

Context of knowledge and network capabilities: a framework for achieving innovation strategies for SMEs in Bandung City

Ahmad Johan¹, Ratih Hurriyati¹, Puspo Dirgantari¹, Zulganef²

¹Department of Management, Faculty of Economics and Business Education, Universitas Pendidikan Indonesia, Bandung, Indonesia

²Department of Management, Faculty of Economics and Business, Universitas Widyatama, Bandung, Indonesia

Corresponding author: Ahmad Johan, ahmadjohan@upi.edu

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Abstract

Small and medium enterprises in Indonesia are currently facing stiff competition. To win the competition, local companies must pay attention to the strategies adopted so as to produce innovations that can be a strength for the organization itself. This study has the objective to investigate how knowledge management and network capability affect the creation of innovation in SMEs in Bandung City, West Java. This study carry out descriptive analysis with quantitative approach. Data was collected through a survey by distributing questionnaires to 200 respondents and returning 170 respondents. The data obtained was processed using structural equation modeling with AMOS 23 software. The results of the study indicate that there are positive and significant influences of knowledge management and network capability on creative of innovation, and that knowledge management has a significant effect on the creation of innovation.

Keywords: *knowledge management, network capability, creation of innovation*

Abstrak

Usaha kecil dan menengah di Indonesia saat ini menghadapi persaingan yang ketat. Untuk memenangkan persaingan, perusahaan lokal harus memerhatikan strategi yang diadopsi, sehingga dapat menghasilkan inovasi yang dapat menjadi kekuatan bagi organisasi itu sendiri. Penelitian ini bertujuan untuk menginvestigasi bagaimana manajemen pengetahuan dan kapabilitas jaringan mempengaruhi penciptaan inovasi dari UKM di Kota Bandung, Jawa Barat. Penelitian ini menggunakan analisis deskriptif dengan pendekatan kuantitatif. Pengumpulan data dilakukan melalui survei dengan mendistribusikan kuesioner pada 200 responden, dan kuesioner yang dapat diolah adalah dari 170 responden. Data dianalisis menggunakan structural equation modelling dengan AMOS 23. Hasil penelitian ini mengindikasikan bahwa terdapat pengaruh positif dan signifikan dari manajemen pengetahuan dan kapabilitas jaringan terhadap penciptaan inovasi, serta terdapat pengaruh positif dari manajemen pengetahuan terhadap kapabilitas jaringan.

Kata Kunci: *manajemen pengetahuan, kapabilitas jaringan, penciptaan inovasi*

Introduction

A number of scholars in marketing management have claimed that the firm success largely depends on the knowledge of the strategy that is adopted by the firm (Fan, Xi, & Liu, 2018). Today's development of the internet has arisen consumers to have varieties of product choices, thus enable consumers to be easier to find products or services according to their desire (Ursu, 2018). In this case, knowledge management plays a role in advancing the industry, as it becomes one of the factors that influences the sustainability of the business itself. To increase competitiveness, organizations must process the information obtained before the decision is implemented. Currently digital marketing provides various conveniences but also becomes an obstacle for business people who do not have an understanding of technology. One of its tools, namely cellular devices, has become a tool for consumers to look for information about the products and services they need. In addition, it can also help customers to build interaction with the providers. In Indonesia, there are many types of e-commerce platforms which is used by firms to meet the needs of consumers, making it a challenge for SMEs.

Table 1. Number of E-Commerce User in Indonesia

No.	Name	Percentage
1.	Shopee	45%
2.	Tokopedia	25%
3.	Bukalapak	20%
4.	Lazada	10%

Source: SimilarWeb (2021)

The presence of various business platforms has enabled consumers to find their needs, but it remains a challenge for organizations, especially for small and medium enterprises (SMEs). These challenges are felt by SMEs with many similar products and falling prices, thus demanding business actors to always innovate. Contextual knowledge in the SMEs has attracted attention recently (Franceschelli, 2019). This is due to the fact that the presence of technology is very crucial for business continuity in the face of competition, where this factor involves from idea generation to product launches, promotions and involves the application of knowledge (Richards, 2019). The ability of an organization to recognize new values, external information, and apply it to commercial goals is very important to build its innovation capabilities especially in a dynamic environment (Pang, 2019). Thus, knowledge and understanding of the external environment are the factors in gaining competitive advantage. Organizations involve customers in the innovation process and adopt an open innovation model to access knowledge from outside the company.

