



Innovation capacity and social capital as mediators of relationships in integrated quality management with sustainable performance of village-owned enterprises in Klaten district, Central Java, Indonesia

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Abstract

The objective of this study is to research sustainability performance in village-owned enterprises as village-based economic driving institutions through integrated quality management with innovation capabilities and social capital in a single model known as Resource-Based View (RBV) development. Directors of the 354 Village-Owned Enterprises in Klaten Regency made up the study's participants. This study used a purposive sampling technique with a total sample of 190 BUMDes. The analysis tool used is Structural Equation Modeling (SEM). The results of the study show that integrated quality management affects sustainable performance. The influence of integrated quality management on sustainable performance is mediated by innovation capabilities and social capital. The outcome of the study is that BUMDes' performance will be sustainable if they have specific resources and capabilities implemented in integrated quality management based on the idea of human resource development such as being actively involved in BUMDes management operations and participating in the empowerment of BUMDes. It is essential for the government of Klaten Regency, Central Java Province to develop leadership management by providing directors leadership training so that they can adapt and be responsive to change and foster a sense of trust in the social environment such as trust in employees, the government and fellow citizens. In addition, the BUMDes director can promote regeneration by encouraging individuals to try new ideas without fear of failure.

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1. Introduction

The village is one of the smallest units. More than 32,000 villages out of 74,093 categorized as underdeveloped villages (Kusuma & Purnamasari, 2016). The central government achieved a significant advancement in the village development and administration policy framework through the issuance of Law Number 6 of 2014 concerning Villages. Village-Owned Enterprises (BUMDes) developed a strategy for implementing local economic drivers as a result of Law Number 6 of 2014 regarding villages. Thomas (2019) states that the government has issued a budget of Indonesian Rupiah (IDR) 30 trillion for the village fund

program in the last five years but the budget has not been used optimally especially by BUMDes. It was recorded that 2,188 BUMDes were not operating and 1,670 BUMDes had not optimally contributed to the development of the village economy.

According to [Sayutri \(2011\)](#), a sustainable BUMDes is required to unleash the potential of the village and can support initiatives aimed at reducing poverty. The establishment and institutionalization of BUMDes is also a response to the issue of rural-urban disparity caused by rural development. [Syukran and Tauran \(2016\)](#) argue that BUMDes sustainable performance values have an impact on increasing income and providing employment. According to [Atuna \(2019\)](#); [Ibrahim, Abdullah, Kamaluddin, and Mas'ad \(2019\)](#) and [Ramadana, Ribawanto, and Suwondo \(2013\)](#), the existence of BUMDes has not shown an optimal role in improving the welfare of village communities. [Budiono \(2015\)](#) argues that not all BUMDes success are in line with the benefits felt by the community. According to [Kusuma and Purnamasari \(2016\)](#), there are BUMDes whose existence is lacking even though its management and village government claim that their implementation has been going well.

Efforts are required to ensure that BUMDes operate sustainably considering all of the phenomena they have displayed. Based on the phenomena shown by BUMDes, some efforts are needed to have sustainable performance ([Thomas, 2019](#)). Sustainable performance is assessed as the unity between social, economic and environmental objectives of organizational activities that can increase value ([Naciti, 2019](#)). The achievement of sustainable BUMDes performance is based on sustainability theory. Sustainability contains the concept of the triple bottom line introduced by [Elkington \(2013\)](#) organizations are not only concerned with profit but must also pay attention to the welfare of the surrounding community (people) and also contribute actively to environmental preservation (planet) for the sustainability of resources. Results of previous empirical studies examine various components of sustainable performance including environmental, social and governance components which are associated with various stakeholders ([Rezaee & Fogarty, 2019](#)). Sustainable performance consists of three dimensions: social sustainability, environmental sustainability and economic sustainability ([Shahzad et al., 2020](#)). [Abbas \(2020\)](#) uses the term triple bottom line.

[Shafiq, Lasrado, and Hafeez \(2019\)](#) and [Al-Serhan \(2019\)](#) focused on integrated quality management with a continuous improvement approach to achieve efficient resource utilisation in order to achieve sustainable performance. Integrated quality management has a long-term orientation related to durability ([Abbas, 2020](#)). [Li, Zhao, Zhang, Chen, and Cao \(2018\)](#) and [Abbas \(2020\)](#) concluded that the characteristics of integrated quality management in achieving continuous improvement are closely related to sustainable performance. According to [Singh, Kumar, and Singh \(2018\)](#), the results of integrated quality management can be expanded from economic aspects of sustainability to social and environmental aspects. In addition, integrated quality management is recognized as a mechanism that has the ability to improve organizational and individual performance ([Mahmood, Hashmi, Shoaib, Danish, & Abbas, 2014](#)) and strengthen the achievement of sustainable performance ([Li et al., 2018](#)). Integrated quality management seeks to adhere to environmentally practices by using few resources. Integrated quality management aims to follow environmentally friendly practices by consuming the least amount of resources in operations ([Qasrawi, Almahamid, & Qasrawi, 2017](#)).

