Innovation Capability and Supply Chain Integration in MSMEs Performance

Dita Sari Lutfiani
Universitas Islam Indonesia, Indonesia

Sofyan Ashari Nur
Universitas Islam Indonesia, Indonesia

Abstract:
The key to the success of the company in this dynamic era is innovation capability and absorptive capacity. There is a paucity of research that links these two things with supply chain integration, especially for MSMEs. This study aims to analyze the relationship between innovation capability, absorptive capacity and supply chain integration in improving the performance of MSMEs in the creative industry of Yogyakarta Indonesia. The empirical test, which used a sample of 135 managers of the creative industry MSMEs in Yogyakarta supports most of the hypotheses in the study. The study conducted structural equation modeling to test the proposed relationship. The results demonstrate that innovation capability has a significant influence on supply chain integration and the performance of MSMEs. And supply chain integration has significant role on performance of MSMEs. The results of this study are expected to be able to contribute to SME managers both owners and the government in improving the performance of creative industry MSMEs in Yogyakarta.

1. Introduction
Creative Economy is one of the sectors that is expected to be able to become a new power of the national economy in the future, along with the condition of natural resources that are increasingly degraded each year. Indonesian creative economy statistical data in 2016 states that from 2010 to 2015, the magnitude of the Gross Domestic Product (GDP) of the creative economy has increased by an average of 10.14% annually, from Rp. 525.96 trillion to Rp. 852.24 trillion. This value contributes to the national economy of 7.38% to 7.66% which is dominated by three subsectors including: Culinary 4%, fashion 18.15% and craft 15.70% (Bekraf, & BPS, 2017).

From the several creative economy industries in Indonesia, the main support for its growth is from MMSMEs (Bekraf & BPS, 2017). MMSMEs together with the community can grow the economy in the country, in accordance with the objectives of MMSME in Article 3 of the Constitution no. 20 of 2008 which states that "Micro, Small and Medium Enterprises aim to grow and develop their businesses in the context of building a national economy based on a just economic democracy". MMSMEs also have the right empowerment goals as stipulated in article 5 law no. 20 of 2008 namely "realizing the structure of the national economy that is balanced, developed, and fair; grow and develop the capability of Micro, Small and Medium Enterprises into a tough and independent business; and increasing the role of Micro, Small and Medium Enterprises in regional development, job creation, income distribution, economic growth, and alleviating people from poverty ".

One of the centers of MMSMEs engaged in the creative economy industry is the pottery industry in Kasongan, Bantul, Yogyakarta. Kasongan is indeed famous for its pottery products for a long time. About 95% of the population of Kasongan profession as pottery artisans. Under these conditions, improving the performance of MMSMEs in Kasongan can increase the welfare of the Kasongan community. However, in this dynamic era, competition is becoming more complex, especially from online sales, prices that are inferior to competitors because of a lack of integration with suppliers is also an obstacle in improving the performance of MMSMEs in Kasongan, Bantul.

Rapid technological advances and high levels of competition require companies to continuously innovate products that will ultimately improve company performance. Performance is the main key to survive in the global era. Many factors determine a company’s performance, one of which is innovation. Rapid technological progress and high levels of competition demand continuous innovation, which in turn will improve business performance. Product innovation is one of the effects of rapid technological change and high product variation will determine organizational performance (Gebrekidan, Awuah, & Iddris, 2014).

Businesses are expected to be able to change their profit-oriented life culture into customer-oriented so that long-term profitable cooperation is formed. Although businesses have grown, they still need support from various parties, so that they have a major contribution to economic development. The problem faced at this time is the weak ability of human resources, especially creativity and capability of innovation, so that the impact on the weak competitive advantage and performance of their businesses (Desbarats, 1999).

Innovative organizations have the ability to improve individual and organizational performance, increase competitive advantage (Lii & Kuo, 2016). In addition to improving the performance of innovation companies can also...
improve supply chain management in the company, specifically related to integration in the supply chain. Khalfan and Demott (2016) state that innovation can improve supply chain integration. This was also supported by Lii & Kuo, (2016) and Seo, Dinwoodie, & Kwak (2014).

In addition to innovation, in this modern era information is an important factor in running a business. Therefore the company must have the ability to absorb good information or called absorptive capacity. Absorptive capacity is the company’s ability to gather information from outside which can then be used for the benefit of the company’s innovation development. Dobrzykowski (2015) examines how absorptive capacity mediates the relationship between responsive strategy and company performance, then results in that absorptive capacity is able to moderate and significantly influence company performance.

