

The Relationship between Supply Chain Collaboration of Value Innovation in Small Medium Enterprises and Supply Chain Capability as Mediator to Achieve Competitive Advantages

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Abstract—To survive in competition with big companies, the Small Medium Enterprises (SMEs) should have a capability to recognize their own supply chain, and start to explore the innovation of their products through supply chain collaboration. The objective of this research is to examine the relationship between Supply Chain Collaboration of Value Innovation (SCCVI) in the SMEs and Supply Chain Capability (SCC) as a mediator to achieve Competitive Advantages (CA). This research is a descriptive study with the quantitative analysis using partial least square method with the second order model analysis using Smart PLS 3. The data was collected by using the questionnaires based on the purposive sampling method. The result of this research showed that the SCC could mediate between the SCCVI and the CA; there was a positive direct relationship between the SCCVI and SCC; also, there was a positive relationship between the SCC and the CA. In other words, if the small medium enterprise does a good supply chain collaboration, it will create a good supply chain ability; and then, when the supply chain ability is good, it will increase its competitive advantages. The suggestion for the further research is that investigating the relationship among the variables used in this research in other creative industries.

Keywords—SCCVI; SCC; CA; and SMEs

I. INTRODUCTION

Economic Asean Community (AEC) drives Indonesian country to compete with its members, especially, with its SMEs of creative industry from China. The imports entry of knitted products from China is a challenge that must be faced by craftsmen at Industry Center of Rajut Binong Jati as one of Indonesian creative industries, especially, for knitted products. China's products are much lower when compared with domestic knitted product prices. This results in less capable in competition that impacts on the reduction of business units at

Industry Center of Rajut Binong Jati. In addition, there are other problems faced by knitting craftsmen at Industry Center of Rajut Binong Jati that is still revolved around the supply chain. The raw materials from factory still have to pass two intermediaries: distributor and sub distributor. They make raw materials' price become expensive from factory [1]; then, the online marketing forces the craftsmen of Rajut Binong Jati following that era by changing gradually from sales or conventional marketing to online one to stay afloat in the competition. This causes the central offender decrease its production that impacts on the decline of business unit at Industry Center of Rajut Binong Jati as it cannot follow the development of the existing era. Therefore, many wholesalers often play the price by buying cheaply; if not given the cheap price, the buyers will move to other knitting industries. That is what makes the profit decreased.

By these problems it needs to be a supply chain strategy, especially, supply chain collaboration in order to improve the position of Industry Center of Rajut Binong Jati, and lead to competitive advantages [2]. Supply Chain Collaboration of Value Innovation (SCCVI) is a resource that enhances business performance and capability [3]. Collaboration in supply chain for innovation is very important because of the benefits of innovation such as high quality, lower cost, more timely delivery, more efficient operation, and an effective coordination for all activities in the supply chain, and all partners are aware of it [2]. The importance of innovation in channel integration happens among supply chain partners who collaborate to create a new customer value [3]. Success in competition will more depend on the power of supply chain collaboration than the ability of every single company in terms of creating value innovation [4]. Thus, supply chain capability is influenced by the value of SCCVI.

From collaborating companies, they share responsibility and benefits by establishing levels of cooperation with their upstream and downstream supply chain partners in creating competitive advantages [5]. Companies that have competitive

advantages always have the ability to understand changes in market structure and choose an effective strategy. Competitive advantages evolve from the value created by the company for customers or buyers [6]. Therefore, Industry Center of Rajut Binong Jati should implement a good value innovation strategy to improve supply chain ability to create competitive advantages in order to compete. So, based on this explanation, it is very important to do research entitled "The Relationship between Supply Chain Collaboration of Value Innovation in Small Medium Enterprises and Supply Chain Capability as Mediator to Achieve Competitive Advantages". The goal of this research is to know that the supply chain collaboration in innovation can influence the firm competitive advantage directly and also influence indirectly through the supply chain capability.

II. LITERATURE REVIEW

There is an important collaboration in innovation. From the innovation, there will be various benefits such as high quality, lower cost, more timely delivery, and more efficient operation and effective coordination for all activities realized by partners in collaboration [2]. A new customer value will be created in the collaboration among supply chain partners; it is the importance of innovation in integration with partners [3]. Thus, it will create a strategic oriented perspective which is the implementation of performance drivers and supply chain capability. In addition, success in competition relies more on the strength of supply chain collaboration than firms that create innovation without collaboration [4]. Therefore, the description above illustrates how SCCVI improves supply chain capabilities. Information sharing in collaboration of value innovation and supply chain partners covering future market trends, new technologies, and processes of innovation and knowledge management skills enhances the value [7]. To measure the level of supply chain collaboration, Decision Synchronization (DS), the dimension proposed by Liao e., al. is used. DS refers to the SCCVI in market planning (at the implementation level and through joint planning) to target markets and products. In addition, beyond DS, Incentive Alignment (IA) is also a dimension to measure the level of supply chain collaboration by investigating supply chain partner alignment [7].

