

# Achieving a Competitive Advantage and Supply Chain Performance by Supply Chain Practices

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## Abstract:

The purpose of this study is to examine the effect of supply chain practices on competitive advantage and supply chain performance. Data were collected through a survey questionnaire responded by 192SME's of Furniture Industry in Surakarta Region, Indonesia. Partial Least Square is used to test the model in this study. The results show that supplier integration, customer integration, internal integration, information sharing, postponement, and internal lean practices as a dimension used to measure supply chain practices has significant influence on supply chain performance and competitive advantage. This study is one of the supply chain practices research conducted on the SME's especially the furniture industry sector in developing countries. This study shows how supply chain practices that can be applied in order to improve supply chain performance and achieve competitive advantage as a capital to face global competition. The results have broader implications for all SME's, especially in developing countries where SME's as a reliable business sector to sustain economic growth.

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## I. INTRODUCTION

Well - supply chain integration is one of the main business strategies to improve supply chain management performance. Real-time information exchange with suppliers (upstream) and customers (downstream) will create opportunities for optimization (Lee et al., 2007). Supply Chain Management (SCM) requires coordination with customers and suppliers (Fox et al., 1993; Tan, 2001). The dynamics that occur in the market often cause difficulties for companies. Thus, the system must quickly respond to market dynamics by minimizing idle time and inventory as well as improving quality of product. Well-linkages along the supply chain (upstream - downstream) can undoubtedly help reduce waiting times thereby reducing adverse effects for the organization (Lee et al., 2007), reduce supply uncertainty (Lee, 2002).

Previous research has been carried out on SCM. Well-SCM achieving a competitive advantage (Sukati et al., 2002; Li et al., 2006; Bratic, 2011; Zulkarnain et al., 2018), achieving a organization performance (Lazarevic et al., 2007; Koh et al., 2007; Li et al., 2008; Yap dan Tan, 2012; Karimi dan Rafiee, 2014; Hussain et al., 2014; Solakivi et al., 2015; Arun, 2015; Al-Shboul et al., 2017; Zulkarnain et al., 2018; Khalil et al., 2019), achieving a supply chain performance (Sukati et al., 2002; Lee et al., 2007; Toyin, 2012; Ibrahim and Hamid, 2014; Solakivi et al., 2015; Abdallah et al., 2014; Mufaqih et al., 2017; Al-Shboul et al., 2017).

Based on empirical studies by previous research, often SCPs is associated with competitive advantage, organizational performance, and supply chain performance. SCM is still strategic in nature and considered an importance source of competitive advantage (Min et al., 2019). Furthermore, organizational performance,

cannot be measured from one perspective but from several perspectives such as financial, internal processes, customer, learn and growth (Haddadi and Yaghoobi, 2014). Organizational performance can be measured by financial indicators, social indicators, and ecological indicators (Ion and Criveanu, 2016), measured by accounting measures, operational measures, market-based measured, survival measured, economic value measured (Carton, 2004). Supply chain practices (SCPs) is one of the 17 keywords used to measure organizational performance (Silva and Borsato, 2017). From contextual perspective, almost studies implemented at large companies in developed countries. The study of SCPs in the context of SMEs in developing countries is limited.

To fill this gap, this research was conducted by examine the effect of supply chain practices (SCPs) on competitive advantage and supply

chain performance (SCP) in Small Medium Enterprises context. The purpose of this study is to examine the effect of SCPs on competitive advantage and SCP and so it is expected to propose an appropriate strategy for the implementation of SCM based on the findings.

## Theoretical Research Framework, Literature Review, and Hypothesis

### II. RESEARCH FRAMEWORK

Figure 1 presents the theoretical research framework developed for this research. The framework proposes that SCPs will have an impact on SCP and also competitive advantage. SCPs is conceptualized as a six-dimensional construct. The six dimensions are supplier integration, internal integration, customer integration, information sharing, postponement, and internal lean practices.

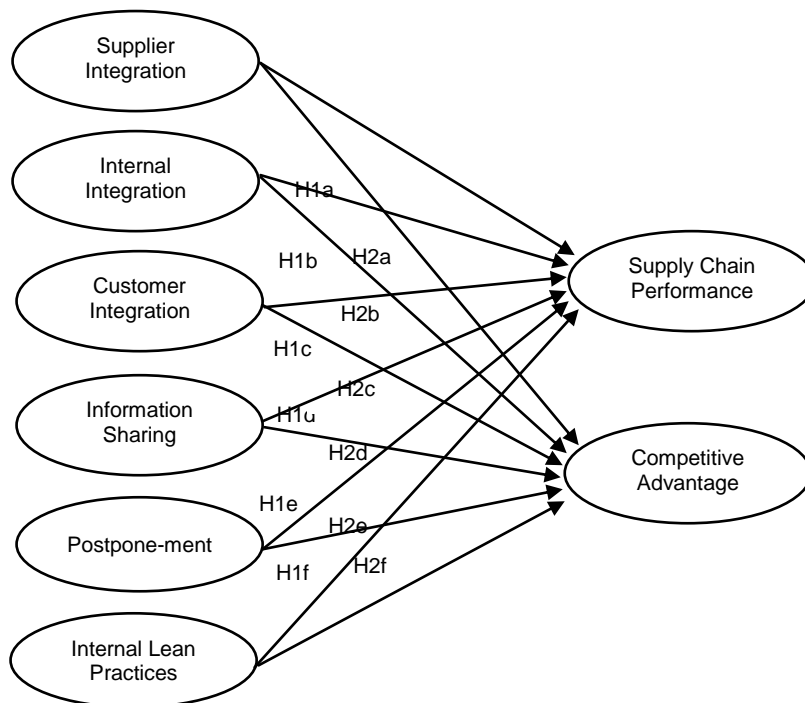


Fig.1. Research Model

Source : Li et al., 2006; Abdallah et al., 2014; Mufaqih et al., 2017; Al-Shboul et al., 2017 be adapted

A detailed description of the development of the SCPs construct is provided in the following paragraphs. Competitive advantage and SCP are concepts that have been operationalized in the existing literature (Li et al., 2006; Mufaqih et al., 2017). Using literature support, the expected relationships among SCPs, competitive advantage, and organizational performance are discussed, and hypotheses relating these variables are developed.

### III. LITERATURE REVIEW

#### *Supply Chain Practices (SCPs)*

SCPs is a series of activities carried out by the organization with the aim of SCM to be effective (Li et al., 2006). The intended activity includes all parts involved in the company's operations from upstream - downstream, from suppliers - consumers. SCPs are defined also as approaches applied in managing integration and coordination of supply, demand and relationships in order to satisfy consumers in effective and profitable manners (Ibrahim and Hamid, 2014). Because of its complexity, SCPs are proposed to be multi-dimensional concepts (Fox et al., 1993; Li et al., 2006; Lazarevic et al., 2007).

