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Article

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Article

Sustainability Performance of Organization: Mediating Role of Knowledge Management

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Abstract: Research about sustainable performance and its impact on the organization's economic, social, and environmental development has attracted the attention of many scholars. However, the research investigating the relationship between sustainable performance from traditional organizations based on local culture is still underdeveloped. This study aimed to examine the relationship among organizational culture and leadership styles with knowledge management and sustainable performance. Moreover, this study investigates knowledge management's role as a mediating variable in the relationship between organizational culture, leadership style, and sustainable performance. This study adopted a quantitative approach using the purposive sampling method with a questionnaire distributed to 99 respondents in Bali Province, Indonesia. The analysis technique was SEM-PLS. The results revealed that organizational culture and transformational leadership have significant effects on knowledge management. This study also proves that knowledge management mediates the relationship between organizational culture and sustainable performance, as well as the relationship between leadership style and sustainable performance. Theoretically, this study confirms the knowledge-based theory about knowledge management practices and sustainability performance. The present study also highlights the characteristics of organizational culture in traditional organizations and the effectiveness of transformational leadership to achieve sustainable organizational performance. Practically, the results provide insights to aid governments and regulators in continuously implementing knowledge management to achieve sustainable performance.

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Keywords: organizational culture; Subak; transformational leadership; Tri Hita Karana; Indonesia

1. Introduction

The sustainability of an organization is a strategic issue in sustainable development. A company will achieve sustainable development if it pays attention to the balance of three aspects, namely economic, social, and environmental. Therefore, companies should prioritize financial and economic goals, pay attention to social benefits, and preserve the environment. Furthermore, sustainable performance requires that every organization meet the presents needs without sacrificing those of future generations' needs (Schaltegger et al. 2015; Baumgartner and Rauter 2017).

One of the efforts that companies make to achieve sustainable performance is through increasing knowledge management. Several works in the literature works have recognized knowledge as the main asset of a business (Obeidat et al. 2016; Heisig et al. 2016), with some works even claiming that it is the only source of sustainable competitive advantage (Mahdi et al. 2019; Torres et al. 2018; de Guimarães et al. 2018). However, knowledge management's mediating role has not been adequately investigated (Zheng et al. 2013). Given that knowledge is a construct that cannot be observed and measured directly, it can only be identified through observable outputs (Stehr 1992; Hunter 2017), such

as performance. Therefore, research to explore knowledge management's role as a mediating factor is essential to achieve sustainable organizational performance.

One challenge in implementing knowledge management into organizational processes is an unsupportive organizational culture (Adeinat and Abdulfatah 2019; Lozano et al. 2013). This condition causes inconsistencies in research results related to the influence of organizational culture on knowledge management practice. On the one hand, organizational culture strongly supports knowledge management's successful practice (Al Saifi 2015; Lee et al. 2016). However, on the other hand, organizational culture often clashes with knowledge management (Bedford 2013). Moreover, organizational culture is a significant barrier to success in the knowledge management process (Ajmal and Koskinen 2008; Chang and Lin 2015). Therefore, a study that examines organizational culture and leadership style in supporting knowledge management and sustainable performance would be essential and exciting.

This study aimed to examine the relationships among organizational culture and leadership styles with knowledge management and sustainable performance. Moreover, the study investigates knowledge management's role as a mediating variable in the relationship between organizational culture, leadership style, and sustainable performance. Therefore, this study attempts to answer the following questions:

- Q1. Does organizational culture affect knowledge management and sustainable performance?
- Q2. Does leadership style affect knowledge management and sustainable performance?
- Q3. Does knowledge management affect sustainable performance?

Theoretically, this study confirms the knowledge-based theory about knowledge management practices and sustainability performance. This study also highlights the characteristics of organizational culture in traditional organizations and the effectiveness of transformational leadership styles to achieve sustainable organizational performance. It is additionally important considering that not many studies have examined traditional organization's performance, for example, is Subak. Most empirical studies only identify modern business-oriented organizations (Bogoviz et al. 2019; Matinaro and Liu 2017; Linnenluecke and Griffiths 2010). Moreover, as a traditional organization, Subak is vulnerable to environmental, social, and economic changes as consequences of sustainable development (Wiguna and Surata 2008; Kieninger et al. 2011).