The results of an empirical study on the effect of integrated quality management on sustainability performance were carried out by [Li et al. \(2018\)](#); [Abbas \(2020\)](#); [Mahmood et al. \(2014\)](#); [Singh et al. \(2018\)](#); [Shafiq et al. \(2019\)](#) and [Al-Qahtani, Alshehri, and Aziz \(2015\)](#) concluded that the characteristics of integrated quality management in achieving continuous improvement are strongly related to sustainable performance. Different results are shown by [Siva et al. \(2016\)](#) and [Shahzad et al. \(2020\)](#) on the role of integrated quality management in increasing the sustainability of company performance. It is interesting to conduct studies investigating the ability of innovation and social capital to act as mediators in order to fill the research gap about the impact of integrated quality management on sustainable performance. Innovation is key not only for survival but also for seizing new opportunities, protecting knowledge assets and creating a competitive advantage in the market ([Hurmelinna-Laukkanen, Sainio, & Jauhainen, 2008](#); [Samson & Gloet, 2014](#); [Teece, 2000](#)). [Zehir, Ertosun, Zehir, and Müceldilli \(2012\)](#) stated that integrated quality management encourages innovation capabilities. The implementation of effective integrated quality management has a significant impact on a company's innovation capability ([Li et al., 2018](#)). Quality management capabilities and innovation are integrated with efforts to obtain sustainable performance ([López-Mielgo, Montes-Peón, & Vázquez-Ordás, 2009](#); [Psomas, Kafetzopoulos, & Gotzamani, 2018](#)). Integrated quality management has a positive impact on innovation capability ([Hung, Lien, Yang, Wu, & Kuo, 2011](#); [Iqbal, Khan, Talib, & Khan, 2012](#); [McAdam, Armstrong, & Kelly, 1998](#); [Prajogo & Hong, 2008](#)). Innovation capability is seen as important for performance that can be improved and achieve sustainability ([Maletič, Maletič, Dahlgaard, Dahlgaard-Park, & Gomišček, 2014](#); [Pinho, 2008](#)). The importance of innovation capability is to encourage the sustainability of a company's performance ([Khan & Naeem, 2018](#); [Zeng, Phan, & Matsui, 2015](#)).

The success of integrated quality management does not only depend on internal cohesion between individuals and groups within the company but also on inter-organizational relationships through social capital ([Donate, Ruiz-Monterrubio, Sánchez De Pablo, & Peña, 2019](#)). Social capital is an intangible asset of an organization consisting of networks, trust and reciprocity that exist between employees and organizations ([Fukuyama, 2001](#); [Nahapiet & Ghoshal, 1998](#); [Putnam, 2001](#)). Integrated quality management will support the development of strong relationships between internal and external agents (structural social capital), trust and

commitment (relational social capital) and common values and shared rules (cognitive social capital) through teamwork and motivation to achieve common goals (Donate et al., 2019; Hammer, Arah, Der, Thompson, & Mannion, 2013; Yu & Huo, 2019).

Achieving corporate sustainability requires social capital (Yu & Huo, 2019). This linkage not only helps employees and organizations share knowledge together but also helps in the development of competencies needed to achieve sustainability (Bennett, 2010). Strong social capital is considered necessary for the growth, innovation and sustainability of small and medium enterprises in a competitive world (Fanfan, 2011; Gronum, Verreynne, & Kastle, 2012; Schebesch, 2012). In addition, there is a positive relationship between sustainability and social capital (Akhtar, Ismail, & Hussain, 2014).

Through a Resource-Based View (RBV) approach that focuses on internal factors therefore the novelty of this study is to combine indicators from previous research as theory and the role of innovation ability. The social capital itself is a variable that mediates the effect of integrated quality management on the sustainable performance of village-owned enterprises developed in a model and explained by Resource-Based View (RBV) as the main theory.

2. Literature Review

2.1. Resource-Based View (RBV)

Resource-Based View (RBV) is a theory that can provide more economic advantages to owners of companies or organizations with the availability of fixed or limited resources (Sherman, 2007). A company's survival is highly dependent on its ability to create new resources and build on its capability programs that cannot be imitated to achieve competitive advantage and corporate sustainability (Day & Wensley, 1988; Peteraf, 1993; Prahalad & Hamel, 1990). According to Ferreira et al. (2011), a company's performance is dependent on the resources it possesses and its ability to transform those resources into revenue. Company resources can be tangible or intangible.

According to the resource-based view, business capability is one of the key internal aspects of managing the resources a firm already has in order to attain competitiveness and sustainability.

Resource management will be effective if the company's current skills are strong especially if its resources are strong and it can sustain its competitive edge in the future.

