

RURAL GOVERNMENT COOPERATION INTENSITY AND LEADERSHIP IN FOSTERING THE INNOVATION CAPABILITIES OF RURAL MICROBUSINESSES

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ABSTRACT

Introduction: The growth of rural entrepreneurship significantly impacts economic growth and the well-being of rural communities. **Background Problem:** Innovation is crucial for entrepreneurs' success, with rural government playing a pivotal role in rural societies. **Novelty:** This study overviews the role of rural government in fostering entrepreneurial innovation, focusing on inter-organizational collaboration and the village head's leadership style. **Research Method:** Employing a quantitative survey methodology, the study undertook direct surveys of 300 rural micro- and small-scale entrepreneurs from diverse industries in Indonesia. A simple random sampling technique was used to ensure a representative sample of the population. Data were analyzed using Structural Equation Modeling—Partial Least Squares. **Findings:** The analysis reveals that rural government cooperation and transformative leadership positively influence entrepreneurs' perceptions of organizational support. In turn, perceived organizational support significantly impacts the desire for knowledge sharing and innovation capability enhancement. This study diverges from previous research by examining the mediating roles of knowledge sharing and perceived organizational support in innovation capability enhancement. It confirms that perceived organizational support is a vital mediator in the relationship between government cooperation intensity, transformational leadership, and innovation capability. **Conclusions:** The findings underscore the need for rural governments to practice effective cooperation and leadership and provide consistent support. Such strategies facilitate a supportive environment that fosters knowledge sharing and significantly boosts rural entrepreneurs' innovation capabilities.

ARTICLE INFO

Article information:

Received 2 October 2023.

Received in revised form 28 December 2023.

Accepted 29 February 2024.

Keywords:

rural entrepreneurship, government cooperation intensity, transformational leadership, perceived organizational support, knowledge sharing, innovation capability

JEL Code:

O33, O35

ISSN:

ISSN 2085-8272 (print)

ISSN 2338-5847 (online)

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INTRODUCTION

Entrepreneurship in rural areas can significantly enhance economic vitality. Kania and colleagues (2021) highlight its role in strengthening rural economic development and similarly, Dong et al. (2021) emphasize that entrepreneurship at the village level can increase income and create employment opportunities in rural areas. Innovation lies at the root of entrepreneurship, and in turn entrepreneurship fosters the growth of innovation and realization of its economic and social value (Zhao, 2005). Consequently, entrepreneurial innovation capabilities must not be neglected, as they are essential to entrepreneurial performance.

Despite its significance, rural entrepreneurship faces several obstacles, with technology and innovation requirements identified as the most significant challenges for entrepreneurs in a recent study (Z. Chen et al., 2022). According to Z. Chen et al. (2022), SMEs and mid-sized businesses are cognizant of the necessity to meet innovation demands. Consequently, as one of the most influential stakeholders in rural areas, the rural government should be a positive force in enhancing rural entrepreneurs' innovative capabilities. A capable village chief and adequate local government to guide community activities are also crucial to improving the quality of life (Grieve et al., 2011), as well as village development (Rakhman et al., 2021).

Previous research has examined the variables that influence an entrepreneur's capacity for innovation. A study by Mendoza-Silva (2020) demonstrates that managerial and interior-organizational factors contribute to innovation capability, confirming previous innovation research on the importance of top managers demonstrating commitment, a positive attitude, and support for innovation initiatives (Yeşil et al., 2013). Leaders are pivotal in determining whether their organizations succeed or fail (Al

Amiri et al., 2020). In a similar vein, Schiuma et al. (2022) emphasize that it is essential for leaders to be able to create and communicate compelling and inspiring visions for the transformation of an organization. Moreover, Mutmainnah et al. (2022) highlight that when a leader excels in guiding staff, it results in a heightened continuance commitment among employees, which consequently fosters innovative work behavior. From a wider interorganizational perspective, innovation initiatives are driven by cooperation with other groups, such as research institutes or universities (institutional cooperation), the government at a higher level (vertical cooperation), and other governments at the same level (horizontal cooperation). According to Frishammar et al. (2012), in this way, organizations can find, acquire, and utilize knowledge from external sources to advance their innovation efforts through intensive collaboration.

Building on existing research on entrepreneurship and innovation, our study fills a critical gap in the existing literature by empirically investigating the relationship between cooperation intensity, leadership traits, and innovation in the unique context of rural Indonesia. It provides actionable insights for rural governments and entrepreneurs on how to establish cooperative relationships and adopt effective leadership styles to catalyze rural entrepreneurship. Our findings are not only academically significant but also hold practical implications for shaping policies and strategies to bolster innovation and economic development in rural areas. Furthermore, this research integrates these elements in a novel empirical analysis that challenges traditional perspectives.

We explore how leadership and collaboration synergistically affect innovation in resource-limited rural settings, an aspect not extensively covered in prior studies. By

highlighting the combined impact of interorganizational cooperation and effective leadership on rural entrepreneurship, our study offers a new lens through which to view and approach innovation in these communities. This unique approach not only enriches the theoretical landscape but also provides a blueprint for practical application, particularly in rural areas like Indonesia where such dynamics are crucial for sustainable economic growth. This research underscores the importance of a holistic approach involving government support, leadership dynamics, and interorganizational collaboration to foster innovation, thereby contributing to broader economic impacts and enhanced quality of life in rural communities. By highlighting these aspects, the study offers a roadmap for rural governments and village chiefs in Indonesia and other similar contexts to harness the potential of rural entrepreneurship as a catalyst for economic and social transformation.

LITERATURE REVIEW

1. Social Exchange Theory

At the heart of this study is Social Exchange Theory (SET), a framework that provides a valuable lens through which to view the interactions and relationships within rural entrepreneurship and innovation. SET posits that social behavior is the result of an exchange process (Blau, 1964; Emerson, 1976; Homans, 1961). According to SET, the purpose of this exchange is to maximize benefits and minimize costs, and interactions that are perceived as fair and beneficial lead to stronger and more productive relationships (Cropanzano et al., 2017; Cropanzano & Mitchell, 2005).

In the context of rural entrepreneurship, SET helps to explain the dynamics between rural governments, entrepreneurs, and other stakeholders. The theory suggests that when

rural governments provide support and resources to entrepreneurs, this creates a sense of obligation and trust. The concept of reciprocal exchange is supported by Pundt et al. (2010), who found that perceived organizational support leads to a feeling of obligation to provide innovation-relevant contributions.