Practically, this study's results provide a framework and insights to aid regulators in continuously implementing knowledge management to achieve sustainable performance in the Subak organization. Furthermore, as a world heritage (Surata and Vipriyanti 2018), Subak supports agricultural development and improves the economy. Thus, the results of this study provide recommendations for the government to maintain the sustainability performance of Subak, particularly in the current area of modernization.

2. Literature Review and Hypothesis Development

This theory is based on the knowledge-based theory. This view emphasizes the importance of knowledge as a firm's sustainable competitive advantage (Mahdi et al. 2019; Torres et al. 2018; de Guimarães et al. 2018). Knowledge is the only long term competitive advantage possessed by a company (Ikujiro Nonaka and Takeuchi 2007), and it includes contextual information, framed experiences, and expert insights (Jennex 2015; Omotayo 2015). Thus, companies must produce, integrate, and distribute knowledge within the organization (Valmohammadi and Ahmadi 2015; Cano-Kollmann et al. 2016). The knowledge-based human resource approach is deliberately designed to improve organizational knowledge (Kianto et al. 2017).

According to the knowledge-based view, knowledge is one of the organization's strategic plans to ensure organizational performance. Organizations will create core competencies if they can develop new knowledge (Ikujiro Nonaka and Toyama 2015). The basic premise of this concept is to use knowledge as the primary source and production input.

Therefore, knowledge-based companies will engage in more accurate resource management (Gu et al. 2017; Kengatharan 2019). Knowledge management is a series of processes that aim to convert data into knowledge or valuable information for advancing the organization (Ikujiro Nonaka and Toyama 2015). These processes include creating, acquiring, storing, sharing, and using knowledge (Valmohammadi et al. 2019; Cano-Kollmann et al. 2016). Furthermore, competitive advantage is generated from the knowledge possessed and developed by organizational members (Mahdi et al. 2019; Huang et al. 2015). Agile organizational management can well manage knowledge to produce quality knowledge. Thus, it can be concluded that knowledge management affects the quality of decisions made and actions taken (Abubakar et al. 2019).

The organization can get the benefits by adopting or implementing the knowledge management practices to create methods or innovations, business models, and strategic positions in industry (Al Saifi 2015; Iqbal et al. 2019; Koohang et al. 2017; Arsawan et al. 2021; Farooq 2019). In terms of sustainable performance, knowledge-based companies have good opportunities to generate high returns in a sustainable manner (Kianto et al. 2017). The creation of new knowledge and methods can benefit the organization and society, environment, and economy (Lopes et al. 2017; Valmohammadi et al. 2019). Knowledge management plays an essential role in creating organizational excellence through a process of innovation, learning, and decision making (Jiménez et al. 2020; Rasula et al. 2012; Adeinat and Abdulfatah 2019).

One critical factor influencing the knowledge management process is organizational culture. Some previous studies stated that organizational culture supports knowledge management practices (Chang and Lin 2015; Abubakar et al. 2019). However, some other researchers have also revealed that organizational culture often clashes with knowledge management (Bedford 2013). Organizational culture is a significant barrier to success in the knowledge management process (Ajmal and Koskinen 2008; Chang and Lin 2015). Some of these obstacles are related to experts' limitations, training, and lack of a creative culture supporting the learning process and producing knowledge (Adeinat and Abdulfatah 2019). In the context of Subak organizations, Tri Hita Karana is a traditional life philosophy in Bali which determines the local culture and impacts the organization. Tri Hita Karana emphasizes that happiness comes from the harmony between humans and God, humans and other humans, as well as humans and environment (Roth and Sedana 2015; Sapta et al. 2016). Therefore, Tri Hita Karana supports the implementation of knowledge management without any conflict with the cultural values. Previous studies have shown that organizational culture facilitates the organizations' knowledge development (Ajmal and Helo 2010; Sheikhalizadeh and Piralaiy 2017; Fernandes 2018; Nurkholis et al. 2020). Thus, the hypothesis is formulated as follows:

Hypothesis 1 (H1). *Organizational culture has a positive effect on knowledge management.*

The leadership style dramatically determines the success of knowledge management. Each leadership style has a different impact on the implementation of knowledge management (Donate and Sánchez de Pablo 2015). Leadership is a driving factor for organizations towards change (Stankevičiūtė and Savanevičienė 2021). A leader's existence should be a symbol which provides solutions to the organizational problems and positively impacts the organizational development (Yadav et al. 2019). Based on the transformational leadership perspective, the leader's behaviors accelerate the innovative thinking to improve both employee and organizational performance. In addition, a leader must motivate or encourage his staff to improve their creativity when working (Kark et al. 2018; Feng et al. 2018; Afsar and Umrani 2020). Thus, transformational leaders greatly affect the implementation of knowledge management to improve the organizational performance (Birasnav 2014; Feranita et al. 2020). Previous findings have presented that transformational leadership determines the organizational learning and organizational performance

