

Creating Competitive Advantage for MSMEs through the Use of Information Technology Functions and Absorptive Capacity in MSMEs Priangan Timur - West Java

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Abstract. This study aims to find out how to create competitive advantage through the use of information technology and the ability to absorb knowledge in MSMEs in the East Priangan area, West Java. In this research, the researcher uses a sequential mixed method where qualitative research is carried out first and then followed by quantitative research. A total of 120 MSME entrepreneurs were selected as respondents purposively and 3 people were used as resource persons (expert judgment method). Linear regression was used to analyze quantitative data. The results of the research show that qualitatively information technology plays a very important role for the sustainability of the business of MSME entrepreneurs in East Priangan, West Java. The ability to absorb knowledge (absorptive capacity) of MSME entrepreneurs has been sufficient. The competitive advantage of the East Priangan MSME managers is sufficient. The results of quantitative research show that the competitive advantage function of MSMEs in East Priangan can be improved through information technology and Absorption Capability, both simultaneously and partially.

Keywords: Competitive advantage, absorptive capacity, information technology, MSME entrepreneurs.

1. Introduction

One of the efforts that must be achieved by MSME entrepreneurs is to achieve competitive advantage in facing current business challenges in the business world environment with very tight competition. One indicator of achieving competitive advantage for companies is that they earn above the income of their competitors [1]. Nevertheless, the acquisition of competitive advantage is not only measured by using income. One other way to create a competitive advantage is to use information technology to support daily operational activities in the MSME business.

Information technology plays a very important role for MSME entrepreneurs today due to the pandemic conditions that require them to focus more on selling their products online. In addition, by employing information technology connected to the Internet, sales can not only be carried out in the East Priangan regional area but can be carried out on a national and international scale. The role of information technology in the MSME business is not only limited to conducting online sales transactions, but can also support other operational activities, such as creating a database of products sold, existing customers, dynamic market conditions and financial management.

Besides mastering information technology, MSME entrepreneurs in East Priangan must also possess the ability to absorb high knowledge related to their type of business. Through this capability, entrepreneurs will be more sensitive to changes and current market demands for the products they sell. Furthermore, in this era where information has become a part of everyday life, mastery in absorbing and filtering knowledge will be very beneficial for entrepreneurs to develop their business.

Based on the considerations above, the present authors conducted research in the MSME entrepreneur environment in the East Priangan region regarding the role of information technology and the ability to absorb the knowledge of the MSME entrepreneurs in gaining competitive advantage in their business. That is why this research is entitled "Creating Competitive Advantage of MSMEs through Utilization of Information Technology Functions and Ability to Absorb Knowledge in MSMEs in East Priangan".

2. Method

Collins, E.et.al (2021) defines information technology as a system consisting of hardware, software, and related system components used by organizations to build a computer-based information system [2]. Information Technology is a combination of computers, networks, and software applications used to process data and distribute information [3]. Laudon & Laudon, (2012) provide an understanding of information technology as a shared technology resource that provides information functions for information system applications used by companies to process information and distribute information for decision making.

In relation to business operational work, the opinion says that facing these challenges, organizational members must be able to place the role of information technology which functions to integrate and automate business activities in providing data or information that is used by managerial in making decisions [4]. Furthermore, information technology can also play a role in increasing productivity, profitability, and the quality of operations or organizational performance [5]. Information technology is a very important factor in the field of governance and organizational structure for application development. In addition, information technology can improve competitive advantage and organizational performance. Furthermore, it is said that information technology can solve a problem, open creativity, increase effectiveness and efficiency in doing work. So it can be said because of the need for problem solving, opening up human creativity and efficiency in doing work, being the cause or reference for the creation of information technology.