Furthermore, SET can be applied to understand how leadership styles within rural governments impact innovation capabilities. Leaders who engage in positive exchanges with their subordinates, offering support and encouragement, are more likely to foster an environment conducive to innovation. A number of studies have explored the relationship between leadership behavior and innovation capability to illustrate the applicability of SET in this context (Amankwaa et al., 2022; Gupta, 2020; Le Blanc et al., 2021).

The theory also extends to the realm of interorganizational collaboration, a key variable in our study. Under SET, collaborations are viewed as mutually beneficial exchanges, where each party contributes and receives value. This perspective is crucial in understanding how rural entrepreneurs engage with external organizations, such as research institutes or higher-level government bodies (Hottenrott & Lopes-Bento, 2016; Najafi-Tavani et al., 2018; Stojčić, 2021).

In summary, SET offers a comprehensive framework for understanding the multifaceted relationships and exchanges that occur within the rural entrepreneurial ecosystem. We therefore apply this theoretical perspective to guide our investigation into the interplay between government cooperation intensity, leadership traits, and innovation capabilities in rural Indonesia.

2. Innovation Capability

Innovation capability is a framework describing actions that can be taken to improve the success

of innovation-related activities and initiatives (Ganguly et al., 2019), including the ability to develop new products and services based on market demand. This is accomplished by implementing processes rapidly and effectively in response to technological shifts and unanticipated opportunities presented by competitors. Innovation capability is therefore viewed as an asset for businesses in relation to providing and maintaining a competitive advantage in the execution of all strategies (Rajapathirana & Hui, 2018).

Numerous researchers have sought to explicitly define the concept through diverse theoretical lenses, such as dynamic capabilities, organizational learning, and innovation management. Utilizing dynamic capabilities, Weber and Heidenreich (2018) define innovation capabilities as an organization's capacity to acquire, assimilate, and transfer novel knowledge into new products and services. From the perspective of organizational capabilities theory, Saunila et al. (2014) assert that firms' innovation capabilities rest on intangibles, which are non-physical characteristics that produce future value. Wang and Ahmed (2004) apply innovation management theory to highlight innovation capabilities in terms of firms introducing new products to the market or entering new markets by combining strategic orientation with innovative behavior and processes. More recently, Mendoza-Silva (2020) analyzed the literature to synthesize an integrated framework for innovation capabilities. The resulting framework depicts innovation capability as the capacity to produce or adopt innovations that can be managed by applying internal abilities and permitting continuous transformation with the goal of creating value.

3. Perceived Organizational Support

Perceived organizational support refers to employee perceptions regarding the extent to

which their participation is valued and acknowledged by their organization, or in other words, as defined by Suifan et al. (2018), the degree to which employees believe the organization values their contribution and is concerned with their welfare. An organization must value and support its employees to achieve positive organizational behavior. Developing a sense of support has been shown to enhance creativity in numerous organizations (DiLiello et al., 2011; Ibrahim et al., 2016). According to Yu and Frenkel (2013), organizational support improves employee performance and organizational commitment. Eisenberger et al. (1986) also assert that organizational support for company activities can influence various aspects of employee behavior and enhance employee performance. These findings suggest that every employee expects a certain level of support from the organization in various situations.

Similar to the relationship between an organization and its employees, rural government, as an organization that oversees business actors, plays a crucial role in ensuring the viability of small local businesses. Rural government support for small businesses is therefore anticipated to help accelerate their growth, leading to improved performance, which in turn has a positive effect on the well-being of rural communities. When rural entrepreneurs perceive that their rural government supports them, their drive and determination to advance their businesses will increase. In addition, this results in a high level of intrinsic motivation (Özarallı, 2015).

4. Knowledge Sharing

Information dissemination is the act of sharing knowledge. Within an organization, knowledge sharing is a management activity that typically takes place through discussion in meetings and other settings, presentations, and tutoring. Members of the organization benefit, grow, and

learn from one another through effective knowledge sharing. More broadly, the exchange of information is advantageous for all involved parties – both within and between organizations. Thus, the focus of knowledge sharing is the ability to explain, codify, and communicate knowledge to other individuals, groups, and businesses, leading to increased work productivity between individuals within a team, as well as across teams and organizational units, and even between organizations. By sharing collective experience-based knowledge, it is possible to improve a thought or idea (Fasbender et al., 2021).

5. Local-Government Cooperation Intensity

Local-government cooperation is the collaborative effort between different areas and other parties centered on the provision of efficient and effective public services and mutual benefit to those involved. Interregional cooperation is conducted within the context of expanding development cooperation with border regions, other regions, and institutions to enhance public services (Medir Tejado & Pano, 2018). There are various types of partners (horizontal, vertical, and institutional cooperation) at various stages of new product development, including concept and product development, and implementation. Cooperation is also advantageous for businesses in the private sector, as demonstrated by Weber and Heidenreich's (2018) study of high-tech companies in Germany.

5.1. Concept Development

During the concept development phase, the demands of the target market are determined, multiple product concepts developed and reviewed, and then one or more concepts chosen for future development and testing. In addition to identifying market needs, it is necessary to review the competitive aspect of the product,

determine product specifications, select product concepts, conduct an economic analysis, and confirm development projects. This phase lays the groundwork for development, and if it is not executed effectively, subsequent efforts will be in vain (Renko, 2018).

5.2. Product Development

Product development is the process of creating and modifying an existing product to improve its quality. With business competition becoming ever more intense in the current digital era, business owners must continuously seek innovative ways to enhance the quality of their products. To win this race against other companies, product development is among the strategies that must be considered (Thomas et al., 2021)

5.3. Implementation

Strategy implementation is the process of putting into action a strategy that has gone through various stages to identify influential external and internal factors. It involves changes to company or institutional goals under different policies, where each division and functional company or institution collaborates and works together according to their respective responsibilities and functions. Strategy is implemented, in other words put into action, through developing programs, draft budgets, and procedures (Jonczyk Sédès, 2019).

6. Transformational Leadership

Transformational leadership is a style of leadership characterized by the development of a shared vision that inspires followers' loyalty and confidence, leading them to perform more effectively. Transformational leaders teach and encourage their followers to become leaders themselves. Moreover, transformational leadership is suggested to play an active role in

change movement, with such leaders and all of their followers actively participating in the process of positive change (Pattnaik & Sahoo, 2021).

Transformational leadership has captured the imagination of scholars, practitioners, and students studying and conducting research in rapidly changing business environments in numerous ways. The emphasis on intrinsic motivation and positive development makes transformational leadership an appropriate approach for today's complicated work groups and organizations, in which followers are not only seeking an inspirational leader to guide them through an uncertain environment, but also to be empowered so they in turn become great achievers.