(Afsar et al. 2019; Park and Kim 2018; Yadav et al. 2019). Thus, the hypothesis is formulated as follows:

Hypothesis 2 (H2). *Transformational leadership style has a positive effect on knowledge management.*

Organizational sustainability cannot be separated from organizational culture (Islam et al. 2017). Culture is a pattern of thoughts, feelings, and actions of one social group to be differentiated from the other social groups (Hofstede 2001). Organizational culture is also a shared perception belonging to each organization member and becomes a shared meaning system (Robbins and Judge 2016). The corporate culture literature reveals that organizational culture is the main attribute to improve performance (Linnenluecke and Griffiths 2010; Tseng et al. 2018; Jabbour and de Sousa Jabbour 2016). Organizations need to align the corporate strategic decisions with the organizational culture to achieve sustainable development (Baumgartner 2014). Organizations start adopting the strategies and policies to achieve the sustainable development goals. Organizations commonly change their organizational culture to align with the sustainable development (Feng et al. 2017; Linnenluecke and Griffiths 2010). Companies must also emphasize the cultural transformation in creating the organizational performance sustainability (Islam et al. 2017). However, not all cultural changes can direct the organizations toward sustainable development (Linnenluecke and Griffiths 2010). In the perspective of Subak organizational culture, there are three main strengths underlying the organizational activities consisting the organizational structure simplicity, cooperation-based working system, and balance concept between nature, humans, and God (Roth and Sedana 2015). Balance concept is believed maintaining the sustainability of human life on earth. Thus, the hypothesis is formulated as follows:

Hypothesis 3 (H3). *Organizational culture has a positive effect on sustainability performance.*

Leadership is a person's ability to influence others to do or not to do something in accordance with his will in achieving the predetermined goals (Fairman and Mackenzie 2015; Dugan 2017). This ability is used to influence and mobilize the subordinates who are passionate with the work, willing to cooperate, and have the discipline to achieve specific goals in organized manners (Ikeda and Marshall 2016). The leadership aspect is a special requirement to direct the organization to achieve its sustainable performance (Ferdig 2007). A leader must provide vision and inspire his subordinates, to responsibly and consistently demonstrate their success (Anning-Dorson 2018). Therefore, sustainable performance requires leaders who are committed to take these actions (Parkin 2010; Jiang et al. 2017). Transformational leadership is a leadership style considered appropriate to accommodate these needs. Leaders should always increase their awareness and motivate their subordinates to improve their performance to achieve the organizational goals (Jiang et al. 2017; Cavazotte et al. 2013; Yahaya and Ebrahim 2016). Waldman and Siegel (2008) revealed that despite the scarcity of research discussing this topic, transformational leaders' intellectual stimulation competence is considered the most appropriate to its sustainability strategy. The transformational leadership style overcomes the limitations of both autocratic-bureaucratic system and authentic-consultative system (Adha et al. 2020). Thus, the hypothesis is formulated as follows:

Hypothesis 4 (H4). *Transformational leadership style has a positive effect on sustainability performance.*

The ability of organization to manage knowledge is an essential factor supporting the company's competitiveness. When improving its quality, the company also improves its competitiveness relying on knowledge-based competitiveness (Bloodgood 2019).

Knowledge management is a function helping identify and managing the organizational knowledge for a long-term benefit (Mahdi et al. 2019; Darroch 2003). Knowledge management is an essential tool to create the organizational future, including efforts to ensure its sustainability. Knowledge management does not merely aim at using the low-cost production methods considering its ability in creating and developing the added value (Al Saifi 2015). There is urgently needed to manage knowledge more effectively in the global economy to gain the competitive value (Soniewicki and Paliszkiewicz 2019) by maintaining the organizational performance sustainability. Many researchers have claimed that the source of competitive advantage is knowledge assets (Mahdi et al. 2019; Torres et al. 2018; de Guimarães et al. 2018). The organization has obtained benefits by adopting or implementing the knowledge management practices (Al Saifi 2015; Iqbal et al. 2019; Koohang et al. 2017; Arsawan et al. 2021). Specifically, knowledge management helps organizations optimize their organizational performance (Alshawabkeh et al. 2020; Graha et al. 2019). Empirical studies show that knowledge management processes positively affect organizational performance (Birasnav 2014). Thus, the hypothesis is formulated as follows:

Hypothesis 5 (H5). *Knowledge management has a positive effect on sustainability performance.*

Organizational culture is a source of sustainable competitive advantage (Barney 1991). Previous studies have shown that organizational culture is a key to organizational effectiveness (Hartnell et al. 2011; Zheng et al. 2013). Previous researchers have validated four dimensions of a conducive organizational culture to organizational effectiveness: adaptability, consistency, engagement, and mission (Denison and Mishra 1989). The process of performance sustainability will be achieved faster if the organization implements knowledge management. The relationship between organizational culture and sustainable management processes allows individuals and organizations to receive the expected benefits (Al Saifi 2015), such as a sustainable competitive advantage (Birasnav 2014). Knowledge management is an organizational asset to generate new ideas and knowledge management helping achieve the sustainable organizational performance. Therefore, knowledge management plays a potential role in linking the organizational culture with sustainable performance. Thus, the hypothesis is formulated as follows:

Hypothesis 6 (H6). *Knowledge management mediates the relationship between organizational culture and sustainability performance.*

Transformational leadership style helps organizations implement knowledge management practices. Leadership style encourages knowledge acquisition to improve organizational performance (Gonzales and Kopp 2017; Koohang et al. 2017). The knowledge management process accelerates the transformational leadership style in directing the organizational members towards the sustainable performance (Birasnav 2014). Leadership style also improves performance through knowledge management process, considering leaders who frequently reward the organizational members. Therefore, knowledge management is a potential mediator between transformational leadership and organizational performance (Birasnav 2014). Thus, the hypothesis is formulated as follows:

Hypothesis 7 (H7). *Knowledge management mediates the relationship between leadership style and sustainability performance.*

Based on the literature reviews and hypothetical development, the conceptual framework is then presented in Figure 1.

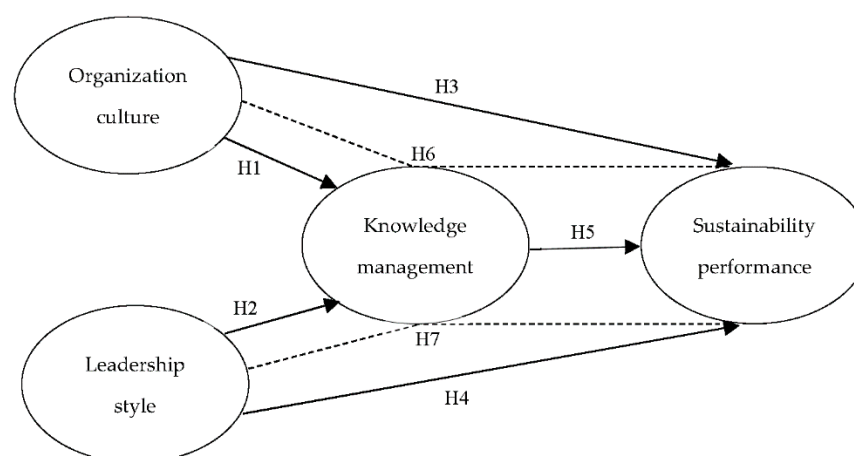


Figure 1. Conceptual framework.

3. Methodology

This study used a survey method. The data were collected using questionnaires distributed to farmers as the members of Subak organization in villages of Bali Province. Subak is a traditional organization based on a local Balinese cultural wisdom. UNESCO has nominated Subak as a Cultural Landscape of Bali: Subak as Manifestation of Tri Hita Karana philosophy (Windia 2013). Subak was selected as the research location because its existence has been eroded by modernization even though Subak is recognized as a world cultural heritage to preserve (Surata and Vipriyanti 2018). The management of Subak organization is based on an organizational culture rooted in the values of Tri Hita Karana philosophy. Tri Hita Karana is a traditional Balinese life philosophy emphasizing on harmony (Windia 2013). The synergy between leadership style, management knowledge, and organizational culture will maintain the sustainable performance of Subak organizations.

The population of this study was all members of four Subak organizations recognized by UNESCO covering Subak Jatiluwih Tabanan, Subak Pura Batur Bangli, Subak Tukad Pakerisan Gianyar, and Subak Mengwi Badung. A purposive sampling was performed based on specific considerations. There were three criteria used to determine the respondents: 1) Subak farmers as well as landowners, 2) already using technology, and 3) Subak organization established at least three years. Thus, the respondents meeting the research criteria were 99 people.