According to Van den Bosch et. al. (2017) the ability to absorb knowledge is a method by which an organization processes new information and translates it for its own commercial purposes [6]. The importance of this ability is that the company will be able to identify, assimilate, change knowledge, and process information at the company level or at the individual level [7] which in turn can affect performance. Knowledge absorption is an exploratory, transformative and exploitative learning process in which exploratory learning includes a) recognition and assimilation; b) transformative learning consists of maintaining and activating knowledge, and c) exploitative learning is the application of new knowledge [8]. The ability to absorb knowledge for an enterprise organization is used to identify, assimilate, transform, and apply valuable external knowledge that will ultimately support business success. Modern information technology plays an important role in the development and maintenance of knowledge absorption for a company [9]. The ability to absorb knowledge has four dimensions, namely acquisition, assimilation, transformation and exploitation which are useful for innovating for the company [10].

In line to that, Porter (1985) as quoted by Marcy Martin (2021) states that competitive advantage is the value a company can create for their customers in excess of the costs for which the company creates the product [11]. He further said that competitive advantage is the core of the company's performance in a competitive market. Competitive advantage is the advantage or dominance of a particular party when the other party does not have what is owned by the party that dominates it. Domination can be in the form of things that are visible to the naked eye or can be observed directly, or things that cannot be observed directly. Another definition states that competitive advantage is the advantage achieved by a

particular organization when the organization can acquire or develop certain attributes that allow the company to show better performance than other organizations. This attribute can be in the form of access to natural resources or new technology that can ultimately make the organization superior compared to other organizations [12].

In conclusion, to create a competitive advantage, there are four business strategies that can be used. The four business strategies are differentiation strategy, cost leadership, differentiation focus strategy and cost focus [13]. The four business strategies can be described as follows:

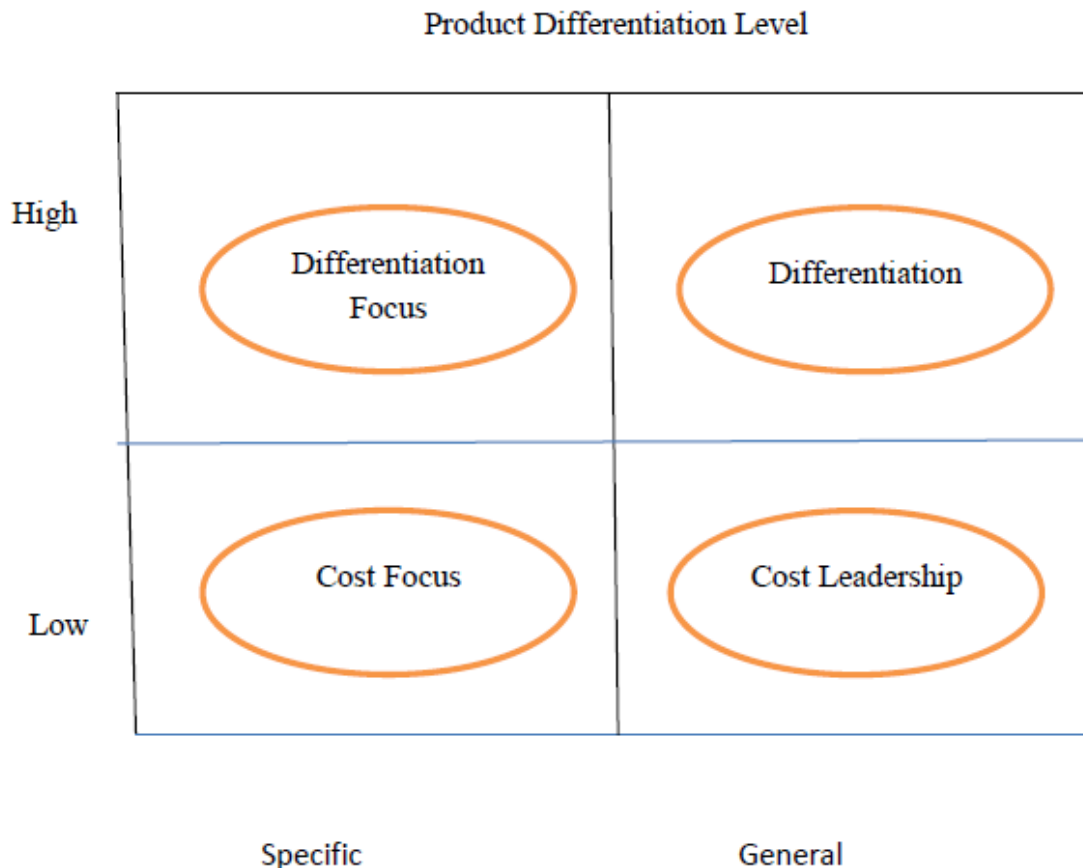


Figure 1. Four Business Strategies (modification from porter)