HYPOTHESES DEVELOPMENT

The sharing of knowledge is a success factor that promotes innovation, and innovation is only possible when there is knowledge sharing (Kremer et al., 2019). Knowledge sharing can facilitate an individual's efforts to reuse and regenerate existing organizational knowledge, thereby enhancing their innovative capacity within the organization. This behavior facilitates the creation of new organizational structures, products, services, business models, and procedures (Castaneda & Cuellar, 2020). The research model developed by Lin (2007) based on empirical studies on the knowledge and process innovation capabilities of companies highlights employee willingness to contribute and acquire knowledge as enabling businesses to increase their innovation capabilities. Thus, H1 is proposed.

H1: Knowledge sharing has a positive influence on innovation capability.

Organizations must provide support when it comes to enhancing employee innovation

performance. As Fan et al. (2022) elaborate, by providing employees with sufficient innovation resources, such as finances, equipment, and technology, in addition to a comfortable and equitable work environment, organizations can proactively accomplish innovation behavior. Moreover, firms should strengthen pertinent supporting policies and procedures, establish a flawless innovation service support system, and provide employee learning resource assistance, among other measures. According to Alpkhan et al. (2010), the presence of organizational support has a direct effect on individuals within the organization. Their study shows that management support for idea generation and risk-taking yields positive results and influences innovative performance. Furthermore, innovation is influenced by the availability of incentive systems based on performance and leisure time. When an individual feels supported by the organization, they feel cared for, and the organization's efforts in this respect increase their abilities and performance. In addition, when employees are confident, they are more likely to pursue novel, innovative projects. Consequently, H2 is proposed.

H2: Perceived organizational support has a positive influence on innovation capability.

According to Blau's (2017) Social Exchange Theory (SET), employees' contributions to their organization are influenced by their expectations regarding interactions with the organization. When employees are rewarded for displaying positive behaviors and contributing to their organization, they are more likely to do so (Eisenberger et al., 1986; Ibrahim et al., 2016). This implies that organizations will receive positive behavior from their employees if they meet their needs, recognize their contributions, and pay attention to their interests. Lin (2017) indicates that organizational support is positively associated with an organization's intention to

facilitate knowledge sharing. This conclusion is supported by Akram et al. (2020) and Mustika et al. (2020), who argue that organizations play a role in the knowledge sharing behaviors of their employees. Based on the preceding discussion, H3 is proposed.

H3: Perceived organizational support has a positive influence on knowledge sharing.

Enterprises are encouraged to increase their collaboration with external organizations (S. Chen & Yu, 2022). Such cooperation is essential for enhancing learning and the development of knowledge (Kim & Lee, 2010). These activities benefit the company, the employees who participate, their collaborators, and the communities in which they operate. Based on the relationships they build with external stakeholders, boundary-spanning employees can have a significant impact on organizational performance (Korschun, 2015). Cooperation between companies is thus an enormous organizational advantage in the workplace. According to Jarvenpaa and Staples (2015), organizational values impact employees' willingness to share knowledge with others. Consequently, H4 is proposed.

H4: The intensity of local-government cooperation has a positive effect on knowledge sharing (a) and perceived organizational support (b).

A leader is an agent of the organization, and their transformational leadership style leads subordinates to perceive that they are receiving positive treatment from the organization, in turn resulting in a greater level of perceived organizational support (Eisenberger et al., 1986; Eisenberger & Stinglhamber, 2011). Stinglhamber et al. (2015) describe a transformational leader as acting as a mentor to the people who follow him or her, taking into account their

unique needs, and creating an environment where they can thrive. Several studies (Hu et al., 2013; Kremer et al., 2019; Mittal & Dhar, 2015) have looked at the link between transformational leadership and perceived organizational support, finding a positive relationship. Furthermore, Le and Lei (2019), Masa'deh (2016), and Xiao et al. (2017) report that transformational leadership fosters a supportive work environment and provides adequate resources to facilitate knowledge sharing activities among employees. Thus, H5 is proposed.

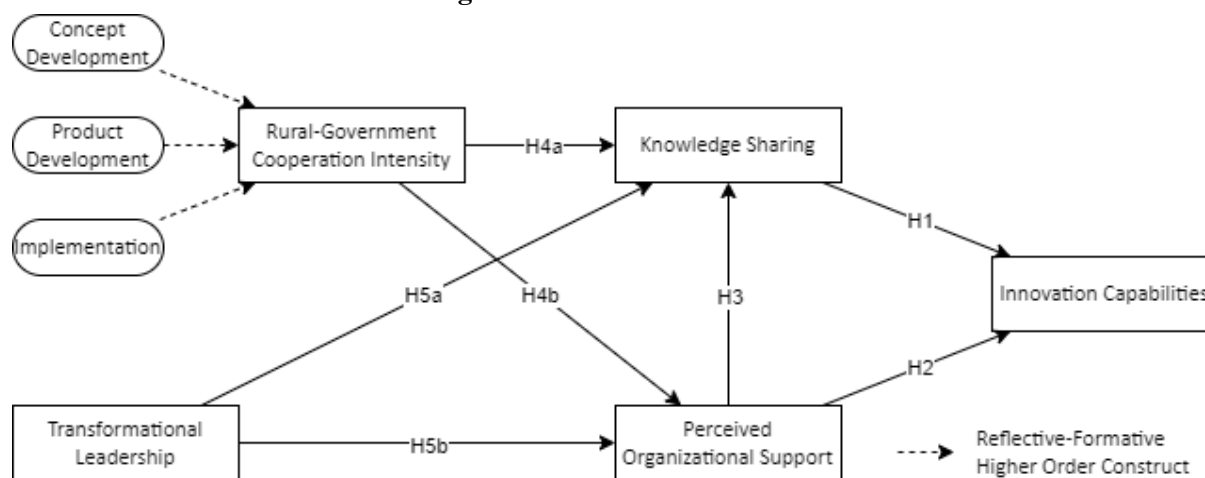
H5: Transformational leadership has a positive impact on (a) knowledge sharing and (b) perceived organizational support.

Based on the preceding discussion, Figure 1 illustrates the research framework for this study.