The capacity of a business to acquire and distribute knowledge is very important to the success and competitiveness of an organization (Bhatti, 2020). In this regard, organizational relationships, business networks, and connections has a significant role for firms in acquiring knowledge in order to compete. Large organizations have substantial financial and managerial resources for acquiring and processing knowledge. On the contrary, SMEs have limited size

and resources which must be addressed well, as it can hinder the progress of SMEs themselves.

In Indonesia, SMEs are considered as the main engine of healthy economic growth. They have to take the initiatives as agents of change by developing new products and services, applying more productive methods, and creating new business models (Müller, 2019). As a result, new jobs are generated, all marketing activities must be integrated in digitization. In an increasingly complex world, of course, an increasingly complex solutions is required, as knowledge creation develops from collaborative activities where information is exchanged, judgments are tested, and opportunities are recognized to be increasingly important (Ding, 2020). Hence, network capability forms the basis for entrepreneurial success and creation of innovation.

In order to respond to the challenge and uncertainty in the business environment, it is essential for SMEs to exploit their knowledge and resources to be more innovative and competitive than their rivals. Chege (2020) suggested that entrepreneurs must build and maintain strong relationships and connections with stakeholders in order to compete. In this regard, a connection is seen as a crucial resource to create knowledge and exchange information in order to identify potential opportunities and threats (Suorsa, 2020). Yoon (2020) assumed that SMEs which build networking capabilities and develop social capital has the potential to have more innovativeness in its business.

Another research from Piazza (2019) have associated network capability to distinct organizational outcomes, namely corporate performance, knowledge management (Wang, 2019), learning (Qayyum, 2019) and sustainable performance (Wass, 2020). However, there are inconsistent results among previous studies, namely that network capabilities have no influence on innovation decisions in organizations. However, at the same time, other studies have found a positive relationship between built networks and the ability to innovate (Maydanova, 2019). Piazza (2019) states that among the differences in the business performance can be caused by the way in managing knowledge. However, there is little literature that mentions how business people use their knowledge to make decisions that lead to innovative solutions and better performance.

Based on these explanations, the objective of this study is to examine this relationship in increasing knowledge creation in the context of small and medium enterprises (SMEs) in Bandung City. This study would like to fill the research gap regarding the different results from prior research about the influence of network capabilities. It also addresses the gap in the literature regarding the role of network capability in influencing creation of innovation (Sarwar, Yang, Khan, Haseeb, & Sarwar, 2021). Finally, this study sheds lights to the literature of knowledge management by linking the relationship between knowledge management, network capability, and the creation of innovation.

Research Methods

This research was conducted using descriptive method. Descriptive analysis is a form of research based on data collected during systematic research on the facts and characteristics of the object under study, which is then interpreted based on theory and literature. In this study, it is interpreted to

understand the relationship among knowledge management, network capability, and creation of innovation in SMEs in Bandung City. The population of this study are all creative SMEs actors in Bandung City. The number of the total population is 200. The sampling technique was carried out using accidental non-probability sampling.

Table 2. Operational Definition

Variable	Description	Source
Knowledge Management	A series of management activities that enable the company's ability to provide value from its knowledge assets and which can have an impact on organizational performance, especially in the creation of innovation.	(Falahat, 2020; Rayón, 2017; Tahmasebi, 2017)
Network Capability	The ability of the organization or company to initiate, develop and utilize internal organization and external inter-organizational relationships	(Arnal, 2018; Nanda, 2018; Nwachukwu, 2018)
Creation of Innovation	Design, invention, development and/or implementation of new or modified products, services, processes, organizational structures or business models for creating new value for customers.	(Lorenzo, 2018; Syapsan, 2019)

Questionnaires were distributed to 200 respondents through online survey using Google Forms, but only 170 questionnaires were filled out completely, thus it can be continued to data processing. Data analysis was carried out using structural equation modeling with AMOS 23 program. The questionnaires are measured using 5-point Likert scale. The operational definition and item measurements from the variable are shown in Table 2 and Table 3.