2.2. Sustainability Performance

Sustainability performance is performance on social, economic and environmental aspects that are expected to increase in the long term (Formentini & Taticchi, 2016; Hassini, Surti, & Searcy, 2012). According to Elkington (2013), a report on a company's sustainable performance includes information on its non-financial performance such as information on its social initiatives and the environment that supports its ability to expand sustainably. According to Barbieri, Vasconcelos, Andreassi, & Vasconcelos (2010), sustainable performance is the ability to produce resources that mitigate factors of production, replace worn-out assets and invest in order to remain competitive by taking into account the triple bottom line's dimensions which include environmental, social and economic concerns (Elkington, 2013).

Sustainable practices are considered the foundation of corporate strategy conducted by businesses to achieve long-term benefits (Das, Rangarajan, & Dutta, 2020). Incorporating the principles of sustainability into the formulation of corporate strategy requires continuous performance measurement. The assessment of the effectiveness of the company's strategy is very important. If sustainable performance experiences positive growth, it will also have a positive effect on company performance (Ting, Azizan, Bhaskaran, & Sukumaran, 2020).

2.3. Integrated Quality Management

According to Vincent (2006), Total Quality Management (TQM) is defined as a way of continuously improving performance at every level of operation or process in every functional area of an organization by using all available human and capital resources. TQM does not only consist of tools and techniques to improve quality but also depends on a set of values and beliefs shared by all members of the organization (Gharakhani, Hossein, Mohammad, & Arshad, 2013).

Regarding the indicators, integrated quality management contains six dimensions: leadership, strategic planning, customer focus, process management, human resource management, information and analysis. It has been widely researched by different researchers such as Abbas (2020); Khan and Naeem (2018); Yusr, Mohd Mokhtar, Othman, and Sulaiman (2017) and Sila (2007). This study's integrated quality management variable combines indicators from previous integrated quality management variables from several studies including those from Saraph, Benson, and Schroeder (1989); Kaynak (2003); Sila (2007) and Yusr et al. (2017). The addition of cultural and communication indicators, social and environmental responsibility indicators and environmental emphasis indicators from the research findings of Hietschold (2014) is new in this study.

2.4. Innovation Capabilities

Innovation capability is the ability to mobilize the knowledge possessed by its employees and combine it to create new knowledge, resulting in product or process innovation (Çakar & Ertürk, 2010). Vicente, Abrantes, and Teixeira (2015) conceptualize innovation capability as a company's capacity to develop new products through a combination of innovation behavior, strategic capabilities and internal technological processes. Saunila (2014) revealed that the measurement of innovation ability includes seven dimensions, namely participatory leadership culture, idea structure and organization, work climate and welfare, knowledge development, regeneration and external.

2.5. Social Capital

Social capital includes the institutions, relationships, attitudes and values that direct and mobilize interactions between people and contribute to social and economic development. Social capital may be a driving force asset held by people that unlocks the potential of other capital such as human, physical, natural and financial resources (La Ola, 2011). Lawang (2004) explains that social capital refers to all social forces of society that are built by individuals or groups with reference to social structures according to their assessment to achieve individual or group goals efficiently and effectively with other capital.

Social capital is transmitted through cultural mechanisms such as religion, traditions or historical customs. Several references regarding indicators of social capital include Shiri, Safi Sis, and Nadi (2013), Hasan, Hoi, Wu, and Zhang (2017) and Cohen and Prusak (2002) which consist of social networks, information sharing, social participation, social values and social trust. In addition, in reviewing some of the literature regarding social capital, there are two indicators that have not been combined with social capital indicators, namely social cohesion and social communication indicators (Shiri et al., 2013).

2.6. Hypothesis Development

The results of an empirical study on the effect of integrated quality management on sustainability performance carried out by Li et al. (2018); Abbas (2020); Mahmood et al. (2014); Singh et al. (2018); Shafiq et al. (2019) and Al-Qahtani et al. (2015) concluded that the characteristics of integrated quality management in achieving continuous improvement are strongly related to sustainable performance. The first hypothesis is based on the description of the relationship between integrated quality management and sustainable performance.

H₁: Integrated quality management influences sustainable performance.

Integrated quality management has a positive impact on innovation ability (Hung et al., 2011; Iqbal et al., 2012; McAdam et al., 1998; Prajogo & Hong, 2008). Innovation ability is seen as important for performance that can be improved and achieve sustainability (Maletič et al., 2014; Pinho, 2008). The importance of innovation capability is to encourage the sustainability of company performance (Khan & Naeem, 2018; Zeng et al., 2015). The study's hypothesis may be presented as follows in the context of the aforementioned cognitive process and variable relationships:

H₂: Innovation capability mediates the relationship between integrated quality management and sustainable performance.

Achieving corporate sustainability requires social capital (Pretty & Ward, 2021). This linkage not only helps employees and organizations share knowledge together but also helps in the development of competencies needed to achieve sustainability (Bennett, 2010). Strong social capital is considered necessary for the growth, innovation and sustainability of small and medium enterprises in a competitive world (Fanfan, 2011; Gronum et al., 2012; Schebesch, 2012). In addition, there is a positive relationship between sustainability and social capital (Akhtar et al., 2014). The study's hypothesis may be presented as follows in the context of the aforementioned cognitive process and variable relationships:

H₃: Social capital mediates the relationship between integrated quality management and sustainable performance.