Two business strategies, namely differentiation strategy and cost leadership, seek competitive advantage in a wide range of markets or industry segments; while differentiation focus and cost focus are being adopted in a narrow market or industry. To make it clearer below, we will discuss these four business strategies one by one.

Differentiation Strategy: This strategy involves selecting one or more criteria used by buyers in a given market and then uniquely positioning the business to meet those criteria. This strategy is usually associated with charging a premium price for a particular product, reflecting the high production costs and extra value-added features provided to the customer. This differentiation relates to charging a premium price that can cover additional production costs and gives customers a clear reason to prefer the product over others, which do not have a difference.

Cost Leadership Strategy: This strategy aims to be the lowest cost producer in the industry. Almost all market segments in the industry emphasize minimal costs. If the selling price achieved is at least the same as or close to the average for the market, then the producer with the lowest cost in theory will enjoy the highest profit. This strategy is usually associated with large-scale businesses that offer standard

products with relatively very little differentiation but are acceptable to the majority of customers. Sometimes, leading businesses that adopt this strategy will discount their products to maximize sales, especially if this policy has a significant cost advantage over the competition and can increase market share at the same time.

Differentiation Focus Strategy: In this strategy, the business organization aims to make differentiation in only one or a small group of targeted market segments. Specific customer needs in a particular segment mean there will be opportunities to provide products that are clearly different from those of its business competitors who might target a larger customer group. An important issue for any business adopting this strategy is to ensure that customers really have different needs and wants, in other words there is a valid basis for differentiation, and competitors' products are not currently able to meet those needs.

Cost Focus Strategy: Businesses adopting this strategy seek lower cost advantages in a small group of specific market segments. The product is a basic product, the product can be similar to the product made by the company that has the largest market segment with a higher price but can be accepted by existing customers. The strategy to arrive at the goal, namely the creation of competitive advantage can be explained as follows:

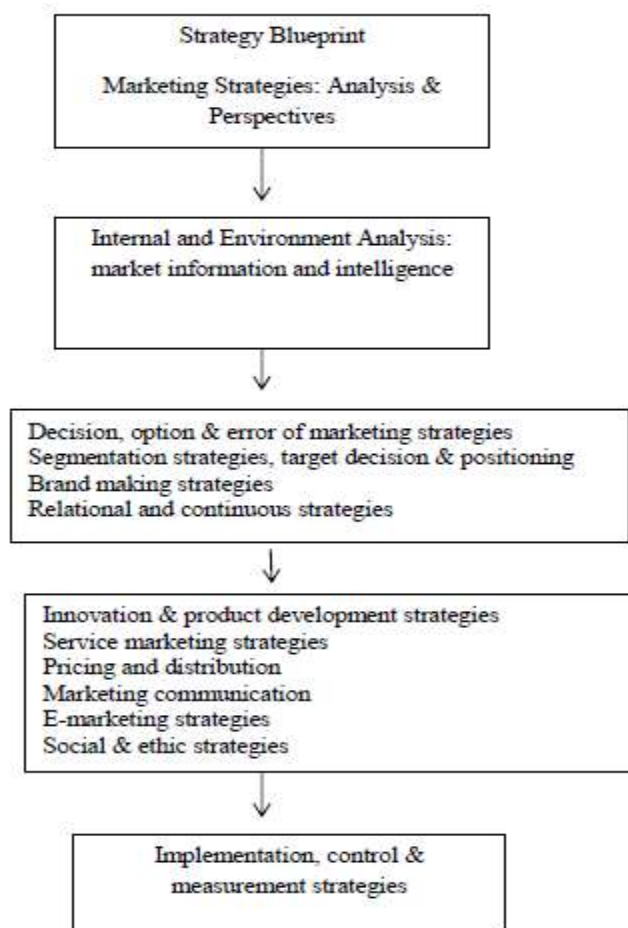


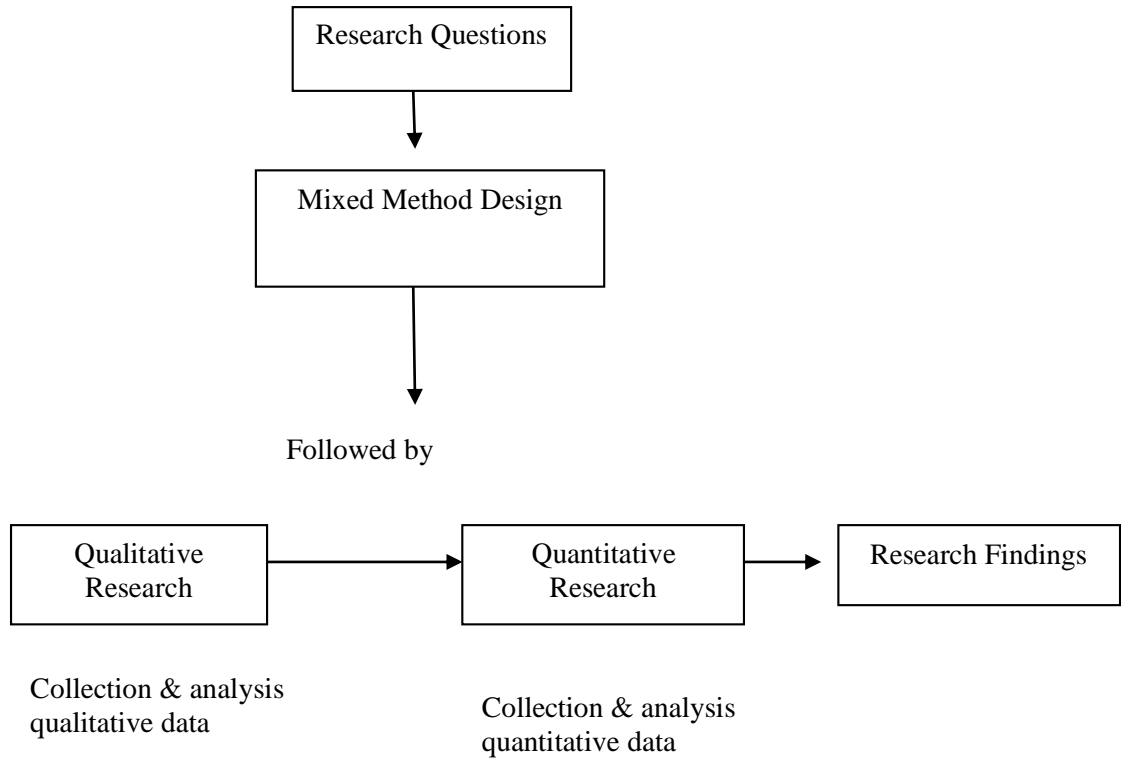
Figure 2. Implementation of Competitive Advantage Strategies
(Source: modification from West 2016)

The strategy to create a competitive advantage begins with the following steps:

- Create a blueprint for the strategy to be executed. Marketing strategy by doing analysis and perspective
 - Conducting environmental and internal analysis by seeking and obtaining market information and intelligence that will be used as input for formulating strategies
 - Make decisions, make choices and eliminate marketing strategy mistakes. In this process, the strategy is carried out in making market segmentation, determining the target market, placing the position, determining the strategy to create a brand, and making a relationship strategy and its sustainability.
 - The next step is to develop a product innovation and development strategy, a service marketing strategy, to determine pricing and distribution, to formulate marketing communications, to develop an e-marketing strategy, and to establish a social and ethical strategy.
- The final step is the implementation, control and measurement of strategy