The exogenous research variables were knowledge management and sustainable performance, while the endogenous variables were organizational culture and transformational leadership. This study adapted the previous questionnaires relevant to the variables used in this research, particularly in the context of traditional organization. The questionnaires for the organizational culture variables were adapted from the previous studies (Denison et al. 2014; Denison and Mishra 1995; Sapta et al. 2016) using four indicators consisting of adaptability, consistency, involvement, and mission. The measurements for the transformational leadership style variables were adopted from the previous research (Afsar et al. 2019; Park and Kim 2018; Rai et al. 2019) consisting of four indicators covering individual consideration, idealized influence, inspirational motivation, and intellectual stimulation. The knowledge management variables were measured using five indicators consisting of localization, knowledge use, knowledge acquisition and development, knowledge codification, and knowledge transfer. The questionnaire was adopted from that developed by Koohang et al. (2017). The measurements used in the sustainability performance variable consisted of three dimensions covering economic performance, operational performance, and environmental performance. The measurement indicators were adapted from those developed by Yang et al. (2017). All questionnaires used 5 Likert scales ranging from scale 1 indicating “strongly disagree” to scale 5 indicating “strongly agree.” This study used five options to ease respondents in distinguishing each scale point. The

Likert scale ranging more significant than five is seen to be more difficult for respondents to choose an option. The odd (five) options have accommodated the respondents' needs to give neutral responses (Finstad 2010). In addition, this research used SEM-PLS to analyze the data.

4. Results

4.1. Descriptive Statistics

The research respondents were 99 people. The descriptive statistical calculations on the respondents' responses include mean, minimum and maximum value, and standard deviation presented in Table 1.

Table 1. Descriptive statistics.

Variable	N	Minimum	Maximum	Mean	Std. Deviation
Organization culture	99	8.00	20.00	16.06	3.10
Leadership style	99	8.00	20.00	15.94	3.35
Knowledge management	99	10.00	25.00	20.16	3.97
Sustainability performance	99	6.00	15.00	11.89	2.51
Valid N (listwise)	99	-	-	-	-

Source: author calculation.

4.2. Measurement Model Evaluation (Outer Model)

Three criteria used to assess the outer model included convergent validity, discriminant validity, and composite reliability. Convergent validity testing aimed at measuring the indicator validity. The results were expressed through the values of outer loading factors. The values of outer model were said meeting the convergent validity if the loading factor value was greater than 0.50. The loading factor values of indicators are presented in Table 2.

Table 2. Outer loading result.

No	Variable	Outer Loading
1	Organizational culture	-
	Adaptability	0.874
	Consistency	0.920
	Involvement	0.950
	Mission	0.886
2	Transformational leadership	-
	Individual consideration	0.916
	Idealized influence	0.905
	Inspirational motivation	0.870
	Intellectual stimulation	0.910
3	Knowledge management	-
	Localization	0.873
	Usage of knowledge	0.916
	Knowledge acquisition and development	0.945
	Knowledge codification	0.821
	Knowledge transfer	0.972
4	Sustainability performance	-
	Economic performance	0.956
	Operational performance	0.936
	Environmental performance	0.969

Source: author calculation.

Table 2 shows that the outer model value measurements have met the convergent validity because the loading factor value was greater than 0.50. This figure indicates that all research indicators were valid to form the four variables in this study. Thus, the outer loading value of each indicator has met the convergent validity requirements.

The next step was examining the validity of discriminant indicators of a variable. This test compared the square root coefficient of average variance extracted ($\sqrt{\text{AVE}}$) of each latent factor with the correlation coefficient in the model. The recommended AVE value in this study is 0.5 (Fornell and Larcker 1981). The results of discriminant validity testing are presented in Table 3.

Table 3. Discriminant validity.

Variable	AVE		Correlation			
	AVE	$\sqrt{\text{AVE}}$	Knowledge Management	Leadership Style	Organizational Culture	Sustainability Performance
Knowledge management	0.832	0.912	0.912	-	-	-
Leadership style	0.784	0.885	0.826	0.885	-	-
Organization culture	0.824	0.908	0.975	0.845	0.908	-
Sustainability performance	0.918	0.958	0.872	0.856	0.867	0.958

Source: author calculation.