Various constructs of SCPs have been used in previous studies. Tan (2001) suggested five constructs of SCPs including supply chain integration, information sharing, supply chain characteristics, customer service management, and geographical proximity and JIT capability. Sukati et al., (2002) that conceptualise SCPs as three construct : strategic supplier partnership, customer relationship, dan information sharing. Li et al., (2006) measuring SCPs with five construct are strategic supplier partnership, customer relationship, level of information sharing, quality of information sharing, and postponement then adapted by (2011), Toyin (2012), Hussain et al., (2014). Lee et al., (2007) measuring SCPs with customer linkage, supplier linkage, dan internal linkage. In the context of the manufacturing industry in Australia, SCPs are measured by

supplier and customer relationship, information sharing, internal operation, IT and training (Lazarevic et al., 2007). SCPs can also be measured with information and technology management, demand management, customer relationship management, capacity and resource management (Yap dan Tan, 2012). Abdallah et al., (2014) using supplier integration, internal integration, customer integration, information sharing, and postponement to measure SCPs which is also used by Mufaqih et al., (2017). In the context manufacturing firms in Finland, Solakivi et al., (2015) use supply chain collaboration to describe supply chain practices that are contained collaboration within the firm and collaboration with suppliers and customers. In the context manufacturing companies in Jordania, Al-Shboul et al., (2017) combining measuring SCPs from Li et al., (2006), Lee et al., (2007), with internal lean practices and total quality management.

Based on our literature review, we defined SCPs with six constructs: supplier integration, internal integration, customer integration, information sharing, postponement, and internal lean practices. These practices will be used in our study.

**Supplier integration** begins with the importance of establishing a relationship between buyer and seller (Dewyer et al., 1987). To be able to achieve competitive advantage, need a continuous linkage between buyers and sellers. Linkage that are not merely transactions but are relationships. In general, supplier integration can be defined as, "the combination of internal resources and capabilities of selected key suppliers through the meshing of intercompany business processes to achieve a competitive advantage" (Kirst and Hofmann, 2007). Supplier Integration enable upstream SCM so that it can support suppliers for material coordination, information flow and finance. Flynn et al. (2010) suggest that supplier integration is one of the important factors that enables all entities in the supply chain to act integrated. This is done to maximize the value of the supply chain

**Internal Integration** is carrying out the coordination, communication, and affective relationship within organization, to working together for the benefit of the company (Basnet, 2013). Internal integration combined with external integration has a significant influence on organizational performance (Gimenez and Ventura (2003). Lack of internal integration causes excessive workload and wasted resources, and reduces the quality and performance of the company (Pagell, 2004). Regarding supply chain performance, internal integration cannot be separated from customer integration and supplier integration (Wong et al., 2011; Lee et al., 2007). Linkages occur in all aspects of the company's internal: product design, procurement, production, sales, and distribution aimed at meeting customer needs (Wong et al., 2011).

**Customer Integration** is concerned with planning, implementing, and evaluating successful relationships between providers and recipients either upstream or downstream of supply chain (Lee et al., 2007). Customer integration is also defined as a integration that is realized through collaboration and information sharing between the company and its customers to increase customer satisfaction (Wong et al., 2011). Customer integration is also able to improve supply chain performance through long-term relationships with customers to meet customer satisfaction (Li et al., 2006). Flynn et al., (2010) propose that the integration carried out between companies and customers includes coordination regarding the design of strategies, practices, and interorganization processes.

**Information Sharing** in the supply chain in this study is divided into two namely the level of information sharing and the quality of information sharing. According to Li et al., (2006) the level of information sharing reflects the extent to which important and exclusive information is communicated from one party to another such as from suppliers to producers, and from retail to customers. Whereas the quality of information

sharing is the quality obtained in the exchange of information. These factors include the level of accuracy, timeliness, credibility and adequacy of information exchanged. Information sharing is a factor that can increase the effectiveness of supply chain practices and make them more meaningful in the company (Zhou and Benton Jr, 2007). From Social Exchange perspective, information sharing and collaborative behavior can contribute to improving supply chain performance (Wu et al., 2014).

**Postponement** is a deliberate strategy in delaying completion of work due to incomplete or unreliable input of information (Yang et al., 2004). Postponement occur during the production process for product modification or customization as long as possible in the production process (Waller, 2000; Heizer and Render, 2014). Company postponement implementation is also able to reduce supply chain costs by reducing inventory levels, increasing forecasting effectiveness, facilitating mass customization, and reducing production cycle times (Li et al., 2006). In applying postponement, there must be a postponable point, company must be analyze costs and benefits of postponement (Yang et al., 2004).

**Internal Lean Practices** emphasizes the minimization of errors that result in the emergence of waste from production along the product value chain (Boyle and Scherrer, 2009). The first time, lean concept was widely applied in the manufacturing sector in the face of competitive global competition (Meredith and McTavish, 1992; Womack and Jones, 1996). Gradually, Lean had expanded to other sectors besides manufacturing in order to improve company performance (Reyes et al., 2012). The Lean concept emphasizes efficiency in all lines of the company through efficiency in management practices from upstream to downstream that are integrated with the system (Shah and Ward, 2003).

*Supply Chain Performance (SCP)*



Supply chain management (SCM) became a much discussed issue in the late 1990s that showed a strong push towards globalization and a shift in market power from producers to retailers (Min et al., 1999). SCM is an integrated process wherein raw materials are manufactured into final products, then delivered to customers (Beamon, 1999; Li et al., 2006), as well as the associated information flows through improved inter-and intrafirm relationships to achieve sustainable competitive advantage (Ellinger, 2000). Discussing about supply chain performance (SCP), there is no consensus among researchers concerning the best measures of supply chain performance (Flynn et al., 2010; Al-Dhoori, 2019).

Previous research, various constructs were used to measure SCP. Sukati et al., (2002) using supply chain responsiveness approach to measure SCP. Lee et al., (2007), Ibrahim and Hamid (2014) using cost-containment and Reliability as dimension to measure supply chain performance. Supply chain performance can also be measured with five dimensions : supply chain flexibility, supply chain integration, responsiveness to customers, supplier performance, and partnership quality (Toyin, 2012). Abdallah et al., (2014) using supply chain efficiency and supply chain effectiveness dimension to measure SCP. Whereas Mufaqih et al., (2017) uses efficiency and flexibility to measure SCP. Al-Shboul et al., 2017 measured SCP in term of flexibility of supply chain, integration of supply chain, customer responsiveness, and supplier performance.

Based on our literature review and consider contextual research, We measure SCP with efficiency and flexibility as implemented by Mufaqih et al., (2017).

