#### Sofyan Ashari Nur<sup>1</sup>

### INNOVATION CAPABILITY, ABSORPTIVE CAPACITY AND SUPPLY CHAIN INTEGRATION IN SMES PERFORMANCE: CASE STUDY OF CREATIVE INDUSTRY IN YOGYAKARTA, 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 SMEs. This study aims to analyze the relationship between innovation capability, absorptive capacity and supply chain integration in improving the performance of SMEs in the creative industry of Yogyakarta Indonesia. The empirical test, which used a sample of 143 managers of the creative industry SMEs 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 and absorptive capacity have a significant influence on the performance of SMEs both directly and through increasing supply chain integration as a moderating variable. 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 SMEs in Yogyakarta.

**Keywords:** Innovation Capability, Absorptive Capacity, Supply Chain Integration, SMEs

#### 1. Introduction

Creative Economy (Ekraf) is one sector 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 every year. Indonesia's creative economic statistics in 2016 state that from 2010 to 2015, the magnitude of the Gross Domestic Growth (GDP) of the creative economy has increased by an average of 10.14% each year, which is 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 sub-sectors including: Culinary 4', 69%, fashion 18.15% and craft 15.70% (Bekraf, & BPS, 2017)

From some of the creative economy industries in Indonesia, the main supporting growth is from MSMEs (Bekraf & BPS, 2017). UMKM together with the community can grow the economy in the country, in accordance with the objectives of the MSME in the Constitution Article 3 no. 20 of 2008 which states that "Micro, Small and Medium Enterprises aim to grow and develop their business in order to build a national economy based on equitable economic democracy". MSMEs also have the right

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empowerment goals as stipulated in law article 5 no. 20 of 2008 namely "realizing a national economic structure that is balanced, developing and just; grow and develop the capacity of Micro, Small and Medium Enterprises to become Tangguh and independent businesses; 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 MSMEs engaged in the creative economy industry is the earthenware industry in Kasongan, Bantul, Yogyakarta. Kasongan has been famous for its pottery products for a long time. About 95% of the residents of Kasongan are profession as pottery craftsmen. With these conditions, improving the performance of MSMEs in Kasongan can increase the welfare of the Kasongan community. However, in this dynamic era competition becomes more complex, especially from online sales, prices that are inferior to competitors due to lack of integration with suppliers also become a obstacle in improving performance of MSMEs in Kasongan Bantul.

Rapid technological advances and high levels of competition require companies to continually innovate products that will ultimately improve company performance. Performance is the key to staying in the global era. Many factors determine the performance of a company, one of which is innovation. Rapid technological progress and competition high levels of require 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 the performance of the organization (Gebrekidan, Awuah, & Iddris, 2014).

Business people are expected to be able to change their culture of life that is profitoriented to be customer-oriented in order to form profitable cooperation in the long run.

Although business people have grown, but still need support from various parties, so that it has a major contribution to economic development. The problems faced today are the weak ability of human resources, especially creativity and capability of innovation, so that it has an impact on the weakness of competitive advantage and the performance of their business (Desbarats. 1999).

Innovative organizations have the ability to improve the performance of individuals and organizations, increasing competitive advantage (Lii & Kuo, 2016). In addition to improving the performance of innovation companies, it can also increase supply chain management in companies, especially related to integration in the supply chain. Khalfan and Demott (2016) state that innovation can increase supply chain integration. This is 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 companies must have good information absorption capabilities or called absorptive capacity. Absorptive capacity is the ability of companies to collect 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 produces that absorptive capacity can moderate and provide a significant influence on company performance.

Likewise, with Tavani (2013) also states that absorptive capacity 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 addition company to influencing performance, absorptive capacity also had a significant influence on the company's supply chain which was an important factor



in the sustainability of the company.

In some literature, it is stated that supply chain management is an important factor in the company. However, 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 implemented by companies in building strategic collaboration within and outside the ownership and control range of the company (Ali, Zhan, & Alam, 2017). Flynn (2010) describes that supply chain integration has three elements, namely integration between suppliers, consumers and internal companies. 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 to the performance of the Kasongan MSMEs in Bantul and how the integrity of the supply chain can moderate the relationship between the ability of innovation, the absorptive capacity of the performance of SMEs in Kasongan, Bantul, Yogyakarta.

#### 2. Literarture 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 application of technologies, development or opening of new markets, or introduction of new organizational forms or strategies to improve results (Ferrer 2011) while Liao and Lii (2018 ) Defines an innovation capability as an ability not only to identify and create new values but to assimilate initiatives back into existing processes and operations. In this study, we argue that innovation capability refers to the company's ability to efficiently effectively launch new products in response

to changes in the business environment.

Iddris (2014) analyzes innovation capability by using dimensions of cloud computing, trust and open innovation. The study sought between innovation the relationship capability and supply chain agility that has a dimension of integration, and resulted in the development and interaction of trust with cloud computing and open innovation 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 company's agility, which leads to the competitiveness of companies.

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 relations along the innovation supply chain need to be run based on commercial partnerships, with the same emphasis on short- and long-term goals. (2016)Then Idrris re-analyzes relationship of innovation and supply chain and finds that the dimensions of innovation capability are embedded in the company's supply chain, focused companies will be in a better position to respond quickly to the needs and desires of today's customers in the market by innovating.

Whereas Khalfan (2016) further states that innovation can create integration in supply chain management, the research offers transferable learning opportunities and motivation for staff of other construction companies 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 competencies in supply chain management. Liao stressed 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 towards competitive ability and company performance. Lii emphasized that innovation orientation influences supply chain integration and company performance. Drawing from previous studies on the theory of resource dependence, this study shows how innovation orientations help companies integrate their supply chains and realize the potential of supply chain management mechanisms.