Likewise, with Tavani (2013) also states that absorptive capacity as measured by aspects of knowledge of workers and managers as well as networks and communication climate can provide a significant influence on company performance. Different from previous researchers Li and Zhang (2016) stated that in addition to influencing company performance, absorptive capacity also had a significant influence on the company’s supply chain which was an important factor in the company’s sustainability.

In some literature, it is mentioned that supply chain management is an important factor in a company. But an interesting and more needed issue in this dynamic era is how companies are able to create supply chain integrity. Supply chain integration is a practice that is implemented by companies in building strategic collaboration within and outside the ownership and range of control of the company (Ali, Zhan, & Nature, 2017). Flynn (2010) explained that supply chain integration has three elements, namely integration between suppliers, consumers and internal company. In his research Flynn stated that supply chain integration can improve company performance.

Therefore this study aims to analyze how the relationship between innovation ability, absorptive capacity on the performance of Kasongan MSME in Bantul and how supply chain integrity can moderate the relationship between innovation ability, absorptive capacity on the performance of Kasongan MSME in Bantul.

2. Literature Review

2.1. Innovation Capability and Supply Chain Integration

Innovation is the creation of new combinations, which can be “new products, new technologies for existing applications, new technology applications, the development or opening of new markets, or the introduction of new organizational forms or strategies to improve results (Ferrer 2011) while Liao and Lii (2018) defines innovation capability as the ability not only to identify and create new value but to assimilate initiatives back into existing processes and operations. In this study, we argue that the ability of innovation refers to the ability of companies to efficiently and effectively launch new products in response to changes in the business environment.

Iddris (2014) analyzes innovation capability using the dimensions of cloud computing, trust and open innovation. The research seeks a relationship between innovation capability and supply chain agility that has an integrated dimension, and results in the development and interaction of trust with cloud computing and open innovation which is very important in the process of developing innovation capabilities. The process of developing innovation capabilities with cloud computing, trust, and open innovation will affect the agility of the company, which leads to the company’s competitiveness.

The importance of innovation is also supported by Desbarats (1999) who conducts qualitative research and produces that to survive and achieve high margins, producers need more than just innovation, they need good innovation. Internal and external commercial relationships along the supply chain of innovation need to be carried out based on commercial partnerships, with the same emphasis on short-term and long-term goals. Then Idris (2016) re-analyzes the relationship between innovation and supply chain and finds that the dimensions of innovation capability are embedded in the company’s supply chain, the focus company will be in a better position to respond quickly to the needs and desires of customers currently in the market by innovating.

Whereas Khalfan (2016) states in more detail that innovation can create integration in supply chain management, this research offers transferable learning opportunities and motivation for other construction company staff who want to promote integration in their supply chains through innovative procurement routes. Different from several other studies Liao (2018) states that innovation can be created from good competence in supply chain management. Liao emphasized that organizations must consider joint efforts to develop internal collaboration, supply network flexibility, and supplier operational capabilities as a package to create innovation capabilities.

More broadly Lii (2016) found that innovation can have an influence on supply chain integration and supply chain integration on the company’s competitive ability and performance. Lii emphasized that the orientation of innovation affects the integration of supply chains and company performance. Drawing from previous studies of resource dependency theory, this study shows how innovation orientation helps companies in integrating their supply chains and realizing the potential of supply chain management mechanisms.

Lii’s statement was supported by Dinwoodie (2014) who also supported the role of innovation in supply chain integration (SCI) and stated that innovation in the supply chain had a positive impact on SCI and SCP. However, the direct impact of innovation on SCP disappears when the model informs SCI as a mediator. Specifically, internal and supplier integration fully mediates the innovation-SCP relationship, whereas customer integration has no intermediary role in the relationship. The findings show that innovation can affect SCP only when the SCI level of the manufacturer is sufficiently effective in developing the required supply chain practices.
Innovation capability is the company’s ability to continue to innovate and adapt to market conditions. This capability is very important for companies in this dynamic era. Some literature states that by having innovation capability, companies will be able to improve supply chain management, especially in supply chain integration.