### *Competitive Advantage*

The concept of competitive advantage was first introduced by Michael Porter in 1985 (Cegliński, 2017). Competitive advantage grows fundamentally out of value a firm is able to create for its buyers that exceeds the firm's cost of

creating it (Porter, 1985). Discuss about competitive advantage, then discuss about how much value the company can give to competitors (Pietersen, 2010). This means that by having competitive advantage, the company has advantages compared to competitors. Organizations can gain competitive advantage if the organization is oriented toward actions that enable it to outperform its competitors (Wang, 2014).

Previous research on competitive advantage shows a wide variety of dimensions used to measure competitive advantage. Sigalas et al., (2013) suggested that exploitation of all market opportunities, full exploitation of market opportunities, neutralization of all competitive threats, and full neutralization of all competitive threats as construct to measure competitive advantage. In the context of the private hospital. In manufacturing industry, Awwad et al., (2013) uses flexibility, cost, quality, and delivery to measure competitive advantage. Diab (2014) uses quality, cost, flexibility, and delivery as the dimension of competitive advantage. Sukati et al., (2002), Li et al., (2006), Bratic (2011), Sachitra (2016), Tahoon et al., (2017) are suggested that price, quality, delivery dependability, time to market, and product innovation is a part of competitive advantage dimension. These dimensions, author used in this research.

### *The Impact of Supply Chain Practices on Supply Chain Performance*

Supply chain performance is one aspect that underpins overall company performance (Silva and Borsato, 2017). SCP is included in the performance group from non-financial aspects (Haddadi and Yaghoobi, 2014; Carton, 2014). SCP can be achieved if the company implements supply chain practices in a disciplined manner. Supply chain practices that include strategic supplier partnerships, customer relationships, and information sharing in the manufacturing sector of consumer goods in Malaysia have a positive effect

on SCP (Sukati et al., 2002). Supplier integration and customer integration has positive effects on SCP (Abdallah et al., 2014). While Mufaqih et al., (2017) in the context of SME's batik, shows that internal integration and information sharing have positive effects on SCP. In the manufacturing sector in Jordan, supply chain practices have a positive impact on SCP (Al-Shboul et al., 2017). In the context of manufacturing in the United States, consumer linkage, internal linkage, and supplier linkage which are indicators of supply chain practice measure have a positive influence on SCP (Lee et al., 2007).

This research, Supply Chain Practices that include supplier integration, internal integration, customer integration, information sharing, postponement, and internal lean practices. SCP can be achieved if companies implement supply chain practices with discipline. When companies implement supply chain practices, it will improve SCP. Implementation of Supply chain practices means covering all aspects that fall into its scope.

There are many dimensions, taxonomy, and focus in explaining supplier integration (Seckin and Sen, 2018). Nevertheless, supplier integration explains the importance of linkage between companies and suppliers (Dewyer et al., 1987; Ellstrom, 2015; Danese, 2013). In the context of Food Manufacturing firms in the UK, supplier integration has significant effect on improving supply chain performance (Kumar et al., 2017). This finding was also found in the manufacturing industry in Turkey (Kocoglu et al., 2011). Supplier integration also extends to the banking services sector. the results show that supplier integration makes a positive contribution to the financial performance of banks (Pakurar et al., 2019). With the existence of supplier integration, well-cooperation between suppliers and companies will emerge. Mutually beneficial coordination is associated with increasing value along the supply chain. Company needs are met, suppliers also benefit by increasing supply efficiency because user expectations can be

known in detail. effectiveness in this supply chain contributes to supply chain performance. Based on the description above, the hypotheses proposed in this study are: ***H1a. Supplier integration has positive effect on SCP.***

As with other integrations in the supply chain, the key word for integration is working together for the benefit of the company (Basnet, 2013). Internal integration as concurrent engineering within the company involving cross-functional existing in the process to plan product design, process design, and manufacturing activities simultaneously (Koufteros et al., 2005). In various industrial sectors, internal integration is proven to be able to contribute to supply chain performance (Kocuglu et al., 2011; Kumar et al., 2018; Pakurar et al., 2019). Findings at the Society of Manufacturing Engineers, internal integration has significant effect on customer intergration and supplier integration (Koufteros et al., 2005). With the involvement of all lines in the company, will support a smooth process along the supply chain. input from suppliers and customers, can be quickly responded by internal companies to be able to produce products according to customer needs. Based on the description above, the hypotheses proposed in this study are: ***H1b. Internal integration has positive effect on SCP.***

Customer integration is the integration between the company and the customer to meet customer satisfaction (Li et al., 2006). Between companies and customers it is better to coordinate with each other in relation to the design of strategies, practices and processes within the organization so that all processes carried out by the company can meet customer expectations (Flynn et al., 2010). In various industrial sectors, customer integration has also been proven to improve supply chain performance (Kocuglu et al., 2011; Kumar et al., 2018; Pakurar et al., 2019). Customer integration has a significant effect on product innovation and product quality improvement which in turn contributes to increasing company profits (Koufteros et al., 2005). The implementation of

customer integration makes it easier for companies to produce products in accordance with customer expectations, and can determine the supply of raw materials in production to be delivered to suppliers. This well-process will increase the productivity of all entities in all supply chains so that the ultimate goal is better supply chain performance. Based on the description above, the hypotheses proposed in this study are: ***H1c. Customer integration has positive effect on SCP.***

Information is an important part of supply chain management from product design to after-sales service and product returns (Lee, 2002). Information flowing along the supply chain will benefit all entities involved along the supply chain which in turn will have an impact on supply chain performance (Yang and Burns, 2003). In context of manufacturing industries in Turkey, information sharing has significant effect on supply chain performance (Kocoglu et al., 2011). The same finding also applies to the electronic commerce industry that information sharing contributes to improving supply chain performance (Lin et al., 2002). Information sharing is part of supply chain integration and has significant effect on supply chain performance (Sezen, 2008). With high information sharing (both level and quality) along the supply chain, it will facilitate the flow of the latest information so that supply chain performance can be better. Based on the description above, the hypotheses proposed in this study are: ***H1d. Information sharing has positive effect on SCP.***

Postponement fosters a new way of thinking about product design, process design and supply chain management (Yang and Burns, 2003). Postponement is an activity to delay the process for product modification or customization as long as possible in the production process (Heizer and Render, 2014). Postponement can make companies more flexible in developing products to meet customer needs (Weller et al., 2000). Postponement is a useful step for utilizing

information flow in the supply chain. Information flows along the supply chain and influences on supply chain performance (Yang and Burns, 2003). By postponement, companies can get important information to be able to increase the value of the product before it is forwarded to the next supply chain so that it can have an impact on overall supply chain performance. Based on the description above, this study proposes a hypothesis: ***H1e. Postponement has positive effect on SCP.***

The main indicator in the implementation of internal lean practices is an effort to improve efficiency along the supply chain without ignoring the objectives (Shah and Ward, 2003). This is in line with the target of supply chain performance which is always oriented towards reducing costs and reducing lead times (Pearcy et al., 2008). Implementation of lean practices in the supply chain, which is called lean supply chain also has a positive effect on supply chain performance (Banihashemi, 2011). Conduct efficiency in all activities along the supply chain, in line with the objectives of supply chain performance including cost reduction and lead time reduction. Therefore, the hypothesis proposed is as follows:

***H1f : Internal Lean Practices has positive effect on SCP.***

#### *The Impact of Supply Chain Practices on Competitive Advantage*

Besides having a positive effect on SCP, SCPs it can also support companies in achieving organizational competitive advantage (Sukati et al., 2002). SCP is expected to increase organizational competitive advantage through price/cost, quality, shipping dependency, time to market, and product innovation (Li et al., 2006). Previous studies have shown that the various components of SCP have an impact on various aspects of competitive advantage (Li et al., 2006; Bratic, 2011; Zulkarnain et., 2018).

