THE ROLE OF KNOWLEDGE CREATION IN MEDIATING THE EFFECT OF NETWORK CAPABILITY ON PERFORMANCE OF MICRO, SMALL, AND MEDIUM ENTERPRISES

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ABSTRACT

Performance has received special attention in the context of Micro, Small, and Medium Enterprises (MSMEs) due to its important role in enhancing an organization's competitive advantage. This study aims to identify predictors of MSME performance. This study used a survey method with 240 respondents. We analyzed the data using Smart-PLS (Partial Least Square) for Structural Equation Modelling (SEM). The results show that Network Capability and Knowledge Creation positively affect MSME performance. Furthermore, Knowledge Creation acts as a mediator between them. This research provides further suggestions on how MSME owners can improve performance in their MSMEs.

Keywords: Network capability, knowledge creation, MSMEs performance

1. INTRODUCTION

According to the World Bank, Micro, Small, and Medium Enterprises (MSMEs) play an important role in the economies of most countries, particularly in developing countries (Asian Development Bank, 2020). Most enterprises worldwide are classified as MSMEs, which play a significant role in employment (International Labour Organization (ILO), 2019). Globally, MSMEs account for about 90% of all businesses and more than 50% of all jobs. Formal MSMEs

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can contribute up to forty per cent of Gross Domestic Product (GDP) in developing countries. This number may be much higher if informal MSMEs are included. As a result of the significant economic contribution they make and the large number of people they employ, many governments have made the study of MSMEs a high priority (Dash, 2018; Kumar & Gajakosh, 2021; Nadaf & Kadakol, 2017). According to the findings of Quaye & Mensah (2018), MSMEs can maintain the market advantage of current products by utilizing specialized marketing resources and competencies simultaneously.

MSMEs make a significant contribution to the national economy in Indonesia and can make a significant contribution to Indonesia's GDP (Gross Domestic Product) (Muliadi, Darma, & Kasuma, 2020; Prasetyo, 2020; Prasetyo & Kistanti, 2020), but in its development, it is still faced with various obstacles in terms of business management, financial management, human resource management and entrepreneurship (Hernita, Surya, Perwira, Abubakar, & Idris, 2021; Mayr, Mitter, Kücher, & Duller, 2021; Salamzadeh & Dana, 2021; Sarvari, Chan, Alaeos, Olawumi, & Abdalridah Aldaud, 2021). Human resource competencies, skills, and knowledge are still weak compared to large enterprises (Hernita et al., 2021; Purnamawati, Jie, Hong, & Yuniarta, 2022; Surya et al., 2021). The human resource practices of many MSMEs are often not conducive to knowledge creation and exchange. Generally, MSMEs also engage in fewer management development activities than large firms (Alhusen & Bennat, 2020; Demirkan, Srinivasan, & Nand, 2022; Heenkenda, Xu, Kulathunga, & Senevirathne, 2022; Madrid-Guijarro, Martin, & García-Pérez-de-Lema, 2021).

Semarang City in Central Java is a tourist destination, agribusiness, and manufacturing center. In addition, it is also the center of various business activities, shopping centers, and culinary and transit areas between West Java and East Java. These various things can attract domestic and foreign tourists to visit Semarang City, Central Java. The increase in MSMEs is inseparable from the increase in home industries in Semarang City, Central Java. The number of MSMEs in Semarang City, Central Java, in 2022 increased by 40% compared to 2017 (Dinas Koperasi Usaha Kecil & Menengah Kota Semarang, 2022; Dinas Koperasi Usaha Kecil & Menengah Provinsi Jawa Tengah, 2022). The growth of MSMEs in Semarang City, Central Java, is greater than that of consumers. It has led to competition for customers for these MSMEs. The increase in MSMEs has led to an increasingly competitive MSME industry in Semarang City, Central Java. This competition is a challenge for the MSME industry to continue to improve its performance and compete in providing superior services to its customers.