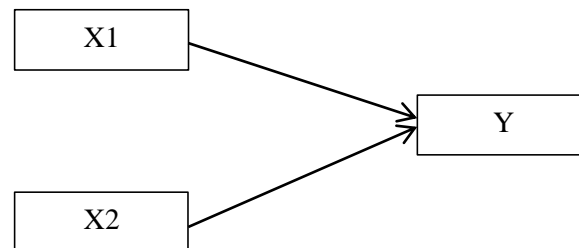
This study uses a mixed method of quantitative and qualitative sequential model where the quantitative approach is used as a sub-ordinate of the more dominant qualitative approach. This is done by conducting qualitative research first followed by quantitative research. Qualitative components are preferred and used to produce specific theories or theory constructs. While the quantitative component is used as a supporting tool to test the ideas generated from the qualitative component. Quantitative data helps in interpreting qualitative findings to: 1) examine aspects of theory that emerge suddenly when research is carried out; 2) generalize the qualitative findings into different samples; and 3) validate a certain set of survey items. This model was developed by Shrelene Hesse in 2010 [14].

This model can be described as follows



While the quantitative analysis procedure uses multiple linear regression in order to calculate the effect of information technology function and the ability to absorb knowledge on competitive advantage simultaneously and partially [15]. A total of 120 MSME managers were used as respondents who were selected purposively and three resource persons were selected by using an expert judgment method.

The relationship model between variables is as follows:



Where:

- X1: Information Technology Function
- X2: Knowledge Absorption Ability
- Y : Competitive Advantage

First hypothesis : The effect of the independent variable Information Technology and Knowledge Absorption Ability on the Competitive Advantage dependent variable

H0: Information technology and Knowledge Absorption Ability have no significant effect on competitive advantage

H1: Information technology and Knowledge Absorption Ability significantly affect competitive advantage

Second hypothesis: The influence of the independent variable Information Technology on the Competitive Advantage dependent variable

H0: Information technology does not significantly affect competitive advantage

H1: Information technology significantly influences competitive advantage

Third hypothesis: The influence of the independent variable Knowledge Absorption Ability on the Competitive Advantage dependent variable

H0: Knowledge Absorption Ability does not significantly affect competitive advantage

H1: Knowledge Absorption Ability significantly affects competitive advantage

3. Results and Discussion

3.1. Qualitative Research Findings

The Role of Information Technology Functions

The existence of information technology currently plays a very important role for business sustainability, especially during the current covid-19 pandemic. MSME entrepreneurs in East Priangan, West Java are quite aware of the important function of information technology, because there are also many MSMEs in the region that have international market segments. Furthermore, it is known that information technology has become one of the strengths for all MSMEs in the East Priangan area so that they can create competitive advantages in the East Priangan area. Changes that occur in the current 4.0 era have resulted in MSMEs having to be able to make changes to their business processes by changing services that were previously conventional to digital. In conclusion, the MSME managers in the East Priangan region must continue to work hard to continue to be able to compete nationally and even

internationally by increasingly maximizing the function of information technology they use to support their business.

Ability to Absorb Knowledge

From the results of qualitative research, it was found that the ability to absorb knowledge (absorptive capacity) of MSME entrepreneurs in East Priangan was sufficient. It has been proven that so far, MSMEs in this region have continued to grow. Business actors have been able to combine their knowledge with their understanding and experience that can be applied in various business activities. It is evident that currently SMEs in East Priangan continue to grow even though they are not yet maximized.

Competitive Advantage

From the results of qualitative research, it is also known that the competitive advantage of the East Priangan MSME managers is sufficient. This is evident because on average they have earned above the average of their competitors who run businesses in the same field as them. Even some of them have managed to outperform their competitors.

3.2. *Quantitative Research Findings*

Feasibility of Regression Model

In this research, the validity and reliability are in accordance with the provisions with the Pearson correlation coefficient above 0.3 for all questions and Cronbach's Alpha value > 0.7 . The data used in this research is normally distributed with a significance value of $0.085 > 0.05$ for the Information Technology variable; of $0.079 > 0.05$ for Knowledge Absorption Ability and $0.094 > 0.05$ for Competitive Advantage.