When a company runs SCPs, then along the company's value chain it will work well, which in

turn can send products to consumers. If this process is continuous, then the company's competitive advantage can be realized. Kirst and Hofmann (2007) argue that good collaboration between internal and external resources and the ability of suppliers can be a means for companies to achieve competitive advantage. Considering the mixed results obtained from linking supplier integration with performance outcomes, a dynamic component or the ability to reconfigure the supply chain to adapt to changing environments appears critical to creating a sustainable competitive advantage (Vanpoucke et al., 2014).

Supplier integration is very helpful in developing new products even though companies face uncertain technological conditions (Razatz et al., 2002). Linkage between suppliers and companies makes it easier for companies to meet customer expectations. While competitive advantage has a relationship with value and quality (Ismail et al., 2012). Supplier integration as part of supply chain practices and do organizations with high levels of supply chain practices have high levels of competitive advantage (Li et al., 2006). Meet customer expectations is one of the company's positive values and is a manifestation of the company's commitment to quality. Based on this background, the proposed hypothesis is as follows:  
***H2a. Supplier integration has positive effect on Competitive Advantage.***

A company's competitive advantage can be achieved if the company has valuable resources, rareness, imperfect imitability, and substitutability (Barney, 2000). All of that can be realized if the internal business processes of the company run well. Internal integration is used to measure supply chain integration, used to measure competitive advantage in the manufacturing industry in 10 developed countries in Asia, America, and Europe, the results show that internal integration has a positive effect on competitive advantage (Li, 2015). Cross-functional cooperation within the internal

organization will positively contribute to the creation of value and quality of the products produced. Value and quality are the key to competitive advantage. Based on this background, the proposed hypothesis is as follows:  
***H2b. Internal integration has positive effect on Competitive Advantage.***

Customer integration contributes to companies in product innovation (Lau et al., 2010). While innovation is a step to achieve competitive advantage (Distanont and Khongmalai, 2018). Customer integration can be useful in creating value for the company (Vargo, 2008). while value is one of the keys of competitive advantage (Ismail et al., 2012). Well-Linkage between the company with customers, will provide benefits for the company in order to produce products in accordance with customer expectations. This can happen because companies easily get detailed information about customer expectations. Thus, the opportunity to innovate products and create value and quality that is expected by customers is getting bigger and will almost certainly be on target. Based on this background, the proposed hypothesis is as follows:  
***H2c. Customer integration has positive effect on Competitive Advantage.***

Information sharing, besides having a positive effect on improving supply chain performance, also has a positive effect on competitive advantage (Sukati et al., 2002). nformation sharing can be categorized into the level of information sharing and the quality of information sharing has a positive effect on the company's competitive advantage (Li et al., 2006). The better and higher level of knowledge sharing within the company together with all entities in each supply chain channel, making information well distributed so that it supports in improving company performance. Superior performance is characterized by good quality, high-value products. Based on this background, the proposed hypothesis is as follows:  
***H2d. Information***



### **sharing has positive effect on Competitive Advantage.**

Postponement occur during the production process for product modification or customization as long as possible in the production process (Waller, 2000; Heizer and Render, 2014). Modification or customization is an activity that contributes to the innovation of the company's products so as to achieve competitive advantage (Hosseini et al., 2018). Postponement is a directed and planned action in order to await complete information along the supply chain from upstream to downstream. By doing postponement, the company carries out activities that lead to innovation, then innovation as capital to achieve competitive advantage. Based on this background, the proposed hypothesis is as follows: **H2e.**

### **Postponement has positive effect on Competitive Advantage.**

Internal Lean Practices regarding the consumption of less use of power source systems with the same mass production speed and offer greater variations for customers (Ghatebi et al., 2013). Internal Lean Practices contribute positively to the achievement of the company's competitive advantage (Lewis, 2000). The implementation of Internal Lean Practices is in line with the concept of competitive advantage which is oriented to increasing value and quality. Based on this background, the proposed hypothesis is as follows: **H2f. Internal Lean Practices has positive effect on Competitive Advantage.**

## **IV. METHODS AND MEASUREMENTS**

This study wants to examine effect of supply chain practices on supply chain performance and competitive advantage. This research is a quantittive research conducted by survey method through distributing questionnaires to owners or representative staff from SME's furniture in Surakarta region. Of the 225 questionnaires distributed, returned a total of 192 questionnaires that are complete and can be analyzed.

Supplier integration is measured by five instruments from Abdallah et al.,(2014) also used by Mufaqih et al.,(2017). The substance of the questions in the questionnaire includes: quality is the main criterion in selecting suppliers, solving problems together with suppliers, helping our suppliers to improve the quality of their products, continuous improvement programs with suppliers, involving suppliers in the process of developing new products.

Internal integration in this study was measured by five instruments from Abdallah et al.,(2014); Mufaqih et al.,(2017). The substance of the questions in the questionnaire includes: The availability of inter-departmental system integration within the company, the availability of integrated inventory management, communication between departments in all lines, the use of cross-departmental teams in creating new products, and the use of cross-departmental teams to carry out the improvement process.

Customer integration is also measured by five instruments from Abdallah et al., (2014); Mufaqih et al.,(2017). The substance of the questions in the questionnaire includes: consultation with customers in setting our product standards, measuring and evaluating customer satisfaction, anticipating customer needs, providing convenience and encouraging customers to communicate, regularly evaluating the importance of customer relationships.

Information sharing in this study, consist of the level of knowledge sharing and the quality of knowledge sharing. Information sharing was measured by ten instruments from Li et al., (2006). The substance of the questions aboutlevel infirmation sharing includes: Provide information to companies in the supply chain before changing needs, share information exclusively, companies in the supply chain get information about things that affect the company's business, companies in the supply chain share business knowledge from the core business processes, keep every information about various events and changes that

affect one of the entities. While the substance of the question about the quality of information sharing includes : exchange information with companies in the supply chain in a timely manner, Exchange information with companies in the supply chain accurately, Exchange information with companies in the supply chain completely, Exchange information with companies in the supply chain adequately, Exchange information with companies in our supply chain reliably.