Lii's statement is supported by Dinwoodie (2014) who also supports the role of innovation in supply chain integration (SCI) and states that innovative supply chains have a positive impact on SCI and SCP. However, the direct impact of innovation on SCP disappeared when the model included SCI as a mediator. Specifically, internal integration and suppliers fully mediate the relationship of innovativeness - SCP, while customer integration has no intermediary role in the relationship. The findings indicate that innovation can affect SCP only when the level of SCI manufacturers is quite effective in developing the required supply chain practices.

Innovation capability is the company's ability to continue to innovate and adjust to market conditions. This capability is very important for companies in this dynamic era. Some literature states that by having an innovation capability, the company will be able to improve supply chain management, especially in supply chain integration.

The relationship between innovation and supply chain integration is supported by several literatures namely Iddris (2014), Ferrer (2011), Ayoub (2017), Desbarats (1999), Iddris (2016), Khalfan (2006), Liao (2018), Lii (2016), Dinwoodie (2014) and Yunus (2018) which states that the ability of innovation is able to increase supply chain integration, both directly and together with

other variables. Therefore this study proposes the following hypothesis:

H1: Innovation capability has a significant effect on supply chain integration.

### 2.2. Absorptive Capacity and Supply Chain Integration

Absorptive capacity is a very interesting topic in this dynamic era. The ability to absorb information is a distinct competitive advantage for companies. Bargaining power possessed will be even greater if the company has an absorptive capacity. Chanvarasuh and Ravichandra (2003) state that absorptive capacity can influence supply chain alliances in a company, aliases of supply chain can also be intended as integration in supply chain management. The study emphasizes that the absorption of information is more likely to have an impact on the supply chain alliance process. Especially in companies that are based on information technology.

Favard (2012) discusses absorptive capacity and some supporting aspects in the supply chain and finds that internal electronic integration resources, external electronic integration, internal cost management, and absorption capacity play a significant direct and indirect role in the development of cost management resources between organization. This is supported by Liu (2013) which states that Absorptive capacity and supply chain agility fully mediate the influence of IT capabilities on company performance. In addition to the direct effect, absorption capacity also has an indirect effect on company performance by forming supply chain agility. The study also emphasizes that absorptive capacity is able to provide the ability to integrate in supply chain management.

Mc Adam (2010) conducted a study of six sigma in the absorptive capacity and stated that there is evidence underlying the theory



that emerged in relation to borrowing Six Sigma from various organizational theories. However, this theoretical development lags behind the practice in the area. Six Sigma development in practice develops mainly through more rigorous studies and applications in a service-based environment (profit and not for profit). The absorptive framework is found to be a comprehensive framework that is useful for placing existing theoretical and practical studies.

In addition, Meinlschmid (2016) states that the results reveal that the company uses identification of knowledge and assimilation mechanisms to integrate external knowledge into the ability to supply supply evaluations, supply supply selection and supply supply development. The findings show that the evolution of supply-supply management capabilities occurs based on the application of the capability itself.

Rojo (2018) further elaborates that environmental dynamism is positively related to operational absorptive capacity and organizational learning, and both are able to influence supply chain flexibility. The study also found that the relationship between environmental dynamism and supply chain flexibility was partly mediated by operational absorptive capacity and organizational learning. The relationship between absorptive capacity and supply chain is also supported by Sanchez (2018) and added that supply chain agility is capable of mediating between absorptive capacity and company performance.

While Fernandez (2019) adds internal and external integrase variables that help absorptive capacity in improving company performance. Shadique and Hyder (2019) are slightly different from the results of the analysis that using elements of absorption collectively can improve achievement. Therefore, managers can consider a holistic point of view, identifying expenditures for establishing procedures, developing employees, and important technology for achievement.

H2: Absorptive capacity has a significant effect on supply chain integration.

### 2.3. Supply Chain Integration and Firm Performance

Supply chain integration is needed in supply chain management in order to create better management. Supply chain integration is a practice implemented by companies in building strategic collaboration within and outside the ownership and control range of the company (Ali, Zhan, & Alam, 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 a mixture to become a whole or round unity. So that 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) describes that supply chain integration has three dimensions, namely integration between suppliers, consumers and internal companies. In his research, Flynn stated that supply chain integrase can improve company performance. Likewise, Ali (2016) also describes the supply chain integration with these three indicators and also supports Fynn's research results, only Ali provides mediating variables, namely halal food supply chain integration and is proven to mediate between supply chain integration and company performance.

Supply chain integration is one dimension in several supply chain related variables. Rojo, Llorens, Montes, and Niev (2016) put supply chain flexibility as a moderating variable between ambidexterity and company performance. The study 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 ambidexterity on the supply chain and put competitive intelligence (CI) as a moderating variable between the two then resulting in organizational ambidexterity through sharing external knowledge to improve supply chain agility.

The moderating role that CI plays in the relationship between organizational ambidexterity and supply chain agility is also verified. The findings of the study extend the supply chain literature through building positive effects of organizational ambidexterity on the agility of the supply chain with CI as a moderator for this effect. The research also provides a definition of agility in the supply chain as the ability to integrate resources and environment to create competitive advantage. So it can be seen that supply chain integration is also part of 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) state that supply chains have an important role in company development. Flynn (2010) emphasizes the importance of supply chain integration and agreed upon by Ali (2017). The importance of supply chain integration for the company's growth encourages companies to improve company aspects that can increase supply chain integrase.