Several studies have examined the relationship between knowledge management and performance but have focused on established manufacturing firms (Patalas-Maliszewska & Kłos, 2017; Robert, Giuliani, & Gurau, 2022; Singh, Gupta, Busso, & Kamboj, 2021; Viet & Kravets, 2022). MSMEs play an important role in the national economy. However, there are still several problems and obstacles in the development of MSMEs, such as management, entrepreneurship, finance, human resources, and performance (Hernita et al., 2021; Menne et al., 2022; Salamzadeh & Dana, 2021; Zutshi, Mendy, Sharma, Thomas, & Sarker, 2021).

Network Capability (NC), according to Walter et al. (2006), is the ability of companies to develop and utilize inter-organizational relationships to gain access to various resources owned by other actors. Network Capability is integrated by various dimensions representing different capabilities for managing relationships with other organizations and partners. Similarly, Network

Capability contributes to the success of small and medium-sized export firms by helping to identify new market opportunities and contributing to knowledge building (Coviello & Joseph, 2012). From the perspective of Dynamic Capability Theory, Network Capability is a determining factor in accelerating the internationalization of MSMEs (Acosta, Crespo, & Agudo., 2018).

The importance of Knowledge Creation (KC) capabilities is emphasized in the knowledge-based view of organizations, advocated by researchers such as Spender (1996), who argues that the 2 main objectives of organizations are to generate and apply knowledge. An organization that has continuous Knowledge Creation capabilities has developed dynamic and unique capabilities and has the potential to support continuous organizational learning. It is supported by empirical findings that Knowledge Creation is critical to various organizational processes that support competitive advantage, including new product development and dynamic capability evolution (Brockman & Morgan, 2003).

In this study, we predict that the difference in previous research is due to the existence of the mediator variable Knowledge Creation between the Network Capability variable and MSME performance. This study uses Knowledge Creation as a mediator variable to bridge the influence of Network Capability on MSME performance. Based on theoretical studies, the main skills gaps identified that hinder performance in MSMEs include technical skills and managerial competencies (Freel, 1999). The lack of studies on strengthening Network Capability and Knowledge Creation in improving performance in MSMEs is a gap in this research that needs further identification and testing. One of the main reasons MSMEs invest in knowledge management is to build knowledge capabilities that facilitate effective management and flow of information and knowledge within MSMEs. Good Network Capability and Knowledge Creation of MSMEs will encourage the sustainable improvement of MSMEs' performance.

This study aims to identify predictors of MSME performance. This research contributes by explaining Knowledge Creation's role in the relationship between Network Capability and MSME performance. From a managerial perspective, the findings of this study will improve the understanding and practice of marketing management in terms of Network Capability, Knowledge Creation, and performance in the MSME industry.

2. LITERATURE REVIEW

2.1. *Network Capability and Knowledge Creation*

Network Capability is a firm's ability to initiate, develop, and leverage relationships between internal and external organizations (Walter et al., 2006). The capabilities that enable firms to succeed in networks are essential factors in knowledge creation and value creation (Dayan, Zacca, & Di Benedetto, 2013). Network Capability development is an organization-wide dynamic process viewed as a higher-order resource (Tolstoy, 2009; Walter et al., 2006) consisting of 4 components: coordination, relationship skills, partner knowledge, and internal communication (Kale, Singh, & Perlmutter, 2000). Social competence or relationship skills are also components of Network Capability (Dayan et al., 2013). Knowledge of partners enables situation-specific approaches to relationship building and effective coordination within the network. Internal

communication, or competence in collaborative communication within the firm, facilitates the assimilation and dissemination of up-to-date information about partners, thus linking external relationships internally to complement internal knowledge. These components of Network Capability are consistent and mutually reinforcing (Walter et al., 2006). Network Capability supports the development of a knowledge base. It is a mechanism to learn customer needs, anticipate market opportunities, and obtain best practices and timely and sophisticated feedback from suppliers (Walter et al., 2006). Zacca et al. (2015) that Network Capability positively affects MSME Knowledge Creation. Based on the information presented above, the first hypothesis to be tested in this study is:

H1: Network capability has a positive effect on knowledge creation

2.2. *Knowledge Creation and MSMEs Performance*

Knowledge creation is one of the crucial things in implementing the knowledge management process to improve organizational performance. According to Tubigi and Alshawi (2015), knowledge creation can aim to develop new knowledge in the organization so that knowledge creation can be a tool to improve organizational performance. Knowledge creation becomes one of the essential things and has a positive impact on improving organizational performance. According to Ali et al. (2010), Jayasingam et al. (2013), and Migdadi et al. (2017) concluded that knowledge creation has a positive effect on organizational performance. Sa & Chai (2020) show that Knowledge Creation significantly positively affects MSMEs' performance. Based on the information presented above, the second hypothesis to be tested in this study is as follows:

H2: Knowledge creation has a positive effect on MSMEs performance

2.3. *Network capability and MSMEs performance*

Companies must connect through networks to access resources and capabilities (Gulati, Nohria, & Zaheer, 2000). Accessed resources and capabilities can affect MSMEs' performance (Gulati, 1999; Hoffmann, 2007). MSMEs that have extensive networks find it easier to market their products. A more comprehensive network is expected to increase the MSMEs market share and sales. Farida & Nuryakin (2021) show that Network Capability positively affects MSMEs' performance. Based on the information presented above, the second hypothesis to be tested in this study is as follows:

H3: Network capability has a positive effect on MSMEs performance

2.4. *Network Capability, Knowledge Creation, and MSMEs Performance*

To improve performance, MSMEs must create new knowledge (Gassmann & Keupp, 2007; Zhou, 2007). The resource constraints inherent in MSMEs make them more likely to utilize networks for new knowledge (Lu & Beamish, 2006; Zacca & Selen, 2011). Network relationships between firms and their partners enable opportunities to acquire valuable information and create knowledge that facilitates performance, leading to new product development and the pursuit of new market opportunities (Acquaah, 2007; Dayan et al., 2013; Gronum, Verreynne, & Kastelle,

2012; Zacca et al., 2015). Researchers hypothesize that MSME's Network Capability strengthens Knowledge Creation, which impacts MSMEs' performance. The greater the Network Capability of MSMEs, the more knowledge can be created and, consequently, the higher the MSME's performance. In this way, research was conducted to determine whether Knowledge Creation can mediate which Network Capability affects MSME's performance. Therefore, this study proposes the fourth hypothesis as follows:

H4: Knowledge creation mediates the effect of network capability and MSMEs performance

Figure 1: Empirical Model
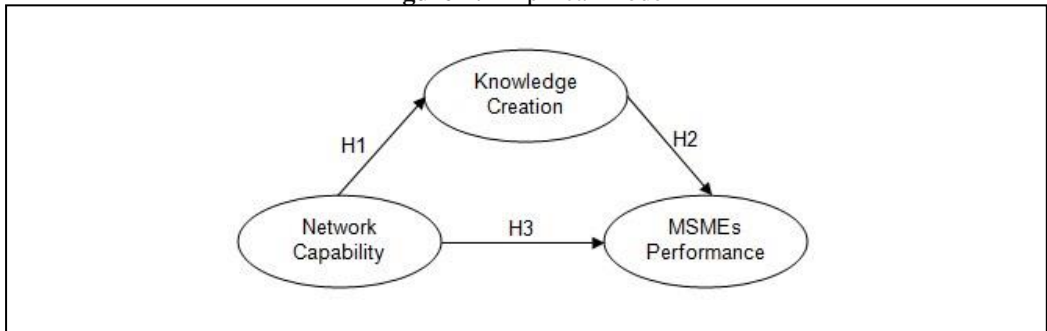
Source: Authors.

3. METHODOLOGY

3.1. *Research Approach*

The investigation was based on descriptive research techniques, which operate on the premise that the primary purpose of the most basic type of investigation is to observe (collect data about) a specific occurrence, often at a single moment in time, in the cross-sectional survey (Esitti & Kasap, 2019). This assumption allows descriptive research techniques to operate on the premise that the primary purpose of the most basic type of investigation is to observe (collect data about) specific events. This research employs a descriptive research strategy and uses survey measures to capture the objective and social realities of MSME businesses to answer the research hypotheses. It allows the study to answer the questions posed by the research. The first thing that needs to be done as part of this technique is to research the relevant literature review to identify the mentioned topics. An inquiry framework is designed after considering previous work done in the sector. After that, structural equation modelling was used with the survey to develop the anticipated links and verify them (SEM).