Postponement is measured by three instruments from Abdallah et al., (2014); Mufaqih et al.,(2017). The substance of the questions in the questionnaire includes: postpone operational activities in the supply chain (such as coloring furniture finishing, shipping furniture, installing additional accessories on furniture), delaying product manufacturing until the customer's order has actually been received, delaying to reduce production costs.

Internal lean practices is measured by six instruments from Al-Shboul et al., (2017). The substance of the questions in the questionnaire includes: company policy that seeks to reduce regulatory time, the company adopts a "Pull" production system, encourages suppliers for shorter periods, a clear flow order, receives, and other work from suppliers, proximity to supplier warehouses / factories, time for material inspection / incoming components / products.

Supply chain performance is measured by ten instruments from Mufaqih et al., (2017). The substance of the questions in the questionnaire includes: ability to respond and accommodate changes in demand, Ability to respond and accommodate a decrease in operational

performance, Ability to respond and accommodate periods when supplier performance is poor, ability to respond and accommodate periods when shipping performance is poor, ability to respond and accommodate the emergence of new variations, markets new, and new competitors, the total cost of raw materials used, total distribution costs, total production costs, inventory costs, and investment development.

Competitive advantage is measured by ten instruments from Li et al., (2006). The substance of the questions in the questionnaire includes: price, quality, delivery dependability, time to market, and product innovation.

Testing the hypothesis of this study using a structural equation model with a partial least square (PLS) approach. the use of structural equation models with a partial least square (PLS) approach makes it possible to test simultaneously with many independent and dependent variables (Hair et al., 2014).

## V. RESULT AND DISCUSSION

Instrument that measures supply chain practices were developed by Abdallah et al.,(2014) and Al-Shboul et al.,(2017). Instruments that measure competitive advantage were adopted from Li et al.,(2006). Instruments that measure supply chain performance were adopted from Abdallah et al.,(2014). The following section will discuss statistical analysis used to determine the validity, reliability of each construct, and path analysis. Validity test is done by convergen and discriminant validity. Then, reliability seen from the value of composite reliability.

Table 1. Convergen Validity Result

Variable	items	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	Standard Error (STER)	T Statistics ( O/STER )
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V)						
Customer Integration	ci1	0.51201 6	0.50810 8	0.04178 3	0.04178 3	12.254032
	ci2	0.75079 3	0.75132 3	0.02345 1	0.02345 1	32.014798
	ci3	0.80800 5	0.80920 7	0.01424 5	0.01424 5	56.721845
	ci4	0.73992 5	0.73953 1	0.02467 8	0.02467 8	29.982946
	ci5	0.70052 7	0.69766 3	0.02846 2	0.02846 2	24.612502
Internal Integration	ii1	0.80776 7	0.80706 5	0.01879 3	0.01879 3	42.981421
	ii2	0.82981 6	0.82926 1	0.01597 5	0.01597 5	51.944455
	ii3	0.80866 6	0.80621	0.01959 2	0.01959 2	41.276246
	ii4	0.80759 7	0.80548 9	0.01907 5	0.01907 5	42.338356
	ii5	0.54936	0.54744 9	0.04195 6	0.04195 6	13.093823
Information Sharing	is1	0.78896 8	0.78841 2	0.01958 3	0.01958 3	40.287452
	is2	0.77061 8	0.77069 4	0.02165 1	0.02165 1	35.5932
	is3	0.63479 5	0.63199 7	0.03031 6	0.03031 6	20.939338
	is4	0.69455 7	0.69406 5	0.02704 6	0.02704 6	25.680623
	is5	0.52972 8	0.42733 3	0.05142 8	0.05142 8	8.355995
	is6	0.55166 3	0.44979	0.04466 7	0.04466 7	10.11182
	is7	0.54346 3	0.44384 3	0.05265 9	0.05265 9	8.421493
	is8	0.52228 5	0.52032 8	0.04222 1	0.04222 1	12.370407
	is9	0.58734 9	0.48593 7	0.04724 3	0.04724 3	10.315735
	is10	0.75203 7	0.75162 8	0.02297 4	0.02297 4	32.734344
Supplier Integration	si1	0.57294	0.57162 9	0.04966 2	0.04966 2	11.536798

	si2	0.56466 6	0.56148 2	0.04614 3	0.04614 3	12.237411
	si3	0.83130 6	0.83035 9	0.01588 6	0.01588 6	52.330425
	si4	0.85970 6	0.85856 5	0.01384 2	0.01384 2	62.107947
	si5	0.60043 1	0.59902 2	0.04138 7	0.04138 7	14.507553
Posponement	post1	0.50918 4	0.40757 3	0.06376 7	0.06376 7	6.41684
	post2	0.82259 6	0.82243	0.01650 2	0.01650 2	49.847775
	post3	0.75526 2	0.75432	0.02588 6	0.02588 6	29.176938
Internal Lean Practices	ilp1	0.54992 4	0.54901 6	0.04965 8	0.04965 8	11.074229
	ilp2	0.61175 2	0.60885 2	0.04249 4	0.04249 4	14.396307
	ilp3	0.83660 8	0.83603 1	0.01566 2	0.01566 2	53.417055
	ilp4	0.86296 2	0.86212 5	0.01300 6	0.01300 6	66.351358
	ilp5	0.60367 3	0.60085 9	0.03971 5	0.03971 5	15.200166
	ilp6	0.54238 7	0.54075 6	0.04245 8	0.04245 8	12.774691
Competitive Advantage	ca1	0.65405 3	0.65204	0.03068	0.03068	21.318216
	ca2	0.74225 9	0.74136	0.02485 5	0.02485 5	29.863533
	ca3	0.77345 2	0.7726	0.02285 6	0.02285 6	33.840067
	ca4	0.71971 1	0.71715 4	0.02551 7	0.02551 7	28.205561
	ca5	0.71246 8	0.71133 1	0.02284 1	0.02284 1	31.192856
	ca6	0.73299 3	0.73194 8	0.02252 3	0.02252 3	32.544367
	ca7	0.78168 3	0.78092 9	0.01811 7	0.01811 7	43.145199
	ca8	0.65771 7	0.65550 8	0.02912 5	0.02912 5	22.582335
	ca9	0.71378 5	0.71308 8	0.02615 7	0.02615 7	27.288594