Flynn (2017) measures supply chain integration with 3 indicators namely supplier integration, consumer integrase and company internal integration. The case of MSMEs especially those in traditional markets is very suitable with some of these studies, that important aspects that must be

improved for MSMEs are finance and marketing so that the following hypothesis is proposed

H3: Supply chain integration has a significant effect on company performance.

### **2.4. Innovation Capability and Firm Performance**

Yunus (2018) added that collaboration with suppliers brings radical innovation, while collaboration with customers brings additional innovation. Contrary to the expectations of this research, although interesting, collaboration with customers has a negative impact on radical innovation. Both radical and additional innovations then provide 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 innovation capabilities in 4 dimensions, namely product innovation, market innovation, strategy innovation, process innovation and environmental innovation. Ibrahim (2014) emphasized that it can have a positive influence on organizational innovation capabilities.

More broadly Lim (2017) found that Innovation Commercialization Capability can have a direct effect on company performance and can also be moderated by supply chains, the role of moderation from the influence of supply chain integration in proactive market orientation (PMO) and company performance (FP) is stronger when SCI high, and innovation in commercialization capabilities (ICC) and the relationship of corporate performance is 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, the aspect of innovation ability was found to have more influence on financial performance than operational performance.

Taherparvar (2014) adds that knowledge from customers has a positive impact on the speed of innovation and the quality of innovation and operational and financial performance. In addition, our results show different effects of customer knowledge and knowledge for customers on various dimensions of innovation and company performance. By using the flow of customer knowledge, the company will be aware of the external environment and new changes in customer needs so that it will be more innovative and perform better.

Wang (2017) sees innovation from a different perspective, namely ambidextrous innovation and analyzing its relationship with company performance then finding that empirical results fully support the hypothesis that ambidextrous innovation and market orientation capabilities can significantly improve company performance. These results imply the benefits of ambidextrous innovation and market orientation capabilities can coexist in the spread of service innovation.

As for Zou (2017) doing a different analysis of what factors influence innovation capability and analyzed how it relates to company performance, then it is found that the company's past performance is 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 innovations significantly result in superior performance.

H4: Innovation capability has a significant

effect on performance systems

### **2.5.** Absorptive Capacity and Firm Performance

In addition to influencing the supply chain, absorptive capacity can also have a direct effect company on performance. Dobrzykowki (2015) states that Absorptive capacity motivated by the company's responsive strategy fully mediates the relationship between responsive strategy and company performance, indicating that absorption is a competency needed for companies that aim to provide innovative products to customers; and the relationship between responsive strategies, shows that when companies try to integrate efficient and responsive strategies, their ability to develop absorptive capacity is reduced.

Tavani (2013) explains absortive capacity with 5 dimensions namely Worker Knowledge. Knowledge Manager. Communication Network. Climate Communication and Knowledge Scanning, then analyzed and produces that the factors that determine absorptive capacity are found from various levels of effects on financial and non-financial performance of the product new products, which will have implications for theory and practice. While Chaudary (2018) provides a relationship between potential Absorptive Capacity, Realized Absorptive Capacity and Orientation (Entrepreneurial, Market. Technology) that can affect company performance.

Huang (2018) includes the influence of organizational forgetting in the relationship between absorptive capacity and company performance and results in that organizational forgetting is positively related to innovation performance. Absorptive capacity mediates the relationship of organizational forgetting and innovation performance. On the other hand Petti (2013) and Petti (2016) state that greater absorptive

capacity leads to greater technological entrepreneurship, which in turn leads to greater performance. Therefore the evidence is given about the role of mediating technological entrepreneurship and the role of absorptive capacity as its predecessor in relation to company performance.

H5: Absorptive capacity has a significant effect on firm performance

#### 2.6. Research Model

In this dynamic era companies must be able to adapt to the external environment well. The company's ability to continue to innovate becomes very important because of the changing market conditions. In addition to innovation, companies must also have an absorptive capacity to be able to get the right information to improve company performance.

Related to the improvement of company performance an important aspect that must also be considered is the supply chain integration in the company's relationship with the suppliers because it can create high competitiveness for the company. Some literature supports the relationship between innovation capability and absorptive capacity to supply chain integration and ultimately can improve company performance. Therefore, the research model is arranged as follows:

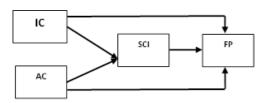


Figure 1. Research model

Source: Iddris (2014), Ferrer (2011), Ayoub (2017), Desbarats (1999), Iddris (2016), Khalfan (2006), Liao (2018), Lii (2016), Dinwoodie (2014), Yunus (2018) - Chanvarasuh dan Ravichandran (2003), Fayard (2012), Liu (2013), Mc Adam (2010), Nagati (2012), Rojo

(2018), Meinlschmidt (2016), Sanchez (2018), Fernández (2019), Shafique dan Hyder (2019) - Ibrahim (2014), Lim (2017), Saunila (2014), Taherparvar (2014), Wang (2017) dan Zou (2017) - Dobrzykowki (2015), Tavani (2013), Li dan Zhang (2016), Chaudary (2018), Huang (2018), Petti 2013 dan Petti 2016 - Wan Omar (2017), Kumar dan Kushwaha (2018), Ali, Zhan dan Alam (2017), Tan, Ali, Makhbul Ismai (2017), Adura , Yusoff, Nerina dan Yusof (2015)

#### 3. Research Method

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

Based on the population number of earthenware craftsmen in Kasongan, Bantul, Yogyakarta in 2017, researchers divided the sample based on the levels / strata into 3 (three) categories as follows:

- 1. Number of Micro Enterprises
- 2. Number of Small Businesses
- 3. Amount of Medium Business

The number of UMKM Kasongan Pottery Craftsmen, Bantul, Yogyakarta, is 537 with the following details:

No.	Total Pekerja	Frekuensi	Prosentase
1.	Usaha Mikro/ Rumah Tangga 1-4 Orang	235	43,72
2.	Usaha Kecil 5-19 Orang	159	29,71
3.	Usaha Menengah 20-100 Orang	143	26,57
	Total/ Jumlah	537	100,00%

**Figure 2.** MSMEs of Kasongan Pottery Craftsmen

Source: BPS Yogyakarta, 2017

Samples were drawn based on proportions, namely 25% of the number of craftsmen of each strata and group. So that the number of samples obtained proportionally represents each strata and group. The number of

samples can be seen in the following table:

**Table 1.** Amount of Samples of MSMEs Kasongan Pottery Craftsmen, Bantul, Yogyakarta Based on Business Size

No.	Strata	Sample
1	Micro Business	59
2	Small Business	40
3	Medium Business	36
Amoun	135	

The data used in this study are primary data. Primary data was obtained from the results of distributing questionnaires given to the owners / management of 135 MSMEs in the Kasongan earthenware industry, Bantul, Yogyakarta.