Collaboration in the supply chain also results in faster product-to-market cycle times, better on-the-bottom outs,

leading times, and quality; and a better understanding of end-customer needs the whole of the market intelligence [8]. By participating in collaborative innovation projects with supply chain partners, companies can achieve higher levels of competitiveness against key competitors (especially operating in the same industry sector) [9]. In the integration of supply chain partners and supply chain performance must be a model to address innovation drivers [3]. Sharing responsibility and benefits by establishing a level of cooperation with their upstream to downstream partners to create competitive advantage is part of the collaboration [5]. From the explanation above, this research gives an idea that the SCCVI influences competitive advantages. In creating competitive advantages, there must be several dimensions as measuring tools for the variables of the competitive advantages. From that point, customer feedback and innovation will increase customer satisfaction as well as companies will benefit better and build sustainable and competitive advantages [7]. Collaboration in industries will involve flexibility, delivery time, product quality, and other non-financial indicators. Thus, the dimensions of competitive advantages used in this study are price or cost, quality, delendability, product innovation, and time to market [10].

Causal relationship among supply chain management practices, competitive ability, supply chain integration level, and company performance has linked the company's supply chain integration strategy with its competitive strategy, and developed a framework [11]. The framework identifies how to link these relationships to better company performance in developing, maintaining, and even improving supply chain capabilities. It is the company's participation in collaboration that contributes in improving company performance that will impact on competitive advantages [12].

In creating competitive advantages, supply chain collaboration is often defined as two or more chain members that work together in creating competitive advantages through information sharing and joint decision making; and sharing the benefits resulted from more profits from the satisfactory customers' needs is larger rather than acting alone (without collaboration) [13]. The innovation value contained in the supply chain collaboration is a resource that improves business performance and capabilities [3]. The description above has given the idea that the SCCVI affects competitive advantages through supply chain capability.

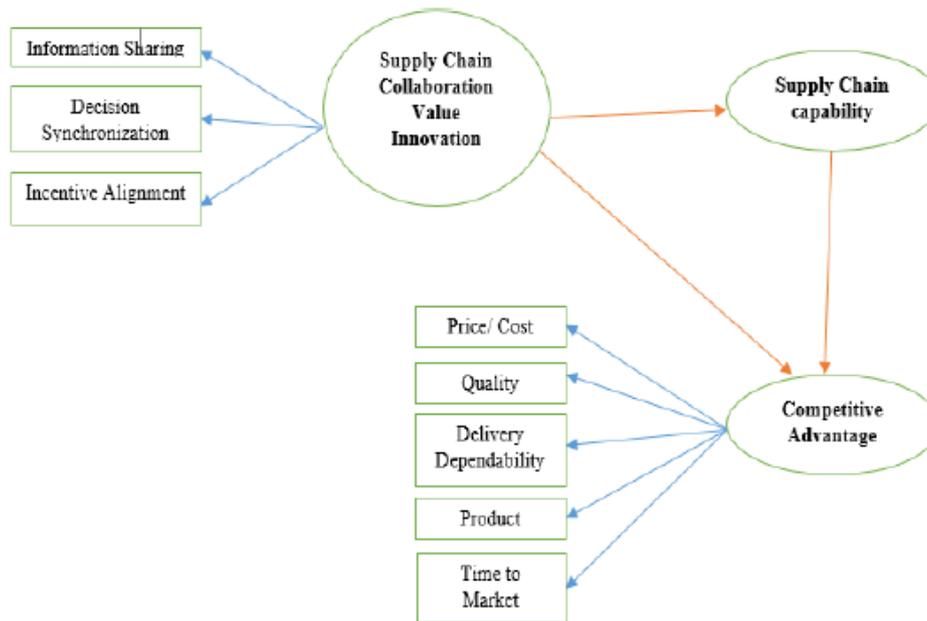


Fig. 1. Adopted from Liao et., al. [7].

In this study, researchers adopt the first study of research from Shu-Hsien Liao, Fang-I. Kuo, Li-Wen Ding and describe the effect of the SCCVI, SCC and CA. Research on the performance of SMEs of Binong Jati using PLS-SEM is applied to 60 units of knitting business (registered in KIRBI) at Industry Center of Rajut Binong Jati. Because it is a central unity, the object under the study has similar characteristics in contrast to the research of Shu-Hsien Liao, Fang-I. Kuo, and Li-Wen Ding [7].