RESEARCH METHODOLOGY

This research was conducted in Guwosari Village, Bantul Regency, Yogyakarta Province, Indonesia, as part of the Matching Fund Program initiated by the Ministry of Research, Technology, and Higher Education in collaboration with Alma Ata University. Guwosari Village is a tourist village in Indonesia's Bantul Regency, where rural entrepreneurship is on the rise. To capitalize on the area's diverse tourism potential, the village government actively encourages micro- and small-scale business activity. According to a recent report (TNP2K & Demographic Institute, 2021), Bantul Regency is ranked 21st of 199 selected regencies in Indonesia and first in Yogyakarta Province in terms of the realization of central government funding assistance for local MSMEs. Rural entrepreneurship is clearly growing in this region and consequently, it was deemed appropriate to use it as the sampling location.

Figure 1. Research Framework



1. Data Collection and Sample Profile

This study employs a quantitative survey-based methodology based on a closed-ended questionnaire administered in face-to-face interviews, where respondents rate their agreement/disagreement with statements using a 7-point Likert scale. A 7-point Likert scale has several advantages over having fewer options to choose from. Firstly, it allows for a greater range of responses, providing more nuanced and detailed information about attitudes or opinions (Hartley, 2014). Secondly, research suggests that the number of options in a Likert scale can influence the psychological distance between categories, with a 7-point scale duly showing a greater influence (Jamieson, 2004). Additionally, using a 7-point scale can improve scale usability by reducing the number of items while maintaining generalizability (Wakita et al., 2012). Furthermore, the Likert method, which includes the 7-point scale, has been shown to produce higher coefficients of reliability compared to other scoring methods (Lie et al., 2017). Therefore overall, a 7-point Likert scale offers a wider range of response options, allows for more accurate measurement of attitudes, and can improve the reliability of the scale.

The population for this study comprises all microbusiness owners in Guwosari Village. To ensure a representative sample of this population, a simple random sampling technique was employed. This method involved randomly selecting microbusiness owners from the complete list of such businesses in the village, thereby providing each individual with an equal opportunity to be included in the study. This approach was chosen to minimize sampling bias and to accurately reflect the characteristics of the entire population of microbusiness owners in Guwosari Village. Alma Ata University students interviewed micro-, small-, and small business owners in Guwosari Village using a pre-designed questionnaire. During the data collection period (September 2022 to November 2022), three hundred responses were submitted.

The respondents were quite evenly distributed by gender. With regard to age group, 36% of the entrepreneurs who responded to the survey were aged between 41 and 50, with the age groups 21 to 30, 31 to 40, and 50 to 60 making up 23%, 25%, and 13% of the sample, respectively. Only a few respondents were aged under 20 or over 60, at 1% and 2% of the sample, respectively. The types of businesses operated by the respondents were also identified,

with 34% in the food and snack industry. This was followed by grocery and supply stores, handicrafts and accessories, fruit and agriculture, tailoring and fashion, auto services, animal care and supplies, laundry, credit and mobile stores, salons and beauty care, and then other businesses. Table 1 shows the demographic details of the sample.

2. Measurement item development

The measurement items from the previous study were used as a basis for the measurement items in this study. The items for measuring the intensity of government cooperation were taken from Weber and Heidenreich (2018). Weber and Heidenreich (2018) suggest the following three

dimensions or latent variables of cooperation intensity: concept development, product development, and implementation. Each of these dimensions has three types of cooperation: vertical, horizontal, and institutional. Cooperation intensity is considered a reflective-formative construct because each dimension adds a specific meaning to the main variable and cannot be used in place of another (Coltman et al., 2008). The measurements of transformational leadership were generated from research conducted by Dai et al. (2013) and Le and Lei (2019). The measurements of perceived organizational support were extracted from a study by Akgunduz et al. (2018). The measurement items for knowledge sharing were adapted from

Table 1. Demographic Information

	Item	Frequency	Percentage (%)
Gender	Male	135	45%
	Female	165	55%
	Total	300	100%
Age	≤ 20	4	1%
	21 - 30	68	23%
	31 - 40	75	25%
	41 - 50	108	36%
	50 - 60	39	13%
	>60	6	2%
	Total	300	100%
Type of Business	Food and Snacks	102	34.0%
	Grocery and Supply Stores	79	26.3%
	Handicraft and Accessories	21	7.0%
	Fruit and Agriculture	18	6.0%
	Tailoring and Fashion	17	5.7%
	Furniture	14	4.7%
	Auto services	13	4.3%
	Animal Husbandry and Supplies	9	3.0%
	Laundry	7	2.3%
	Credit and Mobile Store	5	1.7%
	Salon and Beauty Care	4	1.3%
	Other Services	7	2.3%
	Other Stores	4	1.3%
Total	300	100%	

Source: Direct assessment

various sources (Allameh, 2018; Reyhav & Weisberg, 2010). Lastly, the measures for innovation capabilities were adapted from a study carried out by Wang and Ahmed (2004).

All measurement items were adapted for the current research context. The final measuring item utilized in this study is displayed in Table 2.

Table 2. Measurement Items

Item	Measure
Rural-Government Cooperation Intensity (Weber & Heidenreich, 2018)	
Concept Development	
CDV1	When it comes to producing innovative ideas, our local government works closely with other institutions, like universities.
CDV2	When it comes to evaluating and picking the best ideas, our local government works closely with other institutions, like universities.
CDV3	When it comes to producing ideas, our local government works closely with horizontal partners, such as other sub-districts.
CDV4	When it comes to evaluating and picking the best ideas, our local government works closely with horizontal partners, like other sub-districts.
CDV5	In the area of idea generation, our local government works closely with vertical partners like district, regency, and provincial governments.
CDV6	When it comes to evaluating and choosing ideas, our local government works closely with vertical partners, such as district, regency, and provincial governments.
Product Development	
PDV1	When it comes to making product specifications, our local government works closely with other institutions, like universities.
PDV2	When it comes to planning products and businesses, our local government works closely with other institutions, like universities.
PDV3	When it comes to making product specifications, our local government works closely with horizontal partners, like other sub-districts.
PDV4	When it comes to products and planning, our local government works closely with horizontal partners, such as other sub-districts.
PDV5	In the development of product specifications, our local government works closely with vertical partners like district, regency, and provincial governments.
PDV6	In the area of product and business planning, our local government works closely with vertical partners like district, regency, and provincial governments.
Implementation Stage	
IMP1	In terms of product/business management and strategy, our local government works closely with other institutions, like universities.
IMP2	In the area of marketing, our local government works closely with other institutions, like universities.
IMP3	In terms of product/business management and strategy, our local government works closely with horizontal partners, such as other sub-districts.
IMP4	In marketing, our local government works closely with horizontal partners, such as other sub-districts.
IMP5	In product/business management and strategy, our local government works closely with vertical partners, such as district, regency, and provincial governments.
IMP6	In the area of marketing, our local government works closely with vertical partners like district, regency, and provincial governments.