**Table 2.** Results from the normality test

Millor   Millor   Max   See   C.1.	Variable	min	· ·	skew	c r	kurtosis	c r
KP2         2         5         -0.662         -3.822         1.867         5.390           KP3         2         5         -0.493         -2.847         -0.001         -0.002           KP4         2         5         -0.310         -1.791         1.068         3.083           KP5         2         5         -0.195         -1.127         0.407         1.176           KP6         3         5         -0.076         -0.436         -0.540         -1.559           SI1         2         5         -0.801         -4.626         0.721         2.082           SI2         3         5         -0.072         -0.418         -0.376         -1.085           SI3         2         5         -0.072         -0.418         -0.376         -1.085           SI4         2         5         -0.422         -2.439         -0.279         -0.806           SI4         2         5         -0.327         -1.886         0.547         1.580           SI6         2         5         -0.327         -1.886         0.547         1.580           SI8         2         5         -0.374         -2.157         0.800			max	ł	c.r.		c.r.
KP3         2         5         -0.493         -2.847         -0.001         -0.002           KP4         2         5         -0.310         -1.791         1.068         3.083           KP5         2         5         -0.195         -1.127         0.407         1.176           KP6         3         5         -0.076         -0.436         -0.540         -1.559           SII         2         5         -0.072         -0.418         -0.376         -1.085           SI2         3         5         -0.072         -0.418         -0.376         -1.085           SI3         2         5         -0.422         -2.439         -0.279         -0.806           SI4         2         5         -0.804         -4.644         1.182         3.411           SI5         2         5         -0.804         -4.644         1.182         3.411           SI5         2         5         -0.327         -1.886         0.547         1.580           SI6         2         5         -0.347         -2.186         0.043         3.11           SI7         2         5         -0.374         -2.157         0.800							
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SII         2         5         -0.801         -4.626         0.721         2.082           SI2         3         5         -0.072         -0.418         -0.376         -1.085           SI3         2         5         -0.422         -2.439         -0.279         -0.806           SI4         2         5         -0.804         -4.644         1.182         3.411           SI5         2         5         -0.327         -1.886         0.547         1.580           SI6         2         5         -0.467         -2.694         0.015         0.043           SI7         2         5         -0.374         -2.157         0.800         2.309           SI8         2         5         -0.374         -2.157         0.800         2.309           SI8         2         5         -0.165         -0.951         -0.215         -0.622           SI9         3         5         0.083         0.481         -0.566         -1.634           OS9         3         5         -0.306         -1.769         -0.660         -1.906           OS8         3         5         -0.163         -0.943         -0.694							
SI2         3         5         -0.072         -0.418         -0.376         -1.085           SI3         2         5         -0.422         -2.439         -0.279         -0.806           SI4         2         5         -0.804         -4.644         1.182         3.411           SI5         2         5         -0.327         -1.886         0.547         1.580           SI6         2         5         -0.374         -2.157         0.800         2.309           SI7         2         5         -0.374         -2.157         0.800         2.309           SI8         2         5         -0.165         -0.951         -0.215         -0.622           SI9         3         5         -0.065         -0.951         -0.215         -0.622           SI9         3         5         -0.083         0.481         -0.566         -1.634           OS9         3         5         -0.306         -1.769         -0.660         -1.906           OS8         3         5         -0.163         -0.943         -0.694         -2.003           OS4         3         5         -0.161         -0.930         -0.559							
Si3         2         5         -0.422         -2.439         -0.279         -0.806           Si4         2         5         -0.804         -4.644         1.182         3.411           Si5         2         5         -0.327         -1.886         0.547         1.580           Si6         2         5         -0.467         -2.694         0.015         0.043           Si7         2         5         -0.467         -2.694         0.015         0.043           Si7         2         5         -0.374         -2.157         0.800         2.309           Si8         2         5         -0.165         -0.951         -0.215         -0.622           Si9         3         5         0.083         0.481         -0.566         -1.634           OS9         3         5         -0.306         -1.769         -0.660         -1.906           OS8         3         5         -0.163         -0.943         -0.694         -2.003           OS4         3         5         -0.161         -0.930         -0.559         -1.614           OS5         2         5         -0.455         -2.629         0.293			_				
SI4         2         5         -0.804         -4.644         1.182         3.411           SI5         2         5         -0.327         -1.886         0.547         1.580           SI6         2         5         -0.467         -2.694         0.015         0.043           SI7         2         5         -0.374         -2.157         0.800         2.309           SI8         2         5         -0.165         -0.951         -0.215         -0.622           SI9         3         5         -0.165         -0.951         -0.215         -0.622           SI9         3         5         0.083         0.481         -0.566         -1.634           OS9         3         5         -0.306         -1.769         -0.660         -1.906           OS8         3         5         -0.163         -0.943         -0.694         -2.003           OS4         3         5         -0.161         -0.930         -0.559         -1.614           OS5         2         5         -0.701         -4.049         0.616         1.778           OS6         2         5         -0.701         -4.049         0.616							
SI5         2         5         -0.327         -1.886         0.547         1.580           SI6         2         5         -0.467         -2.694         0.015         0.043           SI7         2         5         -0.374         -2.157         0.800         2.309           SI8         2         5         -0.165         -0.951         -0.215         -0.622           SI9         3         5         0.083         0.481         -0.566         -1.634           OS9         3         5         -0.306         -1.769         -0.660         -1.906           OS8         3         5         -0.163         -0.943         -0.694         -2.003           OS4         3         5         -0.161         -0.930         -0.559         -1.614           OS5         2         5         -0.455         -2.629         0.293         0.845           OS6         2         5         -0.701         -4.049         0.616         1.778           OS7         2         5         -0.768         -3.914         0.728         2.103           OS2         2         5         -0.678         -3.914         0.728				-0.422	-2.439	-0.279	-0.806
SI6         2         5         -0.467         -2.694         0.015         0.043           SI7         2         5         -0.374         -2.157         0.800         2.309           SI8         2         5         -0.165         -0.951         -0.215         -0.622           SI9         3         5         0.083         0.481         -0.566         -1.634           OS9         3         5         -0.306         -1.769         -0.660         -1.906           OS8         3         5         -0.163         -0.943         -0.694         -2.003           OS4         3         5         -0.161         -0.930         -0.559         -1.614           OS5         2         5         -0.455         -2.629         0.293         0.845           OS6         2         5         -0.701         -4.049         0.616         1.778           OS7         2         5         -0.420         -2.425         0.442         1.275           OS1         2         5         -0.678         -3.914         0.728         2.103           OS2         2         5         -0.678         -3.914         0.728	SI4			-0.804	-4.644	1.182	3.411
SI7         2         5         -0.374         -2.157         0.800         2.309           SI8         2         5         -0.165         -0.951         -0.215         -0.622           SI9         3         5         0.083         0.481         -0.566         -1.634           OS9         3         5         -0.306         -1.769         -0.660         -1.906           OS8         3         5         -0.163         -0.943         -0.694         -2.003           OS4         3         5         -0.161         -0.930         -0.559         -1.614           OS5         2         5         -0.455         -2.629         0.293         0.845           OS6         2         5         -0.455         -2.629         0.293         0.845           OS6         2         5         -0.455         -2.629         0.293         0.845           OS7         2         5         -0.420         -2.425         0.442         1.275           OS1         2         5         -0.678         -3.914         0.728         2.103           OS2         2         5         -0.678         -3.914         0.728	SI5	2		-0.327	-1.886	0.547	1.580
SI8         2         5         -0.165         -0.951         -0.215         -0.622           SI9         3         5         0.083         0.481         -0.566         -1.634           OS9         3         5         -0.306         -1.769         -0.660         -1.906           OS8         3         5         -0.163         -0.943         -0.694         -2.003           OS4         3         5         -0.161         -0.930         -0.559         -1.614           OS5         2         5         -0.455         -2.629         0.293         0.845           OS6         2         5         -0.455         -2.629         0.293         0.845           OS6         2         5         -0.455         -2.629         0.293         0.845           OS7         2         5         -0.455         -2.629         0.293         0.845           OS7         2         5         -0.420         -2.425         0.442         1.275           OS1         2         5         -0.678         -3.914         0.728         2.103           OS2         2         5         -0.678         -2.106         0.217	SI6	2		-0.467	-2.694	0.015	0.043