The relationship between innovation and supply chain integration, supported by several literatures namely Iddris (2014), Ferrer (2011), Ayoub (2017), Desbarats (1999), Iddris (2016), Khalfan (2006), Liao (2018), Li (201) 2016), Dinwoodie (2014) and Yunus (2018) who stated that the ability of innovation can increase supply chain integration, both directly and jointly with other variables. Therefore this study proposes the following hypothesis:

H1: Innovation capability has significant effect to supply chain integration

2.2. Supply Chain Integration and Firm Performance

Integration is needed in managing the supply chain. Supply chain integration is a practice that is implemented by companies in building strategic collaboration within and outside the ownership and range of control of the company (Ali, Zhan, & Nature, 2017). Supply Chain Integration can also be defined as integrated control of a number of consecutive or similar economic or industrial processes that were previously carried out independently (Flynn, Huo, & Zhao, 2010).

According to the Big Indonesian Dictionary, integration is integration to become a unified whole or round. So it can be interpreted that supply chain integration is a collaborative process between the parties involved in the supply chain in order to create a unified whole and add value to the company.

Flynn (2010) explained that supply chain integration has three dimensions, namely integration between suppliers, consumers and company internal. In his research Flynn stated that supply chain integration can improve company performance. Likewise, Ali (2016) also described supply chain integration with these three indicators and also supported the results of Flynn’s research, only that Ali provided a mediating variable, namely halal food supply chain integration and proved to be able to mediate between supply chain integration and company performance.

Supply chain integration is one of the dimensions in several variables related to supply chain. Rojo, Llorens, Montes, and Niev (2016) put supply chain flexibility as a moderating variable between ambidexterity and company performance. The research measures supply chain with one of the indicators is the integration of company information which is also an indicator of supply chain integration.

Another study by Tuan (2016) also examined the effect of ambition on the supply chain and placed competitive intelligence (CI) as a moderating variable between the two and then resulted that organizational ambidexterity through sharing external knowledge can increase supply chain agility.

The role of moderation that CI plays in the relationship between organizational ambiguity and supply chain agility is also verified. Findings from the research broaden the supply chain literature through establishing a positive effect of organizational ambiguity on supply chain agility with CI as the moderator for this effect. The research also provides a definition of agility in the supply chain as the ability to integrate resources and the environment to create competitive advantage. So it can be seen that supply chain integration is also part of the supply chain agility.

In addition Bravo and Isabel (2018) stated that ambidexterity moderates the relationship between absorptive capability and supply chain management which is also measured by the ability to integrate supply chain management. Wan Omar (2017), Kumar and Kushwaha (2018), Ali, Zhan and Alam (2017), Tan, Ali, Makhbul Ismai (2017), Adura, Yusoff, Nerina and Yusof (2015) stated that supply chain has an important role in company development. Flynn (2010) emphasized the importance of supply chain integration and was agreed by Ali (2017). The importance of supply chain integration for company growth encourages companies to improve aspects of the company that can improve supply chain integration.

Flynn (2017) measures supply chain integration with 3 indicators, namely supplier integration, consumer integration and company internal integration. The case of MMSMEs especially those in traditional markets is very suitable with some of the studies, that important aspects that must be improved for MMSMEs are finance and marketing so the following hypotheses are proposed

H2: Supply chain integration has significant effect to firm performance

2.3. Innovation Capability and Firm Performance

Yunus (2018) adds that collaboration with suppliers brings radical innovation, while collaboration with customers brings additional innovation. Contrary to the allegations of this study, although interesting, collaboration with customers has a negative impact on radical innovation. Both radical innovation and subsequent additions have a positive influence on company performance.

In addition to influencing the supply chain, innovation also has a direct influence on company performance. Ibrahim (2014) describes the ability of innovation in 4 dimensions, namely product innovation, market innovation, strategy innovation, process innovation and environmental innovation. Ibrahim (2014) emphasized that it can provide a positive influence on the ability of organizational innovation. More broadly Lim (2017) found that Innovation Commercialization Capability can directly influence company performance and can also be moderated by supply chain, the moderating role of supply chain integration influence in proactive market orientation (PMO) and firm performance (FP) is stronger when SCI high, and innovation commercialization ability (ICC) and firm performance relationships are stronger when SCI is low.

The influence of innovation capability on company performance is also supported by Saunila (2014) which states that three aspects of innovation capability, namely ideation and organizational structure, participatory leadership culture, and skills development, have several effects on various aspects of company performance. Surprisingly, aspects of the
ability of innovation were found to be more influential on financial performance than operational performance. Taherparvar (2014) added that knowledge from customers has a positive impact on the speed of innovation and the quality of innovation as well as operational and financial performance. In addition, our results show different influences of customer knowledge and knowledge for customers on various dimensions of innovation and company performance. By using the flow of customer knowledge, companies will realize the external environment and new changes in customer needs so that they will be more innovative and perform better.

