness influences entrepreneurship knowledge, and that entrepreneurship knowledge partially mediates the relationship between intellectual capital readiness and entrepreneurship knowledge. These results can be used as a basis for BUMDes performance management practices by focusing on intellectual capital readiness by increasing entrepreneurship knowledge through various efforts. In addition, the results of this study can also provide considerations for the government to determine mentoring policies in order to develop entrepreneurship knowledge to enrich intellectual capital so that BUMDes performance shows optimal results.

This study develops a model linking intellectual capital readiness (ICR) and BUMDes performance, with entrepreneurial knowledge mediating the relationship. It highlights how BUMDes can improve competitiveness and business performance through managing intellectual capital. Entrepreneurial knowledge connects intellectual capital to enhanced BUMDes performance. Intellectual capital readiness ensures that BUMDes can face challenges and innovate for local and national markets. Entrepreneurial knowledge mediates the use of intellectual capital for better BUMDes performance, thereby fostering economic growth. The study suggests focusing on intellectual capital management and entrepreneurial knowledge development for improved business performance and sustainability. It contributes to intellectual capital theory and practice in BUMDes, showing how Indonesia's BUMDes can enhance performance and local economic development, and offers recommendations for managers and policy makers. However, the report acknowledges some limitations. These limitations open up new research possibilities. First, the study's response rate was modest. In addition, as this study is first-order confirmatory, subsequent researchers could employ a second-order confirmatory approach. The data quality could have been better because the third data collection period, which lasted only two weeks, was short. Fourth, as the intellectual capital readiness variable considers only three factors – human capital, structural capital, and relational capital – researchers could expand the concept to include technological components. Researchers could also conduct additional studies on SMEs and BUMDes.

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Appendix A
Summary of Scale items

Summary of scale items

Intellectual capital readiness
BUMDes managers already have sufficient knowledge to carry out the organization's vision and mission.
BUMDes financial managers are already well versed in financial management.
BUMDes managers already have the necessary skills to carry out the mission and vision.
BUMDes managers understand the organization's values.
BUMDes managers work well together to achieve common goals.
The managed BUMDes have a clear organizational structure.
The managed BUMDes have a reputation, patents and other intellectual capital.
The management of BUMDes is excellent.
Your regional values and beliefs align with the objectives of BUMDes.
BUMDes are well managed in terms of data and documentation.
BUMDes' processes and work methods are managed to support operational activities.
BUMDes managers can form alliances with other BUMDes managers.
BUMDes managers can maintain strategic relationships with other BUMDes, companies, governments, and others.
BUMDes managers are concerned about public health.
BUMDes managers regularly conduct stakeholder satisfaction surveys and evaluations.
Entrepreneurship knowledge
I know how to start a good business because of my experience.
Because of my professional experience, I am very familiar with the needs of customers.
I am very good at recognizing business opportunities in my field of expertise.
I am familiar with the work procedures of the BUMDes I oversee.
BUMDes performance
You can evaluate the quality of growth of the BUMDes you oversee.
You can evaluate an employee's performance.
You can control the costs of BUMDes.
You are content in your current role in a BUMDes.
If the BUMDes you oversee need personnel, you will encourage a friend to apply for a job there.
You have the option to take part in troubleshooting as a BUMDes maintainer.

Supplementary Material

Supplementary material accompanies this paper.
Supplementary Data 1 – Database
Supplementary Data 2 – Smart PLS output Outer model
Supplementary Data 3 – Smart PLS output Inner model
Supplementary data to this article can be found online https://doi.org/10.7910/DVN/HJATXC.

Financial support:
Article work funded by the author.

Open Science:
Shara, Yuni; Narsa, I Made, 2025, "Intellectual Capital Readiness and Village-Owned Enterprise Performance in Indonesia: Mediation through Entrepreneurial Knowledge", https://doi.org/10.7910/DVN/HJATXC, Harvard Dataverse, V1

Conflicts of interest:
The authors have no conflicts of interest to declare.

Plagiarism analysis:
RBGN performs plagiarism analysis on all its articles at the time of submission and after approval of the manuscript using the iThenticate tool.

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2nd author: definition of research problem; development of hypotheses or research questions (empirical studies); theoretical foundation/literature review; definition of methodological procedures; statistical analysis; analysis and interpretation of data; critical revision of the manuscript; manuscript writing.