The discriminant validity test results in Table 3 show that the value of the average variance extracted (AVE) score was more significant than 0.05. This result shows that the indicators representing the dimensions of variables in this study had good discriminant validity. Thus, the variables had sufficient discriminant validity.

Furthermore, this study examined the composite reliability. The results of variable reliability testing were measured with two criteria, consisting of Cronbach Alpha and composite reliability. The composite reliability value and Cronbach Alpha are presented in Tables 4 and 5.

Table 4. Composite reliability.

No	Variable	Composite Reliability
1	Knowledge management	0.929
2	Leadership style	0.930
3	Organization culture	0.899
4	Sustainability performance	0.970

Source: author calculation.

Table 5. Cronbach's Alpha.

No	Variable	Cronbach's Alpha	Information
1	Knowledge management	0.932	Reliable
2	Leadership style	0.947	Reliable
3	Organization culture	0.871	Reliable
4	Sustainability performance	0.990	Reliable

Source: author calculation.

Based on Table 4, the composite reliability value was 0.899–0.970 more significant than 0.7 exceeding the recommended value. Table 5 presents the Cronbach Alpha values ranging from 0.871 to 0.990. Therefore, the variables of this study have met the reliable criteria. Thus, the indicators of this research were valid and reliable.

4.3. Evaluation of the Structural Model (Inner Model)

The structural model was evaluated using R-square. Each change in R-square value assessed certain exogenous latent variables on endogenous latent variables with a substantive effect. The results of R-square estimation are presented in Table 6.

Table 6. R-Square Value.

No	Variable	R-Square
1	Knowledge management (Y1)	0.715
2	Sustainability performance (Y2)	0.853

Source: author calculation.

In addition to R-square, the researchers also measured the goodness of fit model using Q-Square predictive relevance for the structural model. Q-square value of >0 indicated that the model had the predictive relevance; conversely, if the value of Q-Square is = 0, it indicates that the model is lack of predictive relevance. The calculation of Q-Square is conducted using the formula:

$$\begin{aligned}
 Q^2 &= 1 - (1 - R1^2) (1 - R2^2) \\
 &= 1 - (1 - 0.715) (1 - 0.853) \\
 &= 1 - (0.285) (0.147) \\
 &= 1 - 0.042 \\
 &= 0.96
 \end{aligned}$$

The results of Q-Square predictive relevance (Q^2) calculation show the value of 0.96. The Q^2 value could measure how well the model and its parameter estimations generate the observed value. The Q^2 value which was greater than 0 (zero) indicates that the model was adequately good, while the Q^2 value which was less than 0 (zero) indicates that the model had less predictive relevance. In this research model, the construct of endogenous latent variable had the Q^2 value of 0.96, greater than 0 (zero). Therefore, the predictions made by the model were considered relevant. The next test was to examine the formulated hypotheses. The results of the hypothetical testing are shown in Table 7.

Table 7. Hypotheses testing result.

Relationship between Variables	Path Coefficient (Bootstrapping)	t-Statistics	Sig	Decision
Organization culture → knowledge management	0.338	2.955	0.003 *	H1 accepted
Leadership style → knowledge management	0.541	4.964	0.000 *	H2 accepted
Organization culture → sustainability performance	0.365	2.884	0.004 *	H3 accepted
Leadership style → sustainability performance	0.210	2.156	0.032 *	H4 accepted
Knowledge management → sustainability performance	0.409	3.073	0.002 *	H5 accepted

* Statistically significant at 5% significance levels (two-sided *t*-test). Source: author calculation.

5. Discussion

The first hypothesis stated that organizational culture had a positive effect on knowledge management. The testing results show the *t*-statistical value of $2.955 > 1.96$ and significance value of $0.003 < 0.05$. Therefore, the first hypothesis was accepted. It can be concluded that organizational culture has a positive effect on knowledge management. Organizational culture is defined as values or symbols that the members of organization

must understand. At the same time, the culture reflects the uniqueness between one organization and others—the importance of culture in managing the organizational knowledge. Culture is considered as a part of intangible structural capital facilitating the knowledge management implementation. Therefore, organizational culture facilitates knowledge management practices and improves the organizational performance (Ajmal and Helo 2010; Zheng et al. 2013; Adeinat and Abdulfatah 2019). Subak organizations have recently provided resources for place-based education and organizational members that become an integral part of all students' learning aspects (Surata and Vipriyanti 2018). These findings also implied that Tri Hita Karana was a traditional life philosophy in Bali supporting the knowledge management implementation in organizations. Thus, these testing results supported the previous studies revealing a positive relationship between organizational culture and knowledge management (Ajmal and Helo 2010; Sheikhalizadeh and Piralaiy 2017; Fernandes 2018).