3. Method

The population in this study were directors of Village-Owned Enterprises (BUMDes) in Klaten Regency, totaling 354 BUMDes. The sampling technique used in this study was purposive sampling which divided BUMDes criteria into developing, growing and advanced categories in accordance with the BUMDes Development Indicators (IP-BUMDes) assessment given by the village community empowerment agency Klaten Regency, Central Java Province. The category of a developing BUMDes is if BUMDes IP is less than 50, a growing BUMDes has BUMDes IP in the range of 51 to 75. An advanced BUMDes has a BUMDes IP of more than 75. The number of samples is 190 BUMDes classified as 159 growing BUMDes, 21 developing BUMDes and 10 advanced BUMDes. Respondents in this study were directors of village-owned enterprises with the criteria of growing, developing and advancing in Klaten Regency.

3.1. Research Operational Variables

The operational variables used in this study are described in Table 1.

Table 1. Variables, indicators, and variable instruments

Variables	Indicators	Item	Sumber
Integrated quality management	Leadership management	1. Policy makers are responsible for quality assurance. 2. Policy makers focus on efforts to achieve goals. 3. Policy makers focus on planning to achieve goals.	Saraph et al. (1989); Kaynak (2003); Sila (2007); Abbas (2020) and Yusr et al. (2017)
	Strategic planning	4. Policy makers focus on planning to achieve the vision, mission and goals of the organization. 5. Implementation of strategic policies to achieve BUMDes goals.	
	Customer focus	6. Policy makers are knowledgeable about customer demands and, market trends. 7. Policy maker maintains good relations with customers by ensuring customer satisfaction.	
	Process management	8. There is a clear division of processes, ownership and responsibilities. 9. Automation and self-inspection are used to regulate the process of designing a product or service.	
	Human resource	10. Effective human resource management through active participation in operational matters. 11. Effective human resource management through active participation in empowerment.	
	Culture and communication	12. Village institutions emphasize the importance of developing employees with the concept of quality rather than policy. 13. The institution emphasizes simple and effective communication between employees.	
	Social and environmental responsibility	14. The institution emphasizes activities that place importance on the villages' welfare. 15. The institutions make programs that can develop villages' potential.	
Innovation ability	Participatory leadership culture	1. Leaders spend time increasing opportunities for all parties to participate. 2. Leaders spend time achieving a balance that allows them to act on good ideas.	Mi Dahlgaard - Park and Dahlgaard (2010) and Saunila (2014);
	Structurization of ideas and organization	3. Implementation of innovation in how organizational work tasks are arranged. 4. The flexibility and openness of the structure encourage the emergence of new ideas.	
	Work climate and welfare	5. Create an environment that involves employees in understanding work roles. 6. Encourage employees to further express their creativity.	
	Understanding in development	7. Utilization of knowledge in improving employee skills. 8. Commit to learning by seeking a full understanding of its environment, including customers, competitors, and emerging technologies.	
	Regeneration	9. Mutual trust that encourages individual to try new ideas without fear of failure and its consequences.	

Variables	Indicators	Item	Sumner
		10. Mutual respect creates an atmosphere that encourages individual to try new ideas without fear of failure and its consequences.	
	External knowledge	11. The strength of the relationship between companies affects the rate of knowledge transfer. 12. Knowledge gained from partner companies affects the companies innovation ability.	
	Individual activity	13. Creative thinking includes: individuals have a new perspective on problems are willing to take risks and have a tolerance for ambiguity. 14. As business realities change, the behavior and actions of employees need to be adjusted.	
Social capital	Social values	1. Society highly respects all members. 2. Society respects individual as a member.	Fanfan (2011); Gronum et al. (2012) and Schebesch (2012)
	Social trust	3. Trust in officials and the government. 4. Trust in fellow citizens.	
	Social network	5. Active in associations. 6. Communicate with other organizations.	
	Social cohesion	7. A strong relationship with colleagues in one organization and village. 8. Proximity to colleagues and other community members.	
	Social participation	9. Participation in public affairs. 10. Participation in public and non-governmental associations.	
	Information disclosure	11. Obtain information and knowledge in various field. 12. Talk about community programs with colleagues and other community members.	
	Social communication	13. Communicate with colleagues and other community members through communication media. 14. Communicate with colleagues and community members during the holidays.	
Sustainability performance	Environmental sustainability	1. Promotion and protection of natural resources and the natural environment. 2. Do not consume resources excessively.	Elkington (2013); Hollingworth and Valentine (2014); Kang, Chiang, Huangthanapan, and Downing (2015); Robson and Mitchell (2007); Turker (2009); Van Der Heijden, Driessen, and Cramer (2010); Isaksson (2006); Jamali (2006) and Todorut (2012)
	Social sustainability	3. Participation in social development programs and public policies. 4. Contributing financially and non-financially to non-profit organizations.	
	Economic sustainability	5. There is profitability in business activities. 6. Able to expand market share.	