Item	Measure
Transformational Leadership (Dai et al., 2013; Le & Lei, 2019)	
TFL1	The supervisor can understand my situation and give me encouragement and assistance.
TFL2	The supervisor encourages me to take on challenges.
TFL3	I believe the supervisor can overcome any challenge at my business.
TFL4	The supervisor encourages us to make efforts towards fulfilling the sub-district/government vision.
TFL5	The supervisor encouraged me to think about problems from a new perspective.
TFL6	The supervisor encourages me to rethink opinions that have never been doubted in the past.
TFL7	I believe I can complete my work under the leadership of the supervisor.
TFL8	The supervisor spends time understanding my needs.
Perceived Organizational Support (Akgunduz et al., 2018)	
POS1	The local government values my contribution to its well-being.
POS2	The local government appreciates any extra effort from me.
POS3	The local government would accept any complaint from me.
POS4	The local government really cares about my well-being.
POS5	Even if I did the best work possible, the local government would notice.
POS6	The local government cares about my general satisfaction with my business.
POS7	The local government shows big concern for me and my business.
POS8	The local government takes pride in my accomplishments.
Knowledge Sharing (Allameh, 2018; Reyhav & Weisberg, 2010)	
KNS1	When an entrepreneur learns a new thing, they share it with their other entrepreneurs.
KNS2	Among entrepreneurial people, individual entrepreneurs gain more knowledge through the exchange of information with each other.
KNS3	Among entrepreneurial people, knowledge sharing is a common activity.
KNS4	Among entrepreneurial people, individual entrepreneurs share past experiences with other entrepreneurs.
KNS5	I frequently share knowledge based on my experience with other entrepreneurs.
KNS6	People in my entrepreneur's community frequently share knowledge based on their experience.
KNS7	I frequently collect knowledge from other entrepreneurs' organizational members based on their expertise.
KNS8	People in the group my entrepreneur runs often get information from other group members based on what they know.
Innovation Capability (Wang & Ahmed, 2004)	
INC1	I am willing to try new ways of doing things and seek unusual and novel solutions.
INC2	I encourage people to think and behave in original and novel ways.
INC3	I am constantly improving our business processes.
INC4	So far, my business has developed many new management approaches.
INC5	When I cannot solve a problem using conventional methods, I improvise new methods.
INC6	My recent new products and services have major changes from our previous products and services.
INC7	My recent marketing program is revolutionary in the market.
INC8	I am often at the forefront of technology in new product and service introductions.
INC9	I am willing to take risks to seize and explore "chancy" growth opportunities.
INC10	When I see new ways of doing things, I am the first to adopt them.
INC11	My business has introduced more innovative products or services recently.

3. Common Method Variance

To ensure the analytical validity of our findings and address potential concerns regarding common method variance (CMV), we employed Harman's one-factor test (Podsakoff et al., 2003). This test involved conducting an exploratory factor analysis (EFA) on all questionnaire items. The analysis revealed that the largest factor accounted for 37.996% of the total variance. Given that this percentage is below the 50% threshold, it suggests that CMV is not a significant concern in our dataset. This finding provides reassurance regarding the integrity and reliability of our results in terms of the potential impact of CMV on our study.

DATA ANALYSIS

In this section, we detail the results of the data analysis. The research framework consists of five constructs. The Government Cooperation Intensity (GCI) construct was developed based on reflective-formative higher-order constructs, while their respective dimensions act as lower-order constructs (Sarstedt et al., 2019). Thus, a disjointed two-stage approach was used to test the outer model quality (Becker et al., 2012), in which only lower-order components were present in the first stage and only higher-order constructs were assessed in the second stage. Finally, an inner model test was conducted to test the relationship between the proposed hypotheses.

1. Outer model and scale validation

In this study, the quality of the constructs was evaluated based on evaluation of the outer model. Evaluation of factor loading is the first quality criterion, followed by determining construct reliability and construct validity. "Factor loading" refers to the degree to which an item in the correlation matrix connects with a specified principal component. According to

Hair et al. (2016), the factor loading should exceed 0.50. Since no item in the study had a factor loading below the indicated value, the factor loading is irrelevant to this investigation. A reliability analysis was provided to assess the instrument's consistency and stability. Cronbach's alpha and composite reliability were utilized in the reliability test for this study. Cronbach's alpha and composite reliability varied from 0.752 to 0.903 and from 0.871 to 0.966, respectively, both above the recommended limit of 0.70. (Hair et al., 2014). Consequently, these study constructs are trustworthy. The results of the factor loading, construct validity, and reliability tests are presented in Table 3.

Two methods were used to examine the validity of the constructs: convergent validity and discriminant validity. Convergent validity is a criterion that ensures two or more measurements of the same thing differ substantially (Bagozzi et al., 1991). An AVE score greater than 0.50 represents a viable construct (item convergence to assess the underlying construct) (Fornell & Larcker, 2018). As shown in Table 3, the AVE value was greater than 0.50, establishing the convergent validity of the assessment items. Tests of discriminant validity were conducted to ensure that the measurement items were distinct and dissimilar. Each metric must be distinct and not substantially associated with the others (Bagozzi et al., 1991). As stated by Fornell and Larcker (2018), discriminant validity is established when the square root of the AVE for each idea is greater than its correlation with all other conceptions. Table 4 demonstrates that each construct's square root AVE (in bold) is stronger than its correlation with the other constructs. Consequently, the test provides substantial evidence for establishing discriminant validity.

Table 3. Factor loading, construct validity and reliability.

Item	Factor Loading	Cronbach Alpha	Composite Reliability	AVE
CDV1	0.922			
CDV2	0.952			
CDV3	0.931			
CDV4	0.927	0.972	0.977	0.877
CDV5	0.944			
CDV6	0.943			
PDV1	0.928			
PDV2	0.938			
PDV3	0.934			
PDV4	0.921	0.970	0.975	0.868
PDV5	0.928			
PDV6	0.942			
IMP1	0.917			
IMP2	0.924			
IMP3	0.916			
IMP4	0.911	0.964	0.971	0.848
IMP5	0.929			
IMP6	0.927			
TFL1	0.827			
TFL2	0.895			
TFL3	0.896			
TFL4	0.916			
TFL5	0.910	0.958	0.965	0.775
TFL6	0.895			
TFL7	0.827			
TFL8	0.873			
POS1	0.841			
POS2	0.881			
POS3	0.878			
POS4	0.901			
POS5	0.908	0.959	0.965	0.776
POS6	0.888			
POS7	0.865			
POS8	0.884			
KNS1	0.841			
KNS2	0.919			
KNS3	0.920			
KNS4	0.933			
KNS5	0.929	0.956	0.964	0.771
KNS6	0.930			
KNS7	0.858			
KNS8	0.657			

Item	Factor Loading	Cronbach Alpha	Composite Reliability	AVE
INC1	0.739			
INC2	0.806			
INC3	0.789			
INC4	0.802			
INC5	0.765			
INC6	0.776	0.941	0.949	0.627
INC7	0.827			
INC8	0.807			
INC9	0.820			
INC10	0.804			
INC11	0.768			

Note: CDV = Concept Development; PDV = Product Development; IMP = Implementation; TFL = Transformation Leadership; KNS = Knowledge Sharing; POS = Perceived Organizational Support; INC = Innovation Capability.