Coefficient of Determination

Coefficient of Determination or R² Value : The effect of the independent variable Information Technology and Knowledge Absorption Ability on the dependent variable Competitive Advantage.

The value of R² for the relationship between the Information Technology and Knowledge Absorption Ability variable and the Competitive Advantage variable is 0.88 or 88% which means 88% of the Competitive Advantage variability can be explained by using the Information Technology and Knowledge Absorption Ability variable or in other words the magnitude of the effect of the variables of Information Technology and Knowledge Absorption Ability to Competitive Advantage are as much as 88% and the remaining 22% is influenced by other factors outside the model in this research.

Hypothesis test

First hypothesis: The effect of the independent variable of Information Technology and Knowledge Absorption Ability on the Competitive Advantage dependent variable

H₀: Information Technology and Knowledge Absorption Ability do not significantly affect Competitive Advantage

H₁: Information Technology and Knowledge Absorption Ability significantly affect Competitive Advantage

Hypothesis Testing Criteria

If the significance value < 0.05 ; H₀ is rejected and H₁ is accepted

If the significance value > 0.05 ; H₀ is accepted and H₁ is rejected

Decision-making

Based on the calculation results obtained a significance value of $0.013 < 0.05$; then H₀ is rejected and H₁ is accepted. This means that Information Technology and Knowledge Absorption Capability significantly affect Competitive Advantage. Thus the linear regression model made is correct.

Second hypothesis: The influence of the independent variable of Information Technology on the Competitive Advantage dependent variable

H0: Information Technology does not significantly affect Competitive Advantage

H1: Information Technology significantly influences Competitive Advantage

Based on the calculation results obtained a significance value of $0.03 < 0.05$; then H0 is rejected and H1 is accepted. This means that Information Technology has a significant effect on Competitive Advantage and the magnitude of the effect is 0.84, which means that the value of the Competitive Advantage variable increases when the value of Information Technology increases by one unit.

Third hypothesis: The influence of the independent variable of Knowledge Absorption Ability on the Competitive Advantage dependent variable

H0: Knowledge Absorption Ability does not significantly affect Competitive Advantage

H1: Knowledge Absorption Ability significantly affects Competitive Advantage

Based on the calculation results obtained a significance value of $0.01 < 0.05$; then H0 is rejected and H1 is accepted. This means that Knowledge Absorption Ability has a significant effect on Competitive Advantage and the magnitude of the effect is 0.68, which means that the value of the Competitive Advantage variable increases by one unit.

3.3. Discussion

Based on the results of qualitative and quantitative research, it is known that the use of information technology is good among MSME entrepreneurs in the East Priangan area. It is also proven that quantitatively information technology has a positive and significant effect on competitive advantage. Associated with the ability to absorb knowledge, the mastery of MSMEs in the East Priangan region have also practiced well. It is also proven quantitatively that the ability to absorb knowledge has a positive and significant impact on competitive advantage.

Furthermore, quantitatively it was found that simultaneously information technology and the ability to absorb knowledge have a positive and significant impact on competitive advantage. This finding strengthens the findings from qualitative research where the role of information technology in supporting MSME businesses is in the positive category and the ability to absorb knowledge among MSME entrepreneurs in the East Priangan region has also reached a sufficient category. Thus, the results of quantitative and qualitative research can be concluded in the following table.

| | Qualitative Research Results | Quantitative Research Results | Information |
|------------------------------------|------------------------------|--|--|
| The role of information technology | Good category | Significantly affect competitive advantage | Quantitative research results support qualitative research results |
| Ability to absorb knowledge | Good category | Significantly affect competitive advantage | Quantitative research results support qualitative research results |

Table 3.1. Qualitative and Quantitative Research Results

Thus the research findings are in accordance with the theory put forward by Laudon & Laudon, (2012) which defines information technology as a shared technology resource that provides information functions for information system applications used by companies to process information and distribute it for use as a means of business decision making to improve company performance [16]. The research results are also in accordance with what was stated by Zahra & George which said that the ability to absorb knowledge has four dimensions, namely 1) acquisition, 2) assimilation, 3) transformation and 4) exploitation which can be identified in the form of dynamic capabilities. Company to gain and/or maintain a competitive advantage in business [17].