The hypotheses used in this research are as follow:

- H1: Supply chain collaboration of value innovation has a significant influence to supply chain capabilities.
- H2: Supply chain collaboration of value innovation has a significant influence to competitive advantages.
- H3: Supply chain capability innovation has a significant influence to competitive advantages.
- H4: Supply chain collaboration of value innovation has a significant influence to competitive advantages with supply chain capability as a mediator.

III. RESEARCH METHOD

In this study, researchers used quantitative research methods by spreading the questionnaires for data collection.

Based on the purpose of the research, researchers used descriptive method because it adopted the model from the previous research applied to UMKM. The scale used in the questionnaire was Likert scale. The independent variable (X) in this research is SCCVI. Meanwhile, supply chain ability influenced by SCCVI and CA become dependent variable (Y). This study aims to examine the effect of SCCVI, SCC, and CA at Industry Center of Rajut Binong Jati. The method of analysis of this research was multivariate analysis using partial least square method and Smartpls software.

IV. RESULTS

The first process in Smartpls is to draw the model and check the loading factor through Pls algorithm because it will influence the hypothesis result after the bootstrapping process. The result of the pls algorithm can be seen in the figure 2.

The factor loading values seen in the figure 1 are still invalid indicator because the indicator is below 0.7 [14]. Therefore, the researchers through the trimming process evaluates all the loading factors based on the indicators on a reliable position.

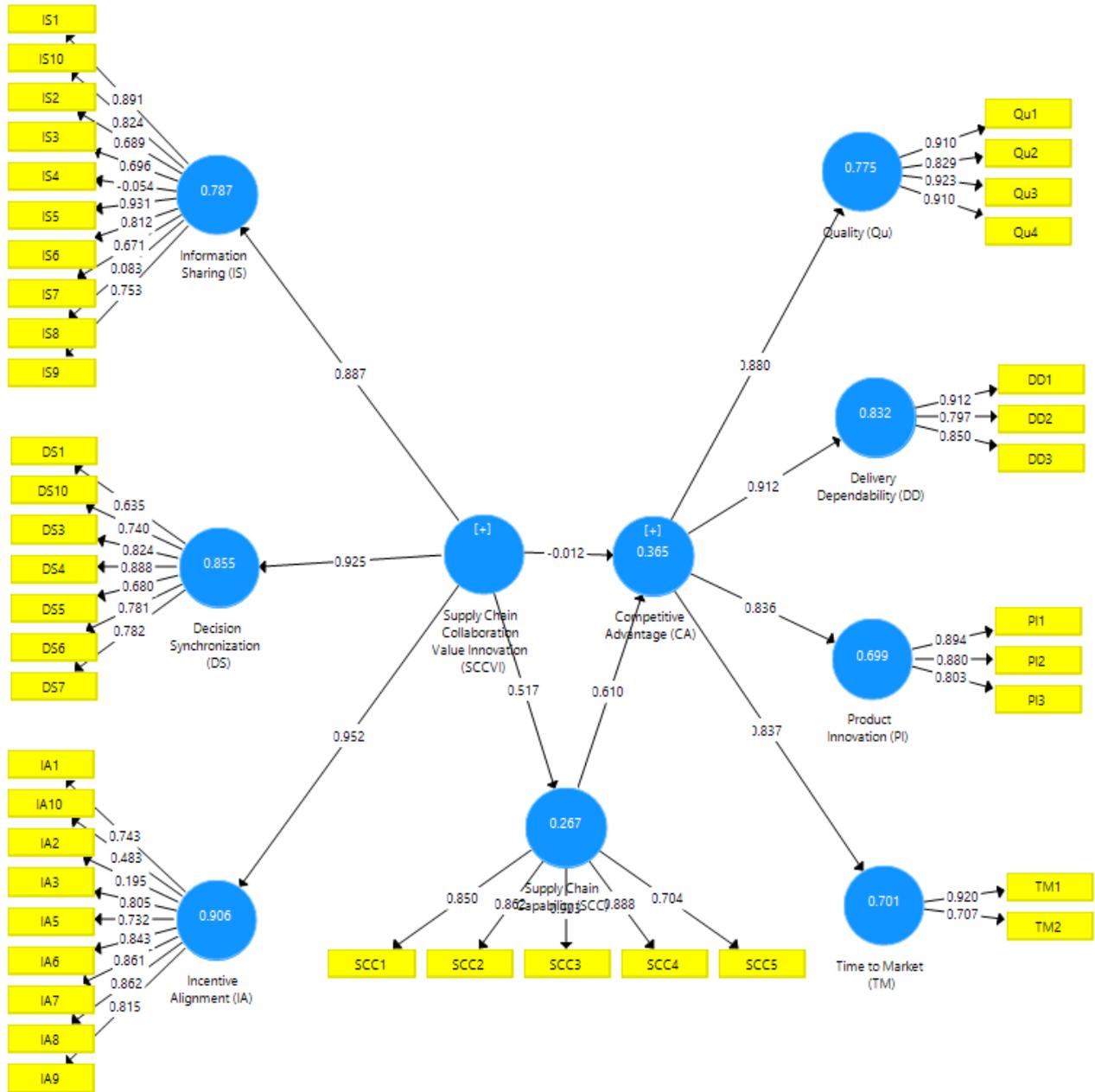


Fig. 2. PLS algorithm.