Supply Chain Performance	ca10	0.52661 8	0.52499 5	0.03816	0.03816	13.800148
	ca11	0.71263 3	0.71239 7	0.02763 3	0.02763 3	25.788911
	ca12	0.58387 3	0.5832	0.03296 4	0.03296 4	17.712276
	ca13	0.53635 9	0.43687 8	0.04519	0.04519	9.656052
	ca14	0.53344 7	0.43280 9	0.04909	0.04909	8.829721
	ca15	0.53621 5	0.53509 7	0.04206 6	0.04206 6	12.746989
	ca16	0.58513 1	0.48308 6	0.04364 6	0.04364 6	11.115156
	scp1	0.51099 8	0.40891	0.05090 8	0.05090 8	8.073269
	scp2	0.56617	0.46503 8	0.04627 9	0.04627 9	10.073126
	scp3	0.53112 1	0.52910 4	0.04381 3	0.04381 3	12.122422
	scp4	0.50927 3	0.50768 9	0.04564 1	0.04564 1	11.158247
	scp5	0.78386 9	0.78349 7	0.02050 3	0.02050 3	38.231927
	scp6	0.81692	0.81586 6	0.01691 5	0.01691 5	48.295579
	scp7	0.81552 7	0.81514 5	0.01837	0.01837	44.394942
	scp8	0.72008 6	0.71684 8	0.02666 5	0.02666 5	27.004878
	scp9	0.73424 3	0.73253 5	0.02540 2	0.02540 2	28.904571
	scp10	0.50793	0.50690 5	0.04205 8	0.04205 8	12.076953

Source : Primary Data Processed, 2019

Based on Table 1 above, it shows that the outer loading value for each indicator measuring variable used in this study  $> 0.5$  and the t-statistic value  $\geq 1.96$ . Thus, the indicators in this study meet the criteria for convergent validity. Furthermore, discriminant validity can be seen

from the cross loading value of each indicator against the measured variable. The cross loading values are presented in Table 2 below.

Table 2. Cross Loading Result

Variable	items	ca	ci	is	ii	ilp	post	si	scp
Competitive Advantage	ca1	<b>0.6540</b> <b>53</b>	0.4983 52	0.4857 01	0.4519 38	0.5331 58	0.4668 08	0.4833 67	0.4861 16
	ca2	<b>0.7422</b> <b>59</b>	0.6076 65	0.5205 56	0.5031 61	0.5454 74	0.5593 99	0.4848 31	0.5254 87
	ca3	<b>0.7734</b> <b>52</b>	0.6285 86	0.5742 58	0.5514 24	0.5852 94	0.5616 99	0.5514 63	0.5964 26
	ca4	<b>0.7197</b> <b>11</b>	0.5268 2	0.5476 91	0.5464 72	0.5863 76	0.5094 12	0.5955 95	0.5888 46
	ca5	<b>0.7824</b> <b>68</b>	0.6723 97	0.7395 63	0.7158 76	0.7286 06	0.7065 12	0.7396 66	0.7747 32
	ca6	<b>0.8329</b> <b>93</b>	0.6698 24	0.7812 33	0.8077 67	0.8051 19	0.6940 79	0.7850 66	0.8169 2
	ca7	<b>0.8816</b> <b>83</b>	0.6347 9	0.7532	0.8302 24	0.7738 71	0.6759 48	0.7648 76	0.8043 41
	ca8	<b>0.8577</b> <b>17</b>	0.5424 16	0.6568 56	0.8086 66	0.6588 49	0.5569 06	0.7101 13	0.7200 86
	ca9	<b>0.8137</b> <b>85</b>	0.6048 41	0.6742 15	0.8102 97	0.6330 5	0.6018 48	0.6683 31	0.7342 43
	ca10	<b>0.5266</b> <b>18</b>	0.4602 17	0.4339 25	0.5578 11	0.4267 31	0.4817 46	0.4862 32	0.5079 3
	ca11	<b>0.7126</b> <b>33</b>	0.6110 41	0.5456 9	0.5991 88	0.5318 95	0.5634 37	0.5492 65	0.5927 86
	ca12	<b>0.5838</b> <b>73</b>	0.5277 7	0.3768 49	0.3098 79	0.3708 13	0.3949 5	0.3280 76	0.3715 23
	ca13	<b>0.4363</b> <b>59</b>	0.4018 51	0.2621 83	0.2095 5	0.2570 21	0.3112 56	0.2451 5	0.2744 72
	ca14	<b>0.4334</b> <b>47</b>	0.3640 73	0.2893 11	0.2340 55	0.3184 48	0.2461 55	0.3200 6	0.3115 02
	ca15	<b>0.5362</b> <b>15</b>	0.5207 52	0.3956 15	0.3019 19	0.4274 93	0.3293 01	0.3903 56	0.4104 79
	ca16	<b>0.4851</b> <b>31</b>	0.4609 23	0.3830 47	0.3094 91	0.4034 97	0.3226 85	0.3730 04	0.3902 1
Customer Integration	ci1	0.3781 45	<b>0.5120</b> <b>16</b>	0.4631 37	0.3187 8	0.3997 45	0.3799 75	0.3846 33	0.4269 48
	ci2	0.5987 95	<b>0.7507</b> <b>93</b>	0.6545 8	0.4842 09	0.5543 97	0.6242 91	0.5351 04	0.6223 98
	ci3	0.7297 47	<b>0.8080</b> <b>05</b>	0.7360 91	0.7653 57	0.6120 31	0.8020 4	0.6108 65	0.7524 23
	ci4	0.6426 42	<b>0.7399</b> <b>25</b>	0.5620 36	0.5372 29	0.5016 57	0.5499 37	0.4791 68	0.5345 74
	ci5	0.6194 12	<b>0.7005</b> <b>27</b>	0.4832 36	0.4878 72	0.4557 54	0.4728 1	0.4290 6	0.5136 45
Information	is1	0.6680	0.6804	<b>0.7889</b>	0.6827	0.6994	0.6509	0.6751	0.7208