Each response to a question was assigned a weight by using a Likert scale to score the respondents' replies in relation to the variables being assessed as follows: 1 =strongly disagree , 2 =disagree , 3 =neutral , 4

= agree and 5 =strongly agree. Structural equation modeling was used for data analysis and hypothesis testing was done using the probability value test. If the p-value is less than or equal to 0.05, then there is a significant effect. Otherwise, there is no significant effect. Meanwhile, [Baron and Kenny's \(1986\)](#) method is used to determine the full or partial mediation of mediating variables.

4. Result

4.1. Characteristics of Respondents

According to the findings of data collection done by distributing questionnaires to the directors of BUMDes who were used as respondents, the following characteristics may be determined based on gender, age, education and years of service:

Table 2. Characteristics of respondents

Individual characteristics	Number (Orang)	%
By gender		
Man	183	96.3
Woman	7	3.7
By age (Years)		
< 30	0	0
31 – 40	128	67.4
41 – 50	52	27.4
> 50	10	5.2
By education		
SMA	163	85.8
S1	27	14.2
S2	0	0
Years of service (Years)		
< 5	190	100
6 – 10	0	0
11 – 15	0	0
> 15	0	0

The characteristics of the respondents in terms of gender indicate that respondents who are BUMDes administrators or directors are dominated by men aged 31-40 years with a high school education level who have experience as directors of BUMDes less than 5 years due to the enactment of the village law. This demonstrates that the majority of BUMDes directors are considered to be of productive age since they have less than five years of experience working which allows BUMDes to be mobile and creative.

4.2. Instrument Testing

It is necessary to test the instrument on a certain number of respondents before using it to conduct research. Testing the research instrument was carried out with a small sample of 30 respondents. The results of testing the validity and reliability of the instrument can be seen in [Table 3](#).

Based on the results of the validity and reliability tests carried out on the question items, it shows that all question items are declared valid and reliable because they have met the validity testing criteria used namely the correlation and coefficient of Pearson product moment ($r \geq 0.3$) and fulfilled the reliability test, namely the Cronbach value alpha greater than or equal to 0.6 .

5. Inferential Statistical Analysis

5.1. Confirmatory Factor Analysis Results

The measurement results of the dimensions or variable indicators that can form latent variables with CFA and the determination of indicators from integrated quality management variables with innovation capabilities, social capital and sustainability performance are based on factor loading values. A summary of the results of the CFA test on the indicators that make up the integrated quality management variable with innovation capability, social capital and sustainability performance is shown in [Table 4](#).

Table 3. Item validity and reliability test results.

Variables	Item	Correlation		Coefficient	
		Rhitung	Status	Alpha	Status
Integrated quality management	X1.1.1	0.688	Valid	0.909	Reliable
	X1.1.2	0.680	Valid		
	X1.1.3	0.859	Valid		
	X1.2.1	0.604	Valid		
	X1.2.2	0.709	Valid		
	X1.3.1	0.678	Valid		
	X1.3.2	0.761	Valid		
	X1.4.1	0.734	Valid		
	X1.4.2	0.797	Valid		
	X1.5.1	0.667	Valid		
	X1.5.2	0.600	Valid		
	X1.6.1	0.526	Valid		
	X1.6.2	0.550	Valid		
	X1.7.1	0.566	Valid		
X1.7.2	0.571	Valid			
Innovation ability	Y1.1.1	0.689	Valid	0.895	Reliable
	Y1.1.2	0.675	Valid		
	Y1.2.1	0.847	Valid		
	Y1.2.2	0.672	Valid		
	Y1.3.1	0.520	Valid		
	Y1.3.2	0.745	Valid		
	Y1.4.1	0.688	Valid		
	Y1.4.2	0.661	Valid		
	Y1.5.1	0.769	Valid		
	Y1.5.2	0.701	Valid		
	Y1.6.1	0.591	Valid		
	Y1.6.2	0.538	Valid		
Y1.7.1	0.562	Valid			
Y1.7.2	0.473	Valid			
Social capital	Y2.1.1	0.670	Valid	0.894	Reliable
	Y2.1.2	0.692	Valid		
	Y2.2.1	0.855	Valid		
	Y2.2.2	0.582	Valid		
	Y2.3.1	0.529	Valid		
	Y2.3.2	0.580	Valid		
	Y2.4.1	0.737	Valid		
	Y2.4.2	0.645	Valid		
	Y2.5.1	0.769	Valid		
	Y2.5.2	0.662	Valid		
	Y2.6.1	0.586	Valid		
	Y2.6.2	0.560	Valid		
Y2.7.1	0.624	Valid			
Y2.7.2	0.415	Valid			
Sustainability performance	Y3.1.1	0.660	Valid	0.842	Reliable
	Y3.1.2	0.560	Valid		
	Y3.2.1	0.577	Valid		
	Y3.2.2	0.742	Valid		
	Y3.3.1	0.557	Valid		
	Y3.3.2	0.401	Valid		

Table 4. Factors loading (λ) integrated quality management variable with innovation capability and social capital and sustainability performance measurer.