Wang (2017) looked at innovation from a different perspective namely ambidextrous innovation and analyzed its relationship with company performance then found that empirical results fully supported the hypothesis that ambidextrous innovation and market orientation capabilities could significantly improve company performance. These results imply the benefits of ambidextrous innovation and the ability of market orientation to coexist in the spread of service innovation.

Zou (2017) conducted a different analysis of what factors influenced innovation capability and also analyzed how it relates to company performance, then it was found that the company’s past performance was positively related to the ability of incremental innovation. The ability of incremental innovation and organizational aspirations is positively related to the ability of radical innovation. Both incremental and radical innovation significantly produce superior performance.

H3: Innovation capability has significant effect to firm performance

3. Research Method

3.1. Population and Sample

The population used in this study is the MSMEs in the Kasongan earthenware industry, Bantul Yogyakarta. The population is 537 (five hundred thirty seven business units). The sampling technique used to determine the number of respondents who will be the source of data collection in this study is the Proportionate Stratified Random Sampling (Sekaran and Bougie, 2013).

Based on the population of the number of pottery craftsmen in Kasongan, Bantul, Yogyakarta in 2017, the researchers divided the sample based on levels / strata into 3 (three) categories, namely the number of micro businesses 59 businesses, the number of small businesses 40 businesses and the number of medium businesses 36 businesses. So the sample in this study was 135.

The data used in this study are primary data. Primary data were obtained from the distribution of questionnaires given to the owners / management of 135 MMSMEs in the Kasongan earthenware industry, Bantul, Yogyakarta.

3.2. Analysis Method

The data analysis technique used in this study is the Structural Equation Model (SEM) method. SEM is an analytical technique that allows complex and complex relationships simultaneously. In simple terms, SEM provides an adequate and most efficient estimation technique for a series of multiple regression equations and is separate and estimated simultaneously (Hair, Black, Babin & Anderson, 2010). The software used in data analysis is SmartPLS.

4. Analysis and Discussion

4.1. Outer Model

4.1.1. Convergent Validity

The measurement model shows how the manifest or observed variable represents the latent variable to be measured. Convergent validity is measured using the outer loading parameter and AVE (Average Variance Extracted). Individual reflexive measures are said to correlate if the value is more than 0.7 with the construct to be measured (Ghozali and Latan, 2015). From the results of the analysis of the measurement model above, it is known that there are several
manifest variables whose factor loading values <0.70, so to fulfill the rule of thumb, the manifest variable whose value <0.70 must be dropped from the model.

From the results of the analysis with PLS factor loading values all manifest variables > 0.70 except the manifest variables SCI 1, SCI 2, SCI 8, SCI 9 then KP1 and KP5. Therefore, the manifest variable must be removed from the model so that it does not affect the results of bootstrapping.

| Latent Variables            | Item Code | Loading Factor |
|-----------------------------|-----------|----------------|
| Innovation Capability       | IC 1      | 0.752          |
|                             | IC 2      | 0.793          |
|                             | IC 3      | 0.786          |
|                             | IC 4      | 0.719          |
| Supply Chain Integration    | SCI 3     | 0.734          |
|                             | SCI 4     | 0.824          |
|                             | SCI 5     | 0.871          |
|                             | SCI 6     | 0.709          |
|                             | SCI 7     | 0.811          |
| Kinerja Perusahaan          | KP2       | 0.750          |
|                             | KP3       | 0.848          |
|                             | KP4       | 0.809          |

Table 1: Summary of Loading Factor Values
Source: Data Processed, 2019

The table above shows the factor loading values of all the manifest variables tested. From this table it can be seen that all loading factor values > 0.70, so that all manifest variables meet the rules of the measurement model and can be continued for further testing.

4.1.2. Discriminant Validity

Discriminant Validity is used to test the validity of a model. Discriminant Validity is seen through the cross loading value which shows the magnitude of the correlation between constructs with their indicators and indicators of other constructs. The standard value used for cross loading must be greater than 7 or by comparing the square root of average variance extracted (AVE) values of each construct with the correlation between constructs and other constructs in the model. If the AVE root value of each construct is greater than the correlation value between constructs and other constructs in the model, then it is said to have a good discriminant validity value.