4. Conclusion

Based on the discussion above, the writer concludes as follows: First, information technology plays a very important role for the business sustainability of MSME entrepreneurs in East Priangan, West Java. Second, the ability to absorb knowledge (absorptive capacity) of MSME entrepreneurs in East Priangan, the ability to absorb knowledge has gone well. Third, the competitive advantage of the East Priangan MSME managers has been well achieved. Fourth, information technology and knowledge absorption capability simultaneously have a positive and significant impact on Competitive Advantage. Fifth, information technology has a positive and significant impact on competitive advantage. Sixth, knowledge absorption ability has a positive and significant effect on competitive advantage.

References

- [1] Besanko et.al. Economics of Strategy. 7th Ed. NewYork : John Wiley & Sons; 2017
- [2] Collins, E.et.al. Artificial intelligence in information systems research: A systematic literature review and research agenda; International Journal of Information Management; Vol 16, October 2021
- [3] Benbya, H., Pachidi, S., & Jarvenpaa, S. (2021). Special issue editorial: Artificial intelligence in organizations: Implications for information systems research. *Journal of the Association for Information Systems*, 22(2), 10.
- [4] Zavdaskas, E.K. et.al. Multiple Criteria Decision Making Techniques for Business Process Information Management; Journal of Information; Volume 10; 2018
- [5] Chege, S. M., Wang, D., & Suntu, S. L. (2020). Impact of information technology innovation on firm performance in Kenya. *Information Technology for Development*, 26(2), 316-345.
- [6] Mom, T. J., Van Den Bosch, F. A., & Volberda, H. W. (2009). Understanding variation in managers' ambidexterity: Investigating direct and interaction effects of formal structural and personal coordination mechanisms. *Organization Science*, 20(4), 812-828.
- [7] Mokhlis, C. E., Soudi, N., Lahmini, H. M., & Elmortada, A. (2020). A critical analysis of absorptive capacity research. *Periodicals of Engineering and Natural Sciences*, 8(3), 1847-1859.
- [8] Moura, D. C., Madeira, M. J., Duarte, F. A., Carvalho, J., & Kahilana, O. (2018). Absorptive capacity and cooperation evidence in innovation from public policies for innovation. *International Journal of Innovation Science*.
- [9] House, R. J. (1996). Path-goal theory of leadership: Lessons, legacy, and a reformulated theory. *The leadership quarterly*, 7(3), 323-352.
- [10] Awamleh, F., & Ertugan, A. (2021). The relationship between information technology capabilities, organizational intelligence, and competitive advantage. *SAGE Open*, 11(2), 21582440211015201.
- [11] Marcy, Martin. How Porter's Five Forces can Help Small Business Analyze the Competition; Business News Daily; 2021
- [12] West, D. C., Ford, J. B., & Ibrahim, E. (2015). *Strategic marketing: creating competitive advantage*. Oxford University Press, USA.
- [13] Islami, X., Mustafa, N., & Topuzovska Latkovikj, M. (2020). Linking Porter's generic strategies to firm performance. *Future Business Journal*, 6(1), 1-15.

- [14] Dwyer, A. A., Hesse- Biber, S., Shea, H., Zeng, Z., & Yi, S. (2022). Coping response and family communication of cancer risk in men harboring a BRCA mutation: A mixed methods study. *Psycho- Oncology*, 31(3), 486-495.
- [15] Narimawati, Umi. Sarwono, Jonathan, Munandar, D., Winanti, M.B. Research Method: Analysis Variety Implementation. Yogyakarta: Andi Offset; 2020
- [16] Laudon, K. C., & Laudon, J. P. (2012). Management Information Systems Managing the Digital Firm Twelfth edition. by Pearson Education. Inc., *Upper Saddle River, New Jersey*, 7458.
- [17] Marrucci, L., Iannone, F., Daddi, T., & Iraldo, F. (2022). Antecedents of absorptive capacity in the development of circular economy business models of small and medium enterprises. *Business Strategy and the Environment*, 31(1), 532-544.