3.2. *Operational Definitions*

Table 1: Operational Definitions

No	Variables	Definitions	Indicators
1	Network Capability (NC)	Company's ability to initiate, develop, and utilize relationships	1. Coordination 2. Internal communication

		between internal and external organizations (Walter et al., 2006)	3. Partner knowledge 4. Relationship skills (Zacca et al., 2015)
2	Knowledge Creation (KC)	Providing process and strengthening knowledge created by individuals and crystallizing and connecting it to the organization's knowledge system (Nonaka, Von Krogh, & Voelpel, 2006)	1. Socialization 2. Combination 3. Internalization 4. Externalization (Dutta & Kumar, 2022; Jha & Cottam, 2021; Oktari, Latuamury, Idroes, Sofyan, & Munadi, 2022)
3	MSMEs performance (MP)	Results obtained by MSMEs financially and non-financially (Rita, Kristanto, Nugrahanti, & Usmanij, 2022)	1. Number of customers 2. Increase in profit 3. Sales turnover 4. Increased Return on Investment (ROI) (Kotane & Kuzmina-Merlino, 2012; Satiman, Abu Mansor, & Zulkifli, 2015)

Source: Literature Reviews.

3.3. Sample

The sample consisted of 240 participants from various MSMEs in Semarang City. The respondents in this study are MSME owners in Semarang City, Central Java, Indonesia. We used MSME owners as respondents by considering their position as representatives of top management, operational staff, and people with network capability, knowledge creation, and innovative MSME performance in work teams. The period from January 2022 to October 2022 was the data collection period. The number of questionnaires distributed was one thousand. Still, for subsequent analysis, only responses from respondents indicated that they used at least one variant of the form and provided answers to the questionnaire statements. The number of valid questionnaires submitted was 240. The researcher used Google Forms for the questionnaire creation and data collection process. Then, the data from Google Forms was stored in Google Drive. Data collection used Google Forms because face-to-face contact was not possible in the context in which the researcher conducted the study. The identity of the respondents was kept confidential, as each questionnaire and invitation to participate in the survey were sent without including any identifying information.

3.4. Questionnaire

Cross-sectional data is used to verify the validity of the theoretical model presented. The data were collected using methods based on a survey of the target population. The indicators have been evaluated on a Likert scale of five points in each category. Anchors on the scale vary from a Strongly Disagree (SD) mark of 1 to a Strongly Agree (SA) mark of 5, with 1 representing Strongly Disagree and five representing Strongly Agree. Since this method requires less time and effort, and by utilizing this scale, respondents can remain neutral by voting for the "neither agree nor disagree" option, this study used a 5-point Likert scale. Additionally, a five-point Likert scale was utilized in this study because previous studies have shown the benefits of using this method (Chatterjee, Chaudhuri, González, Kumar, & Singh, 2022; Dubey et al., 2019; Gupta, Justy, Kamboj, Kumar, & Kristoffersen, 2021).

3.5.   Data Analysis

The researcher used Smart PLS software to present the research results on knowledge creation as a mediator in the influence of network capability and MSMEs performance. We conducted data analysis using Structural Equation modelling (SEM) with Smart-PLS (Partial Least Square) software based on the conceptual framework of this study. The researcher developed a proper bootstrap estimation after determining the measurement parameters and structural model in the first stage. This study was conducted to evaluate the total and direct effects of the network capability and knowledge creation constructs and the indirect effects through mediators to understand the influence between the two variables.

4.   RESULTS AND DISCUSSION

Demographic details of the sample, including employee gender, age, education level, MSME income per year, and tax status are shown in Table 2. Most respondents in the sample are young workers (25-34 years old (46,67%), female (59,17%), Bachelor (54,17 %), micro MSME (80,00 %), and non-NPWP (91,67 %).