Table 4. Fornier and Larcker discriminant validity.

	CDV	IMP	INC	KNS	PDV	POS	TFL
CDV	0.936						
IMP	0.874	0.921					
INC	0.291	0.286	0.792				
KNS	0.202	0.191	0.395	0.878			
PDV	0.886	0.896	0.306	0.230	0.932		
POS	0.763	0.789	0.324	0.228	0.754	0.881	
TFL	0.752	0.778	0.332	0.187	0.758	0.833	0.881

Note 1: CDV = Concept Development; PDV = Product Development; IMP = Implementation; TFL = Transformation Leadership; KNS = Knowledge Sharing; POS = Perceived Organizational Support; INC = Innovation Capability;

Note 2: The bolded figures show the AVE square root.

As part of the outer model evaluation, the higher-order construct, namely GCI, was also evaluated by validating the outer weight and outer loading of its dimensions. The outer model evaluation analysis is presented in Table 5. The outer weights of Concept Development (CDV)

and Product Development (PDV) were found not to be significant, but because the outer loadings were found to be greater than 0.50 for each of the lower-order constructs, the higher-order construct's validity was established (Sarstedt et al., 2019).

Table 5. Higher-order construct validity

HOC	LOC	Outer Weight	T-Statistics	Outer Loading
GCI	CDV	0.317	1.473	0.950
	PDV	0.206	1.209	0.949
	IMP	0.515*	2.901	0.977

Note 1: HOC = Higher Order Construct; LOC = Lower Order Construct; GCI = Government Cooperation Intensity; CDV = Concept Development; PDV = Product Development; IMP = Implementation.

Note 2: * = p < 0.50.

2. Inner Model

Structural equation modeling, often known as the inner model, evaluates the postulated relationship to verify the proposed hypothesis. Using bootstrapping, the weight of each path coefficient can be determined. Consequently, this technique was employed in this study to determine the significance of the correlations between variables. Table 6 presents the hypotheses tested in this study. Regarding the hypothesis 1 and 2 test results, knowledge sharing (KNS) and perceived organizational support (POS) had a significant effect on innovation capability (INC) ($\beta = 0.338$; $t\text{-value} = 5.248$; $p < 0.001$; $\beta = 0.247$; $t\text{-value} = 4.233$; $p < 0.001$). Thus, hypotheses 1 and 2 are supported, as well as hypothesis 3, with the test results showing that POS has a significant effect on KNS ($\beta = 0.197$; $t\text{-value} = 1.673$; $p < 0.010$). However, hypothesis 4a and 5a are not supported because the test results show no significant effect of GCI and TFL on KNS ($\beta = 0.091$; $t\text{-value} = 0.825$; $p > 0.05$; $\beta = -0.049$; $t\text{-value} = 0.437$; $p > 0.05$). Lastly, the test results support hypothesis 4b and 5b, where GCI and

TFL both had a significant effect on POS ($\beta = 0.384$; $t\text{-value} = 6.679$; $p < 0.001$; $\beta = 0.528$; $t\text{-value} = 9.528$; $p < 0.001$).

Additionally, the inner model evaluation was employed to estimate the R-square and path coefficient. Figure 2 displays the R-square values and path coefficients of the structural model used in this study. The R-square statistic indicates that the independent variable clarifies the variation in the dependent variable. Simply put, it reflects the extent to which one or more independent variables can explain the conversion of the dependent variable. In this research, KNS was influenced by GCI and TFL with an R-square value of 0.055. This result indicates that there is just minor change or almost no change in KNS under GCI and TFL. In the other words, there are other constructs outside the model that have an influence on KNS. Meanwhile, the test result shows that the R-square value of POS was 0.748, which means 74.8% of the change in POS was caused by GCI and TFL. Moreover, the R-square value for INC was 0.213, so 21.2% of the change in INC was influenced by KNS and POS.

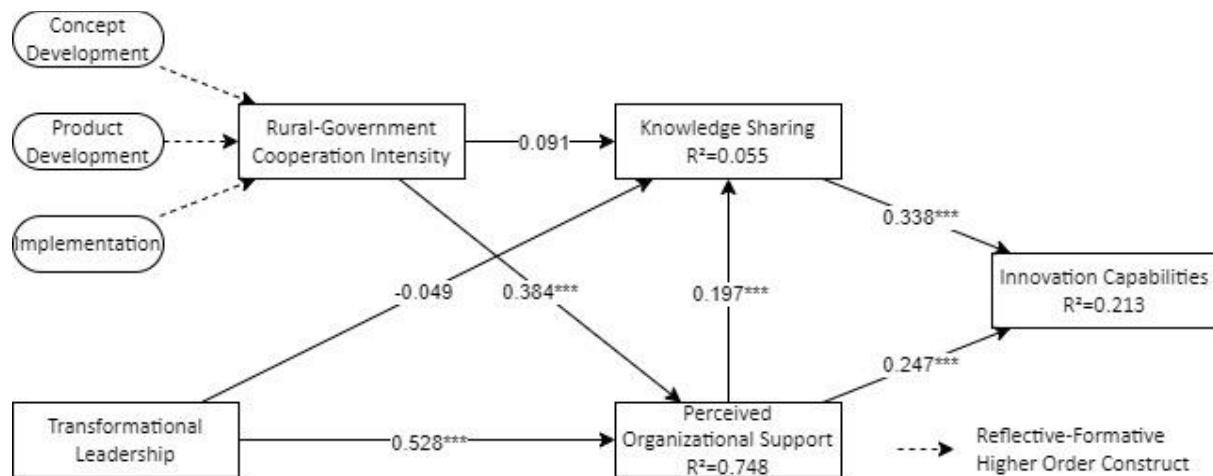
Table 6. Summary of hypotheses testing result

Hypothesis	Path	Standardized Path Coefficient	t-value	Conclusion
H1	KNS → INC	0.338***	5.248	Supported
H2	POS → INC	0.247***	4.233	Supported
H3	POS → KNS	0.197*	1.673	Supported
H4a	GCI → KNS	0.091	0.825	Not Supported
H4b	GCI → POS	0.384***	6.679	Supported
H5a	TFL → KNS	-0.049	0.437	Not Supported
H5b	TFL → POS	0.528***	9.528	Supported

Note 1: GCI = Government Cooperation Intensity; TFL = Transformation Leadership; KNS = Knowledge Sharing; POS = Perceived Organizational Support; INC = Innovation Capability.