Based on the table above, the cross loading value for each item has a value greater than the square root of average variance extracted (AVE), and the greatest value when associated with its latent variable compared to when it is associated with other latent variables. This shows that each manifest variable in this study has precisely explained its latent variables and proved that discriminant validity of all items is valid.

4.1.3. Composite Reliability

Reliability tests are carried out to prove the accuracy, consistency, and accuracy of the instrument in measuring a construct. In PLS - SEM by using SmartPLS, to measure the reliability of a construct can be done in two ways, namely with Cronbach’s Alpha and Composite reliability. However, the use of Cronbach’s App to test the reliability of a construct will give a lower value (under estimate) so it is advisable to use Composite Reliability.
From the table above it can be seen that the value of all variables in reliability testing using either Cronbach’s Alpha or Composite Reliability values > 0.70, and validity testing using AVE (Average Variance Extracted) values > 0.50. Therefore, it can be concluded that the variables tested are valid and also reliable, so it can be continued to test the structural model.

4.2. Inner Model

Evaluation of structural models or inner models aims to predict relationships between latent variables. The structural model is evaluated by looking at the percentage variance described by looking at the R-Square value for endogenous latent constructs, and AVE for predictivity by using resampling procedures such as jackknifing and bootstrapping to obtain stability from estimation.

4.2.1. R-Square (R²)

| Variable | R Square | R Square Adjusted |
|----------|----------|-------------------|
| SCI      | 0.435    | 0.407             |
| KP       | 0.340    | 0.325             |

Based on the table above it can be seen that the influence of innovation capability model on supply chain integration gives a value of 0.455, which can be interpreted that the variability of supply chain integration constructs that can be explained by the constructability variability of innovation capability is 44.5% while the rest is explained by other variables outside this study. Likewise with the innovation capability model of company performance giving a value of 0.340, which can be interpreted that the constructability variability of company performance that can be explained by the constructability variability of innovation capability is 34.0%, while the rest is explained by variables outside this study.

4.2.2. Hypothesis Test

To find out the influence between variables, the bootstrapping method is performed. The bootstrap approach represents nonparametric for the precision of the estimate. In the PLS method, the decision to accept or reject a hypothesis is based on the significance value (P Value), and the T-table value. In the SmartPLS application, the significance value can be determined by looking at the value of the parameter coefficient and the statistical significance value t. Criteria for acceptance or rejection of the hypothesis is if the significance value of t - value > 1.96 and or the value of p - value <0.05 at the significance level of 5% (α 5%) then Hₐ is accepted and H₀ is rejected, conversely if the value of t - value <1.96 and or value p - value > 0.05 at the significance level of 5% (α 5%) then Hₐ is rejected and H₀ is accepted.
Based on the table above, it can be seen that the innovation capability construct has a significant positive effect \((O = 0.553)\) with the supply chain integration construct. The \(t\)-statistic value in this construct relationship is 8.072 > 1.96, and the \(p\)-value is 0.000 < 0.05. Therefore, the first hypothesis stating that innovation capability has a positive influence on supply chain integration is proven.

The exogenous construct of innovation capability has a significant positive effect \((O = 0.570)\) on the endogenous construct of company performance. This is based on the \(t\)-statistic value in this construct relationship is 9.088 > 1.96, and the \(p\)-value is 0.000 < 0.05. Therefore, the second hypothesis stating that innovation capability has a positive influence on firm performance is proven.

The exogenous construct of supply chain integration has a significant positive effect \((O = 0.511)\) on the endogenous construct of firm performance. This is based on the \(t\)-statistic value in this construct relationship is 8.072 > 1.96, and the \(p\)-value is 0.000 < 0.05. Therefore, the third hypothesis which states that supply chain integration has a positive influence on firm performance is proven.

5. Discussion

The exogenous construct of innovation capability has a significant positive effect \((O = 0.553)\) with the supply chain integration construct. The \(t\)-statistic value in this construct relationship is 8.162 > 1.96, and the \(p\)-value is 0.000 < 0.05. Therefore, the first hypothesis stating that innovation capability has a positive influence on supply chain integration is proven true.

The results of this study are consistent with Ayoub’s previous studies (2017), which found that innovation capability has a positive and significant relationship to supply chain integration. While Iddris (2016), also confirmed that supply chain integration can be positively influenced by innovation capability. This is consistent with research conducted by Yunus (2018), which states that there is a positive relationship between innovation capability and supply chain integration. This shows that companies that have a lot of innovation capability will be able to increase supply chain integration.