Table 2: Sample Characteristics

Sample Characteristics	N	Percentage
Age		
1 Less than 25	25	10.42
2 25-34	112	46.67
3 35-44	61	25.42
4 45-55	32	13.33
5 More than 55	10	4.17
Gender		
1 Male	98	40.83
2 Female	142	59.17
Education		
1 Senior high school	37	15.42
2 Third diploma	40	16.67
3 Fourth diploma	33	13.75
4 Bachelor	130	54.17
MSME revenue per year		
1 Micro (Rp 76.000.000)	192	80.00
2 Small (Rp 1.630.000.000)	45	18.75
3 Medium (Rp 29.700.000.000)	3	1.25
4 Enterprise (>Rp. 29.700.000.000)	2	0,83
Tax status		
1 Non-Taxpayer Identification Number	220	91.67
2 Taxpayer Identification Number	20	8.33

Source: The Processed Secondary Data (2023)

4.1.   The Validity Test

Table 3 displays the cross-loadings used to determine discriminant validity. If indicator loadings for the constructive structure of the measurement model are more significant than the indicator

loadings for the other constructs, then the measurement model will have suitable discriminant validity. The results show that the load of each beam is greater than the load of other beams in the same column and row. It clearly distinguishes each latent variable based on the data obtained and is shown in Table 3, which is just above this one. The findings of the cross-loading study provide evidence that the discriminant validity of the measurement model has been established.

Following the Fornell-Lacker criteria, evidence supporting discriminant validity can be seen in Table 4. The latent variable root value of AVE must have a value greater than the value of all correlations with latent variables to fulfil the Fornell-Lacker criteria. The researcher can conclude that discriminant validity has been met because the AVE root value on the diagonal is higher than all the values stated below for each variable. This conclusion can be reached because of the data that the researcher has collected. Table 5 presents the analysis results showing the Heterotrait-Monotrait comparison (HTMT) discriminant validity.

Table 3: Diskriminant Validity—Cross Loading

	KC	MP	NC
KC1	0.912	0.792	0.807
KC2	0.912	0.756	0.825
KC3	0.864	0.687	0.681
KC4	0.887	0.766	0.780
NC1	0.754	0.695	0.892
NC2	0.736	0.720	0.909
NC3	0.804	0.854	0.912
NC4	0.814	0.829	0.879
SP1	0.789	0.963	0.822
SP2	0.806	0.906	0.835
SP3	0.715	0.857	0.724
SP4	0.789	0.960	0.815

Source: The Processed Secondary Data (2023)

Table 4: Discriminant Validity—Cross Loading

	KC	MP	NC
KC	0.894		
MP	0.841	0.923	
NC	0.868	0.868	0.898

Source: The Processed Secondary Data (2023)

Table 5: Discriminant Validity: Heterotrait-Monotrait (HTMT)

	KC	MP	NC
KC			
MP	0.903		
NC	0.939	0.926	

Source: The Processed Secondary Data (2023)

All HTMT values greater than 0.9 indicate that the components differ sufficiently, which suggests that each element represents a unique set of phenomena (Hair, Risher, Sarstedt, & Ringle, 2019). It can be inferred from the values being more significant than 0.9. Based on the data collected and presented in the Table above, the researcher concluded that the conditions for discriminant validity according to HTMT have been met. This result was achieved after

considering all the information presented. Each derived number is more significant than 0.9 (Kock, 2015;Wong, 2013; Iqbal et al., 2021; Hair et al., 2019).

4.2. Structural Model

The last thing that needs to be done is to investigate the influence of the independent variable NC and the dependent variables KC and MP and the function of KC as a mediator between NC and MP. R^2 (R-squared), a statistical measure of the proportion of variance for the dependent variable explained by the independent variables, revealed that the value of "KC" was 78.2%. In comparison, the value of "NC" was 75.2%, and both values were explained by the independent variable "MP" in the model. R^2 is a statistical metric that indicates the fraction of variation in the dependent variable that can be attributed to the particular independent variable.