Fig. 3. PLS algorithm after trimming.

The figure 3 is the data that are generated after the trimming process. Loading factor on each indicator is above 0.7 (reliable). Because this research is adopted from other research, the model used in this research has been checked

through the process of testing validity and reliability. Therefore, this research directly presents the results of the hypothesis through bootstrapping in the figure 4.



Fig. 4. Bootstrapping result.

Based on the bootstrapping image, the *t* value on the arrow line connects each variable. Based on the *t* value is known that the SCCVI has a positive influence (significant) to SCC with *t*-statistic value of 6.702 greater than the value of *t*-table (5% significance level = 1.65). Thus, it indicates that the SCCVI has a positive direct effect on SCC. In other words, the first hypothesis (H1) in this study is accepted. The relationship between the SCCVI and the CA in the second hypothesis (H2) is *t*-statistic value of 0.744 smaller than *t*-table value 5% significance level = 1.65). It means that the SCCVI has no influence (exhibited significantly) to the CA. In other words, H2 in this study is rejected.

The last hypothesis (H3) that examines the relationship between the SCC and the CA shows a *t*-statistic value of 4.691.

Because the *t*-statistic value is greater than the *t*-table (5% significance level = 1.65), H3 in this study is accepted. In other words, the SCC has a positive (significant) effect on the CA.

From the data above, it is explained that indirect effect of the SCCVI on the CA with *t*-statistic value 3,655 is bigger than *t*-table (5% significance level = 1.65). When viewed in the model, the indirect effects are mediated by the SCC. This is supported by a significant indirect effect between the SCCVI to the SCC and the SCC to the CA. So, it can be concluded that the SCCVI influences the CA through the SCC. Thus, Hypothesis 4 (H4) is accepted.

Based on the results of statistical calculations, this study shows that the SCCVI does not positively influence the CA at

Industry Center of Rajut Binong Jati. It can be seen from the t -statistic value of 0.744 smaller than the value of t -table 1.65 (5% significance level). Thus, H2 in this research is rejected. The results of this study are similar to the results of the research conducted by Liao which stated that the SCCVI did not increase the CA at Industry Center of Rajut Binong Jati [7]. Although in descriptive analysis, the knitting business actors agree with the SCCVI & the CA but the collaboration done by the central actors is only in the scope of the junior knitting center only, which makes no effect directly (direct effect) to the CA. On the other hand, there is indirect influence from the SCCVI through the SCC to the CA (as explained in H4). It is the same as the research conducted by Liao et al. that the SCCVI can still increase the CA even though it is indirect [7].

V. DISCUSSION

This research is conducted to analyse how the SCCVI influences the SCC and the CA at Industry Center of Rajut Binong Jati. Based on the results of the research was known that the SCCVI affected the CA through the SCC. Then, the SCCVI has a positive (significant) effect on the SCC. The SCCVI does not have a positive influence or a direct influence on the CA. The SCC has a positive influence on the CA. Based on the results of the research, researchers try to provide advice for practitioners and other users, namely junior knitting center should increase the collaboration of the supply chain (value innovation) because it can improve supply chain ability. When supply chain capability is good it will increase the competitive advantage. Hence, the Industry Center of Rajut Binong Jati should pay attention to the supply chain capability as a mediator in supply chain collaboration to increase competitive advantage.

The Industry Center of Rajut Binong Jati should implement a good value of innovation because with the implementation of good value innovation it will have a good coordination, information sharing, and joint planning. It will increase supply chain capability and solve problems that focus on: 1) supply oriented (raw material from expensive factories, having to go through distributors and sub distributors) and 2) demand oriented (cheaper China's products, online marketing demands, and games wholesale merchant prices). When the problem is resolved, it will increase the competitive advantage at the Industry Center of Rajut Binong Jati.

VI. CONCLUSION

The result of this research showed that the SCC could mediate between the SCCVI and the CA; there was a positive direct relationship between the SCCVI and SCC; also, there was a positive relationship between the SCC and the CA. In other words, if the small medium enterprise does a good supply chain collaboration, it will create a good supply chain ability;

and then, when the supply chain ability is good, it will increase its competitive advantages.

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