SI9         3         5         0.083         0.481         -0.566         -1.634           OS9         3         5         -0.306         -1.769         -0.660         -1.906           OS8         3         5         -0.163         -0.943         -0.694         -2.003           OS4         3         5         -0.161         -0.930         -0.559         -1.614           OS5         2         5         -0.455         -2.629         0.293         0.845           OS6         2         5         -0.455         -2.629         0.293         0.845           OS6         2         5         -0.455         -2.629         0.293         0.845           OS6         2         5         -0.455         -2.629         0.293         0.845           OS7         2         5         -0.450         -2.425         0.442         1.275           OS1         2         5         -0.678         -3.914         0.728         2.103           OS2         2         5         -0.678         -3.914         0.728         2.103           OS3         2         5         -0.784         -4.529         1.192	SI7	2		-0.374	-2.157	0.800	2.309
OS9         3         5         -0.306         -1.769         -0.660         -1.906           OS8         3         5         -0.163         -0.943         -0.694         -2.003           OS4         3         5         -0.161         -0.930         -0.559         -1.614           OS5         2         5         -0.455         -2.629         0.293         0.845           OS6         2         5         -0.455         -2.629         0.293         0.845           OS6         2         5         -0.455         -2.629         0.293         0.845           OS6         2         5         -0.455         -2.629         0.293         0.845           OS7         2         5         -0.701         -4.049         0.616         1.778           OS7         2         5         -0.420         -2.425         0.442         1.275           OS1         2         5         -0.678         -3.914         0.728         2.103           OS2         2         5         -0.678         -3.914         0.217         0.626           OS3         2         5         -0.784         -4.529         1.192	SI8	2	5	-0.165	-0.951	-0.215	-0.622
OS8         3         5         -0.163         -0.943         -0.694         -2.003           OS4         3         5         -0.161         -0.930         -0.559         -1.614           OS5         2         5         -0.455         -2.629         0.293         0.845           OS6         2         5         -0.701         -4.049         0.616         1.778           OS7         2         5         -0.420         -2.425         0.442         1.275           OS1         2         5         -0.678         -3.914         0.728         2.103           OS2         2         5         -0.678         -3.914         0.728         2.103           OS2         2         5         -0.678         -3.914         0.728         2.103           OS3         2         5         -0.365         -2.106         0.217         0.626           OS3         2         5         -0.784         -4.529         1.192         3.440           A4         2         5         -0.769         -4.442         1.103         3.184           A5         3         5         -0.139         -0.803         -0.518 <t< td=""><td>SI9</td><td>3</td><td>5</td><td>0.083</td><td>0.481</td><td>-0.566</td><td>-1.634</td></t<>	SI9	3	5	0.083	0.481	-0.566	-1.634
OS4         3         5         -0.161         -0.930         -0.559         -1.614           OS5         2         5         -0.455         -2.629         0.293         0.845           OS6         2         5         -0.701         -4.049         0.616         1.778           OS7         2         5         -0.420         -2.425         0.442         1.275           OS1         2         5         -0.678         -3.914         0.728         2.103           OS2         2         5         -0.678         -3.914         0.728         2.103           OS2         2         5         -0.678         -3.914         0.728         2.103           OS2         2         5         -0.678         -3.914         0.728         2.103           OS3         2         5         -0.365         -2.106         0.217         0.626           OS3         2         5         -0.784         -4.529         1.192         3.440           A4         2         5         -0.769         -4.442         1.103         3.184           A5         3         5         -0.139         -0.803         -0.518	OS9	3		-0.306	-1.769	-0.660	-1.906
OS5         2         5         -0.455         -2.629         0.293         0.845           OS6         2         5         -0.701         -4.049         0.616         1.778           OS7         2         5         -0.420         -2.425         0.442         1.275           OS1         2         5         -0.678         -3.914         0.728         2.103           OS2         2         5         -0.678         -2.106         0.217         0.626           OS3         2         5         -0.784         -4.529         1.192         3.440           A4         2         5         -0.769         -4.442         1.103         3.184           A5         3         5         -0.139         -0.803         -0.518         -1.496           A6         2         5         -0.493         -2.844         0.774         2.233           A1         2         5         -0.787         -4.544         0.832         2.402           A2         3         5         -0.099         -0.570         -0.422         -1.218           A3         2         5         -0.456         -2.632         -0.202         -0	OS8	3	5	-0.163	-0.943	-0.694	-2.003
OS6         2         5         -0.701         -4.049         0.616         1.778           OS7         2         5         -0.420         -2.425         0.442         1.275           OS1         2         5         -0.678         -3.914         0.728         2.103           OS2         2         5         -0.365         -2.106         0.217         0.626           OS3         2         5         -0.784         -4.529         1.192         3.440           A4         2         5         -0.769         -4.442         1.103         3.184           A5         3         5         -0.139         -0.803         -0.518         -1.496           A6         2         5         -0.493         -2.844         0.774         2.233           A1         2         5         -0.787         -4.544         0.832         2.402           A2         3         5         -0.099         -0.570         -0.422         -1.218           A3         2         5         -0.456         -2.632         -0.202         -0.582	OS4	3	5	-0.161	-0.930	-0.559	-1.614
OS7         2         5         -0.420         -2.425         0.442         1.275           OS1         2         5         -0.678         -3.914         0.728         2.103           OS2         2         5         -0.365         -2.106         0.217         0.626           OS3         2         5         -0.784         -4.529         1.192         3.440           A4         2         5         -0.769         -4.442         1.103         3.184           A5         3         5         -0.139         -0.803         -0.518         -1.496           A6         2         5         -0.493         -2.844         0.774         2.233           A1         2         5         -0.787         -4.544         0.832         2.402           A2         3         5         -0.099         -0.570         -0.422         -1.218           A3         2         5         -0.456         -2.632         -0.202         -0.582	OS5	2	5	-0.455	-2.629	0.293	0.845
OS1         2         5         -0.678         -3.914         0.728         2.103           OS2         2         5         -0.365         -2.106         0.217         0.626           OS3         2         5         -0.784         -4.529         1.192         3.440           A4         2         5         -0.769         -4.442         1.103         3.184           A5         3         5         -0.139         -0.803         -0.518         -1.496           A6         2         5         -0.493         -2.844         0.774         2.233           A1         2         5         -0.787         -4.544         0.832         2.402           A2         3         5         -0.099         -0.570         -0.422         -1.218           A3         2         5         -0.456         -2.632         -0.202         -0.582	OS6	2	5	-0.701	-4.049	0.616	1.778
OS2         2         5         -0.365         -2.106         0.217         0.626           OS3         2         5         -0.784         -4.529         1.192         3.440           A4         2         5         -0.769         -4.442         1.103         3.184           A5         3         5         -0.139         -0.803         -0.518         -1.496           A6         2         5         -0.493         -2.844         0.774         2.233           A1         2         5         -0.787         -4.544         0.832         2.402           A2         3         5         -0.099         -0.570         -0.422         -1.218           A3         2         5         -0.456         -2.632         -0.202         -0.582	OS7	2	5	-0.420	-2.425	0.442	1.275
OS3         2         5         -0.784         -4.529         1.192         3.440           A4         2         5         -0.769         -4.442         1.103         3.184           A5         3         5         -0.139         -0.803         -0.518         -1.496           A6         2         5         -0.493         -2.844         0.774         2.233           A1         2         5         -0.787         -4.544         0.832         2.402           A2         3         5         -0.099         -0.570         -0.422         -1.218           A3         2         5         -0.456         -2.632         -0.202         -0.582	OS1	2	5	-0.678	-3.914	0.728	2.103
A4     2     5     -0.769     -4.442     1.103     3.184       A5     3     5     -0.139     -0.803     -0.518     -1.496       A6     2     5     -0.493     -2.844     0.774     2.233       A1     2     5     -0.787     -4.544     0.832     2.402       A2     3     5     -0.099     -0.570     -0.422     -1.218       A3     2     5     -0.456     -2.632     -0.202     -0.582	OS2	2	5	-0.365	-2.106	0.217	0.626
A5         3         5         -0.139         -0.803         -0.518         -1.496           A6         2         5         -0.493         -2.844         0.774         2.233           A1         2         5         -0.787         -4.544         0.832         2.402           A2         3         5         -0.099         -0.570         -0.422         -1.218           A3         2         5         -0.456         -2.632         -0.202         -0.582	OS3	2	5	-0.784	-4.529	1.192	3.440
A6     2     5     -0.493     -2.844     0.774     2.233       A1     2     5     -0.787     -4.544     0.832     2.402       A2     3     5     -0.099     -0.570     -0.422     -1.218       A3     2     5     -0.456     -2.632     -0.202     -0.582	A4	2	5	-0.769	-4.442	1.103	3.184
A6     2     5     -0.493     -2.844     0.774     2.233       A1     2     5     -0.787     -4.544     0.832     2.402       A2     3     5     -0.099     -0.570     -0.422     -1.218       A3     2     5     -0.456     -2.632     -0.202     -0.582	A5	3	5	-0.139	-0.803	-0.518	-1.496
A1     2     5     -0.787     -4.544     0.832     2.402       A2     3     5     -0.099     -0.570     -0.422     -1.218       A3     2     5     -0.456     -2.632     -0.202     -0.582	A6	2		-0.493		0.774	2.233
A2     3     5     -0.099     -0.570     -0.422     -1.218       A3     2     5     -0.456     -2.632     -0.202     -0.582							
A3 2 5 -0.456 -2.632 -0.202 -0.582	A2			-0.099		-0.422	-1.218
	A3	2		-0.456	-2.632	-0.202	-0.582
	Multivariate					289.298	46.685