Meanwhile, if seen from the cross loading value of the relationship between innovation capability and supply chain integration, there is one questionnaire with the highest value, IC4 = 0.591, and one questionnaire has the lowest value, IC3 = 0.477. This indicates that the lowest question is a; our company continually evaluates new ideas coming from customers, suppliers, etc., as well as incorporating them into product development activities, is of particular concern to companies in increasing the supply chain integration of employees by using the influence of one of the lowest questions that innovation has.

Furthermore, the exogenous innovation capability construct has a significant positive effect \((O = 0.570)\) with the construct of the company’s performance. The \(t\)-statistic value in this construct relationship is 9.088 > 1.96, and the \(p\)-value is 0.000 < 0.05. Therefore, the second hypothesis stating that innovation capability has a positive influence on company performance is proven true.

The results of this study are in accordance with previous studies Lim (2017), which states that there is a positive influence carried out by innovation capability on company performance. These results are the same as previous research conducted by Taherparvar (2014), which revealed a positive and significant influence between innovation capability and company performance. The results of the two studies are in accordance with research conducted by Ibrahim (2014) where the results indicate that innovation capability has a positive influence on company performance. So, this shows the importance of innovation capability in the company because it can improve company performance. So companies must be able to apply innovation capability to employees in the company.

Meanwhile, if seen from the cross loading value of the relationship between innovation capability on company performance there is one questionnaire with the highest value, namely IC4 = 0.628, and one questionnaire has the lowest value, namely IC1 = 0.501. This indicates that the lowest question is a; our company uses knowledge from various sources for product development activities efficiently and quickly, is of particular concern to organizations in accepting and managing various sources of knowledge that are well received, so as to improve the company’s performance in its application.

The exogenous construct of supply chain integration also has a significant positive effect \((O = 0.511)\) with the construct of firm performance. The \(t\)-statistic value in this construct relationship is 8.072 > 1.96, and the \(p\)-value is 0.040 < 0.05. Therefore, the third hypothesis which states that supply chain integration has a positive influence on company performance is proven true.

The results of this study are in accordance with previous studies Kumar and Kushwaha (2018), stated in their research that there is a positive relationship between supply chain integration and company performance. This is also
consistent with the results of research conducted by Ali, Zhandan Alam (2017), stating that there is a positive and significant influence of supply chain integration on company performance. While research conducted by Yusoff, Nerina, and Yusof (2015), found positive results where supply chain integration can significantly affect company performance. That is, companies that implement the correct supply chain integration system, will be able to improve company performance on a regular basis.

Furthermore, if seen from the cross loading value of the relationship between supply chain integration and company performance, there is one questionnaire with the highest value, SCI6 = 0.671, and one questionnaire has the lowest value, namely SCI3 = 0.419. This indicates that one of the lowest questions, namely the level of strategic partnerships with our main suppliers, is of particular concern to the company in improving company performance, especially aspects that can support improved company performance. Where companies must be able to analyze from the lowest questions that exist in supply chain integration, so that these factors can improve the performance of the next company.

6. Conclusion

Based on the results of the analysis and discussion of the implementation of innovation capability and supply chain integration in improving company performance, a number of conclusions can be made as follows:

- There is a significant positive effect between innovation capability on supply chain integration as evidenced by the significance value of the t-statistic value in this relationship is 8.162 > 1.96, and the p value of 0.000 < 0.05.
- There is a significant positive influence between innovation capability on company performance as evidenced by the significance value of the t-statistic value in this relationship is 9.088 > 1.96, and the p value of 0.000 < 0.05.
- There is a significant positive effect between supply chain integration on company performance as evidenced by the significance value of the t-statistic value in this relationship is 8072 > 1.96, and the value of p value 0.000 < 0.05.