Table 3. Variable Measurement

Variable	Item	Indicator	Reference
Knowledge Management	KM.1	Organizational ability to understand customers	(Falahat, 2020)
	KM.2	Organizational ability to understand product trends	
	KM.3	The organization's ability to understand competitors' movements	
	KM.4	Organizational ability to analyze information	
Network Capability	NC.1	Internal communication	(Walter, 2006; Sarwar et al., 2021)
	NC.2	Coordination	
	NC.3	Relationship skills	
	NC.4	Partner knowledge	
Creation of Innovation	CA.1	Ability to take advantage of opportunities	(Syapsan, 2019)
	CA.2	Deliver value for customers	
	CA.3	Neutralize threats	

Result and Discussions

Most of the respondents in this study are male (58%). Based on the age, most of the respondents are 31-45 years old (45%), followed by 18-30 years old (36%). This indicates that mostly, creative SMEs actors in this study are on a productive age. Based on the educational background, most of the respondents have bachelor degree (36%) and diploma degree (32%). One of the causes is that the creative SMEs actors have experienced higher education, but at some point, they experienced difficulties while looking for a job, thus leading them to make the decision to run a business in SMEs. Regarding the income, most of the respondents have IDR 2,500,000 - 5,000,000 income per month.

Table 4. Respondent Profile

Group	Distribution	N	Percentage
Gender	Male	98	58
	Female	72	42
Age	18 – 30 years old	62	36
	31 – 45 years old	76	45
	46 – 60 years old	32	19
Education	Senior high school	23	14
	Diploma	54	32
	Bachelor	61	36
	Post graduate	32	19
Income/month	< Rp 2.500.000	31	18
	Rp 2.500.000 – 5.000.000	53	31
	Rp 5.100.000 – 7.500.000	49	29
	> Rp 7.500.000	37	22

Source: Processed Data (2021)

From 170 data analyzed, the majority of respondents, namely small and medium business actors in the city of Bandung, have applied their knowledge as something that can help in creating new products and developing existing products. In addition, the knowledge gained comes from his education as well as the network or relationships that are built when running a business. Almost every day, SMEs build networks with various partners to improve their business performance by creating new products. Therefore, in order to support the creation of innovation in business, several variables need to be considered, especially the knowledge possessed and the network built. In conclusion, the average percentage of each variable belongs to the good category.

Table 5. Descriptive Analysis

Variable	%	Category
Average percentage of Knowledge Management variable	79.64	Good
Average percentage of Network Capability variabel	73.64	Good
Average percentage of Creation of Innovation variable	74.21	Good

Source: Processed Data (2021)

From the results of the tests that have been carried out, it is shown that the square root value of AVE is greater than the correlation value between constructs. This shows that each variable is valid. Furthermore, this study considers the value of Cronbach's Alpha. The results indicate that the

Cronbach's Alpha value is >0.70. Therefore, it can be concluded that the Cronbach's Alpha, construct reliability, and AVE value of this study has met the cut-off values, thus this data is reliable.

Table 6. Validity Test

Construct	Knowledge Management	Network Capability	Creation of Innovation
Knowledge Management	0,7804		
Network Capability	0,349	0,7395	
Create Innovation	0,332	0,495	0,7848

Source: Processed Data (2021)

Table 7. Results of Reliability Test

Latent Variable	Indicator	Standard Loading	Ca	CR	AVE
Knowledge Management	KM1	0.947	0.860	0.861	0.609
	KM2	0.940			
	KM3	0.611			
	KM4	0.556			
Network Capability	NC1	0,659	0,790	0,796	0,547
	NC2	0,834			
	NC3	0,587			
	NC4	0,719			
Creation of Innovation	CI1	0,863	0,801	0,819	0,616
	CI2	0,927			
	CI3	0,510			

Source: Processed Data (2021)

After carrying out measurement model evaluation, the test results of Chi-square, CMIN/DF, GFI, AGFI, RMSEA, TLI and CFI are found to meet the critical value (cut off), as well as the p-value that has exceeded 0.05 and the value of CMIN/df already below the cut off value < 2.00 as can be seen in Table 8.