#### 4. Analysis and Discussion

In this chapter, we will discuss how the effect of absorptive capacity, innovation capability and supply chain integration on the performance of MSMEs in Kasongan, Bantul, Yogyakarta. From data collection using a questionnaire distributed to 150 respondents who are pottery craftsmen in Kasongan Bantul.

In testing the hypothesis, this study uses a structural equation model method with AMOS 24 software. In the analysis using SEM, it is necessary to do some data tests which include normality and outlier tests, structural tests and hypothesis testing. From the normality test that has been done, the following results are obtained:

From the table, it can be seen that there are several CR values that are outside  $\pm$ -2.58, CR values that are outside the range are smaller than those that meet the criteria so that the data can be said to be normally distributed. While the multivariate test gives a value of CR 46.685 where the value is still above 10,000 and according to Ghazali

(2006) data with these criteria are said to be normally distributed multivariate.

The second step is to do an outlier test. Outliers in this study were analyzed by mulitivariate outliers seen from the mahalanobis distance values as in the following table:

Table 3. Outlier test

Observation number	Mahalanobis d-squared	p1	p2
193	40.57	0.094	0
186	40.333	0.099	0
195	40.333	0.099	0
18	40.087	0.103	0
17	40.038	0.104	0
19	33.38	0.306	0.104
63	33.362	0.307	0.083
112	33.362	0.307	0.062
150	32.464	0.346	0.313
2	32.457	0.347	0.266
3	32.457	0.347	0.22
188	32.301	0.354	0.239
197	32.301	0.354	0.196
62	32.105	0.363	0.232
104	31.897	0.372	0.276
183	31.814	0.376	0.266
192	31.814	0.376	0.221
42	31.689	0.382	0.229
91	31.689	0.382	0.188
140	31.689	0.382	0.152
16	31.328	0.399	0.252
23	30.647	0.433	0.56
172	30.566	0.437	0.549
113	30.064	0.462	0.759
41	30.026	0.464	0.731
139	30.026	0.464	0.683
121	29.736	0.479	0.775
152	29.149	0.51	0.931
98	29.111	0.512	0.918
110	29.084	0.513	0.902
46	28.33	0.553	0.989
54	28.143	0.563	0.992
73	28.068	0.567	0.992
147	27.652	0.589	0.998
125	27.606	0.591	0.998
115	27.428		
-	* * -		



From the table there are several observation number values that have a value of P1 and P2 below 0.05, so it can be ascertained that the data contains outliers. Basically, data that has outliers must be eliminated, but according to Ferdinand (2002) outliers do not need to be eliminated because there is no specific reason to eliminate responder data from the research sample, therefore this study still uses samples as before.