Note 2: *** = $p < 0.001$; ** = $p < 0.010$; * = $p < 0.50$.

R Square analysis

Figure 2. Standardized path coefficients and significance of inner model.

Note: *** = $p < 0.001$; ** = $p < 0.010$; * = $p < 0.50$.

According to Hair et al. (2013), R-square values of 0.75, 0.50, and 0.25 for the dependent latent variable can respectively be characterized as considerable, moderate, and weak. Consequently, the result implies that POS may be described by GCI and TFL. Meanwhile, the KNS and POS suggest that the INC has a weak explanation.

3. Mediation test

The mediation analysis sought to explore the mediation consequences to determine if the mediation model provided in this research was statistically sound. Mediation analysis allows for the investigation of causal pathways and the measurement of indirect effects (Rasoolimanesh et al., 2021). It provides a systematic approach for understanding how independent variables impact outcome variables through one or more mediators (Walters, 2019). Additionally, mediation analysis can shed light on issues of causation, assessment, and intervention (Tofighi & Kelley, 2020). The results presented in Table 7 show that GCI has a significant total effect on INC ($\beta = 0.151$; t -value = 3.267; $p < 0.010$). When the mediating variable, which is KNS, and POS are included, the direct impact of GCI on

INC is not significant ($\beta = 0.028$; t -value = 0.287; $p > 0.05$). Further, the test for the indirect effect of GCI on INC through its mediators (KNS and POS) shows different results. Via KNS, the indirect effect of GCI on INC is not significant ($\beta = 0.031$; t -value = 0.790; $p > 0.05$), which means knowledge sharing does not mediate the relationship between GCI and INC. On the other hand, the indirect effect of GCI on INC through POS is statistically significant ($\beta = 0.095$; t -value = 3.427; $p < 0.001$). Given that, the direct effect of GCI on INC is not significant, whereas POS can be assigned as a full mediator in their relationship. Meanwhile, the mediation test for TFL to INC shows a similar result. KNS plays no mediating effect since the indirect effect path of TFL to INC through KNS is statistically not significant ($\beta = -0.017$; t -value = 0.427; $p > 0.05$). But the test found that POS partially mediates the relationship between TFL and INC since its total effect is significant ($\beta = 0.149$; t -value = 3.011; $p < 0.010$), its direct effect is significant ($\beta = 0.197$; t -value = 2.154; $p < 0.010$) and the indirect effect is significant as well ($\beta = 0.130$; t -value = 1.641; $p < 0.001$).

Table 7. Mediation test result

Path	Direct Effect		Indirect effect			Result
	β	t-value	Mediator	β	t-value	
GCI → INC	0.028	0.287	KNS	0.031	0.790	No Mediation
			POS	0.095***	3.427	Fully Mediation
TFL → INC	0.197**	2.154	KNS	-0.017	0.427	No Mediation
			POS	0.130***	1.641	Partial Mediation

Note 1: GCI = Government Cooperation Intensity; TFL = Transformation Leadership; INC = Innovation Capability.

Note 2: *** = $p < 0.001$; ** = $p < 0.010$.

DISCUSSION

The success of micro and small entrepreneurs in rural areas is a critical factor for enhancing their well-being. This discussion examines the study's hypotheses in light of the collected data and its broader implications.

The analysis confirms that knowledge sharing (KNS) is a significant driver of innovation capability (INC) in rural entrepreneurship. This finding emphasizes the importance of a collaborative environment where knowledge exchange fosters innovative solutions and practices. The impact of perceived organizational support (POS) on both innovation capability (INC) and knowledge sharing (KNS) is evident from the results. This suggests that entrepreneurs who feel supported are more inclined towards innovative activities and sharing knowledge, both essential elements for business growth and sustainability. The results partially support the influence of government cooperation intensity (GCI) on perceived organizational support (POS), but not on knowledge sharing (KNS). This indicates that while government involvement is perceived as supportive, it does not necessarily enhance knowledge sharing among rural entrepreneurs. The results also suggest that the ability of rural entrepreneurs to identify and assimilate external knowledge may be limited. Lowik et al. (2017) highlight that this ability is influenced by an individual's bisociative cognitive style, where imagination and intuition play a key role in

finding unconventional solutions and connections (Payne et al., 1990). This aligns with the characteristics of Indonesian rural communities, known for their irregular work patterns and the need to balance opportunities with family and social responsibilities (Husein, 2021). Additionally, the lower education levels of respondents, as indicated in Table 1, corroborate this finding. Transformational leadership (TFL) significantly affects perceived organizational support (POS), but not knowledge sharing (KNS) directly. This highlights the role of leadership in creating a supportive environment, though this does not directly lead to immediate knowledge exchange. As Drew (2022) explains, the road to transformational change does not end with persuading the employee that change is needed. That is just the beginning. Moreover, in some Eastern cultures, the relationship between leaders and society is very hierarchal; therefore, speaking up for another perspective without the direction of the leader is sometimes considered an act of disrespect.

The interplay of these factors – knowledge sharing, perceived support, governmental cooperation, and leadership – profoundly influences the innovation landscape in rural microbusinesses. Our findings contribute to the literature by offering empirical evidence on the dynamics between these elements and their effect on innovation capabilities in rural settings. The implications of this study extend to policy and practice, indicating that rural governments

and business leaders should focus on fostering supportive environments and transformative leadership styles to encourage innovation and growth.

1. Theoretical Implications

This research enriches the understanding of innovation, organizational behavior, and knowledge management in the context of rural entrepreneurship, particularly in rural areas of Indonesia. The findings have significant implications for several theoretical domains.