n Sharing		97	01	<b>68</b>	08	79	7	04	25
		0.7114	0.6292	<b>0.7706</b>	0.7187	0.6851	0.6385	0.6832	0.7172
	is2	16	52	<b>18</b>	49	67	79	7	71
		0.5698	0.4820	<b>0.7347</b>	0.7052	0.6021	0.4782	0.6296	0.6283
	is3	45	45	<b>95</b>	74	55	52	35	73
		0.6393	0.5885	<b>0.7945</b>	0.7397	0.5936	0.5680	0.6121	0.6820
	is4	86		<b>57</b>	4	23	84	43	39
		0.4554	0.4385	<b>0.5297</b>	0.4577	0.3754	0.4664	0.4055	0.4266
	is5	18	18	<b>28</b>	9	43	15	63	27
		0.3095	0.3094	<b>0.5516</b>	0.2677	0.4207	0.3156	0.4239	0.4248
Internal Integration	is6	64	31	<b>63</b>	72	64	39	38	07
		0.2692	0.3194	<b>0.5434</b>	0.2338	0.3921	0.3273	0.3981	0.4247
	is7	67	14	<b>63</b>	89	67	07	14	59
		0.4110	0.4494	<b>0.5222</b>	0.3080	0.4921	0.3982	0.4576	0.5056
	is8	42	21	<b>85</b>	77	82	11	64	6
		0.3455	0.3923	<b>0.4873</b>	0.2387	0.4906	0.3757	0.4352	0.4551
	is9	65	35	<b>49</b>	55	9	43	31	88
		0.6438	0.6328	<b>0.7520</b>	0.6318	0.6483	0.6671	0.6567	0.6936
	is10	46	87	<b>37</b>	35	94	51	85	97
		0.7329	0.6698	0.7812	<b>0.8077</b>	0.8051	0.6940	0.7850	0.8169
Internal Lean Practices	ii1	93	24	33	<b>67</b>	19	79	66	2
		0.7721	0.6280	0.7455	<b>0.8298</b>	0.7723	0.6708	0.7610	0.7979
	ii2	26	32	45	<b>16</b>	76	39	54	32
		0.6577	0.5424	0.6568	<b>0.8086</b>	0.6588	0.5569	0.7101	0.7200
	ii3	17	16	56	<b>66</b>	49	06	13	86
		0.7047	0.5893	0.6678	<b>0.8075</b>	0.6214	0.5974	0.6574	0.7276
	ii4	83	71	14	<b>97</b>	77	68	66	
		0.5130	0.4460	0.4236	<b>0.5493</b>	0.4151	0.4657	0.4752	0.4936
	ii5	65	1	23	<b>6</b>	44	6	63	64
		0.3905	0.3271	0.5158	0.3511	<b>0.5499</b>	0.3432	0.5729	0.5298
Postpone- ment	ilp1	42	92	82	46	<b>24</b>	59	4	86
		0.4890	0.4589	0.5610	0.3342	<b>0.6117</b>	0.4281	0.5646	0.5633
	ilp2	02	23	31	33	<b>52</b>	2	66	14
		0.7118	0.6171	0.7762	0.7890	<b>0.8366</b>	0.6448	0.8313	0.8134
	ilp3	55	57	42	65	<b>08</b>	71	06	89
		0.7505	0.6076	0.7952	0.8403	<b>0.8629</b>	0.6394	0.8337	0.8362
	ilp4	93	65	31	66	<b>62</b>	37	21	71
		0.6043	0.4311	0.5269	0.6780	<b>0.6036</b>	0.4185	0.6345	0.5768
	ilp5	29	57	49	37	<b>73</b>	07	69	08
		0.5368	0.4336	0.3995	0.3752	<b>0.5423</b>	0.4105	0.3956	0.4239
Postpone- ment	ilp6	59	09	82		<b>87</b>	1	37	91
	post1	0.2682	0.3428	0.3854	0.1558	0.3692	<b>0.4091</b>	0.3441	0.3581
	post2	99	3	81	94	3	<b>84</b>	7	06
		0.6780	0.6826	0.7001	0.6329	0.5959	<b>0.8225</b>	0.5877	0.6794

		32	91	09	17	2	<b>96</b>	48	33
	post3	0.6238	0.6080	0.5713	0.6892	0.5142	<b>0.7552</b>	0.5261	0.6280
		33	32	07	12	01	<b>62</b>	7	75
Supply Integration	si1	0.3905	0.3271	0.5158	0.3511	0.5499	0.3432	<b>0.5729</b>	0.5298
		42	92	82	46	24	59	<b>40</b>	86
	si2	0.4890	0.4589	0.5610	0.3342	0.6117	0.4281	<b>0.6646</b>	0.5633
		02	23	31	33	52	2	<b>66</b>	14
	si3	0.7118	0.6171	0.7762	0.7890	0.8366	0.6448	<b>0.8413</b>	0.8134
		55	57	42	65	08	71	<b>06</b>	89
	si4	0.7550	0.5435	0.7292	0.8433	0.7844	0.5881	<b>0.8597</b>	0.7955
		32	49	05	63	78	02	<b>06</b>	03
	si5	0.5957	0.4388	0.5016	0.6621	0.5276	0.4531	<b>0.6004</b>	0.5589
		76	3	83	27	51	92	<b>31</b>	23
Supply Chain Performan ce	scp1	0.3155	0.3266	0.4331	0.2415	0.4099	0.3051	0.4108	<b>0.5109</b>
		58	37	85	29	29	75	68	<b>98</b>
	scp2	0.3032	0.3205	0.4494	0.2730	0.4249	0.3588	0.4491	<b>0.4661</b>
		89	53	16	71	75	21	37	<b>70</b>
	scp3	0.4484	0.4827	0.5401	0.3214	0.5184	0.4184	0.4750	<b>0.5311</b>
		34	8	05	27	65	38	23	<b>21</b>
	scp4	0.4298	0.4454	0.5227	0.2793	0.5327	0.4030	0.4768	<b>0.5092</b>
		64	63	2	53	3	91	46	<b>73</b>
	scp5	0.7122	0.6618	0.7487	0.7238	0.7400	0.7052	0.7503	<b>0.7838</b>
		75	94	92	67	95	69	89	<b>69</b>
	scp6	0.7329	0.6698	0.7812	0.8077	0.8051	0.6940	0.7850	<b>0.8169</b>
		93	24	33	67	19	79	66	<b>22</b>
	scp7	0.7913	0.6449	0.7642	0.8390	0.7861	0.6879	0.7761	<b>0.8935</b>
		09	33	52	25	36	63	53	<b>27</b>
	scp8	0.6577	0.5424	0.6568	0.8086	0.6588	0.5569	0.7101	<b>0.8200</b>
		17	16	56	66	49	06	13	<b>86</b>
	scp9	0.7137	0.6048	0.6742	0.8102	0.6330	0.6018	0.6683	<b>0.8342</b>
		85	41	15	97	5	48	31	<b>43</b>
	scp10	0.5266	0.4602	0.4339	0.5578	0.4267	0.4817	0.4862	<b>0.5079</b>
		18	17	25	11	31	46	32	<b>3</b>

Source : Primary Data Processed, 2019

Based on Table 2 above, the cross loading value on each indicator shows a greater value in measuring the measured variable compared to measuring other variables. Thus, the indicators for each variable actually measure the variable itself.

After the indicators measuring the variables are declared valid, the next step is to measure the reliability of each variable. Reliability test is done by using composite reliability using Partial Least Square as follows.

Table 3. Composite Reliability

Variable	Composite Reliability
Competitive Advantage	0.918145



Customer Integration	0.832363
Information Sharing	0.851296
Internal Integration	0.875815
Internal Lean Practices	0.832969
Postponement	0.713492
Supplier Intergration	0.821082
Supply Chain Performance	0.872175

Source : Primary Data Processed, 2019

The composite reliability values presented in Table 3 above show values > 0.7, which means that all variables in this study are declared reliable (Hair et al., 2014). After testing the validity and reliability, the next step is to test the hypothesis.

Hypothesis testing in this study was conducted by path analysis using Partial Least Square. The results of the hypothesis test are statistically shown in the following Table 4.