The next step is to test the goodness of fit, which is to test the suitability of the research model which is a requirement that must be met in SEM testing. The goodness of fit test results are as follows:

**Table 4.** The goodness of fit test results

Goodness of fit index	Kriteria	Cut of Value	
Chi-Square (X2)	Diharapkan kecil	324.811	Fi t
Significance Probability	≥ 0,05	0,120	Fi t
RMSEA	≤ 0,08	0,024	Fi t
GFI	≥ 0.90	0,919	Fi t
AGFI	≥ 0.90	0,990	Fi t
CMN / DF	≤ 2,00	1,34	Fi t
TLI	≥ 0,95	0,97	Fi t
CFI	≥ 0.95	0,98	Fi t

From the table it can be seen that the data in this study meet the criteria of goodness of fit and it can be said that this model is feasible to usThe final step in SEM analysis is hypothesis testing. The final results of processing data can be seen from the picture below.

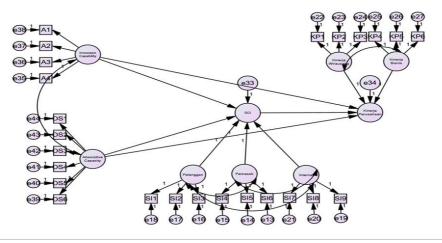


Figure 2. The final results of processing data

After the model meets the requirements, then a regression test is performed on each proposed hypothesis. The regression processing results are as follows:

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**Table 5.** The results of the analysis of the 5 hypotheses proposed in this study

			Estim	S.E	C.R	Р	Lab
			ate			1	el
S	<-	IC	0.257	0.0	7.2	**	
CI		IC	0.237	36	42	*	
S	<-	Α	0.151	0.0	5.4	**	
CI		C	0.131	28	15	*	
K	<-	S	0.783	0.1	4.4	**	
P		CI	0.763	74	85	*	
K	<-	IC	0.261	0.0	7.9	**	
P		IC	0.201	33	21	*	
K	<-	Α	0.287	0.0	7.3	**	
P		C	0.287	39	62	*	

**H1:** There is an influence of innovation capability on supply chain integration

From the data analysis that has been done with the SEM method, the results show that there is a significant influence between innovation capability and supply chain integration. These results support the research conducted by Iddris (2014), Ferrer (2011), Ayoub (2017), Desbarats (1999), Iddris (2016), Khalfan (2006), Liao (2018), Lii (2016), Dinwoodie (2014) and Yunus (2018) who also stated that innovation capability can influence supply chain integration.

From these results, in increasing supply chain integration, MSMEs in Kasongan Bantul must strive to improve innovation capability in their companies. The form of innovation capability carried out by companies is as explained by Yang (2012) that companies need to increase their knowledge base and skills in producing pottery. Furthermore, it is necessary to create research and development processes in understanding consumer desires.

So the company is able to identify new values needed by customers. Moreover, companies are able to utilize technology in the production and marketing of their businesses.

**H2:** There is an effect of absorptive capacity on supply chain integration

Hypothesis 2 test results that absorptive capacity can provide a significant influence on supply chain integration. These results support previous research conducted by Chanvarasuh (2012) and Ravichandra (2013) then Favard (2012), Liu (2013), Rojo (2018) and Fernandez (2019) who also stated that absorptive capacity can influence supply chain integration.

From these results, it is expected that SMEs in Bantul Yogyakarta will be able to maintain and increase their absorptive capacity so that they can create a good supply chain integration for the company. Companies that have absorptive capacity have more potential to gain market share and course have better cross-cutting capabilities.

**H3:** There is an influence of supply chain integration on firm performance

The third hypothesis in this study has been tested and revealed that supply chain integration is able to provide a significant influence on the performance of Kasongan Bantul Yogyakarta MSMEs. These results support previous research conducted by Wan Omar (2017), Kumar and Kushwaha (2018), Ali, Zhan and Alam (2017), Tan, Ali, Makhbul Ismai (2017), Adura, Yusoff, Nerina and Yusof (2015).

Given the importance of supply chain integration and it is proven statistically that supply chain integration is able to influence the performance of the company, MSMEs in Kasongan Bantul Yogyakarta are expected to be able to always increase supply chain integration. From the results of hypothesis testing, supply chain integration was able to be improved by innovation capability and absorptive capacity.

**H4:** There is an innovation capability on firm performance



The results of the analysis test prove that the innovation capability is able to influence the performance of the company. This proves the importance of innovation capability in the company because it can influence 2 important aspects in the company, namely supply chain integration and company performance. The results related to the influence of innovation capability on firm performance are also supported by previous research by Ibrahim (2014), Lim (2017), Saunila (2014), Taherparvar (2014), Wang (2017) and Zou (2017).

With the discovery of these results, it is increasingly evident that innovation capability is an important capability that must be owned by the company, especially in the era of dynamic and disruptive as it is today.

**H5:** There is an absorptive capacity effect on firm performance

The 5th hypothesis in this study is also supported by the results of analysis that the absorptive capacity is able to influence the performance of the company. Dobrzykowski (2015), Tavani (2013), Li and Zhang (2016) and Chaudary (2018) also support these

results

The ability to absorb information has become a competitive advantage for the company. Bargaining power that is owned will be even greater if the company has an absorptive capacity. Therefore MSMEs in Kasongan Bantul Yogyakarta are expected to be able to improve and develop absorptive capacity in their companies both at the company level and individual employees.

#### 5. Conclussion

This study provides new insights that there are 3 important aspects that must be owned by companies, especially MSMEs, in improving the performance of their companies, 3 important aspects innovation capability, absorptive capacity and supply chain integration. These three aspects are strategic aspects in the company and those who are able to make it happen are the company's management. **Business** owners must realize the importance of these 3 aspects and are expected to be able to implement and improve them in a sustainable manner.

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