The second hypothesis stated that leadership style had a positive effect on knowledge management. The results show the t-statistical value of $4.964 > 1.96$ and a significance value of $0.000 < 0.05$. The second hypothesis was accepted. Thus, leadership affects knowledge management. This study used transformational leadership representing the leaders' characters in Subak organizations. The transformational leadership theory suggests that leader's behaviors can accelerate the employee's innovative thinking to improve the employee and organizational performance (Feranita et al. 2020; Rustiarini et al. 2019). These results supported the previous findings mentioning that transformational leaders greatly influenced the implementation of knowledge management to improve organizational performance (Aragón-Correa et al. 2007; Colbert et al. 2008; Piccolo and Colquitt 2006; Birasnav 2014). In Subak organizations, transformational leaders always remind the organization members to make innovations to improve the quality of agricultural products, encourage the utilization of technology, and have the entrepreneurial or managerial abilities in marketing the agricultural products. The development of intensive scientific and technological advancements greatly impacts the formation of labor modern division (Lim et al. 2018) and provides new opportunities to produce the value-added agricultural products. Technology has become one of prerequisites for the inclusive environmental management (Hamdoun et al. 2018), including in Subak organizations.

The third hypothesis stated that organizational culture had a positive effect on performance sustainability. The results supported the third hypothesis with the t-statistical value of $2.884 > 1.96$ and a significance value of $0.004 < 0.05$. Based on this value, the organizational culture has a positive effect on performance sustainability. Organizational culture is one key to achieve the sustainable organizational performance. Organizational culture contains various internal attributes, such as organizational norms and values, formal policies, procedures, and management systems (Eccles et al. 2014). Organizations need to integrate these missions, values, norms, and strategies into organizational culture (Galpin et al. 2015). In Subak organizations, the organizational culture which was based on Tri Hita Karana has implemented the concept of sustainable performance. Previously studies have stated that sustainability performance is an organizational activity seeking to achieve a sustainability balance. One of the concepts derived from the sustainable performance is Triple Bottom Lines (Lozano et al. 2013). Consistent with the Triple Bottom Lines literature, Tri Hita Karana is a culture requiring harmony between humans and God, humans and other humans, as well as humans and environment (Surata and Vipriyanti 2018).

The fourth hypothesis stated that leadership style had a positive effect on performance sustainability. This result supported the fourth hypothesis. This result was indicated by the t-statistical value of $2.156 > 1.96$ and significance value of $0.032 < 0.05$. Thus, transformational leadership had a positive effect on performance sustainability. Transformational leadership is the right style to direct organizations to achieve their sustainable performance (Waldman and Siegel 2008). Business activities are not just an organic circle of people but also all organization members. The existence leader's motivation is one of

basic prerequisites for organizational efficiency (Rustiarini et al. 2019; Koohang et al. 2017). An effective management team is essential to ensure an organization's sustainability and development (Gryshova et al. 2019). Transformational leadership can help establish the professional organizational members, particularly in the modern labor market (Diachok et al. 2020). In Subak organizations, transformational leaders always remind the members of organization to use the environmentally friendly technology (Komin and Sedana 2019), increase knowledge related to the preservation of natural resources (Roth 2014), and maintain the spirit of cooperation in maintaining the physical networks and Subak ritual activities (Surata et al. 2014). Therefore, the leadership style will direct the Subak organizations to achieve their sustainable performance.

The fifth hypothesis stated that knowledge management had a positive effect on performance sustainability. The statistical tests results show the t-statistical value of $3.073 > 1.96$ and significance value of $0.002 < 0.05$. This value supported the fifth hypothesis. Thus, knowledge management had a positive effect on performance sustainability. Knowledge management can choose low-cost production methods and consider methods which are capable of creating and developing different value-added (Lange 2006). Organizational knowledge can improve the quality of employees and become the organizational competitive advantage (Arsawan et al. 2021). In Subak organizations, knowledge management had an important role in motivating Subak members to increase knowledge on agribusiness activities in the modernization era and use the environmentally friendly technology (Komin and Sedana 2019). Knowledge management practices were also essential to improve the functions of Subak institutions, such as accommodating production, distribution, and marketing activities. Thus, Subak organizations facilitate the economic activities of local communities to achieve their sustainable performance.