Table 8. Model Fit Test

Test Statistics	Critical Value	Test Results	Information
Chi Square	-	58,207	-
Degree of Freedom	-	39	-
p-Value	> 0,05	0,065	Fit
CMIN/DF	< 2,00	1,492	Fit
Root Mean Square Residual (RMR)	> 0,05	0,06	Fit
Root Mean Square Error of Approximation (RMSEA)	< 0,08	0,057	Fit
Goodness of Fit Index (GFI)	≥ 0,90	0,935	Fit

Source: Processed Data, (2021)

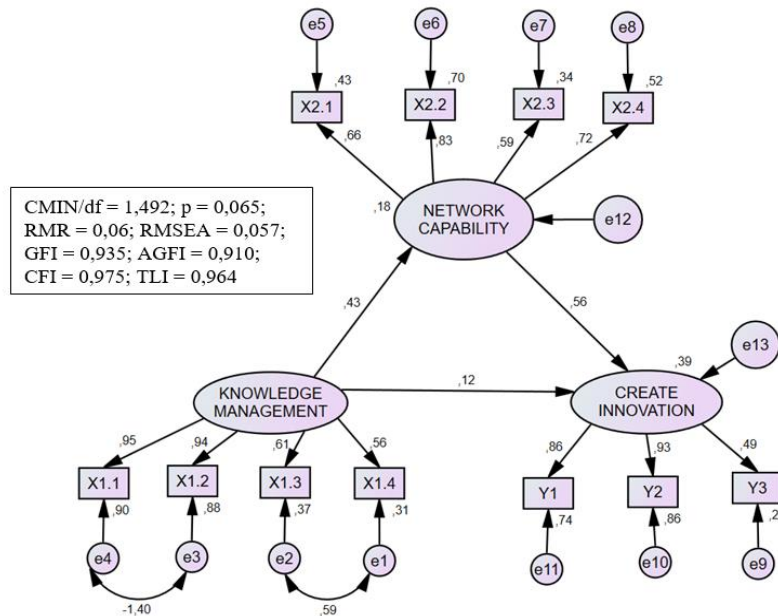


Figure 1. Results of Model Fit Test

Model Causality Test

According to the significance of t-count with probability value (p) of 0.05, the result of causality test is presented in Table 9 below. The more detailed explanation of causality test and regression weights is as follows:

1. Knowledge Management significantly influences Network Capability with a smaller t-count value than the probability value <0.05.
2. Network Capability significantly influences Creation of Innovation with a smaller t-count value than the probability value <0.05.
3. Knowledge Management significantly influences Creation of Innovation with a smaller t-count value than the probability value <0.05.

Table 9. Causality Test

	Hypothesis	Estimate	S.E.	C.R.	P
CAPABILITY	← KM	,630	,156	4,027	***
INNOVATION	← CAPABILITY	,317	,078	4,072	***
INNOVATION	← KM	,103	,073	1,404	,015

Source: Processed Data (2021)

Determinant Coefficient

The magnitude of the contribution of simultaneous variable on the other variables is explained as follows:

1. Knowledge Management has a role of 52.9% on Network Capability.
2. Network Capability has a role of 61.1% of Creation of Innovation.
3. Knowledge Management and Network Capability have a role of 65.9% of Creation of Innovation.

Table 10. Coefficient of Determination

Simultaneous Variables	Affected Variables	Effective Donation
Knowledge Management	Network Capability	52,9%
Network Capability	Creation of Innovation	61,1%
Knowledge Management and Network Capability	Creation of Innovation	65,9%

Source: Processed Data (2021)

The creation, capture, sharing, application, and exploitation of knowledge in firms or organization refers to effective knowledge management (Egbu, 2004). Knowledge management usually requires the right synergy of a number of initiatives in firm, in addition to the utilization of the suitable technologies. The main purpose of knowledge management in firms is to collect, classify, store and disseminate all the knowledge needed, thus firms can grow and develop (Mukherjee, Ganesan, Hashmi, 2011). This study supports the previous studies conducted by Gloet & Terziovski, (2004), du Plessis (2007), and Mardani et al. (2018) who found that knowledge management positively affects creation of innovation.