Tabel 4. Path Analysis Result

Independent → Dependent Variables	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	Standard Error (STERR)	T Statistics ( O/STERR )
Customer Integration -> Competitive Advantage	0.436168	0.43354	0.02426	0.02426	17.9787
Customer Integration -> Supply Chain Performance	0.088079	0.087716	0.014339	0.014339	6.142479
Information Sharing -> Competitive Advantage	0.263614	0.255894	0.043634	0.043634	6.041527
Information Sharing -> Supply Chain Performance	0.204774	0.206268	0.028843	0.028843	7.099629
Internal Integration -> Competitive Advantage	0.307689	0.307091	0.037641	0.037641	8.174207
Internal Integration -> Supply Chain	0.243131	0.24467	0.024197	0.024197	10.0479

Performance					
Internal Lean Practices -> Competitive Advantage	0.293373	0.292394	0.074823	0.074823	3.920914
Internal Lean Practices -> Supply Chain Performance	0.132168	0.134339	0.027877	0.027877	4.741054
Postponement -> Competitive Advantage	0.078914	0.078968	0.029882	0.029882	2.640861
Postponement -> Supply Chain Performance	0.094692	0.095064	0.017141	0.017141	5.524425
Supplier Intergration -> Competitive Advantage	0.182621	0.179792	0.066856	0.066856	2.731571
Supplier Intergration -> Supply Chain Performance	0.293233	0.288218	0.031033	0.031033	9.449055

Source : Primary Data Processed, 2019

The t-statistic value in the path analysis presented in Table 4 above shows that all existing paths are declared significant as indicated by the t-statistic value  $\geq 1.96$  for all paths. T-statistic value  $\geq 1.96$  means that the path is significant (Hair et al., 2014).

Based on the results of the path analysis presented in Table 4, it shows that supplier integration has a significant effect on supply chain performance (t-statistic = 9.449055, and outer loading = 0.293233). This means that the effect of supplier integration on supply chain performance is positive. That is, the well-supplier integration will increase supply chain performance. With these results, **Hypothesis 1a** in this study that supplier integration has positive effects on supply chain performance can be accepted. Furthermore, supplier integration also has a positive effect on competitive advantage (t-statistic = 2.731571, and

outer loading = 0.182621). That is, the well-supplier integration will support the company to achieve competitive advantage. With this result, **Hypothesis 2a** in this study that supplier integration has a positive effect on competitive advantage and can be accepted.

Internal integration has a significant effect on supply chain performance (t-statistic = 10.0479, and outer loading 0.243131). This means that the effect of internal integration on supply chain performance is positive. That is, well- internal integration will increase supply chain performance. With these results, **Hypothesis 1b** in this study that internal integration has a positive effect on supply chain performance can be accepted. Furthermore, internal integration also has a positive effect on competitive advantage (t-statistic = 8.1720207, and outer loading = 0.307689). That is, the well-internal integration

will support the company to achieve competitive advantage. With this result, **Hypothesis 2b** in this study that internal integration has a positive effect on competitive advantage and can be accepted.

Customer integration has a significant effect on supply chain performance (t-statistic = 6.142479, and outer loading 0.088079). This means that the effect of customer integration on supply chain performance is positive. That is, the well-customer integration will increase supply chain performance. With these results, **Hypothesis 1c** in this study that customer integration has a positive effect on supply chain performance can be accepted. Furthermore, customer integration also has a positive effect on competitive advantage (t-statistic = 17.9787, and outer loading = 0.436168). That is, the well-customer integration will support the company to achieve competitive advantage. With this result, **Hypothesis 2c** in this study states that internal integration has a positive effect on competitive advantage and can be accepted.

Information sharing has a significant effect on supply chain performance (t-statistic = 7.099629, and outer loading = 0.204774). This means that the effect of information sharing on supply chain performance is positive. That is, the well-information sharing will increase supply chain performance. With these results, **Hypothesis 1d** in this study that information sharing has positive effects on supply chain performance can be accepted. Furthermore, information sharing also has a positive effect on competitive advantage (t-statistic = 6.041527, and outer loading = 0.263614). That is, the well-information sharing will support the company to achieve competitive advantage. With these results, **Hypothesis 2d** in this study that information sharing has positive effects on competitive advantage can be accepted.

Postponement has a significant effect on supply chain performance (t-statistic = 5.524425, and outer loading = 0.094692). This means that the effect of postponement on supply chain performance is positive. This means that well-postponement will improve supply chain

performance. With these results, **Hypothesis 1e** in this study that postponement has a positive effect on supply chain performance can be accepted. Furthermore, postponement also has a positive effect on competitive advantage (t-statistic = 2.640861, and outer loading = 0.078914). That is, the well- postponement will support the company to achieve competitive advantage. With these results, **Hypothesis 2e** in this study that postponement has a positive effect on competitive advantage can be accepted.

Internal lean practices have a significant effect on supply chain performance (t-statistics = 4.741054, and outer loading = 0.132168). This means that the influence of internal lean practices on supply chain performance is positive. That is, the well-internal lean practices will improve supply chain performance. With this result, **Hypothesis 1f** in this study that Internal lean practices have positive effects on supply chain performance can be accepted. Furthermore, Internal lean practices also have a positive effect on competitive advantage (t-statistic = 3.920914, and outer loading = 0.293373). That is, the well-internal lean practices will support the company to achieve competitive advantage. With this result, **Hypothesis 2e** in this study states that internal lean practices have positive effects on competitive advantages can be accepted.

## VI. CONCLUSION, LIMITATION, AND IMPLICATION

Research on the influence of supply chain practices on supply chain performance and competitive advantage is carried out by taking the context of the SME's Furniture in the Surakarta region. It is interesting to study deeply, the relatively small and medium business capacity does not become a burden in the implementation of supply chain practices, especially the internal dimensions of lean practices. The findings in this study indicate that SME's also aware of the application of lean concepts to all processes along the value chain. Conceptually and empirically, the

research has strengthened previous research on the positive influence of supply chain practices on supply chain performance and competitive advantage.

The limitation of this research is that it becomes a suggestion for further research, that research is carried out in one type of industry, namely furniture. So the results of this study cannot be used as generalizations for cross-industry. Future research, research should be conducted across industries so the results will be better if used for generalization. In addition, this research was carried out in a cross section, so that the dynamic aspects that might arise in supply chain practices in companies and their influence on supply chain performance and competitive advantage could not be measured properly. Future research can be done using a longitudinal approach so that it can better capture and explore the dynamics that occur.

The managerial implications of this research need to get attention for SME's furniture businesses in Surakarta region and other interested parties, to always maintain the harmony of supply chain practice implementation in order to improve supply chain performance and competitive advantage for companies.

## VII. ACKNOWLEDGEMENT

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## VIII. REFERENCES

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