Information about model variables can be found in Table 6. This table includes the variable means, standard deviations, T-statistics, and p-values.

Table 6: Mean, Standard deviation, T-statistic, and p-value

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	*p* Values	Results
NC -> KC	0.868	0.868	0.013	67.495	0.000	Accepted
KC -> MP	0.356	0.356	0.057	6.297	0.000	Accepted
NC -> MP	0.558	0.559	0.053	10.506	0.000	Accepted
NC -> KC ->MP	0.309	0.309	0.048	6.408	0.000	Accepted

Source: The Processed Secondary Data (2023)

Based on the information presented in Table 6, the researcher can draw the following conclusions: There is a positive and significant influence between NC and KC (β = 0.868; T = 67.495; p = 0.000); there is a positive and significant influence between KC and MP (β = 0.356; T = 6.297; p = 0.000); and there is a positive and significant influence between NC and MP (β = 0.558; T = 10.506; p = 0.000). It was found that there is a positive mediating effect between NC and MP, as an indirect effect of KC on MP is significant (β = 0.309; T = 6.408; p = 0.000), and this is because the impact of Knowledge Creation on the effect of Network Capability on MSMEs performance is mediated by Knowledge Creation. It is because the direct effect of Network Capability on MSMEs' performance through Knowledge Creation is significant. The correlation between these variables is shown graphically in Figure 2.

Figure 2: Estimated Path Coefficients
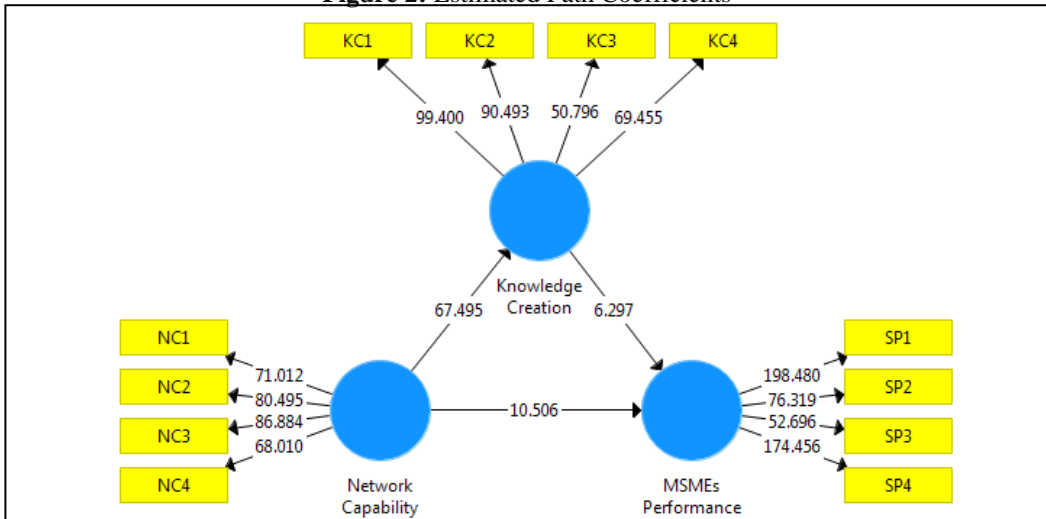
Source: The Processed Secondary Data (2023)

4.3.   *Discussion*

This study aims to identify predictors of MSME performance. The result confirmed that network capability has a positive and significant effect on knowledge creation. The result is in line with the previous studies like Zacca et al. (2015) that Network Creation positively affects MSME Knowledge Creation. Network Capability supports the development of MSME knowledge creation base. It is the mechanism to learn customer needs, anticipate market opportunities, and obtain best practices and timely and sophisticated input from suppliers (Walter et al., 2006). Network Capability is the company's ability to initiate, develop, and utilize relationships between internal and external organizations. Networks developed from strong relationships may be profitable for MSME (Walter et al., 2006). Strong correlation allows entrepreneurs and MSME to get market information and ideas for problem-solving, along with the ability to learn and gain moral and technical support (Messersmith &Wales, 2013). Capabilities that enable MSME to succeed in networks are essential factors in knowledge creation and value creation (Dayan et al., 2013). MSME and their agents are connected in social and professional relationships, forming an extensive network structure that includes complementary organizations and competitors, customers, suppliers, or research institutions (Rank, Rank, & Wald, 2006; Walter et al., 2006).