The study advances innovation theory by highlighting the critical role of government cooperation intensity in rural entrepreneurship. Traditionally, cooperation has been recognized as a key factor in enhancing company and MSME innovation capabilities. However, government as an organization in rural areas and its impact on microenterprise development have been less explored. This research bridges this gap by demonstrating how rural government cooperation, through perceived organizational support, fully mediates the relationship between government actions and innovation capabilities. This aligns with Social Exchange Theory, suggesting that perceived support from the government, as an exchange entity, can significantly influence innovation outcomes in rural settings.

The research confirms that a transformational leadership style within government entities is crucial to fostering an innovative environment in rural entrepreneurship. This finding is in line with research by Xie et al. (2018), but extended to rural settings, reinforcing the role of transformational leadership in innovation capability. It also supports the idea that perceived organizational support mediates the relationship between leadership style and innovation creation, contributing to the broader discourse on leadership's role in organizational behavior.

Contrary to expectations, our findings show that the conventional linkage between knowledge sharing and transformational leadership does not hold the same impact in rural entrepreneurship as in other contexts. This is a divergence from existing theories, such as those proposed by Jarvenpaa and Staples (2015) and Le et al. (2019), indicating unique challenges in rural settings. Nevertheless, the study reaffirms the importance of knowledge sharing in innovation, as supported by Castaneda and Cuellar (2020), by showing its positive influence on innovation capability among rural entrepreneurs.

Lastly, the research underscores the significance of perceived organizational support in rural entrepreneurship, where it mediates the relationship between government cooperation intensity, transformational leadership, and innovation capability, directly impacting knowledge sharing behaviors. This adds to the existing literature on the role of top management support and introduces perceived organizational support as a crucial situational variable in government influence on innovation capability.

Overall, these theoretical implications suggest that the effectiveness and outcomes of the rural government taking a role in innovation capability are contingent on the extent of perceived organizational support, thus aligning with the concepts of Social Exchange Theory.

2. Managerial Implications

Based on its theoretical contributions and empirical analyses, this study provides a better understanding of the causal correlations between rural government cooperation intensity, transformational leadership, perceived organizational support, knowledge sharing, and innovation capabilities. Therefore, Indonesian rural government can use this study as a guide for implementing organizational support, fostering knowledge sharing behavior, and enhancing the

innovation capabilities of rural entrepreneurs. Specifically, the findings indicate that the intensity of government cooperation and transformational leadership practice are key to increasing rural entrepreneurs' perceptions of organizational support, which in turn increases their knowledge sharing behavior and innovation capability. There are several specific managerial implications.

First, high intensity cooperation by rural governments with institutional partners (e.g., universities), vertical partners (e.g., the central government), and horizontal partners (e.g., other rural governments), and the transformational leadership practices carried out by village heads create impressions and feelings among rural entrepreneurs that the rural government fully supports the continuation of their businesses. They will assume that the rural government and their village leaders care about their welfare if all their efforts to develop their businesses are supported. As reported previously, individuals perceiving high organizational support also exhibit greater trust in the organization, believing that risks can be taken without fear of being exploited (Kurtessis et al., 2015). In addition, Eisenberger and Stinglhamber (2011) suggest that employees who perceive a high level of support are more likely to feel a sense of unity within the organization. Thus, government cooperation activities and the practice of transformational leadership will assist rural government foster a culture of trust and unity among rural entrepreneurs.

Second, high perceived organizational support indicates that the rural entrepreneur believes their government cares about the sustainability and growth of their business. Their willingness to share business-related knowledge and information with other business actors will be affected by these organizational circumstances. As a result, there will be an acceleration

in the flow of information and knowledge, allowing rural entrepreneurs to expand their businesses. More specifically, this finding suggests that rural entrepreneurs will actively participate in the process of sharing their expertise and knowledge if the rural government pays special attention to encouraging and providing the necessary assistance and resources for rural entrepreneurs to share knowledge.

Third, to increase the innovative capabilities of rural entrepreneurs, the rural government needs to foster a supportive environment and promote knowledge sharing. The innovation capacity of rural entrepreneurs cannot be realized solely through cooperative actions conducted by the village government with external parties; they also require the support and assistance of the village government.

Finally, it is recommended that the rural government pays more attention to creating perceived organizational support, which this study has found to be significant. The formation of innovation capabilities will be influenced by perceived organizational support, the intensity of government cooperation, and transformational leadership practice. Therefore, if the rural government can combine these three factors, the capacity of rural entrepreneurs to innovate will increase. In addition, support from the rural government will encourage rural entrepreneurs to share business-related information and knowledge with other rural entrepreneurs, since knowledge sharing is a key factor in innovation development (Castaneda & Cuellar, 2020).

LIMITATION AND FUTURE RESEARCH

While contributing valuable insights into the field of rural entrepreneurship and innovation, we acknowledge certain limitations in our study. Firstly, its cross-sectional design presents constraints in capturing the evolving nature of causal relationships over time. Future research

could benefit from a longitudinal approach, offering a more dynamic view of how these relationships develop and change, particularly considering the evolving psychology and trustworthiness of individuals in rural entrepreneurship.

Secondly, the study identifies the essential role of knowledge sharing in enhancing innovation capability, alongside government cooperation intensity and transformational leadership. However, it stops short of fully exploring the mechanisms through which rural government practices foster knowledge sharing behavior among entrepreneurs. Future studies could delve into these mediating mechanisms, possibly examining different aspects or forms of support that facilitate knowledge exchange.

Lastly, considering the collectivist nature of Indonesian culture and its potential influence on innovation capabilities, future research could explore more diverse leadership styles and cultural factors. This exploration would enhance understanding of the varied and complex factors, processes, and mechanisms that influence innovation in rural settings. Such studies would provide deeper insights for rural governments to effectively support and nurture innovation within their communities.

CONCLUSION

The findings of this paper have significant theoretical and practical implications for the literature on rural government roles, including support and knowledge management, and rural enterprise innovation creation. The results confirm the hypotheses that government cooperation intensity and transformational leadership have a positive and significant effect on innovation capability via perceived organizational support as a potential mediator. In addition, the results provide empirical evidence that perceived organizational support has a

positive effect on knowledge sharing, which drives innovation capability. Examining the mediating role of knowledge sharing and perceived organizational support, the study diverges from previous research to advance understanding of the pathways and conditions for enhancing innovation capability by examining the mediating effect of knowledge sharing and perceived organizational support. The findings emphasize the importance of rural government cooperation practices and leadership style, as well as the implementation of appropriate, necessary, and timely support over an extended period. The outcome is a positive supportive environment that facilitates knowledge sharing activities and significantly contributes to enhancing rural entrepreneurs' innovation capabilities.

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