The next test was analyzing the mediating role of knowledge management variable (Y1) between organizational culture (X1) and performance sustainability (Y2). This study also examined the mediating role of knowledge management variable (Y1) between leadership style (X2) and performance sustainability (Y2). The hypothetical testing on the indirect effects is shown in Table 8.

Table 8. Results of testing for knowledge management mediation variables.

No	Relationship between Variables	Effect				Decision
		(A)	(B)	(C)	(D)	
1	Organization culture → sustainability performance	0.365 (Sig)	0.503 (Sig)	0.338 (Sig)	0.409 (Sig)	Partial Mediation
2	Leadership style → sustainability performance	0.210 (Sig)	0.432 (Sig)	0.541 (Sig)	0.409 (Sig)	Partial Mediation

Source: author calculation.

The overall effects on each relationship of variables under study are presented in Table 9.

Table 9. Direct effect, indirect effect, and total effect.

No	Relationship between Variables	Direct Effect	Indirect Effect	Total Effect	Sig
1	Organization culture (X1) → knowledge management (Y1)	0.338	-	0.338	0.003 *
2	Leadership style (X2) → knowledge management (Y1)	0.541	-	0.541	0.000 *
3	Organization culture (X1) → sustainability performance (Y2)	0.365	-	0.365	0.004 *

4	Organization culture (X1) → knowledge management (Y1) → sustainability performance (Y2)	0.365	$(0.338 \times 0.409) = 0.138$	0.503	0.001 *
5	Leadership style (X2) → sustainability performance (Y2)	0.210	-	0.210	0.032 *
6	Leadership style (X2) → knowledge management (Y1) → sustainability performance (Y2)	0.210	$(0.541 \times 0.409) = 0.221$	0.431	0.013 *
7	Knowledge management (Y1) → sustainability performance (Y2)	0.409	-	0.409	0.002 *

* Statistically significant at 5% significance levels (two-sided *t*-test). Source: author calculation

Table 8 and Table 9 show that knowledge management (Y1) mediated the relationship between organizational culture (X1) and performance sustainability (Y2) acting as a partial mediation. The testing results accepted the sixth hypothesis. These findings indicated that knowledge management facilitated organizational culture to direct the organization towards sustainable performance. Organizational culture, combined with knowledge management creates opportunities for organizational members to innovate, learn, and develop themselves to achieve sustainable performance (Yang et al. 2017; Surata and Vipriyanti 2018).

Table 8 and Table 9 also show that knowledge management (Y1) mediated the relationship between leadership style (X2) and performance sustainability (Y2) as a partial mediation. Thus, the results of this test accepted the seventh hypothesis. This finding implied that knowledge management facilitated transformational leaders in managing resources to achieve sustainable performance. Knowledge personally increased individual working performance and directed organizations to achieve their sustainable performance (Arsawan et al. 2021). In the context of Subak organizations, knowledge management helped leaders motivate their members to increase their knowledge and competencies. The knowledge possessed by the members of organization will encourage them to utilize the agricultural technology, starting from production to post-harvest. The organizational members who have the entrepreneurial and managerial knowledge determine the market, selling price, and payment system. Knowledge management practices support the efforts made by the transformational leaders to achieve their sustainable performance. Thus, knowledge management mediated leadership style and sustainable performance.

6. Conclusions

This study investigated the role of knowledge management in mediating organizational culture and transformational leadership to sustainable performance. The results confirmed that the knowledge-based theory which implemented knowledge management practices leads organizations to achieve their sustainable performance. Knowledge management also had a potential role in linking organizational culture with sustainable performance. Likewise, knowledge management accelerated the transformational leadership style in directing the organizational members towards sustainable performance in the relationship of leadership style with sustainable performance. One surprising finding obtained from this study was that knowledge management did not completely play its role as a mediator. In traditional organizational management, organizational culture, and transformational leadership still become the main organizational activity drivers. Thus, the implementation of knowledge management model must be matched with the organizational missions, values, norms, and strategies.

This study had two limitations. First, this study only analyzed the concept of local organizational culture using Tri Hita Karana which can not to be generalized to the other local organizational cultures. This limitation then opens opportunities for researchers in

the other areas to explore different organizational cultures. Second, this study was conducted at agricultural organizations in the developing countries with different knowledge management practices. Therefore, it is necessary to examine the knowledge management practices in agricultural organizations of the developed countries to better understand the results.

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