Indicators and variables	FL	CR	p
Leadership management --> Integrated quality management	0.361	4,408	0.000
Strategic planning --> Integrated quality management	0.485	5,958	0.000
Customer focus --> Integrated quality management	0.744	8,464	0.000
Process management --> Integrated quality management	0.767	9,158	0.000
Human resources --> Integrated quality management	0.782	9,064	0.000
Communication --> Integrated quality management	0.636	9,201	0.000
Social responsibility --> Integrated quality management	0.704	-	-
Participatory leadership --> Innovation capability	0.729	-	-
Structurization of organizational ideas --> Innovation capability	0.784	8,925	0.000
Work climate --> Innovation capability	0.524	5,133	0.000
Understanding in development --> Innovation capability	0.563	5,488	0.000
Regeneration --> Innovation capability	0.267	3,193	0.001
Knowledge of externals --> Innovation capability	0.196	2,364	0.018
Individual activity --> Innovation capability	0.267	3,176	0.001
Social value --> Social capital	0.735	10,316	0.000
Social trust --> Social capital	0.661	9,046	0.000
Social network --> Social capital	0.761	10,577	0.000
Social cohesion --> Social capital	0.797	11,268	0.000
Social participation --> Social capital	0.784	10,958	0.000
Information disclosure --> Social capital	0.813	11,565	0.000
Social communication --> Social capital	0.762	-	-
Environmental sustainability --> Sustainability performance	0.890	-	-
Social sustainability --> Sustainability performance	0.891	17,936	0.000
Economic sustainability --> Sustainability performance	0.941	19,602	0.000

Based on [Table 4](#), it can be explained that all of these indicators are important as they shape quality management, innovation capability, social capital and sustainable performance. Human resource indicators are dominant in shaping quality management, organizational idea, structurization and innovation capabilities in forming sustainable performance.

The results can be explained by the fact that BUMDes in Klaten Regency will have high-quality management if the directors of BUMDes actively participate in the operational management of BUMDes and engage in participatory human resource management. If the director of BUMDes implements innovations regarding specified organisational work duties, flexibility and openness in the organisation foster the introduction of new ideas.

BUMDes in Klaten Regency will have good social capital if the BUMDes director participates in obtaining information and knowledge in various fields and participates in organizational programs with colleagues and village communities.

5.2. SEM Analysis Result

The test results with Structural Equation Modeling (SEM) are presented in [Figure 1](#).

The final model test results presented in [Figure 1](#) were evaluated based on the goodness of fit indices criteria. It shows that the evaluation of the model for the construct as a whole has produced a value above critical based on the evaluation of the proposed model. Therefore, the model can be categorized as suitable and feasible to use so that it can be interpreted for further discussion.

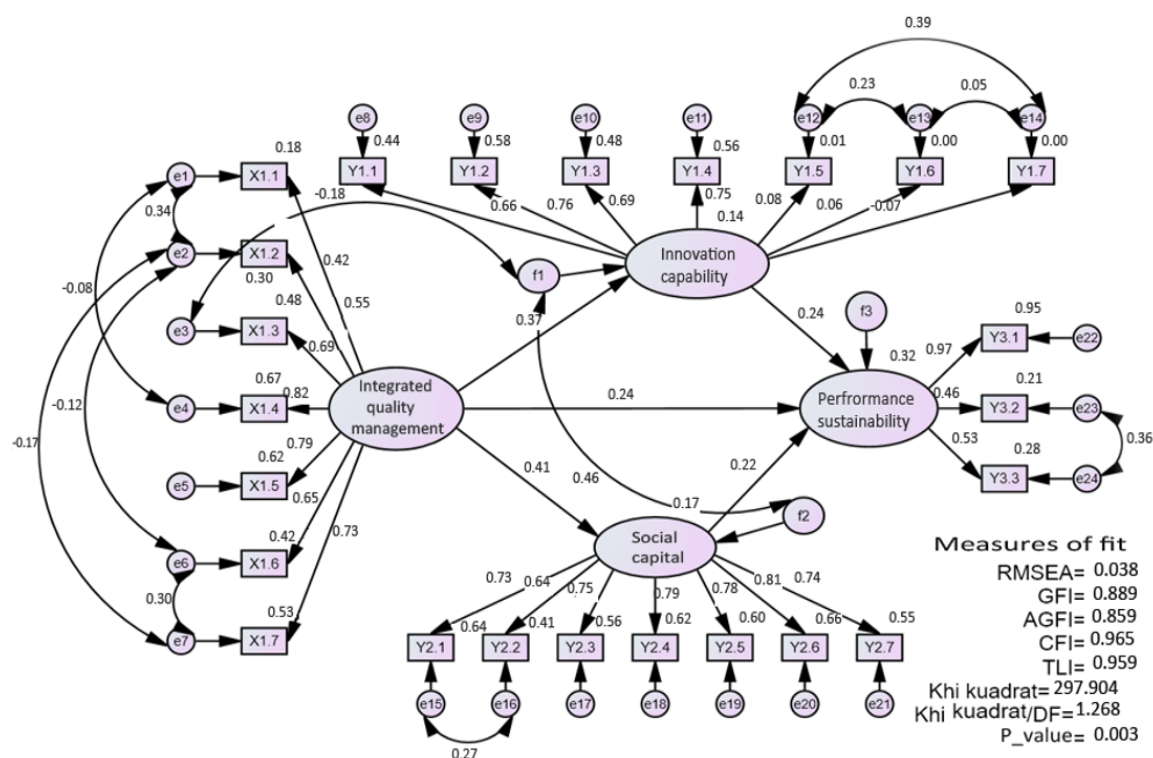


Figure 1. Analysis of structural equation modeling.