Network Capability value can be expressed as relational capital (Kale et al., 2000). Relational capital development only happens naturally. MSME must develop the capability to prosper in relational settings. MSME Network Capability development is an organization-wide dynamic process viewed as a higher-order resource (Tolstoy, 2009; Walter et al., 2006) consisting of 4 components: coordination, relationship skills, partner knowledge, and internal communication (Kale et al., 2000). Coordination between collaborating MSME facilitates mutually supportive interactions. Social competence or relationship skills are also components of Network Capability, as business relationships often involve interpersonal communication that requires adaptation to various social situations and appropriate responses to different social stimuli and information

(Dayan et al., 2013). Partners Knowledge enables situation-specific approaches to relationship building and effective coordination within the network. Internal communication or competence in collaborative communication within an MSME facilitates the assimilation and dissemination of up-to-date information about partners, thus linking external relationships internally to complement internal knowledge. Components of Network Capability are consistent and mutually reinforcing (Walter et al., 2006).

Knowledge creation has a positive and significant effect on MSME's performance. These results are in line with the studies conducted by Ali et al. (2010), Jayasingam et al. (2013), and Migdadi et al. (2017) concluded that knowledge creation has a positive effect on organizational performance. The finding is consistent with earlier studies by Sa and Chai (2020) that Knowledge Creation has a significant positive impact on MSME's performance. Knowledge creation is one of the essential things in implementing a knowledge management process to improve MSME performance. Knowledge creation can aim to develop new knowledge in the MSME, so knowledge creation can be one of the tools to improve MSME's performance. Knowledge creation becomes one of the essential things and has a positive impact on improving MSME's performance.

However, network capability creation positively and significantly affects MSMEs' performance. These results align with the studies conducted by Farida and Nuryakin (2021) that Network Capability positively affects MSME's performance. MSME must connect through networks to access resources and capabilities (Gulati et al., 2000). Accessed resources and capabilities can affect MSME's performance (Gulati, 1999; Hoffmann, 2007). MSME that have extensive networks find it easier to market their products. A more comprehensive network is expected to increase the MSME's market share and sales.

Similarly, there is knowledge creation as a mediator of the effect of network capability creation on MSMEs' performance. To improve performance, MSMEs must create new knowledge (Gassmann & Keupp, 2007; Zhou, 2007). Resource constraints inherent in MSMEs make them more likely to utilize networks for new knowledge (Lu & Beamish, 2006; Zacca & Selen, 2011). Network relationships between MSME and their partners enable opportunities to acquire valuable information and create knowledge that facilitates performance, leading to new product development and the pursuit of new market opportunities (Acquaah, 2007; Dayan et al., 2013; Gronum et al., 2012; Zacca et al., 2015). With greater Network Capability of MSMEs, more knowledge can be created, and consequently, higher MSME's performance. This way, research was conducted to determine whether Knowledge Creation can mediate where Network Capability affects MSMEs' performance.

5. CONCLUSION

Based on the study's results, the Network Capability variable directly influences Knowledge Creation and contributes to its success. In addition, Network Capability indirectly affects MSMEs' performance through Knowledge Creation. Knowledge Creation is a Mediator in the Correlation of Network Capability to MSMEs performance.

This research contains practical implications for implementing Knowledge Creation to improve MSMEs' performance. These implications can be found in the potential to develop MSMEs' performance. It is important because almost every MSME's performance in the modern era has recognized the most significant challenges. Using this research approach and data analysis, this study is one of the first in Indonesia to address the issues of Network Capability, Knowledge Creation, and MSMEs Performance. Therefore, the findings of this study have the potential to be a starting point for the development of MSMEs' performance and flexible work program actions, as well as their proper implementation.

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