Knowledge management in this study has a direct and indirect influence on creation of innovation and is found to has a significant influence based on causality testing. Based on the test results, it can be interpreted that when the company has the ability to understand the condition that determine their success related to knowledge, it will be able to help them to boost their creation of innovation. In other words, the SMEs actors in this study have had the ability to understand their customers, the product trends in the market, their competitors' movement, and able to analyze the information which exists around them. This enables the SMEs actors in Bandung City who becomes respondents in this study to enhance their innovation, such as by being able to take advantage of opportunities based on the knowledge they have been preserved. Therefore, the hypothesis regarding the relationship between knowledge management and creation of innovation is accepted.

Knowledge management is found to directly and significantly influence Network Capability. Network Capability is the organization's ability to initiate, develop and utilize the internal organization and relationships between external organizations (Zacca, Dayan, & Ahrens, 2015). For firms, knowledge management is very important to obtain various kinds of information to improve or expand the network. This study supports the previous findings from Cenamor et al. (2019), Zacca et al. (2015), and Sarwar et al. (2021), that there is a positive and significant influence of knowledge management on network capability.

The results indicate that when companies have the ability to manage the flow of knowledge, it will be useful for them to increase their network capability. In this study, the SMEs actors in Bandung have been able to utilize the knowledge and use it to understand their customers, product trends, characters and movement from their competitors, and most importantly, to analyze information. This enables the SMEs actors in Bandung City to maintain their way of communicating with the internal organization, coordinating with one another, use their skills to build and maintain the relationship with others, and understanding their partners' knowledge. Therefore, the hypothesis regarding

the relationship between Knowledge management and Network Capability can be accepted.

Network Capability is the ability of firm to initiate relationships with other firms, and it includes the benefits of those relationships (Balboni Bortoluzzi, & Vianelli, 2014). In line with this definition, the relationship that can occur with the creation of innovation is being able to find out which products can be developed into better products. In this study, it is indicated that network capability has a direct influence on creation of innovation with a significant effect. This supports the previous studies which have also proven that network capability positively influence innovation in the organization (Anser, Yousaf, Usman, Yousaf, Fatima, Hussain, Waheed, 2020; Sarwar et al., 2021).

According to the findings in this study, it is proven that when companies have the capability to build relations with other companies and within their own, they will be able to increase or maximize their creation of innovation. When it is associated with this study, the creative SMEs actors in Bandung have been able to maximize their network capability through carrying out internal communication, coordination, master their relationship skills, and understand their partners' knowledge. This enables the SMEs actors in Bandung to seize opportunities, add value for their customers, and neutralize threat when carrying out their business activities. Therefore, the hypothesis regarding the relationship between network capability and creation of innovation can be accepted.

Conclusion

This study has the objective to examine the influence of Knowledge Management and Network Capability on Creation of innovation for SMEs in Bandung. After doing the research, the purpose of this research can be achieved, as this study found a significant relationship either direct or indirect influence that can affect Creation of Innovation for creative SMEs in Bandung City. This study bridges the theoretical gap that exist by proving that there is a positive influence between knowledge management on network capability and the creation of innovation, and that network capability has a significant influence on the creation of innovation.

The practical implication of this study is that the ability of an SME to expand knowledge and networks will add input in the form of the emergence of new ideas in finding or developing existing products. With this, SMEs that are already running will be able to continue to grow and survive in the face of competition. This study also has contribution to the enrichment of the literature regarding knowledge management, innovation, and network capability.

The limitation of this study is that it only explores the nexus of knowledge management, network capability, and creation of innovation using causality test. Future studies should find out regarding on what condition this causality occurs, and it can be done through adding a moderating variable that will possibly affect the relationships between the variables analyzed in this study.

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