Table 5. Results of the regression weight analysis

Connection	Coefficient path	C.R.	P-value	Explanation
Integrated quality management --> Sustainability performance	0.244	3,054	0.002	Significant
The innovation ability test mediates the influence of integrated quality management on sustainable performance				
Integrated quality management --> Innovation capability	0.451a	4,582	0.000	Significant
Innovation capability --> Sustainability performance	0.456b	4,743	0.000	Significant
Integrated quality management --> Sustainability performance	0.515c	5,168	0.000	Significant
Integrated quality management --> Sustainability performance	0.717d	6,472	0.000	Significant
The innovation ability test mediates the effect of social capital on sustainable performance				
Integrated quality management --> Social capital	0.503a	5,497	0.000	Significant
Social capital --> Sustainability performance	0.523b	4,702	0.000	Significant
Integrated quality management --> Sustainability performance	0.387c	3,904	0.000	Significant
Integrated quality management --> Sustainability performance	0.717d	6,472	0.000	Significant

Note: (a), (b) and (c) are the results of the path coefficients and the overall model, (d) is the result of the path coefficient of the overall model without any mediating variables.

5.3. Results of Hypothesis Testing

Testing the hypothesis of its direct influence on sustainable performance and indirectly through innovation capabilities and social capital is given in Table 5.

The results of testing the hypothesis about the effect of integrated quality management on sustainable performance yield a p value < 5% significance so integrated quality management directly has a significant effect on sustainable performance. Assessing the ability of innovation and social capital to mediate the effect of integrated quality management on sustainable performance reveals that these two factors can partially mediate the indirect effect of integrated quality management on sustainability.

6. Discussion

6.1. The Effect of Integrated Quality Management on Sustainable Performance

Improving the sustainability performance of Village-Owned Enterprises (BUMDes) in Klaten Regency, Central Java Province, Indonesia is influenced by integrated quality management. This means that BUMDes in implementing integrated quality management which is defined as the combination of all functions of the organization into a holistic philosophy that is built on the concept of human resource development such as being participatory in empowering BUMDes and active participation in BUMDes management operations. Human resources as part of integrated quality management are able to improve the sustainable performance of BUMDes in Klaten Regency, Central Java Province which is indicated by economic sustainability such as gaining profits in business activities and being able to expand market share.

This conception is in accordance with the theoretical study put forward by [Robson and Mitchell \(2007\)](#) argues that achieving sustainability in an organization can realistically be achieved through integrated quality management. [Mahmood et al. \(2014\)](#) argued that integrated quality management has been largely recognized as a mechanism that has the ability to improve organizational and individual performance. Integrated quality management aims to follow environmentally practices while consuming fewer resources in operations ([Qasrawi et al., 2017](#)).

The results of this study corroborate previous empirical studies put forward by [Abbas \(2020\)](#) that integrated quality management practices have a significant impact on company sustainability. [Kang et al. \(2015\)](#) and [Todorut \(2012\)](#) emphasize that integrated quality management has a significant and positive impact on social sustainability. [Lai and Cheng \(2005\)](#); [Mehra, Joyal, and Rhee \(2011\)](#) and [Zeng et al. \(2015\)](#) explained that there are factors that influence integrated quality management.

6.2. Innovation Capability Mediates the Effect of Integrated Quality Management on Sustainable Performance

Innovation capability is able to mediate the effect of integrated quality management on sustainability performance. These results can be explained by the fact that the BUMDes director in Klaten Regency, Central Java Province in implementing integrated quality management that is built on the concept of human resource development such as being participatory in empowering BUMDes and being active in the operational management of BUMDes which contributes to the innovation capabilities of the BUMDes director. The innovation capability possessed by the director of BUMDes in Klaten Regency, Central Java Province due to the implementation of integrated quality management is able to improve the sustainable performance of BUMDes.

These results support a study conducted by [Hoang, Igel, and Laosirihongthong \(2006\)](#) and [Kafetzopoulos, Gotzamani, and Skalkos \(2019\)](#) that explain that integrated quality management is able to provide encouragement for companies to be innovative in developing and launching new products or services that aim to suit customer needs. [Hung et al. \(2011\)](#); [Iqbal et al. \(2012\)](#); [McAdam et al. \(1998\)](#) and [Prajogo and Hong \(2008\)](#) concluded that integrated quality management has a positive impact on innovation ability.