7. Reference

i. Aigbogun, O., Ghazali, Z., & Razali, R. (2017). The Impact of Regulatory Function on Supply Chain Resilience: Reliability of Measurement Scales. Global Business and Management Research: An International Journal, 524-531.

ii. Simangunsong, E., Hendry, L., & Stevenson, M. (2015). Managing supply chain uncertainty with emerging ethical issues. International Journal of Operations & Production Management, 1272-1397.

iii. Namagembe, S., Sridharan, & Ryan, S. (2016). Green supply chain management practice adoption in Ugandan SME manufacturing firms. World Journal of Science, Technology and Sustainable development, 154-173.

iv. Parulekar, A., & Verulkar, A. (2015). Supply Chain Management And Its Relationship With Organizational Performance: A Literature Review. Journal of Commerce & Management Thought, 770-787.

v. Kumar, A., & Kushwaha. (2018). Supply Chain Management Practices And Operational Performance Of Fair Price Shops In India: An Empirical Study. Scientific Journal of Logistics, 85-99.

vi. Ali, H. M., Zhan, Y., & Alam, S. S. (2017). Food supply chain integrity: the need to go beyond certification. Industrial Management & Data Systems, 1589-1611.

vii. Tan, K. H., Ali, M. H., Makhbul, Z. M., & Ismai, A. (2017). the impact of external integration on halal food integrity. Supply Chain Management: An International Journal, 189-199.

viii. Saifudin, A. M., Othman, S. N., & Ezanee. (2017). Exploring in Setting a Model for Islamic Supply Chain in Malaysia. International Review of Management and Marketing, 95-102.

ix. Adura, F., Yusoff, M., Nerina, R., & Yusof, R. (2015). Halal Food Supply Chain Knowledge and purchase intention. International Journal of Economics and Management, 155-172.

x. Wan Omar, W. (2017). Developing A Model For Halal Food Supply Chain. RMIT University.

xi. Flynn, B., Huo, B., & Zhao, X. (2010). The impact of supply chain integration on performance: A contingency and Configuration Approach. Journal of Operations Management, 58-71.

xii. Ali, M. H., Zhan, Y., Alam, S. S., Tse, Y. K., & Tan, H. K. (2017). Food supply chain integrity: the Need to go Beyond Certification. Industrial Management & Data Systems, 1589-1611.

xiii. Gebrekidan, D. A., Awuah, G. B., & Iddris, F. (2014). The Role of Innovation Capability in Achieving Supply Chain Agility. International Journal of Management and Computing Sciences, 4, 104-112.

xiv. Ferrer, M., Santa, R., Storer, M., & Hyland, P. (2011). Competences and capabilities for innovation in supply chain relationships. Int. J. Technology Management, 56, 272-289.

xv. Ayoub, H. F., Abdallah, A. B., & Sulian, T. S. (2017). The effect of supply chain integration on technical innovation in Jordan: the mediating role of knowledge management. Benchmarking: An International Journal, 24, 594-616.

xvi. Desbarats, G. (1999). The innovation supply chain. Supply Chain Management: An International Journal, 4, 7-10.

xvii. Iddris, F. (2016). Measurement of innovation capability in supply chain: an exploratory study. International Journal of Innovation Science, 4, 331-349.

xviii. Khalfan, M. M., & McDermott, P. (2006). Innovating for supply chain integration within construction. Construction Innovation, 6, 143 - 157.

xix. Liao, Y., & Li, Y. (2018). Complementarity effect of supply chain competencies on innovation capability. Business Process Management Journal.

xx. Lii, P., & Kuo, F.-I. (2016). integration for combined competitiveness and firm performance. International Journal of Production Economics, 174, 142-155.
xxi. Seo , Y.-J., Dinwoodie , J., & Kwak , D.-W. (2014). The impact of innovativeness on supply chain performance: is supply chain integration a missing link? Supply Chain Management: An International Journal, 19, 733-746.

xxii. Yunus, E. N. (2018). Leveraging supply chain collaboration in pursuing radical innovation. International Journal of Innovation Science, 10, 350-370.

xxiii. Chanvarasuth, P., & Ravichandran, T. (2003). Absorptive capacity and strategic alliance in the supply chain context.

xxiv. Chanvarasuth, P., & Ravichandran, T. (2003). absorptive Capacity and Strategic Alliances in the Supply Chain Context. 340-344.

xxv. Fayard, D., Lee, L. S., Leitch, R. A., & Ketinge, W. J. (2012). Effect of internal cost management, information systems integration, and absorptive capacity on inter-organizational cost management in supply chains. Accounting, Organizations and Society, 168-187.

xxvi. Liu, H., Ke, W., Wei, K. K., & Hua, Z. (2013). The impact of IT capabilities on firm performance: The mediating roles of absorptive capacity and supply chain agility. Decision Support Systems, 54, 1452–1462.

xxvii. McAdam, R., & Hazlett, S.-A. (2010). An absorptive capacity interpretation of Six Sigma. Journal of Manufacturing Technology Management, 21, 624 - 645.