Innovation capability is seen as essential for performance that can be scaled up and achieving sustainability ([Maletič et al., 2014](#); [Pinho, 2008](#)). It has been viewed as a driver of growth ([Agarwal & Chekitan, 2003](#)) and sustainability ([Utterback, 2001](#)). [Khan and Naeem \(2018\)](#) show that the importance of innovation capability in encouraging the sustainability of the performance of a company or organization ([Khan & Naeem, 2018](#); [Zeng et al., 2015](#)) emphasize the link between innovation ability and sustainability performance. In addition, the research results also show that there is a relationship between a company's innovation capability and its sustainability performance from an organizational to an economic and social perspective ([Du Plessis & Cole, 2011](#); [Huedo & Lopez-Mesa, 2013](#)).

6.3. Social Capital Mediates the Effect of Integrated Quality Management on Sustainable Performance

Social capital is able to mediate the effect of integrated quality management on sustainability performance. These results can be explained by the fact that the BUMDes director in Klaten Regency, Central Java Province is implementing integrated quality management that is built on the concept of human resource development such as being participatory in empowering BUMDes and being active in the operational management of BUMDes contributes to the implementation of good social capital which is manifested in information disclosure, such as the director of BUMDes participating in obtaining information and knowledge in various fields and participating in organizational programs with colleagues and village communities. The application of BUMDes social capital in Klaten Regency, Central Java Province due to the implementation of integrated quality management has an impact on increasing the sustainable performance of BUMDes in Klaten Regency, Central Java Province which is indicated by economic sustainability such as gaining profits in business activities and being able to expand market share.

The results of this study develop an empirical study conducted by [Pretty and Ward \(2021\)](#) demonstrate that achieving corporate sustainability requires social capital. This linkage not only helps employees and organizations share knowledge together but also helps develop the competencies needed to achieve sustainability ([Bennett, 2010](#)). Strong social capital is considered necessary for the growth, innovation and sustainability of small and medium enterprises in a competitive world ([Fanfan, 2011](#); [Gronum et al., 2012](#);

Schebesch, 2012). In addition, there is a positive relationship between sustainability and social capital (Akhtar et al., 2014).

6.4. Research Implication

The implications of research findings can be divided into theoretical implications and practical implications.

6.5. Theoretical Implications

The results of this study have implications for the development of Resource-Based View (RBV) theory which views organizations as unique and surrounded by diverse resources and capabilities (Barney, 1991). The resource-based perspective views an organization's competitive strategy and sustainable performance as significantly depend on the specific resources and capabilities possessed by the organization (Ferreira et al., 2011). Resource-Based View (RBV) theory discusses resources that can provide more economic advantages to owners of companies or organizations with the availability of fixed or limited resources (Sherman, 2007).

The relationship between Resource-Based View theory and this research is the sustainability of BUMDes performance in Klaten Regency, Central Java Province if BUMDes have specific resources and capabilities. The resources and capabilities of BUMDes can be implemented in integrated quality management which is built on the concept of developing human resources such as being participatory in empowering BUMDes and being active in the operational management of BUMDes. Participation in the empowerment and operational management of BUMDes as a form of integrated quality management is able to increase innovation capabilities which have implications for the structuring of organizational ideas such as implementing innovations regarding predetermined organizational work tasks and encouraging flexibility and openness within the organization to encourage the emergence of new ideas.

Participation in the empowerment and operational management of BUMDes as a form of integrated quality management is able to carry out an organizational culture as shown by consistency such as when the directors of BUMDes understand organizational values and have a shared awareness to find solutions to every problem.

6.6. Practical Implications

Integrated quality management is a combination of all functions of the organization into a holistic philosophy that is built on the concept of human resource development such as participation in BUMDes empowerment and active participation in BUMDes management operations. The government of Klaten Regency, Central Java Province (stakeholder) is selective in determining the position of BUMDes director based on competence.

Social capital is the relationships that shape the quality and quantity of social relations in society through information disclosure such as actively participating in obtaining information and knowledge in various fields and participating in organizational programs with colleagues and village communities. BUMDes directors need to motivate their human resources to always participate actively through social networks.

Sustainable performance is assessed as a unity between the social, economic and environmental objectives of BUMDes activities which can increase the value of BUMDes through economic sustainability such as being oriented to gain in business activities and being able to expand market share. BUMDes directors need to use local resources and assets that are owned and are expected to carry out sustainable development in order to improve the economic welfare of their people.

The results of this study can enrich references and scientific literature related to the development of a Resource-Based View (RBV) of the sustainability of BUMDes performance in Klaten Regency, Central Java Provinces if BUMDes has specific resources and capabilities and uses all available human and capital resources. In addition, the BUMDes director can create regeneration by encouraging individuals to try new ideas without fear of failure so that the consequences can be used as material for thought, consideration and reference material for further research by conducting studies on other variables that can improve the performance of sustainable organizational learning and competitive advantage.

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