xxviii. Nagati , H., & Rebolledo, C. (2012). The role of relative absorptive capacity in improving suppliers’ operational performance. International Journal of Operations & Production Management, 32, 611 - 630.

xxix. Rojo, A., Stevenson, M., Montes, F. J., & Perez-Arostegu, M. N. (2018). Supply chain flexibility in dynamic environments: The enabling role of operational absorptive capacity and organisational learning. International Journal of Operations & Production Management, 38, 636-666.

xxx. Meinschmidt , J., Foerstl, K., & Kirchoff , J. F. (2016). The role of absorptive and desorptive capacity (ACDC) in sustainable supply management: A longitudinal analysis. International Journal of Physical Distribution & Logistics Management, 46, 177-211.

xxxi. Martinez-Sanchez, A., & Lahoz-Leo, F. (2018). Supply chain agility: a mediator for absorptive capacity. Baltic Journal of Management, 13, 264-278.

xxi. Fernández, J. T., de-Burgos-Jimenez, J., & Lorente, J. C. (2019). Absorptive capacity as a confounder of the process of supply chain integration. Business Process Management Journal, .

xxxii. Shaﬁque, I., & Hyder, T. (2019). Investigating Absorptive Capacity in Supply Chain Performance: Green Supply Chain Management Practices and Responsive Strategy. NMIMS Management Review Investigating Absorptive Capacity in Supply Chain Performance, 36, 53-68.

xxxiii. Soares, A., Soltani, E., & Liao, Y.-Y. (2012). The Influence Of Inter-Firm Relationships on Supply Chain Quality Management: A Survey of UK Firms. International Journal of Global Management Studies Professional, 4(2), 17-32 http://dx.doi.org/10.1108/SCM-08-2016-0286

xxxiv. Lim, J.-S., Darley, W., & Marion, D. (2017). Market orientation, innovation commercialization capability and firm performance relationships: the moderating role of supply chain influence. Journal of Business & Industrial Marketing, 32, 913-924.

xxxv. Minna, S. (2014). Innovation capability for SME success: perspectives of financial and operational performance. Journal of Advances in Management Research, 11, 163-175.

xxxvi. Taherparvar, N., Esmailpour , R., & Dostar , M. (2014). Customer knowledge management, innovation capability and business performance: a case study of the banking industry. Journal of Knowledge Management, 18, 591-610.

xxxvii. Tsai, M. C., & Wang , C. (2017). Linking service innovation to firm performance: The roles of ambidextrous innovation and market orientation capability. Chinese Management Studies, 11, 730-750.

xxxviii. Zou, B., Guo, F., & Song, M. (2017). Elastic and plastic innovation capability in firms. Industrial Management & Data Systems, 117, 198-212.

xli. Dobrzynkowski, D. D., Leuschner, R., Hong, P. C., & Roh, J. J. (2015). Examining Absorptive Capacity in Supply Chains: Linking Responsive Strategy and Firm Performance. Journal of Supply Chain Management, 51, 3-28.

xlii. Tavani, S. N., Soleimanof, S., Najmi, M., & Sharifi, H. (2013). An empirical study of firm’s absorptive capacity dimensions, supplier involvement and new product development performance. International Journal of Production Research, .

xliii. Li, L, Zhang, Z., & Xu, M. (2016). Research on the Relationship of Innovation Capability and Operating Performance Based on Moderation of Openness. Technology and Investment, 7, 14-25.

xliv. Chaudhary, S., & Batra, S. (2018). Absorptive capacity and small family firm performance: exploring the mediation processes. Journal of Knowledge Management, 22, 1201-1216.

xlv. Huang, D., Chen, S., Zhang, G., & Ye, J. (2018). Organizational forgetting, absorptive Capacity, and innovation performance: A moderated mediation analysis. Management Decision, 56, 87-104.

xlvi. Petti, C., & Zhang , S. (2013). Technological entrepreneurship and absorptive capacity in Guangdong technology firms . Measuring Business Excellence., 17, 61-71.

xlvii. Petti, C., & Zhang , S. (2016). The role of absorptive capacity in Chinese firms. Measuring Business Excellence, 20, 1-12.

xlviii. Ibrahim, A. R., Zolait, A. H., Subramanian, S., & Ashtiani, A. V. (2009). Organizational Innovative Capabilities: An Empirical Study of Malaysian Firms. Journal of Innovation and Business Best Practices, 1, 9-18.